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

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John Morris, Sherilyne Jones and Jaime Awe

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SECTION ONE: POSTCLASSIC PERIOD PAPERS

Fish centipede found in excavations during the Lamanai Historic Conservation Project
Archaeology undertaken in the country of Belize has changed the way in which researchers view and interpret the Maya Postclassic Period. Archaeologists working in Belize have successfully invalidated a series of once prevalent myths about the Maya, including: the Postclassic dating of Chichen Itza, Mexico; the scorched earth view of the Southern lowlands after the Maya collapse; and characterizations of later Maya civilization as declining, decadent, and depopulated. The past thirty years of research have caused Belizean archaeology to emerge as a significant force in rectifying our paradigms about the ancient Maya and, especially, the Postclassic Period.

Introduction

While much is known about the importance of Belizean archaeology in terms of our understanding of the Maya Preclassic Period (Awe 1992; Hammond 1985; Healy 2006), the significance of archaeological data from Belize in terms of our conceptualization of the Postclassic Period is frequently overlooked. Yet, within the last thirty years archaeologists working in Belize have recovered more original data relating to the Postclassic Maya than at any other point in the history of Maya archaeology (Morris and Awe 2007). These data have helped to provide fundamental shifts in the paradigms that were and are used to interpret this enigmatic time period and position it relative to the broader Mesoamerican world (Smith and Berdan 2003).

The Postclassic Period of Maya prehistory is first and foremost a temporal era. It is that period of time that exists from the end of the Classic Period until the advent of the Historic era. While the time period can be fairly well bracketed for Belize as being from A.D. 900 until A.D. 1532, there are methodological issues involved in identifying the two transition periods that make the material correlates of the Postclassic Period difficult to securely identify at both its beginning and its end.

For a variety of reasons, archaeologists in the Maya area have tended not to focus on the Postclassic Period. There has been a general predisposition towards viewing this era as being relatively unimportant. The site of Mayapan, dug by the Carnegie Institution of Washington in the 1950s as their final long-term project, also did little to alleviate this perception (D. Chase and A. Chase 2004b). In fact, the Mayapan excavations were used as confirmation for an older paradigm used in Maya archaeology that saw the Postclassic as being defined by decline, decadence, and depopulation (“the 3 Ds”; for critiques and review, see D. Chase 1981 and A. Chase and P. Rice 1985:1). To some degree this characterization was directly borrowed from an Old World frame of reference relating to the Roman and Greek worlds (see Proskouriakoff 1955). The use of such terminology implied that the Postclassic Period was less important developmentally than the early Classic Period: material culture had tumbled from its acme; lewd and lascivious behavior permeated society; and, much of the population had disappeared. Thus, archaeologists who bought into this 3-D model believed that Postclassic material culture was not well-developed, that Postclassic art and buildings were poorly constructed, and that a smaller population...
meant a reversion to a less complex social order. These preconceptions were compounded further by the difficulty that Maya archaeologists had in even locating Postclassic sites (see Chase and Garber 2004:8). But, recent archaeological data from Belize have all but erased this earlier paradigm and its incorrect assessment of the Maya Postclassic.

Myth #1: Chichen Itza was a Postclassic Site

Among the first myths to be overturned by Belizean archaeology was the mistaken belief that the bulk of the archaeological remains at the Mexican site of Chichen Itza dated to the Postclassic time period. Chichen Itza had been incorrectly assigned a dating to the Early Postclassic Period by researchers from the Carnegie Institution, who relied heavily on ethnohistoric interpretations rather than on archaeological data. While it is true that parts of Chichen Itza were occupied in the Late Postclassic era, the majority of the architectural buildings are now recognized as having been constructed in the Late to Terminal Classic Periods (Cobos 2004). Yet, there is still a lingering perception among both Maya archaeologists and the general public that Chichen Itza existed on a Postclassic temporal horizon.

Even though some researchers had questioned the temporal placement of Chichen Itza as the only known “major city of the Early Postclassic period” (Pollock 1965:393, n.27), it was not until excavations were undertaken at Nohmul, Belize that much of the architectural constructions at Chichen Itza could finally be more correctly placed in the Terminal Classic Period. The excavations at Nohmul in 1978 and 1979 succeeded in finding a host of material correlates that could be used to realign the temporal framework that formed the transition between the Classic and the Postclassic Periods. Two architectural buildings that were matches for similar constructions at Chichen Itza and almost nowhere else were excavated in one of the central plazas at Nohmul (D. Chase 1982a; D. Chase and A. Chase 1982). One of the Nohmul buildings (Structure 20) was an elite residential compound referred to as a patio-quad or a gallery-patio, an architectural form extensively documented at Chichen-Itza, but from no other mainland Maya sites. The other Nohmul building (Structure 9) was a round temple that shared almost exact dimensions and construction techniques with an earlier version of the famous Caracol building at Chichen-Itza. In situ refuse found in association with the Nohmul patio-quad (and duplicated in the core of the round temple) permitted the alignment of spatially distinct archaeological sequences from the Northern and Southern lowlands that clearly dated these architectural styles to the Terminal Classic Period (D. Chase 1982b; D. Chase and A. Chase 1982). The artifactual materials contextually recovered at Nohmul in association with these two buildings conclusively demonstrated that “Mexican-style” architecture at Chichen Itza was on an equivalent temporal level and must also date to the Terminal Classic Period (D. Chase and A. Chase 1982). What had been taken to be architectural hallmarks of a Postclassic Mexican influx into the Yucatan Peninsula (following Tozzer 1957) were placed into an earlier temporal horizon associated with events that were more likely linked to the end of the Maya Classic Period. Thus, archaeological data from Belize were responsible for re-dating a key Mexican site and for invalidating one of the initial – and still lingering – Postclassic myths.

Myth #2: The Totality of the Collapse

The ancient Maya did not disappear as a result of the Classic Maya collapse.
What was once viewed as a sudden and total disappearance of an entire people is now seen as a transformation that involved the redistribution of people over the landscape and a reformulation of organizational structures and beliefs. Again, archaeological data from Belize have been a key in documenting this transformation. However, recognition of Postclassic peoples has proven quite problematic for Maya archaeology.

After completing excavations at Barton Ramie in the early 1950s, Gordon Willey (1956:781) wrote a summary article in which he stated that no Postclassic materials had been uncovered at that site. His summary reflected the generally accepted paradigm which portrayed the Maya as having disappeared from the Southern lowlands following the Classic Period. However, ten years later this assessment was completely overturned in the initial archaeological report on Barton Ramie (Willey et al. 1965). During the analysis of the excavated ceramics, James Gifford (1976) was able to document the occurrence of Postclassic occupation in 62 out of 65 excavated mounds (Chase and Garber 2004:8). Subsequent research in the Belize Valley has recovered Postclassic occupation at many other sites (e.g., Aimers 2004). However, the inability of researchers to recognize Postclassic remains in the field is not uncommon; other archaeological projects in the Southern lowlands have had similar methodological difficulties in identifying Postclassic materials (A. Chase 1990). Thus, the older paradigm of total collapse in the Southern lowlands following the Maya Classic Period has been engaged in a long slow death.

In contrast to points further south, however, the inability to identify or to find Postclassic remains in the archaeological record never occurred in northern Belize. At the turn of the twentieth century, Thomas Gann (1900) was already publishing recognizable Postclassic materials. Survey work undertaken in northern Belize also confirmed the widespread presence of artifacts and architecture dating to this late time period at many sites (Hammond 1973, 1975; Sidrys 1983). More importantly, both the Lamanai Project (Pendergast 1981, 1985, 1986; Graham 1987) and the Corozal Postclassic Project focused at Santa Rita Corozal (D. Chase 1981, 1984, 1985. 1986; D. Chase and A. Chase 1988, 2004a; A. Chase and D. Chase 1987) excavated and documented extensive Postclassic archaeological materials and their transformation over time. Many of the artifactual materials recovered were works of true art, meaning that the existence of Postclassic Maya in northern Belize could no longer be ignored or marginalized.

Prior to the 1970s, when Belize had been considered to be a backwater for Maya archaeology, the viability of the total collapse model for the Southern lowlands was never questioned. However, by the mid-1980s archaeology in Belize was surging and it became clear that the ancient Maya of Belize had been in the forefront of Maya cultural developments from the Preclassic Period through the present. It also became evident that the Postclassic populations in Belize could not all be ascribed to later population influxes, such as occurred in the Historic Period (Thompson 1972). Rather, the ancient Maya in Belize had survived and prospered at multiple locations and in large numbers past the end of the Classic Period. The myth of the total collapse was shattered.

**Myth #3: The Postclassic was a Time of Decline, Decadence, and Depopulation**

Almost all of our older models about the Postclassic Period have been discredited or overturned in the last thirty years. Our original understanding of the Maya
Postclassic was largely grounded in ethnohistory. The writings of Diego de Landa (Tozzer 1941), early Historic Spanish documents (Roys 1957), and Maya prophecies and astronomical tables (Roys 1967; Edmonson 1982) were combined to provide us with a version of Postclassic Maya society as living in many regional territories (especially in the Northern lowlands), having a variety of different socio-political organizations, being quite warlike, and being quite focused on prognostication and agriculture. The accepted model of early contact society was not based on archaeological data, but was instead derived from ethnohistoric interpretations combined with ethnographic data from more modern Maya communities. The ethnohistorically derived models and interpretations were also believed to hold true for the Postclassic Maya of Belize (as originally summarized by Thompson 1972). These same ethnohistoric sources were also used to portray the Postclassic Maya in terms of the 3-Ds and in opposition to the Classic Period. Any changes that had occurred to the Maya peoples did not enter into this original portrayal; neither did archaeological data.

The accepted wisdom of what constituted the Postclassic Maya was originally set in contrast to an equally strange picture of the Classic Maya. Until the later half of the twentieth century, the Classic Period Maya were often portrayed in popular literature as an almost utopian society who knew no war and were ruled by magnanimous astronomer-priests; their civilization had suffered a major collapse in the Southern lowlands and had eventually been reconstituted in the Northern lowlands. The ethnohistoric data showed that the Maya in the reconstituted Northern lowlands were at constant war with each other, while the Southern lowlands remained depopulated. The ethnohistoric literature also indicated that homosexuality was introduced from Mexico; this was seen as being confirmed in the numerous carved phallic representations that were found as surface remains at sites in the Northern lowlands (e.g., Arden and Hixson 2006). Thus, in contrast to the Classic Maya, the Postclassic Maya came to be characterized as both warlike and decadent. The magnificent sculpture and polychrome ceramics of the Southern lowlands were believed to have disappeared, amounting to a decline in material culture. On the whole, the Postclassic Period came to be viewed in extremely negative terms and was usually talked about as “lacking” the esteemed hallmarks of the Classic Period (D. Chase and A. Chase 2004b:13).

That this model of the Postclassic is patently false is known largely from archaeological work undertaken in Belize. The work at Lamanai (Pendergast 1981), Santa Rita Corozal (A. Chase and D. Chase 1988), Ambergris Caye (Graham and Pendergast 1987; Guderjan 2007), Laguna de On (Masson 2000), and elsewhere in northern Belize (Sidrys 1983) has gone a long way to revitalizing our view of the Maya of the Postclassic Period. We can now recognize that Postclassic settlements were quite extensive and that Postclassic material culture was extremely expressive. We have come to view the Postclassic Period as a complex and multi-faceted transformation from the earlier Classic and Terminal Classic Periods (D. Chase and A. Chase 2006).

Postclassic settlements exist almost everywhere in northern Belize (see Sidrys 1983), but they are difficult to locate because many of these households were constructed in non-mounded situations and the foundations of many of these buildings were often no more than simple lines of stone. Maya archaeologists have tended to concentrate on mounded architectural remains, which comprise the bulk of Classic
Period households. However, Postclassic households were built directly on the landscape and were often not raised, meaning that many archaeologists have trouble locating these constructions because they technically occur in “vacant terrain.” And, these non-noticeable “line-of-stone” buildings are also easily disturbed, meaning that areal excavations are often needed to recognize their very existence. This Postclassic focus on horizontal, rather than vertical, constructions means that standard archaeological methodology used in many excavations (focusing on test-pits and trenches) can often miss the remains of such edifices, even if they are in fact present. Thus, the Postclassic Maya of northern Belize have been referred to as the “invisible Maya” (D. Chase 1990), a label that can probably be extended throughout the Maya area. A focus on Classic Period mounds and the inability of many archaeologists to find and recognize Postclassic sites has meant that the population of this temporal era is probably severely underestimated. Thus, much of what is interpreted to be depopulation for this era may instead be predicated on methodological issues in Maya field research and analysis.

Rather than being characterized as something lesser than the Classic Period Postclassic Maya art was extremely complex and filled with iconographic representations that exhibit continuities to earlier times. New venues for expression opened through the use of metals for jewelry during the Postclassic Period. Polychrome painting did not end with the Classic Period; rather, it changed. Colorful murals were applied to the walls of many Postclassic buildings, as at Santa Rita Corozal (Gann 1900). And, polychrome painting was applied to a large variety of ceramics, but only as a post-fire decoration, meaning that it erodes from these ceramics in less than pristine conditions. The many elaborate ceramic vessels from Lamanai (Graham 1987) and Santa Rita (Chase and Chase 1988) illustrate innovative and vibrant styles. Unlike the Classic Period, modeling of ceramics was common in the Postclassic, leading to the physical expression of many iconographic details that would never be found in Classic Period art. The modeling that was found in ceramics was also likely reflected in building decoration through the use of stucco. Besides being brightly painted, the upper facades of Postclassic buildings were likely decorated with thick coats of modeled stucco that have disintegrated under the onslaught of tropical weather. It is highly likely that the mural traditions of the eastern Yucatec coast (Farriss et al. 1975; Miller 1982) were also once found throughout the Postclassic sites of Belize and the Guatemalan lowlands.

In summary, far from being an era of decline, decadence, and depopulation, the archaeological data for Postclassic Belize indicate a time of vivaciousness, vibrancy, and vitality. Ultimately, it was the incursion of the Spanish and their introduced diseases that transformed a resurgent people into the pale shadow of their former selves. The pale shadow that came to be reflected in the ethnohistoric literature is not reflected in the archaeological record of Belize.

**Conclusion**

Several things conspire to prevent us from fully understanding the Postclassic Period. First, modernization is destroying many archaeological sites before archaeologists can excavate and analyze them. This is true of both Postclassic and earlier sites. Postclassic peoples enjoyed living in many of the same areas that today’s modern populations have come to occupy. Thus, a seaside bluff becomes the breezy home for modern suburbia and obscures the earlier Postclassic remains; river valleys are bulldozed and plowed for crops and grazing
land, also up-ending fragile line-of-stone buildings. Second, there is a current archaeological focus on the more easily located mounded architecture and Maya Classic Period remains, often located some distance from modern settlements and disturbed only by looters (who can also see the mounded architecture and read the archaeological patterning). This focus on mounded buildings means that the unmounded Postclassic remains have witnessed little excavation. Thus, within most modern Maya projects, Postclassic remains are rarely encountered because they are not readily viewable on the surface and because they are usually not commingled with Classic Period settlement. Until research strategies are reframed, Postclassic occupation will remain largely hidden. Third, even the excavation methodologies generally used in Maya sites are not well-suited to the recovery of Postclassic remains. Maya archaeologists need to carry out more large-scale horizontal excavations and pay particular concern to line-of-stone constructions. The test-pits that are popular among many researchers can easily miss latest occupation. Until there is more of a focus on large-scale vacant terrain excavation, it is likely that the Postclassic Maya will remain “the invisible Maya.” Finally, if we are truly to move forward, our antiquated paradigms need to be put to rest. Rather than using recycled views of the Postclassic Maya, excavated data related to the Postclassic era – particularly from sites in northern Belize – need to be utilized and more fully digested for their significance to conceptualizations of ancient Maya civilization. We also need more archaeological investigation and descriptive publication of this key area of Maya prehistory. Luckily, the Postclassic Period in Belize is well represented by sites that remain to be found and excavated - and future archaeologists will undoubtedly add to our understanding of this temporal era.

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Willey, Gordon R., William R. Bullard, Jr., John B. Glass, and James C. Gifford
The Classic Maya collapse cannot be fully understood without incorporating the perspective of households and small communities. This paper presents a micro-scale analysis of settlement data from the Mopan valley. The near absence of Postclassic settlements in the valley demonstrates the magnitude of the collapse, but this study shows that the collapse-era demographic decline was not abrupt: some settlement zones were largely abandoned in the eighth century, others in the ninth century, and others not until the tenth or eleventh century. Furthermore, most sites and settlement zones experienced gradual attrition, as they were abandoned over the course of two ceramic periods. At San Lorenzo, a hinterland community near Xunantunich, the wealthiest households with the strongest ties to the polity’s rulers were the last to be abandoned, indicating that the collapse did not affect all sectors of society in the same way.

**Introduction**

As the amount of archaeological and epigraphic data available from different regions of the Maya lowlands grows, it is increasingly clear that the Classic Maya collapse cannot be understood as an event. It was a set of complex processes that began in the eighth century, during the Late Classic period, and developed over the course of several centuries. It also has become clear that these processes played out quite differently in the various sites and regions of the Maya lowlands (Demarest et al. 2004). The upper Belize River valley presents a case study for understanding the collapse (Aimers 2002; Ashmore et al. 2004), one unique in its particulars and yet largely consistent with the overall pattern of heightened political competition in the Late and Terminal Classic periods, followed by significant depopulation and political decentralization. This paper focuses specifically on the demographic history of the western edge of the upper Belize River valley, comprised of the Mopan River, its floodplain, and adjacent uplands. Elsewhere, this author has argued that models of the collapse must be multi-scalar, accounting for variability between regions, between polities within a region, and between households and communities within a region (Yaeger and Hodell 2008). The smaller scales remain relatively understudied, and they provide the focus for this paper.

**Postclassic Occupation in the Mopan Valley**

The Mopan Valley affords its inhabitants with many advantages. Its alluvial soils are fertile, as are the limestone-derived soils of the adjacent uplands, which were heavily terraced (Neff et al. 1995; Wyatt and Kalosky 2003), and the river was one of the principal transportation routes between the Caribbean coast and the heartland of the Petén (Figure 1). Many archaeological projects have studied the valley’s sites, including the Mopan-Macal Triangle Project, the Belize River Archaeological Settlement Survey, the Xunantunich Archaeological Project (XAP) and Xunantunich Settlement Survey (XSS), the Belize Tourism Development Project, the Chan Project, and the Actuncan Early Classic Maya Project.
Despite decades of intensive archaeological investigation throughout the upper Belize River valley, there is little evidence of Postclassic occupation (see the excellent synthesis in Aimers 2002). The Postclassic village of Tipu lies along the Macal River (Graham et al. 1985), and the region’s only other significant Postclassic settlement at Barton Ramie is downstream on the Belize River (Willey et al. 1965). Postclassic remains are much sparser in the Mopan valley. Joseph Ball and Jennifer Taschek’s (2004) extensive excavations at Buenavista del Cayo have recovered the valley’s only firm evidence of Postclassic occupation: two structures adjacent to Buenavista’s monumental core and the main plazuela of the Guerra group (cited in Aimers 2002:135-137). They also found Postclassic sherds in Str 4 at Nohoch Ek (cited in Aimers 2002:140).

The remaining finds in the Mopan valley come from the plazas and monumental structures of large sites. At Xunantunich, the Tourism Development Project recovered a fragment of a Mayapan-style effigy incensario on the Castillo (J. Awe, personal communication, 2005), and Peter Schmidt (1976–77) found a few Postclassic sherds around the site’s stelae in Plaza A-I. At Cahal Pech in the Macal valley, Ball and Taschek found a similar effigy incensario associated with the site’s largest pyramid (cited in Aimers 2002:145). At Chan, in the uplands between the Mopan and Macal Rivers, Cynthia Robin (2003) found Early Postclassic offerings in the main plaza. Taken together, these finds recall post-abandonment reverential activities by Colonial Maya at La Milpa (Hammond and Bobo 1994) and by twentieth-century Lacandon at Yaxchilan (McGee 2005), and they indicate that the valley’s large, abandoned centers remained important places in the region’s Postclassic sacred landscape.

This paucity of evidence of Postclassic occupation in the Mopan valley is striking in light of the extensive surveys, testing, and excavations conducted by the projects mentioned above. Although it is highly likely that additional Postclassic settlements remain to be discovered (also Aimers 2002), there is no doubt the Mopan valley underwent a significant demographic collapse prior to the Postclassic period, similar to most areas of the Central and Southern Lowlands.

Population Histories in the Mopan Valley

Settlement data collected by Xunantunich Archaeological Project (XAP) allow us to examine in more detail the valley’s demographic trends from the Late to Terminal Classic periods, with particular attention to settlement abandonment. XAP members surveyed and tested hinterland sites in large blocks around Xunantunich, Actuncan, Chaa Creek, and San Lorenzo, and along three 400-m wide transects (Ashmore et al. 1994; Connell 2000; McGovern 2004; Neff et al. 1995; Yaeger 2000). The first transect (T/A1) extended east from Xunantunich to Dos Chombitos in the Macal valley, the second (T/A2) ran north from Xunantunich through the Mopan valley to Callar Creek, and the third (T/A3) ran through the Macal valley from Dos Chombitos past Tipu (Figure 1).
A comparison of the settlement histories of the transects reveals markedly different occupation densities in the Preclassic and Early Classic periods, with T/A2 showing the highest density (Table 1). In T/A2, occupation rates peak in the Samal phase and then decline slightly, while they continue to rise in T/A1 and T/A3 and peak in the subsequent Hats’ Chaak phase (see Figure 2 for chronology). In all transects, populations decline sharply into the Terminal Classic Tsak’ phase, with no groups showing evidence of Postclassic occupation.

<table>
<thead>
<tr>
<th>Period</th>
<th>Time</th>
<th>Uaxactun</th>
<th>Barton Ramie</th>
<th>Xunantunich</th>
<th>Cahal Pech / Buenavista</th>
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Examiner the data at a finer scale reveals even more interesting patterns. Jennifer Ehret (1995) tested the groups mapped along the Xunantunich Settlement Survey (XSS) transects. In order to assess micro-scale settlement patterning, she divided the transects into zones, building on spatial analyses by Jon VandenBosch (1999). Pertinent to this paper are the westernmost Xunantunich zone of T/A1 and the four settlement zones of T/A2, labeled from south to north Xunantunich, Actuncan, Vaca Brava, and Callar Creek (Figure 3). She stratified her excavation sample so that it included representatives of the seven morphological types of sites and was distributed across the different settlement zones. She placed 1 m x 2 m test units in just over 20 percent of the 280 mapped groups (n=58), with some groups receiving additional testing. She placed units near structures in areas that shovel testing found to be rich in artifacts.

The results of Ehret’s testing that are relevant for this discussion are summarized in Table 1 and Figure 4. As Ehret and others have observed, the settlement history of Xunantunich’s hinterland has strong correlations with that center’s construction history, suggesting that Xunantunich’s rise and fall strongly influenced the lives of its hinterland populace (Ehret 1995; also Ashmore et al. 1994, 2004; Leventhal and Ashmore 2004; Neff et al. 1995). The settlement zone immediately surrounding Xunantunich is sparsely occupied during the Preclassic period, undergoes rapid growth in the Samal phase to reach maximum size in the Hats’ Chaak phase, followed by decline in the Tsak’ phase. Despite this growth, the population density within 1 km of Xunantunich was never substantially greater than that of its hinterland (Yaeger 2003).

Moving north along T/A2, the next zone lies just west of the large center of Actuncan, which witnessed monumental construction from the Middle Preclassic to the early Late Classic Samal phase, after which new construction is rare (McGovern 2004). The high occupation rates in the Actuncan settlement zone throughout the centuries when Actuncan was a powerful political center suggest the center drew people to the political, ritual, and economic opportunities it offered. Even as Actuncan declined, however, the population density of the Actuncan zone goes up, reaching a maximum coincident with the regional
maximum in the Hats’ Chaak phase. This, again, is likely tied to Xunantunich’s apogee during this time.

Figure 3: The Mopan Valley between Xunantunich and Buenavista

The Vaca Brava zone follows, and it conforms to the general Mopan valley trend of relatively high densities during the Preclassic with a population maximum in the Hats’ Chaak phase. The northernmost zone on T/A2, the Callar Creek zone, proves to be the exception to this tendency. Associated with the second-tier center of Callar Creek (T/A2-087), the Callar Creek zone has a high frequency of occupation during the Preclassic period and the Ak’ab and Samal phases. It was in the Hats’ Chaak phase, however, that its population history diverged markedly. The other settlement zones in the Mopan valley—those along T/A2 and at San Lorenzo (see below) — all continued to grow, reaching peak occupation rates in the Hats’ Chaak, while the Callar Creek zone witnessed a significant population decline (Figure 4). Nine of the 10 groups that Ehret tested in this zone were occupied in the Samal phase, but only two showed evidence of Hats’ Chaak occupation—an 89% abandonment rate—and one of those was Callar Creek itself. This decline continued into the Terminal Classic, when only one of the tested groups, a solitary mound, was occupied.

The last settlement zone in the Mopan valley to consider is San Lorenzo. The site is a discrete cluster of 20 mound groups 1.5km northeast of Xunantunich, on the opposite side of the Mopan River (Figure 3). Excavations at San Lorenzo by this author in the 1990s documented a population history that strongly paralleled that of Xunantunich, with minimal Preclassic or Early Classic occupation, followed by strong growth through the Samal phase to a peak in the Hats’ Chaak phase, followed by a steep decline into the Tsak’ phase (Yaeger 2000). This population history and the rich data we have from the site make it a good case study for understanding the collapse in the Mopan valley, as will be addressed below.

Settlement Abandonment in the Samal Phase: Callar Creek

The data from the Callar Creek zone demonstrate that the processes associated with the Classic-period collapse do not account for all instances of settlement abandonment in the Mopan valley. In this particular case, it is likely that political competition between Xunantunich and Buenavista played a central role in the settlement’s abandonment (Ehret 1995).

The Callar Creek site is the largest architectural complex between Actuncan and Buenavista, and it overlooks the fertile Mopan floodplain from an imposing perch.
atop a modified hillside. In her testpits, Ehret (1995) found evidence that the site was occupied from the Middle Preclassic through the Hats’ Chaak phase. Its architectural features, layout, size, and long occupation history suggest that Callar Creek was the seat of a powerful rural family, similar to Chan (Robin 2003), Callar Creek (Connell 2000), and Zubin (Iannone 1996).

Ehret (1995) suggested that Callar Creek was subordinate to Buenavista during the Samal phase and brought under Xunantunich’s sway in the Hats’ Chaak phase. She and Tom Jamison both observed three large limestone slabs along one edge of the plaza that appear to be the butts of stelae that once looked toward Buenavista, the stelae themselves perhaps broken and scattered in antiquity. A fourth slab that appears to be a stela lies toppled at the base of the southern ramp to the site’s main plaza. The ramp and the toppled stela lie along an impressive sight-line that connects Callar Creek’s main plaza with Xunantunich’s Castillo, and the placement of the stela plausibly signaled the forging of new political links to Xunantunich (see Connell 2000 for the establishment of similar lines of sight to the Castillo from elite groups in Chaa Creek).

Although more work is needed at Callar Creek, these tantalizing data, coupled with the decline in local population during the Samal phase, support the working hypothesis that this area, closer to Buenavista than to Xunantunich, was a conflict zone between the two sites that may have become a depopulated buffer zone. Callar Creek might have been incorporated into Xunantunich’s realm in the Hats’ Chaak phase, but the area’s population never fully rebounded.

**Settlement Abandonment in the Hats’ Chaak Phase: San Lorenzo**

San Lorenzo provides another good example of micro-scale settlement dynamics, one that we can more fully explore thanks to extensive investigations conducted there by Sabrina Chase, Jon VandenBosch, and this author (summarized in Yaeger 2000). The majority of the hamlet’s houses were small wattle and daub structures set on isolated platforms that were faced with river cobbles. Energetics estimates suggest that approximately 100 person-days were required to build these simple houses and their platforms. This minimal level of labor investment suggests that these families were relatively poor, an inference further supported by the relative scarcity of elaborate pottery or objects made of imported raw materials. Other San Lorenzo residents lived in multi-house domestic groups with platforms faced with cobbles and small limestone blocks. Some of their wattle and daub houses had low foundation walls, and we recovered a few objects of imported raw materials, such as shell pendants, in these groups.

The households that occupied the three largest residential groups at San Lorenzo stand in strong contrast. Their houses, built of cut limestone blocks, sported corbel vaulted roofs and required up
to 1500 person-days to build, indicating a significant ability to harness extra-household labor. Elaborate architectural features such as frontal terraces, high benches, and basal moldings made these houses appear much more like the palatial residences of the Xunantunich elite, than the wattle-and-daube houses of their neighbors in San Lorenzo. These residents also owned ornaments of exotic marine shell and greenstone.

These three largest groups were among the first to be established at San Lorenzo, founded after a period of prolonged, high-energy alluvial activity that remade the Mopan floodplain and buried houses located there (Holley et al. 2000). Founding households apparently laid claim to the productive resources of this remodeled landscape, and their wealth and status increased over several generations. Inequalities became pronounced, as these families likely profited as intermediaries between the community and the rulers of Xunantunich.

The abandonment of San Lorenzo is just as illuminating as its founding and growth. Almost all of the structures at San Lorenzo were occupied in the Hats’ Chaak phase, but only one-third were occupied in the Tsak’ phase (Table 1). Although the pattern is not entirely black-and-white, the groups most likely to be occupied into the Tsak’ phase were those of the village leaders. The poorer farming families either left or did not reproduce. We could envision many reasons why this might have been the case: if yields fell because of soil exhaustion, environmental degradation, or drought, poorer farmers would feel the subsistence shortfalls most acutely. If tribute demands rose in the context of growing elite competition, they would have been least able to meet those added demands. They also had the least to lose by moving, as they had the least invested in their houses and in the local productive landscape.

Instead, those families who had the longest-standing presence in the community and the greatest access to resources and labor tended to remain in the community the longest. Their control of local resources likely allowed them to weather the political and economic upheavals of the Terminal Classic period, while their investment in the physical means of production and institutions of the political economy disinclined them to leave. They may have also been linked to the entrepreneurial non-royal elites who seem to have taken advantage of the diminishing power of royal families and their control of lucrative trade networks to become important power brokers in the Terminal Classic across the Maya Lowlands (also Helmke 2001). The presence of molded-carved vessels and a Terminal Classic carved shell pendant at San Lorenzo suggest that the families there were tied into these new pan-Maya elite networks.

**Discussion**

The data presented above support several observations relevant to the Classic collapse in the Mopan valley. First, a severe demographic decline resulted in the valley’s nearly complete abandonment by the end of the Terminal Classic period. This included the valley’s centers like Actuncan (McGovern 2004), Buenavista (Ball and Taschek 2004), Callar Creek (Ehret 1995) Chan (Robin 2003), Las Ruinas de Arenal (Taschek and Ball 1999), and Xunantunich (Leventhal and Ashmore 2004).

Second, this abandonment apparently occurred gradually (also Ashmore et al. 2004). Although some zones, like the Callar Creek zone, were abandoned well before the collapse, most groups in the Mopan valley settlement zones were abandoned during the Hats’ Chaak phase, and the rest during the Tsak’ phase. At San Lorenzo, we found few items of value or utility associated with
abandoned structures, suggesting they were scavenged by people who continued to live in the valley. This paralleled Xunantunich’s gradual abandonment, where different sectors of the site ceased to be used over the course of a century or more (LeCount et al. 2002).

Third, this abandonment was well underway before the Terminal Classic period. The absence of Terminal Classic Tsak’ phase ceramics in most residential groups indicates that those groups were no longer occupied at the end of the Hats’ Chaak phase, radiocarbon dated to around AD 780 (LeCount et al. 2002).

Fourth, the processes leading to abandonment did not impact all families equally. At San Lorenzo, the first houses to be abandoned were those of the poorer residents, and Robin (1999) found that the poor farming hamlet of Chan Nöohol was abandoned prior to the Tsak’ phase.

The space afforded in this paper does not permit a full discussion of the collapse in the Mopan valley or its possible causes. The above observations, however, suggest that one important factor was anthropogenic environmental change, evidence of which is accumulating in the valley. For example, David Lentz, Cynthia Robin, Wendy Ashmore and this author (Lentz et al. 2005) demonstrated that pine charcoal became much more common in Xunantunich and its hinterland settlements during the Late Classic period. The nearest pine stands are located 15 km away in the Mountain Pine Ridge, and the most likely explanation for the increasing intensity of pine use lies in the region’s growing populations. As forests were made into fields and forest gardens, fuel wood became scarcer, leading to importation of pine as wood or charcoal.

Carolyn Freiwald and this author (Freiwald and Yaeger 2007) are studying how population growth affected deer populations in the Mopan valley. The replacement of forest by milpa corn fields would have increased browsing opportunities for white tail deer, but growing human populations would have also intensified hunting pressures. Strontium isotope analyses of 13 deer teeth from Hats’ Chaak- and Tsak’-phase San Lorenzo revealed the all of the deer came from the Mountain Pine Ridge or the Maya Mountains, with some showing evidence of ranging into the adjacent limestone foothills.

Studies like these are beginning to reveal the impact of growing Maya populations on the Mopan valley landscape and its productive resources. This will in turn permit us to examine the relationship between these environmental changes, transformations of the economy and political economy, and the abandonment of the Mopan valley over the course of the Late and Terminal Classic periods.

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Yaeger, Jason, and David Hodell
3 METHODOLOGICAL ISSUES IN THE ARCHAEOLOGICAL IDENTIFICATION OF THE TERMINAL CLASSIC AND POSTCLASSIC TRANSITION IN THE MAYA AREA

Arlen F. Chase and Diane Z. Chase

The transition between the Terminal Classic and Postclassic Periods remains an enigma. The traditional model is one of collapse followed by gradual replacement. As more archaeological work has been undertaken in the Maya area, problems with this general model have emerged. It is our contention that a major part of the difficulty in conceptualizing this transition is methodological and theoretical. At issue is the identification of the latest use of various sites and determination of both the speed of abandonment and the status of occupants. The use of a type-fossil approach in classification and identification has hampered these interpretations. Our analytical tools frequently are inadequate to deal with non-uniform artifact and ceramic distributions. Seriational analyses based on partially sampled materials also compound the problem. The confluence of these issues with regard to the Terminal Classic / Postclassic transition means that we have a flawed understanding of cultural change and the archaeological record. This paper suggests new avenues for approaching this crucial temporal transition in Maya prehistory.

Introduction

The analytic units that are used in archaeology directly affect the interpretations that are made about the past - perhaps more than we care to admit. This paper seeks to examine the inter-relationship between ceramic analysis in the Maya field and our interpretations of both cultural units and traditions. It argues that the type-variety-mode system of ceramic analysis is ineffectual and, in fact, misleading for deriving both temporal and spatial interpretations about past societies. Finally, the paper suggests a different method for accomplishing an understanding of the past through ceramic analysis.

The Ceramic Lens

When an archaeologist makes interpretations about a past culture, he or she is using the material residues of the past to effect their reconstruction. These residues, however, are not a direct reflection of the past; instead, they are viewed through inexact interpretational lenses. These lenses form part of an epistemological package that sometimes acts as a blinder for the archaeologist. At least in terms of ceramic analysis, there are “conceptual limitations” to the “existing archaeological paradigm in which researchers often associate differences in archaeological remains, particularly pottery, with temporal change prior to evaluating evidence for the presence of spatial and/or cultural factors” (A. Chase 1986:99).

Many of the problem areas in archaeological interpretation stem from poorly framed assumptions relating to the scale of the phenomena being observed. Of particular note here are considerations of continuity and discontinuity in the archaeological record over time and space. Within the culture historical paradigm a site generally was conceived as a continuous use of space that could be characterized by its artifactual content, usually referred to as an “assemblage.” Variations within artifactual assemblages were frequently thought to be due to temporal differences that could be stratigraphically demonstrated. Left out of this discussion, however, was the fact that more complex sites could exhibit several contemporaneous, yet distinct, artifactual
expressions due to any number of reasons (e.g., function, status, wealth, or ethnicity). In the past, contemporaneous variability was sometimes incorrectly framed as temporal difference within a seriation because artifactual analysis was generally undertaken apart from contextual considerations.

Various researchers have recognized the problem of scale of place and/or occupation in archaeological analysis. Dunnell (1971:151) opted to use the term “occupation” to define “a spatial cluster of discrete objects which can reasonably be assumed to be the product of a single group of people over that period of time during which they were in continuous residence at that particular locality.” Dunnell’s definition of “occupation” goes a long way towards dealing with problems of scale and is certainly useful in a contextual analysis. But even he (1971: Figure 14) conflates “occupation” with the overly broad unit of “phase” (thus implying a single occupation at any one time within a given site), although he (1971:151-153) notes that “additional scales are being recognized” and that “the term ‘occupation’ can be used for the scale of phenomena above that of ‘discrete object’ if cognizance is taken of the fact that the label only suffices to continue the discussion and does not constitute the resolution of this serious problem.”

Binford (1982:5) framed comments about problems in archaeological analysis in terms of an “archaeology of place,” demonstrating “that the two most common forms of archaeological systematics, ‘assemblage’- versus ‘type’- based systematics, are not appropriate for the study of places.” Yet, all sites are places by definition. He further argued that places cannot be analyzed as “types” and that “places with different ‘content’” are difficult to encompass within a single system “assemblage.” Thus, he effectively recognized the problems in using traditional archaeological units in complex situations. But, even 25 years after Binford (1982) decried the use of “types” and “assemblages,” standard archaeological methodology has not really moved beyond the inexact ethnographic equivalencies ascribed to artifacts and assemblages by Deetz (1967: Figure 17) and repeated in most textbooks (Sharer and Ashmore 2003:305-7; Renfrew and Bahn 2004:119).

Most Maya archaeological sites are extremely complex units. Yet, we Mayanists have traditionally used the synthetic definitions afforded us methodologically in the culture history school of thought and have only rarely questioned the broader implications (e.g., Ball 1979; A. Chase 1986; A. Chase and D. Chase 1987). Looking at ceramic analysis, specifically, certain assumptions have often been made with regard to how ceramics are distributed in the archaeological record:

1. In the Maya area, type-variety-mode analysis has focused on the description of pottery; the synthetic complexes that result are predicated on the pottery types being evenly distributed throughout a given society at any one site. From a social standpoint, this implies that ideally all members of a society had access to the ceramic repertoire, with some potential exceptions as noted below. From an investigational standpoint, this means that all excavations have an almost equal chance of encountering ceramic types from a given time period. These assumptions are clearly not tenable. Maya ceramic assemblages are traditionally conceived as containing domestic, serving, and ritual wares. Analysis and interpretation of each of these ceramic sub-groupings is also predicated on other ingrained, although potentially unstated, suppositions:
   - Domestic wares are considered to have been generally similar in all contemporaneous contexts at any specific locus at a single site. They are also often assumed to have been
made locally with little trade in such items. Archaeologically, we know that this is not the case (e.g. Fry and Cox 1974).

- Serving wares are assumed to have been made in set locations by specialized potters, usually considered to be attached specialists (e.g. Ball 1993). These materials are believed to have been distributed to the extended population through either direct exchange or a hierarchical patronage system; only rarely are painted Maya wares viewed as having been made available to a populace through a market system (e.g., A. Chase and D. Chase 2004a).

- Ritual wares, such as incensarios or cache vessels, are assumed to have been very restricted in their distribution and to have been controlled by a given site’s elite both in terms of manufacture and distribution (e.g., 1999).

(2) Because Maya ceramic analysis has focused on sherd materials as its fundamental unit, easily identifiable decorated finewares (or serving vessels) have tended to be used for dating purposes. Certain ceramics are more easily recognized than others and, over time, these types have been used to assign a temporal value to the recovered archaeological remains. In fact, lack of such ceramics at a given site has sometimes been interpreted to mean that a given temporal era is largely lacking in the archaeological record of a given site. This methodological use of “key” or “marker” types to both establish chronology and to identify “distinct cultures” was explicitly spelled out by Willey and Woodbury (1942:236) in their work on Florida pottery. As Lyman, O’Brien, and Dunnell (1997:5) have noted, these units – “types not only as analytical units allowing the measurement of time but also as accurate reflections of distinct ethnographic units” – “were products of two diametrically opposed ontologies.” Yet, most active Mayanists are still wedded to these basic tenets.

In point of fact, there are impediments to correlating ceramics and change. Using standard methodology, it is difficult to know what ceramics are coeval, how various groups of ceramics changed, how rapid this change may have been, or how ceramic change may be documented archaeologically. Not only are transitions difficult to see and identify ceramically, but the behaviors associated with these transitions are even harder to discern. A major part of this problem stems from the use of a type system, which tends to normalize and encompass variation, especially for incomplete vessel fragments or sherds, which form the basis for most analyses. “The simple typological description of pottery is a synthetic exercise stressing similarities while the explanation of the behavior behind that pottery needs to examine the variability that is hidden within the integrative type-variety-mode system of analysis” (A. Chase and D. Chase 1987:47-48). Culbert and Rands (2007) have noted that t-v-m analyses in the Maya area have failed to deal with pottery holistically within a single classification system; they suggest that multiple descriptive typologies, based on surface, paste, form, and decoration, are now necessary to adequately deal with Maya ceramic variability. Perhaps more important is the need to methodologically and theoretically integrate ceramic analysis with the social conditions of the archaeological record.

A large part of the methodological problem derives from the interpretation of partial sub-assemblages in the archaeological record without regard to context. While the concept of a “sub-assemblage” is framed by Deetz (1967) as a unit between an artifact and an assemblage, methodologically this concept remains vague and poorly defined. To deal with this
issue, for the last 20 years we have emphasized the analytic use of the ceramic “subcomplex” (A. Chase and D. Chase 1987), originally defined as “a subdivision of a complex that has significance in cultural interpretation other than that of chronological differentiation” (Willey et al. 1967:304). While subcomplexes are more easily defined for caches, incensarios, or burials, we have attempted to use the subcomplex to focus on refuse deposits that are contextually associated with buildings, seeing the ceramics recovered from such contextual situations as forming meaningful behavioral units (A. Chase and D. Chase 1987:48).

In contrast to the analytically constructed subassemblage, our use of the subcomplex is context driven. It is not “synthetic” in that it does not merge pieces of the contextual ceramic subcomplex with analytically constructed subassemblages derived from fill materials. Subcomplexes are kept as distinct units in our analyses so that both the functional and temporal parameters of these important units are not confused through the analytic process. Besides providing functional information relevant to the use of specific buildings and, inferentially, to specific social groups, subcomplexes form relatively discrete temporal units that contain contemporaneously-used ceramic vessels. Rather than analytically aligning types found in out-of-context structural fill, subcomplexes are temporal snapshots of materials that were definitely associated with each other for some specific purpose. Thus, subcomplexes can sometimes provide far more refined temporal discrimination than the simple identification of a ceramic marker.

Ball (1977:3) noted that subcomplexes were dependent for their formulation “upon the recovery of functionally specialized contexts.” While caches and burials are easily recovered and synthesized, primary refuse is neither as easily encountered nor dealt with in the archaeological record. There also are issues concerning the identification of “rapid” versus “gradual” abandonment in the archaeological record (D. Chase and A. Chase 2000; Inomata and Sheets 2000). Thus, it may be difficult to identify the completeness of refuse deposits, especially as gradual abandonment may lead to partial subassemblages in the archaeological record (Plunket and Urunuela 2000). Only infrequently are domestic and serving vessels found associated together on building floors and, even if they are found together in such contexts, it is often a Herculean task for the archaeologist or analyst to piece together and delineate how many and what percentage of certain vessels may be present in a single context. Larger unslipped sherd materials are far more difficult to piece together than the smaller patterned and decorated finewares. Thus, it is only rarely that the important subassemblages from such contextually significant deposits are recovered and then fully presented. But, it is precisely these kinds of deposits – and the hours, indeed days, of analytical work that are needed on such deposits – that prove most useful for dating purposes, for making functional interpretations, and for understanding archaeological change.

Transitioning Classic to Postclassic

What does this preceding discussion have to do with the Maya Terminal Classic and the Postclassic Periods? Realistically, a lot! Traditionally, these two temporal eras are the hardest ones to define in terms of the archaeological record.

First, Classic and Postclassic sites are not usually found in the same spatial locations in the Southern lowlands. Thus, discontinuous occupations are the norm.
The general archaeological focus on Classic Period sites in the Southern lowlands also means that we know far less about the Postclassic Period than the Classic Period.

Second, both Terminal Classic and Postclassic occupations have tended to be identified through the traditional use of ceramic markers in the Maya archaeological record. Thus, for both periods, identification of specific ceramic types is taken to be indicative of chronological position. And the discovery of these types often directly leads to the positing of the requisite dating.

The Terminal Classic has been notoriously difficult to isolate in the archaeological record (A. Chase and D. Chase 2004b, 2005; Culbert 1973; Graham 1987). In the Southern Maya lowlands, the Terminal Classic Period has been identified largely based on the occurrence of ceramic temporal markers in the archaeological record, particularly modeled-carved (Figure 1) and fine orange pottery (Figure 2). With few exceptions (e.g. Culbert 1973 and Sabloff 1975), polychrome ceramics have been assumed to be restricted to earlier time periods. Modeled-carved pottery has come to be viewed as representing either imports or local paste copies of imported fine orange vessels (e.g. Adams 1973, Sabloff 1973). Fine orange pottery was seriated into 5 different groups (X, Y, Z, U, and V) by Smith (1958) in 1958. While Smith saw these 5 groups as representing 5 different temporal eras, X, Y, and Z fine orange are all coeval and date to the Terminal Classic Period, representing different, but overlapping, geographic expressions of this marker (Ball 1979). The other two fine orange types (U and V) are not as common, but appear to represent coeval geographic expressions of this ware in the Postclassic Period. While easily recognizable, we believe that the strict use of modeled-carved and fine orange ceramics as a dating tool has led to errors of interpretation relative to the Terminal Classic Period and the Maya collapse.

At many sites, fine orange ceramics are rare (Smith 1958) and at other sites modeled-carved ceramics tend to be almost exclusively associated with stone buildings and palaces (A. Chase 1994). At Caracol it was possible to define both of these ceramic types as part of a status-linked palace ceramic subcomplex that was frequently encountered on and outside of epicentral stone buildings (A. Chase and D. Chase 2004b, 2005). The contextual associations of these ceramic markers and the emphasis on defining subcomplexes at Caracol helped to make it clear that such materials could only be expected to occur in the archaeological record outside of a site epicenter if the locus being dealt with was of a high status. Thus, although widespread in the broader Maya area, these two ceramic markers were spatially restricted in the archaeological record.

Methodology and the Abandonment of Tikal

A different interpretation of these materials was derived from the archaeological data excavated in the 1960s at Tikal, Guatemala. This interpretation has come to color our general view of the Maya collapse. While a similar correlation of stone buildings and modeled-carved ceramics was noted for Tikal, the focus there on the tenets of type-variety-mode ceramic analysis and ceramic markers led to the belief that a lack of modeled-carved ceramics in the site’s sustaining area was necessarily correlated with a lack of Terminal Classic population (Culbert 1973, 1988). Thus, because such materials were generally not found in residential groups surrounding the downtown area, the broader settlement area was interpreted as being
Figure 1. Modeled-Carved pottery, like this vase from Caracol, Belize, has been used as a temporal marker to identify and date Terminal Classic remains in many lowland Maya archaeological contexts. At Caracol these ceramics are part of a status-linked ceramic subcomplex.

Figure 2. Several different kinds of Fine Orange pottery have been identified in the Maya archaeological record; these are referred to as “X” (a and d) “Y” (g) and “Z” (b, c, and f) Fine Orange. That these three different “kinds” of Fine Orange are largely coeval and date to the Terminal Classic Period can be seen in their contextual recovery as the latest remains on the building floors of Uaxactun, Guatemala (after Smith 1955 and 1958).

temporally discontinuous with the occupation that occurred in the site’s epicentral palaces and stone buildings. The groups that occupied these palaces at Tikal were also viewed as “the impoverished descendants” of the Classic populations and were described as being “like barbarians living untidily among the ruins of vanquished cities” “amidst the rubble” (Culbert 1974:107). What is unstated in this
description is that Tikal’s Terminal Classic Eznab ceramics were isolated based on forms that were taken to be temporal markers:

“There are marked differences between Imix and Exnab complexes in vessels shapes. A series of new shapes appear in Eznab to provide easily recognized markers for the complex. Three of the new shapes, the incurved-rim tripod dish …, the bulging-neck jar …, and the tripod plate with notched sharp z-angle …, are common enough that one or more are almost certain to appear in any lot containing a significant number of rim sherds. In addition, a number of rare vessel shapes are restricted to the Eznab Complex.

These shapes include the bead-rim jar, the barrel with tall ring base …, the everted-rim jar, and the everted-rim, composite silhouette vessel … (usually with molcajete interior).” (Culbert 1973:84)

It is apparent, therefore, that ceramics temporal markers played a crucial role in the interpretation of collapse at Tikal. Culbert (1974:106), in fact, explicitly noted that “of several hundred housemounds that have been tested by excavation in Tikal and its vicinity, not one shows any hint of Eznab occupation. All of the Eznab debris comes from in and around palace structures.” Testing in “rural” areas of Tikal revealed the same result: “the situation in the countryside was identical to that in the center – tiny Eznab population remnants in crumbling palaces and nobody at all in housemound areas” (Culbert 1974:107). Taken as a whole, Tikal’s latest population was seen as “squatting” in stone buildings that formed palace groups, definitely tossing garbage into the abandoned buildings (Harrison 1999:193-198) and possibly undertaking the looting of earlier structures and their burials (Coe 1990).

A reconsideration of the Tikal data, in light of the Caracol contextual information, poses a different interpretation, instead postulating a continuous temporal distribution between Tikal’s site center and sustaining area in which different ceramics were used by remnant epicentral elites. While the deterioration of the site’s garbage system (e.g., Harrison 1999:193) may signal changing social conditions, long-distance trade was still ongoing (Harrions 1999:198) and it is suspected that the palace inhabitants represented only the elite of a broader population – an elite who utilized their own ceramic subcomplex. This would mean that the collapse scenario and the archaeological contexts at Tikal need to be re-evaluated.

The Problem with Plumbate

Even more problematic is the ceramic marker known as plumbate. In her tome, entitled Plumbate, Shepard (1948:1, 147) noted that plumbate is spread from Lake Nicaragua in the south to Nyarit, Mexico in the north and that “its associations indicate a relatively short time period of manufacture,” making it “the most outstanding ‘index fossil’ for this region.” However, she assiduously declines to attempt any sort of dating for this ware, instead arguing that “we need more digging.” The inability to firmly date plumbate continues to cause problems in interpreting the transition between the Terminal Classic and Postclassic Period.

In the southern Maya area, archaeological contexts at Quirigua and Copan would indicate that plumbate was in use during the Terminal Classic Period (A. Chase 1986:111). Contexts from Zaculeu in the Guatemalan highlands suggest that plumbate overlapped with X and Z fine orange (Woodbury and Trik 1953: figs. 82 & 83). Shepherd (1948:133-141) noted that plumbate overlaps with X Fine Orange, Nicoya Polychrome, and Tiquisate Ware. Yet, while its extensive trade contacts are well established, plumbate has yet to be
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Figure 3. A Plumbate cache vessel from the core of Tayasal (Guatemala) Structure T120, probably placed in the building in the Terminal Classic era (after A. Chase 1983)

recovered in a refuse context in the Southern Maya lowlands that would permit a proper chronological assessment of its subcomplex placement (although W. Coe [personal communication, 1982] noted that plumbate occurred in contextual association with other Terminal Classic ceramics at Tikal). For the Northern lowlands, indications are that plumbate was in use at Chichen Itza in the Terminal Classic Period (Lincoln 1986; Cobos 2004) and presumably occurred in a similar temporal siting at Uxmal (Kowalski et al. 1996:286), where at least one of three offerings appears to be associated with the construction of the basal platform for a round building. The fact that plumbate is so well known as a marker throughout Mesoamerica - and yet so rarely found in good contextual situations in the Maya lowlands – led to an almost automatic assignation of a Postclassic date when it did occur (e.g., A. Chase 1986). Yet, it is not well represented in excavated Postclassic sites like Mayapan, Mexico (Smith 1971:26-27), Lamanai, Belize (Graham 1987), or Santa Rita Corozal, Belize (D. Chase and A. Chase 1988, but see Sidrys 1983).

While it is present at the site of Tayasal, Guatemala in eight spatial locations, here, too, it is difficult to distinguish between Terminal Classic and Postclassic Period dating (A. Chase 1983:1217). At Tayasal, a Tohil Plumbate cache of an effigy bird jar was recovered in the building core of Tayasal Structure T120 (Figure 3; A. Chase 1983:599-600); while originally placed as “Postclassic” based on its ceramic marker status, the contextual
position of the vessel on axis to and in the rock core of the building clearly suggests a Terminal Classic date – a dating considered highly unlikely in 1983 (when originally described). Another undecorated tripod plumbate jar at Tayasal (A. Chase 1983:910-911) was associated with a burial that is covered with fill than can be dated to the Postclassic. Thus, without further recovery of other dateable contexts, plumbate remains an enigmatic temporal marker.

Even with plumbate conventionally placed in the Postclassic Period, the initial lack of other recognizable ceramic markers for this time meant that early researchers had trouble dating materials to this era. At Barton Ramie, where 95% of the excavated areas actually evinced Postclassic materials, the original ceramic assessment of the excavations noted that nothing of Postclassic date had in fact been found (Willey 1955). Researchers who excavated Tayasal in 1971 similarly reported being uncertain of finding any Postclassic ceramics, although 48 of the 99 structures tested proved to be associated with Postclassic materials in subsequent analysis (A. Chase 1990:163). Perhaps the one ceramic marker that has been used most commonly to identify Postclassic remains in the archaeological record is the full-figure human-like effigy incensario (e.g. Bullard 1973; Smith 1971). Apart from these items, however, ceramics have been given a Postclassic dating largely on the presence of certain redware forms and decorative styles. For instance, slipper and trumpet-shaped feet on redware tripod plates have come to be used as ceramic markers for this period (Figure 4; A. Chase and D. Chase 1985). Yet, distinguishing temporal variants between Early and Late Postclassic remains based on redwares is challenging at best.

How do ceramic subcomplexes help to understand the Terminal Classic?

So, why should we focus on subcomplexes in order to understand the Terminal Classic to Postclassic transition? . . because our focus on ceramic temporal markers has led to methodological mishaps in terms of both dating and process . . . and because a focus on subcomplexes will contextualize functional and social groupings, leading to a better definition and, hopefully, understanding of this crucial time. The Terminal Classic has traditionally been defined in terms of ceramic markers. For the most part, any contextual associations with these ceramic markers have been inferred, rather than demonstrated, by analysts. However, the use of subcomplexes permits us to contextually see contemporary vessel forms (and types) that co-exist with these markers.

Figure 4. Tripod redware bowls/plates with distinctive feet are used as temporal markers for identifying Postclassic Period remains. The vessels illustrated here are identified as dating to the Postclassic Period: a., c Tulum (Payil) Red; b. Augustine Red; e. Paxcaman Red (after D. Chase 1986:373).

And, when we look at the subcomplexes, some established preconceptions fall by the wayside. Examples from Caracol demonstrate how poorly this transitional era is understood. Materials traditionally seriated or typed as
Figure 5. Unslipped collared-necked ollas comprise a ceramic form that has sometimes been used as a temporal marker for identifying Postclassic Period remains. The collared-necked ollas illustrated here all come from different contexts at Caracol, Belize and date to the Terminal Classic era: a. Structure A2; b., e., and h. Structure B25; c., i., f., and l. Structure A31; d., g., j. Structure A6; k. Structure A40. Modally, necks applied to the olla bodies that do not form smooth curves (e.g., c, d, e, i, and l) are closer in form to known Postclassic examples.

“Postclassic” occurs in Terminal Classic contexts, often repeatedly. And, finewares are not the only materials affected. An unslipped form that is frequently incorrectly seriated is a collared-necked olla (Figure 5). When the first unslipped collared-necked olla was recovered at Caracol on the floor of Structure A6, the modal dictates of the form were assumed to require a Postclassic date and to indicate a potential reoccupation of the site (in spite of being found in direct association with a Terminal Classic fine orange vessel). A similar vessel was found in a context associated with a human effigy figure on the summit of Structure A2; the human effigy figure was similarly thought to be Postclassic in date, even though human effigy censer forms occur in earlier Classic Period contexts elsewhere (specifically at Quirigua, Guatemala in Terminal Classic censer materials associated with Structure 1A-10 [personal observation]). The collared-necked olla form, however, has now been recovered in several other contextual units and is recognized as being Terminal Classic in date and as a part of the palace ceramic subcomplex. It has been recovered in the Barrio palace complex both in the fill of a building addition and on the floor of a room in association with a Sahcaba Modeled-Carved vessel. The form also occurs in association with other vessels.
in front of Caracol Structure A31. Thus, the automatic assignation of this form to the Postclassic Period at other Maya sites should be questioned, unless additional contextual information is supplied.

While the contextual Caracol Terminal Classic palace subcomplex is associated with standard forms and types, there are also specialized forms and tradewares in evidence. These include locally made items such as barrels, drums, and burners as well as foreign items that include bowls, cylinders, and censers (A. Chase and D. Chase 2004b). Holistically viewed, the Terminal Classic Period at Caracol exemplifies a great variety of materials. Some redwares (plates, ollas, and specialized forms) exhibit affinities to materials recovered at Lamanai in northern Belize. At Lamanai, one of these forms has traditionally been dated to the Postclassic era; at Caracol it is associated with a fine orange vessel and is in a Terminal Classic context (A Chase and D Chase 2007:21). Thus, the use of contextually driven ceramic subcomplexes is useful for re-analyzing both the Terminal Classic to Postclassic transition and the more widespread political and ritual connections in Mesoamerica at the time of the collapse.

**Conclusion: A Brave New World**

Years ago, Brew (1946) admonished archaeologists to use new and different forms of classification. We have not followed his advice. Half a century later we are still using hackneyed recipes for our archaeological interpretations, at least in terms of ceramics. For the most part, our dating is still done through the use of ceramic markers and we still use a type-variety-mode system of classification as a basis for cultural interpretations.

Maya ceramicists look at polychrome ceramics and pronounce a dating of “Classic Period.” Form may be used to refine the dating to Early Classic (basal flange) or Late Classic (cylinder). Modal combinations may be perused to attempt finer temporal discrimination. Ceramics may be classified as “unslipped” or “slipped;” surface decoration may be used for sorting; basic forms may be discerned; and sherds may be sorted, counted, and even weighed by archaeological unit. Burial and cache ceramics may be reassembled and drawn, but only rarely are refuse materials contextually analyzed (if they are even recovered). Instead, ceramic markers provide dating and bulk ceramics are sorted and described according to t-v-m analysis, being seriated into ceramic complexes that are independent of archaeological context (but to which burial and cache vessels are linked). Higher order units, like ceramic spheres, may be used to manipulate these homogenized data masses into even more abstract pictures that bear little resemblance to actual archaeological units and past social groupings.

Our current practices in ceramic analysis separate us from the spatial variability that clearly existed in the use of pottery by the ancient Maya. These practices also mean that temporal parameters are often subjectively set on the data that we analyze. Thus, it is difficult to see spatial variability in the archaeological record, which in turn hinders the identification of temporal change, catching Maya analysts in an interpretational helix.

If we truly want to understand what happened in the past, we need to re-focus our research and analysis. From a ceramic perspective, we must make the excavation and reconstruction of functional subcomplexes a priority, expending more time on the in-field laboratory analysis of these deposits. These contextually-driven archaeological units are the building blocks for future archaeological interpretation in the Maya area.
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Recent research has identified a discrete molded-carved ceramic type dating to Terminal Classic times in the eastern lowlands of Guatemala and central Belize. Erroneously denominated in the archaeological literature “Imitation Pabellon”, the type does not share any of the features characteristic of Pabellon ceramics. Termed Ahk’utu’ Molded-carved, the type is distinctive in vessel form, paste composition, surface treatment and imagery (both iconographic and glyphic). This paper discusses the type’s physical characteristics including its glyphic contents, temporal and spatial distribution. The limitations of the Type-Variety-Mode classification system, which were encountered in the designation of the Ahk’utu’ type, are also discussed. Its geographical and sociopolitical place within the greater Terminal Classic molded-carved tradition is addressed via stylistic and modal comparisons with other molded-carved types from throughout the Maya lowlands. We conclude with a discussion of the historical contents and socio-political implications of Ahk’utu’ vases within the turbulent Terminal Classic period.

Introduction
A discrete ceramic type within the molded-carved tradition has recently been recognized in the eastern Maya lowlands of Guatemala and Belize. The type has been erroneously termed “imitation Pabellon” since it shares certain similarities in terms of production techniques and paste characteristics with the ceramic type Pabellon Modeled-carved (Smith and Gifford 1966: 160). However, closer inspection reveals the distinctive combination of viable glyphic texts, vessel form, paste composition and pictorial imagery, thereby prompting its identification as a new ceramic type designated herewith as Ahk’utu’ Molded-carved. This paper discusses the type’s features, its chronology, and intersite contexts in which these molded-carved specimens are found. Though clearly outside the scope of this paper, the social mechanisms, and historical agents responsible for the incipience, dissemination and cessation of this important ceramic type are presented.

Determination of Type-Variety
In 1966 the Pabellon Molded-carved and Sahcaba Molded-carved ceramic types were established by Smith and Gifford as part of the Uaxactun assemblage of the central Peten (Smith and Gifford 1966: 160, 162). Pabellon was defined as belonging to the Fine Orange ware and its characteristics include absence of tempering agents, orange paste, presence of diagnostic light orange slip on bowls and barrel-shaped vases with pedestal base (Smith 1955: 43-45, 95, 192, 194; Smith and Gifford 1966: 160; Adams 1971: 49-51; Sabloff 1975: 195-196, 198; Ball 1977: 98). The members of this type were also seen to exhibit a consistent set of iconographic imagery that is said to be influenced by Central Mexican or Gulf Coast cultural elements (Sabloff and Willey 1967; Thompson 1970; Adams 1971: 50-51; Sabloff 1973; Sabloff 1975: 198; Willey and Shimkin 1973, 1987). Sahcaba was defined as a member of the Puuc Slate Ware, with tempered brown paste, red-slipped exteriors, on barrel-shaped vases with pedestal bases, as salient characteristics (Smith 1955: 34, 43-45, 194, 195; Smith and Gifford 1966: 160).
Terminal Classic Molded-carved Ceramics

This type also exhibits highly detailed iconographic panels, which notably form a mutually-exclusive set with those documented for Pabellon. A growing body of molded-carved ceramic remains has been recovered in the eastern Peten as well as parts of adjoining central and northern Belize since the 1930s. During the ensuing decades, many have been grouped into specific types and varieties within the nascent type:variety system for seriating ancient Maya ceramics.

Though many of the specimens have been aptly classed as part of existing type-varieties a particular set of molded-carved ceramics has emerged that to date has evaded coherent classification into the type-variety scheme (Figure 1). We would herewith like to follow-up on earlier proposals (Helmke 2001) and establish a new molded-carved ceramic type to provide a typological placement of this important assemblage. We propose the designation Ahk’utu’ Molded-carved based on the idiosyncratic vessel type glyph with which these specimens were labeled in antiquity (see Helmke et al. 1998: 125-127; Helmke 2000: 17; Helmke 2001: 51, 52; for more details on ‘vessel type’ glyphs see MacLeod and Reents-Budet 1994: 115, 127-128). To be clear: the ancient Maya glyphically labeled all vases of this type with the term $y$-ahk’utu’ (written ya-k’u-tu-u), which literally means “his/her-give-thing”, or more succinctly: ‘gift’ (see Helmke 2001: 51, 52; Boot 2002: 16). Consequently, all these vases fall under one emic unit of classification, irrespective of the physical attributes which they display and how these may figure in modern ceramic classificatory schemes. Consequently, we favor and adhere to the ancient and emic classification, even though we recognize that an intimate match between ancient and modern classifications may not be fully achieved. Evidence indicating the mold-production method for Ahk’utu’ vases include the specimens’ size and decorative attributes that are shared between different sites. For example identical molds appear to have been used for sherds found at Altun Ha that are similar to the nearly complete Actun Tunicil Mucnal vase. Further, the vases’ breakage patterns reveal weak points along the “seams” where the mold-made sections were joined.

Figure 1. Detail of a decorative panel on an Ahk’utu’ Molded-carved vase allegedly from Ucanal. Photograph by Dorie Reents-Budet.

Pabellon, Sahcaba and Ahk’utu’ all share a similar approach to surface embellishment, which is to say that they are all mold-made, and subsequent to molding additional details are provided by incising in
the foreground and sometimes gouging of the background. In some cases casts produced from poorly-made molds were not subsequently corrected by incising or gouging, allowing us the opportunity to examine rough molds. Nonetheless, the similarities end when other characteristics are considered. For example, the Ahk’utu’ specimens differ markedly in paste composition, slip, vessel form and several decorative modes. Geographically, Ahk’utu’ Molded-carved ceramics are found at 23 sites in a highly nucleated area extending from the eastern Peten lowlands of Guatemala to the Caribbean coast of central Belize. These features combine to distinguish this molded-carved assemblage from Pabellon and Sahcaba, thereby requiring the establishment of a new type.

In some cases researchers have equated what are now recognized as Ahk’utu’ specimens with the Pabellon type, although more frequently the specimens have been referred to as “imitation Pabellon” or provisionally as “Belize Molded-carved” (see Graham et al. 1980: 164, 165-166; Awe 1985; Graham 1987: 79-80; Helmke et al. 1998: 101-102). The Caracol assemblage specimens that we are calling Ahk’utu’ have been classed as Sahcaba Molded-carved (Chase 1994: 173, 175, Figs. 13.11d & m; Chase and Chase 2001: Figs. 16b & 16m). This classification is in keeping with Smith and Gifford’s original intent to create Sahcaba as the place-holder for the non-fine paste molded-carved specimens (Arlen Chase pers. comm. 2007). These nomenclatures not only reveal the recognition of the specimens’ differences from the established types, but also the reluctance of ceramicists to pigeonhole these particular ceramics into the Maya ceramic typological system.

Our research highlights the problematic and misleading nature of the notion of “imitation Pabellon”. First, it erroneously equates the Ahk’utu’ type with other types of the Fine Orange ware based only on gross similarities in surface treatment attributes. In reality, the type’s paste attributes do not correspond to Terminal Classic fine paste ceramics. Second, the term implies the temporal precedence of the Pabellon type, when in fact the type dominates Maya ceramic typologies simply because it was the first recognized and established molded-carved type. Dating of these ceramics by means of epigraphic data indicates that they are contemporaneous within a few decades, and therefore one is neither inspired from nor derivative of the other. Instead, the archaeological, iconographic, epigraphic and paste compositional data imply that they comprise regional manifestations of a shared Terminal Classic molded-carved ceramic tradition (for earlier discussions see Smith 1958; Sabloff 1973; as well as Willey and Shimkin 1973, 1987).

Beyond the shared mold-made production technique, the Ahk’utu’ type differs from the other types in its specific paste composition, slip colors, vessel form, and decorative modes. First Ahk’utu’ Molded-carved vases are not made with the same fine paste that distinguishes the Pabellon Molded-carved type. Indeed, the two most prevalent pastes of Ahk’utu’ are consistent with the Pine Ridge Carbonate and British Honduras Ash Wares (Figure 2), in keeping with characteristic types common to the time period and the area (see Gifford 1976: 227-243, 255-267). Inclusions are commonplace containing hematite nodules, opaque and clear crystalline quartzite and calcite, as well as rarer mica and slate-like inclusions. This point is nowhere clearer than in the Altun Ha and Pook’s Hill ceramic assemblages, which together represent the largest Belizean collection of Ahk’utu
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Second, in contrast to the mostly orange color of Pabellon Molded-carved ceramics, Ahk’utu’ slip colors range widely from dark red to light matte orange; the former comparable to the types of the Vaca Falls ceramic group (Gifford 1976: 235-243), the latter comparable to that employed on Buk phase ceramics at Lamanai (see also Graham 1987: 81-87). Nonetheless, the great heterogeneity of pastes exhibited by the Ahk’utu’ does represent a considerable hurdle to a proper classification of these ceramics within the type-variety system, since “types” by definition cannot cross-cut differing pastes. In addition, Ahk’utu’ vases as a whole do exhibit distinct sets of paste, iconography, and glyphic texts. This latter point implies that numerous and disparate locations were involved in the production of Ahk’utu’ vessels. Notwithstanding it seems best to group these all under the same “type” heading, allowing discrete paste attributes to serve as identifiers of the production locales from which specimens stem (these could perhaps be viewed daringly as “varieties”).

Ahk’utu’ vases have hollow tripod oven-shaped supports each containing a large ceramic rattler ball, and a single circular vent perforates each tripod support (Figure 3). In contrast, Pabellon and Sahcaba ceramics are characterized by pedestal bases. Ahk’utu’ vessel profiles tend to be cylindrical to barrel-shaped with slightly constricting orifice, and the bases are either flat or concave. The basal break where the body and the base meet is pronounced and angular. In addition, vases of the Ahk’utu’ type vary in total height from 17 to over 36 cm. This variability may come from the process by which moulds were made from extant vases, thereby gradually reducing the size of the resultant vessels. That this practice may have been employed is supported by the fact that the vases exhibiting clear iconography and glyphic texts tend to be taller than the small vases that render unclear details. Thus the

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1 For Altun Ha, Helmke – working in collaboration with Elizabeth Graham and David Pendergast– has inventoried a total of 230 sherds representing 9 fragmentary vessels and 89 isolated sherds of this type. At Pook’s Hill 3 fragmentary vessels and 180 isolated sherds have been documented.
taller vases tend to be earlier while the smaller vases appear to be later manifestations. This pattern is supported by alterations in slip coloration which originally is dark red and eventually manifests itself as light orange (a temporally-sensitive gradation also documented for ceramics at Lamanai; see Graham 1987: 79, 81).

The decorative modes of Ahk’utu’ vessels differ markedly from other established molded-carved types and include a distinctive iconographic program. Unlike the “Mexicanized traits” typical of Pabellon pottery (Sabloff and Willey 1967; Sabloff 1973; see also Thompson 1970), Ahk’utu’ vessels duplicate themes typically found on the contemporaneous public monuments in the region, rendered in formal Classic Maya style (see Helmke et al. 1998: 104-113; see also Sabloff 1975: 198 and Graham et al. 1980: 165-166). The Ahk’utu’ type is further distinguished by the presence of viable (readable) glyphic texts and the absence of the kinds of “Mexican” glyphic motifs that typify Pabellon Molded-carved specimens (though see Keeler 2005). The Ahk’utu’ vessels also are characterized by three stacked horizontal moldings which frame the primary glyphic text and the iconographic scenes, a trait completely absent on Pabellon and Sahcaba specimens. Interestingly, this feature is analogous to the architectural “three-member binder” moldings found on many Terminal Classic period buildings in the Puuc (Kubler 1990: 234), coastal Quintana Roo (Shelby 1999: Fig. 3) and rare examples in the Peten (Smith 1982; Ruppert et al. 1955).

**Epigraphy**

Classic period Maya ceramics are frequently adorned by a formulaic statement of ownership and dedication, which is known as a Primary Standard Sequence, or PSS, (Coe 1973; MacLeod and Reents-Budet 1994) which serves as a ‘standard dedicatory formula’ (Stuart 2006: 114). Ahk’utu’ vessels display three types of dedicatory phrases. The most prominent among these includes a nominal section that cites the names and titles of the same patron (Figure 4), implying that all vases were produced for, or at the behest of, the same patron at a great variety of production locales. This is in sharp contrast with earlier Late Classic elite painted and carved vases that were hand-made, unique, and often tied to a specific royal patron who backed a singular ceramic workshop (see Reents-Budet et al. 1994). It would seem, then, that the Terminal Classic mold-made tradition indicates a change in valuation, royal patronage and perhaps also consumer audience for specialized food service vessels.

In the decipherment and reading of the PSS most commonly associated with
Figure 4. End of the PSS that typically adorns the rim of Ahk’utu’ Molded-carved vases. Shown here are the so-called ‘vessel type’ section (the leftmost glyph block) and the ‘nomino-titular’ section (the entire remainder of the text). The vessel type section records the original designation of these vases as ahk’utu’ or ‘gifting-implement’. The nomino-titular section records the names and titles of the original patron, in this case Lady Olom, who bears the exalted titles ukawal ochk’in kalo’mte’, or “the proud western kalo’mte’.” The missing glyph may originally have recorded ucha’an. Preliminary drawing by Christophe Helmke, based on photographs by Dorie Reents-Budet.

Ahk’utu’ ceramics we must acknowledge the invaluable assistance of Pierre Robert Colas, David Stuart, Erik Boot, Stanley Guenter and Marc Zender. References to the ancient patron of the Ahk’utu’ vases is headed by the relatively common elite, ch’ok kele’m titular pair. Next is a title that may be phrased in the guise of a statement of “guardianship” over a captive named Chowtijatz’ though this segment remains problematic in its decipherment. A reference to the patron follows as Ixolom or “Lady Olom”, wherein which olom means “blood” or “lineage” in Yukatek (Barrera Vásquez 1980: 605) –the term is not otherwise attested in Ch’olan or other lowland languages (see Helmke et al. 1998: 130-131; Guenter 1999: 19 no. 1, 108-109, 155, 159). Closing the nomino-titular string are the exalted and some might say “imperial” ochk’in kalo’mte’ titles. During the Late Classic period, these last titles were reserved for the highest-ranking and most powerful kings in contrast to their Terminal Classic usage in which lesser nobles such as Papamalil of Ucanal (Grube 1994: 95-96, Fig. 9.18tt; Guenter 1999: 104-109; Martin and Grube 2000: 99) or Wat’ul K’atel of Seibal (Schele and Mathews 1998: 175-196; Guenter 1999: 133-140) made claims to these exalted titles (Figure 5). Analogous is the appropriation of the Tikal Emblem Glyph by contemporary lords of Jimbal and Ixlu who term themselves ‘Godly Tikal King’ (i.e. k’uhul mutu’l ajaw), though undoubtedly the claimants assumed these paramount titles without actually having control of the Tikal polity (Schele and Mathews 1998: 187; Guenter 1999: 154-160; Martin and Grube 2000: 53; Valdés and Fahnser 2004: 151, 154-155). In the case of the Ahk’utu’ ceramics, it seems that Lady Olom may have also usurped these titles as no references to her ever include the royal title ajaw. Lady Olom does set herself apart from all others by the use of a modified title reading ukawal ochk’in kalo’mte’, or “the proud western kalo’mte’”.

2 The best-preserved example of this PSS is found on a vase allegedly from the site of Ucanal and presently in a private collection in Guatemala City. In this case, the glyph block occupying position G1 was not recovered. Other examples of this particular glyph block are found on vases from Actun Tunichil Muucnal and Pook’s Hill, but these are beyond legibility. Another molded-carved sherd recovered at Pook’s Hill (Op. 9A, EU 59, SU 221) may provide the missing segment. Though extensively weathered the sherd appears to record u-CHAN-nu, read ucha’an. This typically forms part of ‘captive statements’ in which case the patron of the vases would be termed the ‘guardian’ of a particular captive, named Chowtijatz’. Alternatively ucha’an may stand for “de, para, suyo, suya” based on Chontal entries (Nikolai Grube pers. comm. 2007). In this case Chowtijatz’ would form the initial part of the vessels patron’s name and ucha’an would serve simply as a possessive construction.
appears to have used a modified version of the title as well, as *chak kalo’mt’e* or “great kalo’mt’e” (St. 7 & 19). Interestingly, the contemporary monumental stone inscriptions from Uaxactun record Lady Olom’s ascent to authority between A.D. 810 and 830, and a possible posthumous reference (in A.D. 879) may also be found at Jimbal where the local lord refers to an Olom person as his parent (see Guenter 1999: 155, 159; Valdés and Fahsen 2004: 154-155).

These eastern Peten monuments confirm that Lady Olom was alive during the first half of the ninth century, thereby providing a temporal anchor for the earliest Ahk’utu’ Molded-carved vases. In contrast, the arrival of the so-called “Facies A” individual Wat’ul K’atel at Seibal in A.D. 849 may mark the introduction of Pabellon Molded-carved ceramics and perhaps even the ‘Mexicanized’ Bayal ceramic complex (as suggested by Schele and Mathews 1998: 178-179, 183) (Figure 5). Noteworthy are the clear textual statements that Wat’ul K’atel came to Seibal from the site of Ucanal and at the behest of a local lord named Kanek’ (Schele and Mathews 1998: 178-179, 183-184). If we may correlate the incipience of two types within the molded-carved tradition to these specific historic individuals, then from a chronological standpoint Ahk’utu’ Molded-carved in fact precedes Pabellon by a few decades, or more conservatively is generally contemporary to it.3

**Spatial Distribution**

The Terminal Classic molded-carved ceramic tradition is widely distributed throughout the lowland Maya region. The relative distribution patterns of the three dominant molded-carved types—namely Pabellon, Sahcaba and Ahk’utu’—suggest three relatively discrete geographic zones of distribution. Note that these ‘zones’ refer to the maximal and total geographic distribution of a particular molded-carved type irrespective of its temporal attributes. The largest zone is that of the Pabellon type, which is variably represented throughout the Maya area. The Sahcaba zone seems much more restricted than the Pabellon zone, being limited to the eastern half of the Peten.

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3 From a socio-political standpoint it would seem that Lady Olom provides a Maya analogue for the historical figure known as 13 Rabbit who is cited both on monuments of El Tajín and molded-carved vessels of northern Veracruz (see Piña Chan and Castillo Peña 1999: 140, 142; Wiley 2003).
with minor constituents in the Maya Mountains, central Belize, and southern portions of Campeche. Nonetheless with continued research the extent of this zone is likely to increase. In contrast, the Ahk’utu’ zone is the most nucleated of the three with sites yielding this type occurring throughout central Belize as well as the eastern Peten (Figure 6). The Ahk’utu’ zone appears to be specifically oriented to the course of the Belize River and its tributaries. Similarly, the Pabellon zone appears to be oriented predominantly to the course of the Usumacinta River.

Ahk’utu’ ceramics have been found at nearly two dozen sites in the eastern Peten and central Belize. The Ahk’utu’ zone spans roughly from the site of Uaxactun in the west to Marco Gonzalez in the east, and from San José in the north to Caracol in the south. In all, the zone covers an area measuring approximately 200 km east-west and 100 km north-south. It should be noted that the sites with monuments mentioning Lady Olom (Uaxactun and Jimbal) define the western edge of the Ahk’utu’ zone. All other glyphic references to Lady Olom occur on Ahk’utu’ Molded-carved vases – including more than 20 fragmentary vases and over 300 sherds excavated from 23 different sites.

Although the three molded-carved zones overlap in the central Peten, the relatively discrete distribution held by all three hints at three principal and somewhat discrete zones of socio-political interaction.
in the Terminal Classic. It must be remembered, however, that the distributions thus defined are the final accretive product of more than a century of intense exchange and interaction, thereby blurring the specific diachronic distributions held by these types during the course of their use.

**Temporal Distribution**

Ahk’utu’ Molded-carved vases tend to be discovered in terminal occupation deposits. The ceramic associations at sites in central Belize indicate that these vases date to the Terminal Classic (A.D. 800–950) though some overlap has been noted with types typically classed as belonging to the Early Postclassic (A.D. 950–1200) New Town and related complexes (Figure 7). Architectural features provide additional temporal indicators for the ceramic type, including the stacked decorative moldings defining the iconographic programs on the vessels. This type of molding is elsewhere referred to as ‘three-unit’ moldings or *ataadura* moldings (Kubler 1990). Such moldings are commonplace in the facades of vaulted masonry structures at Terminal Classic coastal sites in Quintana Roo, sites in the Puuc area of Yucatan, but are otherwise rare in the Peten, with notable exceptions at the sites of Bonampak (Ruppert 1955) and Seibal (Smith 1982). Thomas Shelby’s (1999) architectural typology for Quintana Roo sites indicates that this type of molding date to the Terminal Classic and Early

![Figure 7](image)

*Figure 7.* Synthesis of the temporal placement of the Ahk’utu’ Molded-carved type based on the dating of associated ceramic remains, the decorative moldings, the iconography of the decorative panels, and historical texts that make reference Olom.
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Postclassic periods (c. A.D. 850-1200). It is of great interest that the date assigned to these vessels on the basis of ceramic associations duplicates the dating obtained for the three-unit moldings (Figure 7).

Similarly, the iconographic programs of the Ahk’utu’ vessels reflect comparable programs depicted on the Terminal Classic stelae of central Peten sites (Helmke et al. 1998: 104-113). The greatest congruity is found with the late monuments of Ucanal, Ixlu, Tikal and Jimbal. These stelae date to between 10.0.10.0.0 and 10.2.0.0.0, or between A.D. 840 and 879 (based on the standard Goodman-Martínez-Thompson, or GMT correlation). Unfortunately with the close of the ninth century, no additional monuments were erected in the area. Thus the range provided by the style of the iconography should be taken as a lower end range since the iconographic record ended abruptly, and thus does not serve as a yardstick beyond its cessation. Nonetheless these dates are well within the range of contemporary and posthumous references to Lady Olom (A.D. 810-879).

The chronological overlap of the ceramic, glyphic, iconographic and architectural datings secures the timeframe for Ahk’utu’ Molded-carved vases to a period spanning from A.D. 830 to at least A.D. 950. Its dates correspond to the late facet Spanish Lookout ceramic complex in central Belize. At present the upper range has yet to be satisfactorily determined and requires more research. Nonetheless it seems probable that the usage – if not the manufacture – of Ahk’utu’ Molded-carved vases persisted into the early facet of the Early Postclassic New Town and related ceramic complexes in the area. This possibility is suggested by the limited and occasional associated incidence of ceramic types belonging to Early Postclassic complexes, though this point still requires further research.

Conclusions

The identification of another major type within the molded-carved tradition provides a classificatory unit for ceramicist as well as insights into the disjunction between the etic type-variety system and emic classifications, but also sheds light on the socio-political processes operating behind ceramic types and complexes. Based on the possible association of Wat’ul K’atel with Pabellon and Lady Olom’s patronage of Ahk’utu’, we may speak of historical agents in stimulating the incipience and dissemination of these ceramic types.

Often societal restructuring or political transformation may not correlate directly with changes in the ceramic record. In the case of the Terminal Classic Maya, however, the socio-political balkanization evidenced from the glyphic inscriptions seems to be proportionately reflected in the contemporary “ceramic balkanization”. In turn, this aspect of the molded-carved tradition does also appear to stem directly from societal factors, a point that has been highlighted by Arlen and Diane Chase at Caracol (Chase and Chase 2004). Based on these findings it seems that the presence or absence of clear Terminal Classic markers in ceramic assemblages is conditioned by the proportionate presence or absence of specific elite activities and the associated consumption, use, and discard practices of these activities. Lisa LeCount (pers. comm. 2007) contests this point, since she views the rate of changes in pottery as specific to the historical trajectories of particular sites and the degree to which elite or non-elite segments of the society deliberate want to signal changing social, political, or economic relationships. Consequently, to some extent, such conclusions have to be drawn on a site-by-site basis. Nevertheless, Ahk’utu’ ceramics function as an integral part of such Terminal Classic elite activities.
Yet the disassociation of molded-carved special service wares from the highest royal segment of Maya society at certain sites, points to a restructuring of social negotiations—from the hands of paramount royalty during the Late Classic period to the hands of lesser nobles such as Lady Olom during Terminal Classic times (see LeCount 1999). Furthermore, the distribution zone of Ahk’utu’ vases may indicate the spatial extent of a particular social network in which such vessels were important material components; a network under the influence of important historical agents.

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Since 2001, the Pusilhá Archaeological Project has conducted archaeological and epigraphic investigations at the ancient Maya city of Pusilhá, Toledo District, Belize. Previous papers published in the annual Belize Symposium volumes have addressed the theoretical goals of our project, have described the dynastic history of the city, have presented a preliminary ceramic chronology of the site, and have discussed both our excavations and settlement survey. Here, we present evidence for exchange and political connections between Pusilhá and other cities in the Maya area. The data we consider are drawn from Prager’s analysis of the hieroglyphic corpus, Bill’s study of ceramics, and Braswell’s analyses of obsidian, ground stone, and other artifacts excavated at the site.

Introduction

Two important goals of the Pusilhá Archaeological Project, which began in 2001, are to understand secondary state formation processes in Toledo District during the Early to Late Classic transition, and to learn something about the roles played by political and economic interaction in these processes (Figure 1; Braswell et al. 2004, 2005b). Our research program, therefore, builds on but goes beyond Richard Leventhal’s (1990, 1992) definition of southern Belize as a cultural region. Rather than emphasizing similarity within the Toledo District and difference between southern Belize and the rest of the Maya world, we are seeking to understand the history of Pusilhá in terms of both internal and external historical factors.

We began our project with two competing hypotheses (Braswell et al. 2004, 2005b). First, that Pusilhá was established near the end of the Early Classic as a small and independent polity, was absorbed into the rapidly expanding Copán state, and later - like Quiriguá - exerted its independence. In this first scenario, Pusilhá may be considered as an example of a province as described by Joyce Marcus’ (1993) Dynamic Model of state formation. While we were planning our project, several lines of evidence seemed to support this interpretation, or at least suggested that Pusilhá had important political and economic ties with the southeastern Maya region: (1) Since its discovery, Pusilhá has been known for zoomorphic altars somewhat like those at Quiriguá; (2) the main signs of the Quiriguá and Pusilhá
emblem glyphs are similar and differ primarily only in orientation; (3) The Pusilhá hieroglyphic corpus mentions two names also known from Copán; (4) polychrome pottery illustrated by the British Museum project resembles polychromes best known from western Honduras and El Salvador; and, finally, (5) chemical analyses conducted on sherds supposedly from Pusilhá matches Copador polychrome samples from Copán itself (Bishop and Beaudry 1994; Braswell et al. 2004, 2005b).

A second hypothesis that we considered at the beginning of our project was that Pusilhá was a minor vassal state of either Tikal or Calakmul, the two great competing “superpowers” of the sixth to ninth centuries. Based entirely on epigraphic analyses, Simon Martin and Nikolai Grube (1995, 2000) have posited that these two states each exerted hegemonic control over the central and southern Maya lowlands. Matthew Looper (1999) has suggested that Copán was an ally of Tikal, that Quiriguá gained its independence from Copán after gaining permission from Calakmul to battle that site. In this second scenario, Pusilhá - like Quiriguá - may have begun as a minor satellite in the orbit of Tikal and perhaps later switched allegiances.

As we have stressed in previous volumes of this series, we now believe that neither of these narratives is consistent with the epigraphic and archaeological data from Pusilhá (Bill and Braswell 2005; Braswell 2007). Instead, it seems most likely that Pusilhá was established by settlers from the southern - perhaps even southwestern - Petén, and that the site maintained political independence from its more powerful neighbors from the early 7th century until the early 9th century (Braswell et al. 2005a, 2005b).

Our previous Belizean publications have focused on the dynastic history of Pusilhá (Braswell et al. 2004), the ceramic chronology of the site (Bill and Braswell 2005), survey (Braswell 2007), and excavations (Braswell and Gibbs 2006). In this chapter, we focus on external economic and cultural relations as demonstrated through the analysis of hieroglyphic texts, ceramics, and lithic artifacts.

**Epigraphy**

The hieroglyphic texts and figurative stela art of Pusilhá (Figure 2) reveal that the site participated in at least eight warfare events (Prager 2002, 2003). Curiously, not one emblem glyph of an archaeologically known site appears in the extensive texts. Nim Li Punit, Lubaantun, Quiriguá, Copán, Caracol, and the more distant Tikal and Calakmul are not mentioned even once in the Pusilhá hieroglyphic corpus. Moreover, the stone monuments of these and other sites contain no citation of the Pusilhá emblem glyph or the name of a known Pusilhá lord. With the exception of the Pusilhá monuments, just one artifact - of unknown provenience - uses the Pusilhá emblem glyph. It is distinctly possible that this artifact was looted from the site itself. Epigraphic clues of connections with known Maya sites, therefore, are indirect. Such evidence consists of personal names, two toponyms, a legendary celebration, and the name of a stela that also appears in the epigraphic record of another site (Braswell et al. 2005a; Prager 2003).

The first individual whose name is known at Pusilhá and elsewhere is nicknamed “Foliated,” “Decorated,” or “Leaf Ajaw.” Stela K of Pusilhá, erected by Ruler D, links the celebration of the 9.12.0.0.0 k’atun ending (A.D. 672) to a legendary celebration that took place at the “Chi-Throne-Place” on 8.6.0.0.0 (A.D. 159). That event was overseen or conducted by “Foliated Ajaw.” It is important to stress that this is a retrospective reference to a celebration conducted more than 400 years ago.
Figure 2. Pusilhá stelae that are now, with the exception of Stela F, in the British Museum (drawings by Christian Prager).

before the founding of the Pusilhá polity. Hence, it should be considered as a legendary event and not as a historical occurrence.

At Copán, a reference to “Foliated Ajaw” appears on Stela I. This Late Classic monument also contains the retrospective date of 8.6.0.0.0 (A.D. 159). On the basis of this citation, Copán scholars hypothesize
that the monument refers to a “Predynastic king” who ruled the site centuries before the arrival of the dynastic founder *k’inich yax k’uk mo’* (Stuart 2004:223). Several more references to “Foliated Ajaw” and the celebration of the 8.6.0.0.0 *k’atun* ending, as well as to the “Chi-Throne-Place,” are now known from Tikal, Calakmul, and especially from Late Classic cylinder vases from the El Mirador basin.

Both Stanley Guenter (2003) and Nikolai Grube (2004) have analyzed texts referring to “Foliated Ajaw.” He may, indeed, have once been a living individual, as Guenter has argued. While this is speculative, it is clear that by the Late Classic period, “Foliated Ajaw” had become a legendary figure tied somehow with widely-shared Maya notions of kingship and calendrical celebration. In particular, references to “Foliated Ajaw” and the 8.6.0.0.0 *k’atun* ending at both Pusilha and Copán do not indicate a direct relationship between the two sites. Instead, they point to a shared body of legend that may have its roots in the Petén.

Ruler B of Pusilha began his rule in the early seventh century A.D. and died around A.D. 650. We read his name as *k’ak’ u ti’ chan* (Braswell et al. 2004, 2005b; Prager 2002, 2003). This hieroglyphic name is identical to that of Copán Ruler 11, known at that site by the nickname Butz’ Chan. Because they both ruled at the beginning of the 7th century, we once considered the intriguing possibility that they were one and the same person. But parentage statements of both men indicate that they had different fathers, and Prager’s (2002) analysis reveals that Pusilha Ruler B continued to live at least 20 years after the death of his namesake at Copán. Nonetheless, the overlapping appearance of the same royal name at two relatively close sites hints at some sort of interaction. We may speculate that perhaps Pusilha Ruler B was named after his older and more established counterpart at Copán.

The paternal grandfather of Ruler G of Pusilha was named *hun ew chak muyal chan yoat ?ti’ k’awil*. He was an important noble, but not from Pusilha itself. Segments of this name phrase appear also at Naranjo, Copán and Quiriguá, suggesting that he came from an unknown site in the eastern or southeastern lowlands (Braswell et al. 2005; Prager 2003).

On Pusilha Stela D the “Water-Scroll” toponym - seen so often in inscriptions from Aguateca and Seibal - is mentioned twice. It is not clear, however, if this toponym refers to a single place or to multiple locations; one might be in the southwestern Petén, a second somewhere in the vicinity of Naj Tunich, and a third, known to us as Altun Ha, in northern Belize. Also appearing on Stela D is a name connected to a warfare event on 9.8.1.12.8 (A.D. 594). This personal name contains a glyphic element seen in later inscriptions from the Petexbatun region (Braswell et al. 2004).

Stela Q of Pusilha and Stela 1 of Caracol were both erected on the *k’atun* ending 9.8.0.0.0 (A.D. 593). Both stelae are given proper names and they are the same name. It is conceivable that this might indicate direct ties between the two sites, but it also might imply that the rulers and scribes of Caracol and Pusilha merely participated in the same general cultural system.

In sum, although Pusilha engaged in at least eight warfare events with adversaries from unknown sites, epigraphic evidence for political interaction with known polities is quite slim. There are a few suggestive indications of some sort of interaction with Copán or Quiriguá during the early history of Pusilha, as well as with sites in the southwestern Petén. Other personal names
and toponyms point only to participation in a Petén-centric world.

**Ceramics**

We have divided the ceramic chronology of Pusilhá into four phases (Bill and Braswell 2005). Material pertaining to the earliest phase, dating to the 7th century, is known to us primarily from only one context: Pottery Cave. The pottery we excavated from this disposal site was “mixed”; not only does it appear with later 8th century materials, but also it was recovered from the backfill of the British Museum project of the late 1920s. The vast majority of the sherds show close affinities with materials known from the Petén. In short, the ceramics from Pottery Cave may be considered a mixed Tepeu I/Tepeu II assemblage. Jars with striated or impressed designs, many of which closely resemble examples of Pantano Impressed from the southwestern Petén, are particularly common. Small quantities of ceramics, including examples of Masica Incised, almost certainly were imported from western Honduras, perhaps from Copán itself. Also found in this mixed Late Classic assemblage are a few examples of polychromes with the “twist and bud” motif, a design element known from eastern El Salvador and elsewhere in the southeastern Mesoamerican periphery. Most of the polychromes from Pusilhá, however, share forms and general surface-treatment attributes that are closely related to established groups such as the Saxche-Palmar Orange polychromes of the Pasion and central Petén regions. None of the local ceramic types so well known from western Belize are present in either the mixed Tepeu I/II context of Pottery Cave, or in the many unmixed Tepeu II contexts that we have excavated.

Unlike materials from Pottery Cave, our unmixed 8th century Tepeu II ceramics from Pusilhá - with the exception of one vessel - lack connections to Honduras and El Salvador. This may in part be due to surface preservation; materials from Pottery Cave are remarkably preserved while ceramics from most other contexts at the site are not. An interesting feature of the Late Classic and Terminal Classic ceramic assemblage is the presence of *comales* (Figure 3). These are relatively common at Pusilhá and at sites in the Upper Pasion Region and the Dolores Valley to the west. They are not described for nearby Lubaantun, have not been found at Uxbenka (Andrew Kindon, personal communication 2007), and are generally uncommon, rare, or unknown in the northern Petén. The presence of *comales* at Pusilhá and in parts of the southern Petén may indicate that a distinct food-way was practiced in this region. Moreover, the marked difference in this regard between Lubaantun/Uxbenka and Pusilhá may indicate that in ancient times, identity in Toledo District was as complex as it is today.

![Figure 3. Comales, or tortilla griddles, from Pusilhá.](image)

This form is not found at Uxbenka or Lubaantun, suggesting that there were significant differences in food preparation practices within southern Belize during the Late Classic period.

The Terminal Classic ceramic assemblage of Pusilhá is dominated by
Tepeu III types, forms, and modes (Bill and Braswell 2005; Braswell 2007). Nevertheless, imports and copies of foreign vessels appeared during this period. For the first and only time in its history, ceramics from the Belize Valley, such as Belize Red, were brought to Pusilha. Also fairly common during the Terminal Classic are copies, probably local, of Fine Orange vessels and forms from the northwestern Maya region.

The Pusilha ceramic sequence ends with a Postclassic assemblage of uncertain date. The Postclassic pottery of Pusilha is crude and unstandardized and therefore reminiscent of, but not necessarily related to, similar Postclassic assemblages from many sites in the Maya lowlands (Bill and Braswell 2005; Braswell et al. 2004).

In sum, the ceramics of Pusilha firmly establish the site within the Late Classic Tepeu sphere of the Petén. The closest affinities appear to be with sites in the southeastern and, especially, southwestern Petén. During the 7th century, that is, the first 100 or so years of occupation, a very limited quantity of pottery was imported from western Honduras. Some, but by no means the majority, of the polychromes dating to this period have decorative elements that are much more reminiscent of eastern El Salvador and Honduras than of the Petén heartland. Thus, economic and cultural connections with sites to the southeast were strongest during the first half of the Late Classic and diminished during the 8th century. Although there are many ceramic similarities shared between Lubaantun and Pusilha, there are also some significant differences. We speculate that the presence of comales at Pusilha and the lack of this form at Lubaantun and Uxbenka imply both different site histories and identities.

Chipped Stone Lithic Artifacts

Flaked lithic artifacts are common at Pusilha. A total of 816 chert and 4,079 obsidian artifacts have been recovered to date by our project. Eighty-eight percent of the chert artifacts are either simple ad hoc percussion flakes or flake cores. Another three percent are percussion or pressure blades. Finally, nine percent of the chert sample consists of bifacially worked artifacts and thinning flakes. Most of the 59 bifacial tools are handheld knives, but a very small number may be large spear points. Most of these bifacial tools were extensively reworked and resharpened during their use life. Finally, two of the chert artifacts are eccentric.

Sourcing chert artifacts by either visual or geochemical means is problematical. Quite simply, the Maya region is full of chert sources. It seems highly probable to us that all or nearly all of the ad hoc percussion tools and debitage are derived from local chert. The color range of these artifacts is quite extensive. In contrast, a more restrictive range of colors is visible among the formal bifaces; most are either a light gray or caramel color. According to Jason Barrett (personal communication 2007), a large anthropoid eccentric (Braswell and Gibbs 2006: Figure 11a) and perhaps one other piece comes from the famed Colha source. Lacking any further definitive data, we are nonetheless inclined to believe that most of the bifaces are made of local or at least regionally available chert.

Obsidian is much more abundant than chert at Pusilha, despite the fact that the nearest high-quality sources are located roughly 200 km away. Nonetheless, Pusilha is the closest major Belizean site to these sources. As a crude estimate, the density of obsidian at Pusilha is roughly eight to ten times that found at sites in the Belize Valley. The vast majority of obsidian artifacts recovered from Pusilha are prismatic blades.
and blade related debitage. Bifacially worked tools are exceedingly rare. Only two have been recovered, and both of these come from the surface of the “Bulldozed Mound” (Braswell et al. 2004), a platform occupied in the Terminal Classic and Postclassic periods. One of these is a bifacially worked projectile point that was likely imported from central Mexico.

At least five geologically distinct obsidian sources have been identified in the collection (Figure 4). These are El Chayal, Ixtepeque, Zaragoza, Pachuca, and San Martín Jilotepeque. The fourteen black obsidian artifacts from the Zaragoza, Puebla, sources were identified both through visual sourcing and Neutron Activation Analysis. Four more artifacts - including the bifacial projectile point just mentioned and three eccentrics - have not yet been given source assignments, but all are likely made of obsidian from Zaragoza or one of the other Mexican sources of black obsidian.

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Chayal, Guatemala</td>
<td>3730</td>
<td>91.4</td>
</tr>
<tr>
<td>Ixtepeque, Guatemala</td>
<td>311</td>
<td>7.6</td>
</tr>
<tr>
<td>Zaragoza, Puebla</td>
<td>14</td>
<td>0.3</td>
</tr>
<tr>
<td>S. M. Jilotepeque, Guatemala</td>
<td>12</td>
<td>0.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>4</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1</td>
</tr>
</tbody>
</table>

**Figure 4.** The geological sources of obsidian artifacts recovered from Pusilhá.

Obsidian procurement patterns in the Maya area varied over both space and time. Throughout the Early and Late Classic periods, more than 90% of the obsidian consumed in the central Maya lowlands - including the Petén and western Belize - came from the source of El Chayal, located near modern Guatemala City. In contrast, approximately 95% of the obsidian consumed at Copán during these same periods came from the Ixtepeque source, located in the Department of Jalisco, Guatemala. Our point is that when considered from a synchronic perspective, Pusilhá received most of its obsidian from the same source as other Petén-oriented sites. It did not receive much obsidian from Copán or other polities in the southeastern periphery.

There are some interesting diachronic patterns in the Pusilhá obsidian data set (Figure 5). Our earliest significant context, again, is Pottery Cave, which contains a mixture of Tepeu I and II pottery. Eighty-three obsidian artifacts were recovered from Pottery Cave, and just five, or about 6%, come from the Ixtepeque source. This is not significantly different from the relative frequency of Ixtepeque obsidian in the entire collection. That is, during the time period for which we have the strongest evidence (and it is not much) for ceramic ties with the southeastern periphery, the obsidian data do not support stronger economic links with Copán and other sites in that region.

The largest and best-dated obsidian sample comes from the royal tomb excavated in 2005 (Braswell and Gibbs 2006). Fully 761 obsidian artifacts were recovered from the tomb. These appear to have been placed originally as a bed of lithic debris above the capstones, a caching pattern very well known in the Petén but not practiced in the southeastern periphery. A ceramic date of the mid 8th century is indicated by the 14 vessels found in the tomb, and we have argued that it was the resting place of Pusilhá Ruler G, who died between A.D. 731 and A.D. 751 (Braswell et al. 2005a) . All but three of the 761 obsidian artifacts recovered from the tomb come from the El Chayal source. These three are eccentrics that appear to be made of material from one or more central Mexican source. Most telling, absolutely no obsidian from Ixtepeque was recovered in this large sample.
During the Terminal Classic and Postclassic periods, obsidian procurement patterns changed at Pusilha. A sample of 1,496 obsidian artifacts has been recovered either from Terminal Classic architecture or from mixed surface contexts containing at least some Tepeu III pottery. In these contexts, just 82.2% (N=1,231) of the obsidian comes from the El Chayal source, while 16.1% (N=241) comes from Ixtepeque. Put another way, fully 77.5% of the Ixtepeque obsidian we have collected comes from contexts containing Tepeu III or later pottery. By this time, Copán had collapsed, so increased access to the principal source of the southeastern periphery cannot be linked to more trade with that polity. It should be noted, as well, that throughout the Maya lowlands, the Terminal Classic to Postclassic transition is marked by an increase in the consumption of Ixtepeque obsidian. By the Middle Postclassic, more than 90% of the obsidian imported to the Maya lowlands came from this source (Braswell 2003).

Also present in contexts containing Terminal Classic and Postclassic pottery is a small but significant quantity of obsidian from the central Mexican sources of Zaragoza, Puebla, and Pachuca, Hidalgo. Ten of the 14 artifacts from the Zaragoza source come from these demonstrably late contexts, as do nine of the 12 Pachuca artifacts. Mexican source obsidian is particularly diagnostic of the Terminal Classic period across the Maya area. What is peculiar is the lack of obsidian from the Ucareo, Michoacan, source in the Pusilha collection. Ucareo (followed closely by Pachuca) is the most commonly represented Mexican source in most Maya obsidian samples dating to the period of A.D. 800-1050 (Braswell 2003).

In sum, obsidian procurement data indicate that Pusilha participated in an economic interaction sphere that included most of the Maya lowlands, but not sites in the southeastern periphery of Honduras and El Salvador. During the Terminal Classic, procurement patterns changed somewhat, but reflect developments common throughout the Maya lowlands.

<table>
<thead>
<tr>
<th>Source</th>
<th>Tepeu I/II</th>
<th>Tepeu II</th>
<th>T. Classic/Postclassic</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHY</td>
<td>78 (94.0%)</td>
<td>758 (99.6%)</td>
<td>1231 (82.3%)</td>
</tr>
<tr>
<td>IXT</td>
<td>5 (6.0%)</td>
<td>241 (16.1%)</td>
<td></td>
</tr>
<tr>
<td>SMJ</td>
<td>2 (0.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZAR</td>
<td>10 (0.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAC</td>
<td>9 (0.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNK</td>
<td>3 (0.4%)</td>
<td>1 (0.1%)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5. Diachronic patterns in obsidian procurement patterns at Pusilha. The mixed Tepeu I/II sample comes from excavations inside and immediately outside of Pottery Cave (Op. 1/16 and Op. 1/17). The “pure” Tepeu sample comes from Bu. 8/4 (Op. 8/9/3 and Op. 8/10/5), a royal tomb believed to date to between A.D. 731 and A.D. 751. The Terminal Classic/Postclassic sample comes from the fill and surface of the “Bulldozed Mound” (Op. 2/5-Op. 2/15) and floor contexts sealed by fallen architecture (Op. 3,4, 8, and 9).

**Ground Stone Artifacts**

The ground stone artifacts of Pusilha consist of manos and metates, doughnut stones, and other miscellaneous forms. In 2006, Dr. Brian Holland of Belize Minerals, Ltd. examined our ground stone. We are deeply indebted to him for sharing his many years of geological experience in Toledo District and elsewhere in Central America. The manos and metates are made from several distinct materials, but the two most common are a porous pumice-like yet quite hard igneous rock and a fine-grained, calcareous sandstone. The sandstone is local and comes from the well-known Toledo Formation dating to the lower Eocene. The pumice-like rock dates to the late Tertiary or Quaternary periods and was imported from the volcanic highlands of Guatemala or Honduras. Also from the late Tertiary or Quaternary volcanic highlands
are manos and metates made of pink and green tuff. Less common materials used to make ground stone artifacts are non-local calcareous sandstones, some containing pebble size particles. Holland identified one such metate as probably coming from a geological formation in the Mountain Pine Ridge north of Caracol. In another case, the particles welded by the sandstone are of subrounded quartzite. Finally, local limestone was sometimes used for producing groundstone artifacts, especially doughnut stones.

Missing entirely from the assemblage are the old (about 285 Million years ago) Permian igneous rocks of the Maya Mountains. These include porphoritic granites, silicified ash and tuff, and volcaniclastic sedimentary rocks. Webster Shipley and Elizabeth Graham (1987) and, more recently, Marc Abramiuk and William Meurer (2006) have suggested that the Bladen Range was an important source for ground stone artifacts used in the Maya lowlands. It is somewhat surprising, then, that none from this region are found at nearby Pusilha. It is important to note as well that all 18 ground stone artifacts from Lubaantun that have been studied are made of vesicular basalt from the Maya highlands (Abramiuk and Meurer 2006:347). Thus, neither Pusilha nor Lubaantun received their ground stone from the Maya Mountains, and, in fact, the two sites imported different sorts of materials from the volcanic highlands of Guatemala.

One last aspect of the ground stone sample from Pusilha is particularly worthy of note. Metates made of imported volcanic materials all have feet (Figure 6). Footed metates are quite common in the Maya Highlands (including at Copán) and in the southern Petén, but are either rare or unknown in the central and northern Maya lowlands. The presence of footed metates at Pusilha suggests that they were exported from the volcanic highlands of Guatemala as finished artifacts.

Figure 6. Footed metates from Pusilha

**Conclusions**

Richard Leventhal (1990, 1992) defined southern Belize as a region sharing many cultural traits, most notably in architecture. Although these observations still hold true, the definition of southern Belize as a cultural region has two unfortunate results. First, when accentuating those characteristics that are common to the region, it is easy to lose site of important economic or cultural ties with more distant sites outside of southern Belize. Second, the identification of shared traits may lead to the misconception of uniformity within the region. As we learn more about Pusilha, Lubaantun, Nim Li Punit, and Uxbenka, it has become apparent that they had significantly different histories and cultural practices.
After six years of research at Pusilhá, we now know much more about the largest site in southern Belize than we once did. We now have a detailed dynastic history, comparable in richness to many of those from the Petén heartland. That history describes a kingdom that was part of the southern Maya lowlands yet stood at a distance from the political machinations of Tikal and Calakmul. We now have a ceramic chronology that demonstrates close cultural ties with the Petén, and only evanescent and minor 7th century connections with Copán and other sites in the southeastern periphery. Moreover, the ceramics of Pusilhá show very little interaction with peripheral western Belize until the Terminal Classic period. We now know that the obsidian procurement system also places Pusilhá squarely within a Petén interaction sphere. Finally, we see that the inhabitants of Pusilhá either made their *manos* and *metates* out of local materials, or received them in finished form from the volcanic highlands of Guatemala.

Results of the Pusilhá Archaeological Project also allow us to see important differences between that site and other important places of ancient southern Belize. Epigraphic data from Uxbenka suggest political ties between that site and Early Classic Tikal (Wanyerka 2005). It may even be that the ruling elite of Uxbenka came from the great metropolis far to the northwest. In contrast, there are no clear epigraphic ties between Pusilhá and the central lowlands. The Pusilhá ceramics imply closer relations with people from the southeastern and, especially, southwestern Petén. Speculating a bit, it may be that the Late Classic settlers of Pusilhá came from the west rather than from the northwest. Certain aspects of the Late Classic iconography of Nim Li Punit suggest ties between the rulers of that site and the southeastern Maya periphery. A glyphic reference dating to the 8th century possibly hints at a political relationship between Nim Li Punit and Copán. By this late date, however, evanescent ties between Pusilhá and the southeastern Maya periphery had vanished. Thus the three sites of southern Belize that have substantial hieroglyphic texts seem to have had very different political histories.

The inhabitants of Pusilhá cooked on *comales*, so presumably made tortillas. The people of the city, then, shared a basic foodway with their neighbors in the southern Maya lowlands, but not with the inhabitants of Lubaantun or Uxbenka. We speculate that this difference may be linked to different identities. As of yet, there is no ceramic report for Nim Li Punit. It will be interesting to learn if the ceramic inventory of Nim Li Punit includes *comales*, like Pusilhá, or generally lacks them, like Lubaantun and Uxbenka.

Finally, the inhabitants of the southern Belize region participated in distinct interregional trade routes. Lubaantun received its ground stone implements from the volcanic Maya highlands and, so far as is known, used *manos* and *metates* made only of basalt. The people of Pusilhá made ground stone implements of local materials but also imported finished *manos* and *metates* from the volcanic highlands. None are made of basalt, so come from sources different than those represented at Lubaantun. Most interestingly, apparently neither site obtained ground stone implements from the nearby Bladen Range. It will be interesting to learn about ground stone procurement at Uxbenka and Nim Li Punit, as well.

As work progresses at Pusilhá, Uxbenka, and - we hope - at other sites of inland Toledo District, we will undoubtedly learn more about historical, political, and economic variation within the district, and also about interregional economic and
political affiliations beyond the southern Maya region.

Acknowledgments. Archaeological research at Pusilhá has been generously supported by grants from the National Science Foundation Archaeology Program (SBE-0215068), the National Science Foundation International Research Fellowship Program (INT-0202581), the National Geographic Foundation (Grant #7847-05), the Wenner-Gren Foundation for Anthropological Research (Grant #6848), the School of American Research, the Foundation for the Advancement of Mesoamerican Research, Inc. (Grant #00029), and the Faculty Senate of the University of California, San Diego. We are particularly indebted to Dr. Jaime Awe for his early support of our project and mentorship through the NSF-IRF Program, and to Dr. John Morris for institutional and personal encouragement. Dr. Jennifer B. Braswell, Lorington Weller, Susan Maguire, Sonja Schwake, Bonnie Dziadaszek, Sherry Gibbs, Beniamino Volta, Brittany Frazier, Edwin Barnes, Megan Pitcavage, and Karen Nickels have also contributed greatly to our field and laboratory efforts. We especially wish to thank Dr. Brian Holland for analyzing our ground stone artifacts. Finally, we thank the inhabitants of San Benito Poité for welcoming us to their community and collaborating on our project.

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PURPOSEFUL DESECRATION OF A RULING ELITE RESIDENCE? RECENT EXCAVATIONS AT THE HERSHEY SITE, SIBUN VALLEY, BELIZE

Eleanor Harrison-Buck, Patricia A. McAnany, and Satoru Murata

Recent excavations at the Hershey site in the Sibun Valley, Belize shed light on the final occupation of the site core, specifically the ruling elite residential compound in Group A. A passageway between two buildings (Structures 506 and 537) was exposed and a high density of animal and human bone, smashed serving vessels, jade and other special artifacts were found on the floor surface of the passageway, along with large pieces of burned wood. Previous investigations revealed another passageway leading into Group A that held a similar deposit, with human remains of at least six individuals. Together, the evidence suggests that the elite residence at Hershey may have been purposefully desecrated as part of a violent conquest event at the end of the Classic period, around the beginning of the ninth century A.D. However, a number of the artifacts from the desecratory deposits at Hershey point to a northern derivation and are interpreted as possible “signature wares” of the perpetrators - Yucatec foreigners and/or local allies of northerners. The finds from the Sibun Valley suggest variable political and social responses to outside influences during the Late-to-Terminal Classic transition.

Introduction
This paper presents recent archaeological finds from the Hershey site in the Sibun Valley of Belize (Figure 1). These data suggest that political influence over the Sibun Valley was actively contested at the end of the Classic period. The long-standing hegemony of the Petén - attested in ceramics and architecture - appears to have been challenged by the growing power of the northern Yucatec region, likely Chichén Itzá, during the Late-Terminal Classic transition (ca. A.D. 780-900). In previous years of the Belize Archaeology Symposium (BAS), we have presented papers regarding the changing patterns of ritual architecture, specifically the introduction of northern-style circular shrines, which hint at the political re-orientation of the Sibun valley inhabitants (see Harrison-Buck and McAnany 2006 and 2007). Yet, the largest site in the Sibun Valley, Hershey, reflects Petén affiliations and displays none of the northern architectural traits. In fact, the only artifacts found at this site that reflect a northern Yucatec influence are associated with two terminal deposits that were excavated in the main elite residence at Hershey over the course of two spring field seasons in 2003 and 2007. Here, we discuss these two deposits, which contain high densities of smashed serving vessels and special exotic trade items accompanied by a large quantity of bone, including portions of at least six elite individuals.

The nature and timing of these large-scale and arguably desecratory deposits is similar to finds reported from other sites in the Eastern Maya Lowlands of Belize, including Colha (Barrett and Scherer 2005; Hester 1985; Hester et al. 1982), Dos Hombres (Houk 2000), Blue Creek (Clayton, et al. 2005; Guderjan 2004), and Minanha (see Iannone, this volume), among others. In the case of the Hershey deposits, we suggest that the evidence points to a brutal conflict with outsiders, which ended in the violent defeat of this prominent Sibun Valley site by the beginning of the ninth century A.D.
Recent Investigations at Hershey Site, Sibun Valley, Belize

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

Figure 2. Map of the Sibun Valley settlements (map prepared by B. Thomas).
The Sibun Valley as a Production Locale for Cacao: Local & Regional Perspectives

The Sibun River Valley is located in the mid-section of Belize (Figure 1). The river is linked to two important regions of the Maya area - the Petén just to the west where many large Classic Maya centers, such as Tikal and Naranjo, are situated, and the Caribbean Sea to the east that links the valley to important centers, such as Chichén Itzá in Northern Yucatán. Elsewhere, we theorize that core-periphery relationships involving the trade and/or tribute of luxury crops, such as cacao, existed between the Sibun Valley and the core areas of Petén and Northern Yucatán from Classic through Colonial times. The two core areas in which Classic Maya royal courts flourished were not zones of prolific cacao production. Consequently, we can assume that there was considerable political interest in the well-watered valleys of the Caribbean watershed and that this scenario would have would have encouraged production of this desired crop in peripheral drainage areas, like the Sibun Valley (McAnany et al. 2002:128).

We propose that this was the reason that these two core areas may have been competing for control over this particular “rural” production locale, specifically during the Late-Terminal Classic, a period of heightened factional competition and warfare.

The Hershey Site and its Relationship with the Petén during the Late Classic Period

The Hershey site appears to have maintained strong connections with the Petén region to the west, at least until the beginning of the Terminal Classic period (ca. AD 800). Strategically positioned at the base of the Maya Mountains in the upper reaches of the Sibun Valley, Hershey may have functioned as a connecting site to the powerful Petén region to the northwest (Figure 2; McAnany et al. 2002 and 2005). Ben Thomas (2005) has noted that the Hershey site core (Figure 3) exhibits an architectural plan that resembles Classic period Petén sites. More explicit evidence of Petén affiliations comes from a ceramic sherd recovered from Group B in the elite core center at Hershey (Morandi 2004; Figure 3). This sherd bears a portion of the crossed band emblem glyph of Naranjo surmounted by a late version of the “k’uhul ajaw” prefix (Stephen Houston, personal communication, 2003). Additional hieroglyphic evidence indicates the presence of Naranjo at both Xunantunich and Buenavista, two sites in the adjacent Belize River valley further to the northwest (Houston, Stuart and Taube 1992; Martin and Grube 2000:83; Taschek and Ball 1992;
Recent Investigations at Hershey Site, Sibun Valley, Belize

Yaeger this volume). From the hieroglyphic record of Naranjo, it is clear that the peak of this city’s political power was achieved during the late seventh through eighth centuries. At this point, we can only speculate that cacao production in both the Belize and Sibun River Valleys, especially near the Hershey site where cacao is still grown today, provided a catalyst for the political and economic interest stemming from the Petén.

Figure 4. Map of Group A showing locations of excavation units (map prepared by S. Morandi and modified by E. Harrison-Buck).

Operation 54

The political turbulence of the Late-Terminal Classic transition - a time when Northern Yucatec capitals strengthened as the influence of the Petén waned - is indicated in poignantly human terms in two recent excavations performed in the main elite residence (Group A) at the Hershey site (Figure 4).

In one excavation (Operation 54) - located in a narrow passageway that links the main plaza to a ballcourt area - we found over 1200 fragments of disarticulated human bone deposited directly on the passageway surface and adjacent plaza areas (Figure 5; Harrison-Buck and Cesario 2004; Harrison-Buck et al. 2007). While there is evidence of erosion on the bones, along with a good deal of rodent gnawing, the human bone is exceptionally well preserved. From the widely scattered clusters of bone, osteologist Rebecca Storey has identified the partial remains of six individuals: an 18 month-old child, a 6-7 year-old, a 9-10 year-old, two late adolescent/young adult individuals (one perhaps 18-24 years of age and the other 20-35 years of age), and one individual 40-60 years of age (Storey 2004). While these ages are preliminary, the age profile of the human remains bears an uncanny resemblance to an extended family grouping.

Overall, the broken, disarticulated nature of the entire assemblage of human bone lacks characteristics indicative of human sacrifice. Elsewhere Harrison-Buck, McAnany and Storey (2007) have suggested that the remains of these six individuals perhaps were originally entombed, left to skeletonize, and then later exhumed and scattered in the passageway during an act of conquest. Cranial fragments generally are lacking, although a portion of a skull - an individual who is perhaps 18-24 years of age - was found lying directly on the floor of the passageway (Figure 5b). This is the only individual, a probable male, who shows signs of cut marks indicative of sacrifice, although these marks could be the result of trophy-taking by the perpetrators. Overall, however, there is very little evidence of cut marks and fresh bone breaks on the other five individuals that would be indicative of sacrifice. Of the 42 teeth recovered, there are 28 loose premolars and molars. These teeth are much more likely to fall out of skeletal mandibles than fleshed ones and support the notion that the bones were skeletonized when they were scattered in the passageway. Although we have not excavated any disturbed tombs at Hershey, there is a series of disturbed coarse-masonry
“rooms” located high on the western flank of the main pyramid in Group A not far from the passageway.

Several teeth from different individuals in this sample, display “T”-shaped filing patterns and drilled holes for the missing inlays. The same filing pattern was found on an isolated tooth with an intact jade inlay, which was found sealed beneath the passageway floor in a context that suggests a dedicatory cache rather than a termination ritual. Tooth modification is not necessarily an indicator of high rank (see Whittington and Reed 1997).
However, the dental modifications of these individuals do point to their elite status, privileged to display the same “T”-shaped incisors as K’inich Ajaw, the sun god, framed by possible jadeite inlays on their canine teeth (Harrison-Buck et al. 2007:79). A similar filing pattern among these individuals - who may represent the ruling line at Hershey - suggests a measure of longevity in the practice of dental modification at this site.

That these clusters of human remains represent the aftermath of despoiled ancestral tombs is suggested by a number of finely-made smashed ceramic vessels and seven marine shell ornaments (two shell tinklers, a tubular bead, a circular perforated bead, a perforated shell, and two shell pendants) that were associated with the bone clusters. These findings may represent burial accoutrements originally accompanying the elite tombs that were scooped up when the bones were exhumed. Other special-purpose artifacts were recovered from the passageway deposit, including several spindle whorls; some carved animal bone, censer material, and the remains of one or more drums. Diagnostic ceramic material and associated radiocarbon dates suggest that the deposit dates to the early ninth century (ca. A.D. 830) or the Terminal Classic period. The content and composition of the deposit, coupled with its location, physically blocking access into the
main elite residential compound, is similar to deposits described elsewhere by Mock (1998a) and others as ritual termination or desecratory deposits. Iannone (this volume) describes a similar deposit at Minanha, consisting of thick artifact dumps that physically block the entrance to the elite residence. He interprets the physical desecration of the elite household at Minanha as the symbolic termination of elite culture at this site. Similarly, Yaeger (this volume) interpret the ritual termination of the ruling elite residential architecture at Xunantunich as the overthrow of the royal elite family, who perhaps originally came from Naranjo.

The desecratory termination deposits, specifically those from Hershey, are strikingly similar to those found at Aguateca in Guatemala, particularly in terms of the content and context of the deposits (see detailed descriptions of the Aguateca deposits in Inomata 2003). Like Hershey, the royal elite residence at Aguateca was selectively destroyed through a series of termination rituals. Inomata (2003) links the large-scale destruction to warfare inflicted by outsiders, who caused a sudden abandonment of the ruling elite at the beginning of the ninth century (Inomata 2003:46). The nearby site of Dos Pilas also shows evidence of being politically defeated by outsiders around the same time, ca. 830 A.D. (Palka 2003:123-124). At both Aguateca and Dos Pilas, evidence of expedient defenses walls surround the main palace compounds and these fortifications suggest that warfare became increasingly aggressive by the end of the Classic period and that the ruling elite were the main target of outside attacks (Inomata 2003:59; Palka 2003:Fig. 9.2). At Hershey, a low wall built of recycled stones - which served to partially block the entrance to the passageway into the main elite compound - was exposed in a southern extension of Operation 54 (Square D) during the 2007 field season (Robinette 2008). Similar to defensive walls found elsewhere in the Maya Lowlands (Demarest et al. 1997; Suhler et al. 2004:472; Webster 1979), it appears to have been constructed expediently and without regard for permanence and construction quality. Based on the topographic map of Hershey (see Figure 4), another similar wall may exist in the northeastern corner of the main plaza of Group A, serving to block partially another narrow entryway into the elite residence. These walls at the entrances would have made access into this already restricted plaza much more tightly controlled.

Additionally, a linear ditch feature just north of Group A also may have served some type of defensive function for Group A. The linear ditch feature runs the length of Group A and is in line with the orientation of the site (see Figures 3 and 4), suggesting that it is an ancient feature rather than a result of modern excavation. A substantial heap of compact clay was exposed in the northern part of Operation 58 and probably represents back dirt from the excavation of the ditch. The deposit of clay was overlying the final phase of Structure 506, along the structure’s northern edge (see description of Operation 58 below). It is difficult to say with certainty whether the back dirt pre or post-dates the collapse debris falling from Structure 506 and more excavation is necessary to clarify the sequence. However, it is conceivable that the linear ditch and wall features were quickly constructed prior to invasion in an attempt to protect the main elite residence. Further excavation may reveal that the entire elite residential compound was encircled by some kind of defensive construction, similar to the palisade walls found at other Lowland Maya sites, including Dos Pilas and Aguateca in the Petexbatun (Demarest et al. 1997; Inomata 2003; Palka 2003), as well as
numerous sites in the Northern Maya Lowlands, such as Xkanha (Suhler et al. 2004:472), Yaxuna (Suhler et al. 2004:Fig. 20.10), and Becan (Webster 1976), among others (Webster 1978).

**Operation 58**

Further excavation in the elite residence at Hershey during the spring of 2007 yielded another large deposit suggestive of desecration and termination of the ruling elite household at Hershey. Across the plaza on the far northern side of the main elite compound, a 6 x 6 m excavation unit, referred to as Operation 58 South, was placed over a portion of Structure 506. Another unit (Operation 58 North) measured 6 x 4 m and was placed along the northern side of this structure (Murata, Gonia, and Harrison-Buck 2008 [Figures 4 and 6]). This structure appears to be the main elite residence in the compound and contains surface remains of a large quantity of boulder and cobble debris (see Square M in Figure 6, for instance, which shows the large rubble debris with no clearly delineated walls). The large boulders made excavation challenging and only portions of the north and south units were ultimately excavated, as demarcated in Figure 4. Further excavation in Square J on Structure 506 revealed the architectural remains of walled rooms on the surface of the large platform structure. The walls and floors are exceptionally disturbed and suggest that these buildings may have been partially dismantled and perhaps covered over with the large, uncut limestone boulders during a desecratory event. Vault stones were not apparent in the debris, and the buildings may have consisted of low masonry walls covered with perishable superstructures.

Operation 58 also exposed another narrow passageway between Structures 506 and 537—the latter a smaller superstructure situated on a western extension of the platform that supports Structure 506 (refer to Figure 4). The cross-section of Operation 58 North (Figure 7) shows the construction sequence. In its latest phase, Structure 506-1st comprised low masonry walls with a series of interior rooms, one of which was exposed in excavation (Square J in Operation 58 South). The interior rooms contained plaster floors and were probably covered with a perishable roof structure. An earlier phase, Structure 506-2nd, also was detected, but time did not allow for substantial investigation of this earlier construction. The northwestern corner of Structure 506-1st was exposed in the southwestern corner of Operation 58 North in Square D, revealing the remains of a finely plastered platform structure (Murata et al. 2008). Additionally, ceramic material that may correspond with this earlier construction phase was collected from underneath the floors of the interior rooms in Square J of Operation 58 South. Some time after this initial structure was built, the platform lining the northern edge of Group A was expanded to the west and Structure 537 was built. Clearly post-dating Structure 506-2nd, this building was probably used at the same time as Structure 506-1st during the final occupation of Group A.

![Figure 7. Cross-section of Operation 58 South, showing two discrete construction phases, Structures 506-1st and Str. 506-2nd (illustration by E. Harrison-Buck).](image-url)
Like the passageway in Operation 54, a rich layer of artifacts was found covering the passageway surface within Operation 58 (Figure 6b). Many of the artifacts, including a large amount of bone, were point-plotted using a total station (Figure 6a). Although osteological analysis has not yet been carried out, human bone is readily identifiable. Some of the bone deposits were found associated with a series of shallow pit-like features that were intruding into the floor surface of the passageway (Figures 6c). Rather than burial features, the pits appear to be the result of purposeful pitting of the floor; they contained large quantities of smashed, partially reconstructable vessels and other artifacts. Like Operation 54, the excavation of the passageway between Structures 506 and 537 revealed a high density of finely-made serving vessels. Ceramics were found smashed throughout the narrow corridor and were associated with the remains of other items presumably owned by the elite inhabitants, including worked jade and marine shell, obsidian blades, and fragments of groundstone, several complete netweights and a number of celts. Many of these artifacts were point-plotted in the field and are shown in Figure 6a precisely where they were found on the surface of the passageway. Intermingled with the artifacts was a high density of large burned pieces of wood found strewn about the passageway floor. It is conceivable that the charred wood represents the remains of one or more of the perishable buildings mounted on top of Structures 506 and 537 that were burned during this final act of desecration in the elite residence.

**Notable Finds from Operations 54 & 58**

Notable among the terminal debris and disarticulated bone in Operations 54 and 58 at Hershey were several objects that show a northern Yucatec influence, including a sherd with a trickle decoration similar to Sotuta ceramics from Chichén Itzá (Figure 8a-b; see other examples in Smith 1971). Additionally, a gouged-incised spindle whorl was found that displays a bird motif, which is stylistically similar to others found at Balankanche Cave, located 4km west of Chichén Itzá (Figure 8c-d; from Andrews 1970: Figures 38a-I and 39a). In Operation 58, a piece of Pachuca green obsidian was found in association with the passageway floor deposit. In Belize and throughout most of the southern Maya Lowlands, Ixtepeque and El Chayal (derived from Guatemala) are the two primary sources of obsidian found in the Late and Terminal Classic periods. On the other hand, Pachuca green obsidian (derived from central Mexico) is strongly represented at Chichén Itzá in the Northern Lowlands during this time (Braswell 1998; Braswell and Glascock 1995). Additionally, several vessels found in the Operation 54 passageway are pyriform shaped vessels, which have stronger modal ties to the north rather than the Upper Belize Valley and Petén regions to the west. Notably, artifacts showing Yucatec influence at Hershey are restricted to the desecratory deposits in the elite residence. Trade items stemming from Yucatán have not been identified in any other contexts at Hershey and point to a purposeful deposition in this context, which can be interpreted as a conquest event of the site core.

**Discussion**

Artifacts stemming from Northern Yucatán that are associated with the large-scale termination deposits exposed in the elite residence at Hershey could represent so-called “signature wares” of the perpetrators. Stanton and Gallareta (2001:230) suggest that when trade items, such as ceramics, are found strictly in context reflective of desecratory termination
rituals, they may indicate “a particular class of ritual feasting that occurred after conquest events and violent internal factional conflicts” (see also Bey 2001). In contrast, they suggest that when foreign trade goods are found in archaeological contexts, such as caches, burials or non-destructive feasting deposits, they may suggest gift-giving and alliance with an outside power (Stanton and Gallareta 2001:230). Using this model, we propose that a high density of smashed serving vessels, including at least one northern import, and other objects indicative of northern influence, such as Pachuca green obsidian, may have been used, and perhaps specially manufactured for, conquest feasts at the Hershey site that were then ceremonially smashed and discarded in the

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Figure 8. Trickle ware (a) imported ceramic from Hershey (photograph by P. A. McAnany); (b) comparative example of Sotuta slateware (drawing after Andrews 1970:Figure 35a); (c) spindle whorl with bird motif from Operation 54 (photograph by P. A. McAnany); (d) comparative examples from a cave associated with Chichén Itzá (drawing after Andrews 1970: Figures 38-39).
context of the elite residential compound as part of a larger ritual - a practice that Stanton and Gallareta (2001:232) argue was “designed to ‘kill’ places or objects associated with defeated enemies.”

Elsewhere in the valley, Yucatec-style ceramics and architecture, namely circular shrines - smaller versions of the Caracol at Chichén Itzá - are found at three sites in the middle and lower reaches of the Sibun Valley (Harrison-Buck 2007). These northern traits are introduced at approximately the same time as the elite residence in the Hershey site core experienced the event described herein. Unlike Hershey, sites in the middle and lower reaches of the valley continued to thrive throughout the ninth century A.D. At Hershey during this time, the ruling elite appear to have been overthrown, possibly by aggressors from Northern Yucatán. The termination deposits at Hershey show a large quantity of human bone and are similar to other deposits from the Maya area, described elsewhere as representing “purposeful disturbance and/or desecration of elite burials as well as the remains of ritually sacrificed elite inhabitants of a Maya community” (Pagliaro 2001:80). Tomb desecration, as well as the sacrifice of elite individuals, is not unknown for the Maya area (Ambrosino 1997; Mock 1994 and 1998b; Schele and Freidel 1990). Scholars have argued that dis-entombing elite ancestors served as a symbolic act of conquest that sought to undermine the legitimization of a royal ancestral line (Ambrosino et al. 2001:119-120; Freidel 1998:192-193; Mock 1998b:118-119; Pagliaro et al. 2001:80-81; Story 2005). At the northern Yucatec site of Yaxuna, evidence of a ransacked tomb and extensive site destruction in the main acropolis is attributed to a warring event between Yaxuna and Chichén Itzá in the Terminal Classic period (Suhler and Freidel 2003; Suhler et al. 2004; Freidel 2007) and is perhaps analogous to the termination deposit uncovered at the Hershey site.

Data presented herein shed light on the Sibun inhabitants and their divergent political and social responses to outside influences - the Petén and northern Yucatán - as they found themselves enmeshed in the larger web of competing political spheres during the Late-to-Terminal Classic transition.

Concluding Thoughts

Evidence from the Hershey site excavations points to a strong relationship with the Petén regional center of Naranjo during the Late Classic period that may have been similar to Xunantunich and Buena Vista in the upper Belize Valley (Houston, Stuart and Taube 1992; Martin and Grube 2000:83; Taschek and Ball 1992; Yaeger this volume). Like Xunantunich, Hershey displays its largest monumental construction, often built in a single episode, during the Late Classic period and shows architectural affinities with the center of Naranjo. Similar to Xunantunich and Buena Vista, Hershey also yielded glyphs comprising the Naranjo emblem glyph. Elsewhere, we (Harrison-Buck, McAnany, and Storey 2007) suggest that Naranjo may have politically dominated these sites in the Belize and Sibun Valleys in an effort to control the production of cacao and the circum-Maya Mountain trade routes. In contrast, sites in the lower and middle reaches of the Sibun Valley show evidence of Northern Yucatec influence in the form of northern-style shrine architecture and ceramics that have not been found at Hershey. These northern traits are introduced by the mid-eighth century and continue until the beginning of the tenth century. These finds suggest that an alliance relationship with northerners existed at sites in the middle and lower reaches of the Sibun
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Valley. Increased coastal trade, intermarriage, and/or small-scale migration stemming from northern Yucatán may be the result of outgrowth from regional centers, such as Chichén Itzá (Harrison-Buck 2007). At Hershey, northern-style artifacts are few in number and are restricted to a series of termination deposits in the main elite residence. Recent excavations of Operation 58 during the spring of 2007 exposed further evidence of termination deposits that can be interpreted as desecratory in one of the largest elite residential structures in Group A at Hershey. These data lend support to the notion of a conquest of the ruling elite at this site during the Late-to-Terminal Classic transition (Harrison-Buck, McAnany, and Storey 2007).

The archaeological remains show divergent responses to northern incursions in different parts of the Sibun Valley. The alliance relationships formed in the middle and lower reaches of the Sibun Valley resulted in sustained growth of these communities until the beginning of the tenth century AD. In contrast, the elite reaction at Hershey to outside influence suggests a contested relationship that led to a different outcome - the demise of the site center - by the beginning of the ninth century. Together, the evidence from the Sibun Valley supports a prevailing model for the Lowland Maya “in which powerful rulers forged inter-polity alliances, sponsored acts of martial aggression against other enemy polities, and generally sought to control territories from which highly desired luxury goods - such as cacao - might be procured” (Harrison-Buck et al. 2007:96). If warrior-merchants from the regional center of Chichén Itzá did infiltrate the Sibun Valley by Terminal Classic times, then evidence of incendiary violence might not be unexpected. Murals found at Chichén Itzá vividly illustrate large-scale martial campaigns with the burning and sacking of towns. Military societies, human sacrifice, and acts of conquest involving a great many participants characterize the art and iconography of this northern city and enabled this center’s broad hegemonic expansion during the Terminal Classic period (D. Chase and A. Chase 2004:20-21; Krochrock 1988; Wren and Schmidt 1991). The local material evidence from the Sibun Valley, coupled with the regional evidence from Chichén Itzá, suggests to us that the resources of the Belize zone - namely cacao - may have been actively contested at the end of the Classic period. As Suhler and colleagues (2004:483) has opined in reference to deposits interpreted as desecratory at Yaxuna: “clearly there was a price to be paid for living in a community, whether independent capital or vassal to outsiders, that was strategic in the commercial and political interests of regional powers.”

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7 LATE POSTCLASSIC RITUAL AT SANTA RITA COROZAL, BELIZE: UNDERSTANDING THE ARCHAEOLOGY OF A MAYA CAPITAL CITY

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The site of Santa Rita Corozal was the focus of major excavation at two points during the twentieth century, first by Thomas Gann and subsequently by the Corozal Postclassic Project. These investigations demonstrated the importance of this site during the Late Postclassic Period and confirmed that Santa Rita Corozal was one of the few Late Postclassic capital cities in the Maya lowlands that have been excavated. Arguably the ancient Maya city of Chetumal, the combined excavations at Santa Rita Corozal provide substantial information on site organization, socio-political structure, and the ritual organization of a late Maya community. These data have impact on Postclassic ceramic history, on interpretations of intra- and inter-regional exchange and economies, and on calendric ritual. These investigations also can be used to refine and refute interpretations based solely on ethnohistoric data. This paper provides a synthesis of Postclassic Period archaeological data at Santa Rita Corozal relative to ritual caching practices and katun celebrations.

Introduction

Corozal Postclassic Project investigations at Santa Rita Corozal were initiated in order to elucidate and evaluate four research areas: (1) the relationship between the Classic and Postclassic Period Maya; (2) the models used to describe Postclassic Maya society; (3) archaeological identification of ethnic groups; and, (4) the congruence between ethnohistory and archaeology (D. Chase 1982:1-18). Subsequent research focused predominantly on testing models related to Late Postclassic site, ritual, and social organization (D. Chase and A. Chase 1988).

Forty-four structures were investigated in the vicinity of Corozal Town from 1979 through 1985 under the auspices of the Corozal Postclassic Project. Nearly an equivalent number had been investigated by Thomas Gann at the turn of the twentieth century (Gann 1900; 1918). Both projects focused on the site’s largest remaining pyramid, Structure 7 (see D. Chase and A. Chase 2005). However, the majority of other investigation locales did not overlap. Limited survey, surface collecting, and test excavations were also undertaken by three short-term projects led by Ernestine Green (1973), Norman Hammond (Hammond 1973; Pring 1973), and Raymond Sidrys (1983). Thus, a substantial corpus of data has been gathered to effect interpretations of the site.

The first occupation at Santa Rita Corozal was during the Preclassic Period at approximately 900 BC, when the site’s ceramics appear to be equivalent to Swasey materials at Cuello (D. Chase and A. Chase 2006; Hammond et al. 1995). Evidence for occupation of the site is well documented from the Preclassic Period through the present day (D. Chase 1981; D. Chase and A. Chase 1988). While there is a long history of occupation at the site, the majority of archaeological investigations that have been undertaken have produced Postclassic remains – the subject of this paper (for an overview of excavations and the history of occupation of Santa Rita Corozal, see D. Chase and A. Chase 1988 and 2004).

By the time the Corozal Postclassic Project began investigations at Santa Rita Corozal in 1979, many of the site’s more sizeable constructions had been lost to urban sprawl and the majority of the remaining
Late Postclassic Rituals at Santa Rita, Corozal

structures were low-lying platforms and line-of-stone edifices, often barely visible (or invisible) prior to excavation (D. Chase 1990). Thus, the Corozal Postclassic Project investigations, more than those of Thomas Gann, focused on what appeared to be unimposing buildings. Upon excavation, however, these “humble” constructions ranged from single room building pads to multiple room residences. Most of these buildings also were found to have been integrated into formal residential plaza groups, something that often could not be discerned based on surface indications alone. The low-lying nature of the constructions and the expansion of modern Corozal Town over the ancient site mean that the site map is very incomplete and that the full formal expression of the public buildings that once constituted Santa Rita Corozal will never be known.

In spite of being embedded beneath modern Corozal Town, the quantity and quality of excavated materials from ancient Santa Rita Corozal (“SRC”) is impressive. An excellent indicator of the bountiful nature of the Santa Rita Corozal data is the number of effigy caches that have been recovered from the site. The 18 examples from Santa Rita Corozal compares well with the 17 known examples excavated at Mayapan during the Carnegie Institution of Washington investigations at that site (R.E. Smith 1971; A. L. Smith 1962). Perhaps even more impressive is the number of effigy cache or figurine vessels in these SRC caches. At 171 vessels, this total represents more than six times the 21 effigies or figurine cache vessels found at Mayapan (R.E. Smith 1971; A. L. Smith 1962; Milbrath and Peraza 2003). Apart from these caches, a substantial number of Postclassic interments also were recovered at Santa Rita Corozal and careful excavation and reconstruction of in situ debris has revealed an equally plentiful corpus of ceramic and other artifactual remains. For example, thirty-two (32) reconstructable vessels were recovered during the excavation of Structure 81, most from the floors of this important building (D. Chase and A. Chase 2000).

From an archaeological standpoint, perhaps the most interesting information from Santa Rita Corozal relates to Late Postclassic Period ritual organization. These data inform scholars not only about immediately pre-contact Maya practices, but also have a bearing on interpretations of earlier Maya remains and practices with regards to continuities and discontinuities.

Postclassic Caches at Santa Rita Corozal

Postclassic Period caches from Santa Rita Corozal are relatively abundant and, in contrast to most Classic or Preclassic Period caches, are somewhat easier to interpret and decode because they generally contain three dimensional figures as opposed to the abstract objects found in earlier caches. Nevertheless, symbolism is not always apparent.

At Santa Rita Corozal, caches appear to be located primarily in association with shrines. These shrines may consist of small free-standing buildings or may be incorporated into larger multiple room “palaces;” some shrines also may have been housed on taller substructures. In most cases, shrines appear to be located within or adjacent to residential groups. This follows Classic Period practices, as reported for Caracol (A. Chase and D. Chase 1994; D. Chase and A. Chase 1998), where caches are often located in residential groups and in special residential buildings. However, unlike many residential caches of the Classic Period, the function of most Postclassic caches does not appear to be related to ancestor veneration. Instead, Postclassic caches appear to relate to the observation and celebration of the calendar ritual. This
becomes particularly apparent when historic descriptions, Maya codices, and caching patterns are compared (D. Chase 1985a, 1985b).

Late Postclassic modeled figure caches are well known from Santa Rita Corozal due to the work of both Thomas Gann (Figure 1) and our own Corozal Postclassic Project (Figures 2-5). Gann (1900, 1911, 1914, 1918; Gann and Gann 1939) found 7 late effigy caches at the site in 7 different constructions (Structures 2, 5, 6, 24, 25, 26 and 27). While these excavations are summarized elsewhere in greater detail (D. Chase 1982: 29-74), the caches are referenced below relative to their location and numbering in Gann’s 1900 report.

The Structure 2 cache found by Gann consisted of a Santa Unslipped urn, ten painted pottery figures, and two “leaf-shaped” flint spear points (Gann 1918:680-81; D. Chase 1982:37-9). The pottery figures were hollow with ceramic stoppers covering holes in their backs. Gann reported that the modeled figures consisted of 4 tigers, 5 turtles, and a double-headed alligator (one of the alligator heads also portrayed a human head inside its jaws). One of the turtles and the double-headed figure were located above the urn; the other figures were located about it. The word “turtle” is used loosely by Gann and actually refers to a composite creature with a human head between animal jaws.

The Structure 5 cache (Gann 1900:682-3; D. Chase 1982: 39-40) consisted of a Santa Unslipped urn and lid that contained a painted ceramic double-headed “alligator.” Human heads protruded from both sets of alligator jaws.

Gann’s Structure 6 cache was also localized within a lidded ceramic urn (Gann 1900: 683-5; D. Chase 1982: 41-2). This urn, however, had three supports (or feet). Within it were 19 figures: 4 tigers, 8 “alligators,” and 4 humans covering their faces with veils, 1 double-headed alligator similar to that from Structure 2, 1 diving figure attached to a small vessel, and 1 bird.

The Structure 24 cache also was localized within an unslipped urn and lid (Gann 1918: 59-63 D. Chase 1982: 50-52). It consisted of 49 modeled and painted ceramic figures: 4 warriors, 4 standing figures, 4 lizards, 4 alligators, 4 snakes, 4 birds, 4 “dragon-like” creatures, 4 tigers, 14 quashes or pisotes, 3 seated humans undergoing penis perforation, and 1 ceramic penis along with beads of jadeite and spondylus, as well as a perforated alligator tooth. Thus there were 9 sets of 4 figures each, plus 14 pisotes.

Gann’s (1918:63; D. Chase 1982: 52-54) Structure 25 investigations located a single modeled and painted ceramic alligator with a human head protruding from its jaws and two jade beads within it.

The Structure 26 investigations (Gann 1918:66; D. Chase 1982: 54-55) produced an urn with handles and a lid as well as 20 modeled and painted ceramic figures: 3 warriors, 1 seated human perforator, 4 alligators, 4 dragons, 6 quashes or pisotes, and 2 “serpent-like” creatures. No published illustrations of these figures exist.

The Structure 27 cache (Gann 1918:70; D. Chase 1982: 55-56) consisted of 2 small ceramic vessels. One of these had a handle on either side. The other had three supports and a modeled and painted human face. The effigy vessel held one green stone and one red shell bead.

Corozal Postclassic Project investigations at Santa Rita Corozal encountered ceramic caches dating to the Postclassic Period in 9 buildings (Structures 36, 37[2], 58, 81, 183, 213[2], 215, 218, and Platform 2[2]). Of 12 caches recovered in
Figure 1. Effigy caches and figurines recovered by Thomas Gann at Santa Rita Corozal. The effigy vessels and figurines shown here represent his entire published corpus.
Figure 2. Ritual caches and vessels recovered by the Corozal Postclassic Project: a. Structure 213; b. Structure 218; c. Structure 215; d. and e. Structure 37; f. Structure 58; g. Structure 36; h. and i. Structure 81; j., k., and l. Platform 2.
Figure 3. Ceramic figurines recovered by the Corozal Postclassic Project: a.-f. Structure 183; g.-k. Structure 213.
these constructions, 11 contained effigies (D. Chase 1982; D. Chase and A. Chase 1988). All were photographed and carefully recorded in situ. They include both multiple figure and single composite figure caches. The figures recovered in the Gann and Corozal Postclassic Project excavation samples are similar, but not identical. There is also variation in the composite figures (as described below). Special deposits, including both burials and other non-effigy caches, were also encountered in other investigations.

A construction core cache in Structure 36 (Operation P9) consisted of two Cao Modeled cache figures (D. Chase 1982: 183-184, Fig. 4-10; D. Chase and A. Chase 1988: 37-38). Both were modeled and post-fire painted. One vessel was found inside the mouth of the other. The exterior vessel is a Cauac monster with serpents emerging from either side of its mouth (Figure 2g). The interior vessel portrays a deity emerging from a horned jaguar which is in turn emerging from a snail shell. The interior vessel was hollow and had a stopper over the hole in its back, but there were no preserved offerings inside it.

Investigations into Structure 37 produced two Postclassic Period caches (D. Chase and A. Chase 1988: 39-40). A small cup with a diving god on its front (Figure 2d) and three stingray spines were found near the southeast corner of the building substructure. Dug into the core of the building was a second cache. Inside an unslipped urn and lid was yet another diving god figure (Figure 2e). It held offerings in each hand. The paint is exceedingly well preserved showing that the stoppered hole in the back of the diving god also served as the mouth of yet another creature with maize attributes. Inside the hole were pieces of spondylus shell, jadeite, and gold foil.

Structure 58 rested on Platform 1 and was the locus of substantial ritual activity during the Postclassic (D. Chase 1982: 189-227; D. Chase and A. Chase 1988:114-16). Besides a series of late burials, two caches were recovered. The earliest cache, consisting of animal bone, was placed prior to the earliest Postclassic construction. Carbon from this deposit indicates that the initial Postclassic building was constructed prior to AD 1400. A modeled cache was encountered barely below the surface and consisted of a Santa Unslipped olla and Rita Red dish that enclosed a Cao Modeled effigy vessel (Figure 2f). While distinct, the modeled effigy combined the deity, horned jaguar (or bee), and shell elements (also seen in vessels from Structures 36, 81, and 218). Within the hole in the back of the modeled figure were two turquoise pieces and a jadeite bead.

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Structure 81 was a multiple room residence that probably served as a locus for pulque ceremonies and for prognostication (D. Chase 1982: 240-288; D. Chase and A. Chase 1988: 17-25). Below the back wall of the Late Postclassic Period shrine in Structure 81 was placed a black-slipped bird effigy of apparent non-local origin (Figure 2h). Centrally located in front of the Structure 81 altar, a later cache was intruded into the floor. Two unslipped vessels encased yet another example of deity
emerging from a shell (Figure 2i). It is nearly identical to the one encountered in Structure 36, except that more post-fire paint remained intact on its surface.

Figure 5. Two of the four bacab figurines from a cache in SRC Structure 213.

A cache uncovered in Structure 183 consisted of a lidded urn containing 28 figurines (D. Chase and A. Chase 1988: 56-59). These were carefully placed so that each of the four similar items was evenly spaced from the others. Four warriors with shields and spears (Figure 3a,b,c) were cardinally located within the center facing outward. Two of these warriors (those facing east and west) had human faces; the other two (those facing north and south) were portrayed as deities. Between them were four women with veils or mantles held over their faces (Figure 3d). Also carefully placed in similar fashion were 4 jaguars (Figure 4), 4 alligators (Figure 3f), 4 sharks (Figure 3e), 4 snakes, and 4 birds. Carbon inside the urn yielded a date of A.D. 1538±70.

Three Postclassic Period caches were uncovered in Structure 213 (D. Chase and A. Chase 1988: 47-48). An unslipped urn capped by an upside down ladle incensario centered the most elaborate of the caches. The urn was surrounded by sixteen modeled ceramic figures. Four deer (Figure 3h), 4 dogs (Figure 3j), and 4 pisotes (Figure 3g) were south of the urn. Four bacabs performing penis perforation while standing on sea turtles (Figure 5) were found nearly evenly spaced around it. Centered within the urn was a figure seated on a stool blowing on a conch shell (Figure 3i). Below him was a single triangular piece of jadeite and 4 small shells. Inside the urn, around the central seated figure were placed 4 male monkeys (Figure 3k) and 4 female creatures. In front of Structure 213 two other caches were recovered. One consisted of a single turtle effigy (Figure 2a) containing two small jadeite beads. The other cache consisted of turtle bone and one jadeite and one spondylus bead that had been placed inside an unslipped urn and capped by an inverted Rita Red tripod bowl. The association between identifiable turtles and Structure 213 in 3 separate caches is unusual and is reminiscent of the effigy turtle caches recovered from Mayapan (Smith 1971).

Structure 215 was in the same group as Structure 213. This building contained one of the most basic caches encountered (D. Chase and A. Chase 1988: 59-60), consisting of a small unslipped tripod cup capped by a large sherd (Figure 2e) and placed along the midline of the building. This kind of cache occurs repeatedly at Mayapan (Smith 1971).

A modeled cache in Structure 218 (D. Chase and A. Chase 1988: 59-61) consisted of a single (empty) hollow modeled ceramic figure similar to those from Structures 36, 58, and 81. Unlike these caches, however, a jaguar (or margay) head and paws encircled the human/deity face (Figure 2b). Like the others, the head is emerging from a snail shell.

A number of structures rested on and around Platform 2 in the northeastern
portion of Santa Rita Corozal (D. Chase 1982: 318-402; D. Chase and A. Chase 1988: 35-31). Among the items deposited to the south of the platform was a cache of three small ceramic cups. Each had a modeled face on its front. All wore earflares; two had the exaggerated teeth of “Chac” (Figure 2k). Similar cups (Figure 2j) were found elsewhere in the platform associated with a disarticulated interment, containing multiple subadults. These bones were located below a stone alignment that may have functioned as an altar. This deposit also contained a foot cup (Figure 2l), a small tripod bowl, several beads, and obsidian fragments. Thus, it may have also served as a cached offering. The cups with Chac faces are similar to ones recovered at Mayapan in caches and burials (Smith 1971).

Uayeb Rituals

Taken together, these caches provide reasonable insight into certain Late Postclassic ritual activities at Santa Rita Corozal. Several different kinds of modeled caches may be identified, specifically those that focus on one or two figures and those that contain multiple figures in a single cache. Single or double figure caches generally portray either a diving god or one of two composite figures, each of which contains a human or deity projecting from within the jaws of another creature – either a horned jaguar, or a bee (itself emerging from a shell), or an “alligator” or caiman.

We believe that the composite deity-jaguar/bee-shell figures served a similar symbolic function. We (D. Chase 1982: 588-9; D. Chase 1985a:122; D. Chase 1985b:228; D. Chase and A. Chase 1988: 73) have suggested that these figures represent the “angels” described by Landa (Tozzer 1941:143) who “descended and received the sacrifice” of the heart of a man or a dog that was offered during Kan year Uayeb ceremonies. That this association of composite figures with sacrifice was not limited to the northern lowlands is also suggested by an image from the Nuttall Codex that shows a similar figure descending to receive an animal heart (D. Chase 1985a: figure 11; Nuttall 1902). These have not been found in the same structures that contain multiple figure caches. Facial features of figures are similar to those thought to characterize Itzamna with only two dull protruding teeth on either side of the mouth and a bump above the nose. When paint is preserved there are scrolls and dots below the eyes.

Landa (Tozzer 1941: 141) described presumably similar angels as “painted,” “frightful to look at,” and as being symbolic of water. All of these descriptions easily fit these cache vessels with their vividly painted faces and conch shell bodies. While these angels are referenced specifically for the Kan years Uayeb rites by Landa, diving figures and perhaps the “angels” themselves were likely not limited to only these ritual events. Composite figures are present in other Postclassic Northern lowland contexts, specifically at Mayapan, Lamanai, and elsewhere in Belize. Diving gods are perhaps more widespread, being present on ceramic vessels (caches and incensarios) and as wall or building decorations in various Postclassic Period contexts (e.g., Madrid Codex page 35 [Lee 1975]; Mayapan – Winters 1955: Fig 3; Tulum – Miller 1982: Figs. 28, 37

Multiple figure caches contain clear quadripartite symbolism. This is apparent in the physical directional placement of figures in the caches as well as in the numerical repetition of specific cache figure types by multiples of 4 in both the Gann and the Corozal Postclassic Project sample. Single figure and/or artifacts are generally surrounded, covered, or elevated above multiple figures and artifacts. The specific
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figures, the focus on directions, and the number of items reinforce interpretations that these caches reflect directionality, calendric ritual, and specifically New Years or Uayebe rites.

There are four distinct Uayebe rites and four deities or bacabs to whom these rites are dedicated (Landa in Tozzer 1941: 138-139). We have suggested specific correlations among Landa’s descriptions, Madrid codex depictions, and archaeological contexts for several of these years (D. Chase 1982: 586-591; D. Chase 1985a: 118-124; D. Chase 1985b; D. Chase and A. Chase 1988: 71-75). Specific correlations among the Landa text, Madrid codex, and archaeology for Muluc year rituals include: the association of warriors, cloth, dogs or pisotes, and blood-letting (Table 1). The caches also include additional images that are not described or depicted in Landa or in the codices, suggesting that these activities may have been more varied than Landa suggests. Of interest also, is the actual timing of these Uayebe events and cache offerings. Were they made every year? Were they made at specific junctures of years? Were counts of these events kept? And, could the numbers and kinds of figures included in an offering be related to such a count?

By far the most common aspect of multiple figure caches is the 4 roughly cardinal and quadrant positioning conjoined with the placement of fifth elements in a position that is central, above, below, or surrounding other figures. This pattern is repeated in the caches found by both Gann and the Corozal Postclassic Project. It is seen clearly in SRC Structure 213 where a central seated figure sits above a single central jadeite triangle surrounded by 4 white shells and where the figure itself is surrounded by 4 male and female creatures, encased within an urn and lid, and then again surrounded by the other figures in the cache. Bacabs standing on the backs of turtles are positioned directionally around the world as represented by the urn and lid. It is also evident in SRC Structure 2 where a double-headed figure with a human head protruding from one set of alligator jaws and a turtle sit above a central urn that has paired figures on its 4 sides. The presence of carefully positioned and separated offerings conforms with the directionality and zenith centering believed to be key to ancient Maya world view (D. Chase and A. Chase 1998; Mathews and Garber 2004) and with descriptions of New Year’s rites that require a sacred ceremonial passage from one of the four outskirt entrances of town to the central residences and then out again to a second exterior point (D. Chase 1985a; Coe 1965). Named Uayebe year bearers correlate with specific directions and colors. When combined with the presence of specific offerings mentioned in Landa’s Muluc year’s texts such as warriors, cloth, and dogs or with codex depictions of jaguar headresses, the picture appears to be complete. In question, however, are the specific patterns of individual caches. More figures are present than are directly accounted for by Landa’s text, perhaps reflecting the variation in ritual from year-to-year, but with patterning that begs decipherment.

Beyond directionality and centering, the second most common aspect is the occurrence of at least one figure with symbolic water associations (Table 2). Five multiple figure caches contain sharks, caiman, or “turtles”. Further, the majority of the composite figure caches incorporate conch shells, turtle shells, or caiman. Taube (1989), pointing toward the Santa Rita Corozal Structure 1 murals and one of the double-headed figures encountered by Gann, argues that the caimans not only represented the surface of the earth, but were also inextricably associated with calendric cycles.
and the passage of time, thus also bolstering the interpretation of these caches.

These water and surface figures may not only represent the underworld and the surface of the current world, as Taube (1989) and others have indicated, but also the ability to move or exist between worlds (D. Chase and A. Chase in press). Caiman and turtles may be seen at the surface of the water, shark fins penetrate the water’s surface, and shelled hermit crabs likewise exist on the shore and within the water itself. Significant in this juxtaposition also are the interments of caches in pits within the earth inside sacred built spaces and the placement of figures both within and surrounding cache vessels. In these contexts the urns and lids are not just containers, but also represent the surface of the world itself. And, cache figures are contained within or surround the “earth’s” surface forming a microcosm of the world at large.

Katun Rituals

Further associations between the archaeological contexts and Landa’s descriptions of calendar rites may be found in the distribution of incense burners at the site (D. Chase and A. Chase 1988: 72; D. Chase 1985a and 1985b). The majority of archaeological contexts from both Thomas Gann and the Corozal Postclassic Project investigations containing caches (particularly multiple figure caches) also encountered effigy incense burners. Twelve excavated structures can be associated with incense burners (Strs. 2, 5, 6, 7, 17, 25, 81, 92, 182, 183, 212, and 213); seven of these buildings had effigy caches. These incense burners generally were found in pairs of two, with one incense burner more complete than the other. In one case, the incense burners (Figure 6) were found in association with an enclosed shrine within a residence. This shrine also contained a false backroom that would have been suitable to hide a priest. Thus, the incensarios may have served as “talking idols” and the SRC shrine may have served like a similar oracle building recorded for Cozumel (D. Chase 1982: 300; Chase and Chase 2000).

The archaeological pattern of paired effigy incense burner matches descriptions of Katun idols that were paired (D. Chase 1982:591-3; D. Chase 1985a, 1985b; D. Chase and A. Chase 2004). Following Landa (Tozzer 1941:168), each idol “ruled” alone for a period of 10 years, but was paired with preceding and succeeding Katun idols for 10 years each, so that there was a transition of power from one to the other.

They had in the temple two idols dedicated to two of these characters. They worshipped and offered homage and sacrifices to the first, according to the count from the cross on the circle shown above, as a remedy for the calamities of their twenty years. But for the ten years which remained of the twenty of the first idol, they did not do anything for him more than to burn incense to him and show him respect. When the twenty years of the first idol had passed, he began to be succeeded by the destinations of the second and (they began) to offer him sacrifices, and having taken away that first idol, they put another in its place, in order to worship that for ten more years.

The archaeological distribution of paired censers conform with this ethnohistoric description of a limited number of Katun idols and the orderly passage of power from one Katun idol to the next in accord with the passage of time. However, given the occurrence of effigies in twos, the precise timing may have been different than Landa indicated. Whether the data may be used to support Rice’s (2004) structural model for Maya civilization as organized about the Short Count is still open for further investigation.

Both the descriptions and the archaeological patterns of calendar-
associated materials contradict descriptions by Landa and others (e.g., Freidel and Sabloff 1984) that suggest a model of dissipated family worship for the Postclassic Period.

They had such a great quantity of idols that even those of their gods were not enough: for there was not an animal or insect of which they did not make a statue and they made all these in the image of their gods and goddesses. (Tozzer 1941:110)

The common people also had private idols to whom they sacrificed, each one according to his calling or occupation which he had. (Relaciones de Yucatan 1898: 1:52).

Instead, the archaeology suggests a very orderly, purposeful, and regularized model of Postclassic ritual. Tedlock (1993) has suggested that the interpretation of Postclassic Maya ritual as consisting of blood sacrifice and a multitude of idols was exaggerated by Catholic priests seeking to find evidence of Maya non-conformance with the teachings of the Church. The archaeological data would bolster this interpretation.

Conclusion

In summary, investigations at Santa Rita Corozal show the possibilities for conjoining archaeology with historic materials in order to make interpretations about Postclassic ritual organization. These analyses suggest that ancient Maya ritual activities reflected both Uayeb and Katun rites. Postclassic effigy cache offerings can be correlated directly with descriptions made by Landa (Tozzer 1941) and with depictions in the Madrid Codex (Lee 1975) pertaining to rituals carried out particularly for the Kan and Muluc years (D. Chase 1985b). Thus, caches and the figures in them reflect offerings made for Postclassic calendric ritual rather than for ancestor veneration or for random idol worship. This is confirmed in the patterning found archaeologically related to paired incense burners that are believed to be associated with Katuns.

The similarity in cache contents and the pairing of incense burners suggests that the ceremonies surrounding the archaeologically-recovered rites were a significant means of communicating and performing unified ritual activity among the Postclassic Maya. While the specific offerings are quite different from those in the preceding Classic Period, the use of directionality and the centering of offerings are similar to epicentral caching practices at many Classic Period Maya sites (D. Chase and A. Chase 1998; Mathews and Garber 2004). Thus, while the venue for cache placement may have shifted from downtown to neighborhoods and while the symbolism of cache contents may have gone from abstract to explicit, general caching practices continued to serve much the same function relative to the community – suggesting as much continuity as difference in caching practices over time. These combined data and interpretations hint at the intricate social, ritual, and political organization of the pre-contact Maya and the importance of both context and large sample size for making interpretations.

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Our understanding of the nature and extent of the Postclassic Maya presence in northwest Belize is limited, although new discoveries hold important promise for advancing our knowledge of occupation and utilization during this period. Evidence for the Postclassic is derived from sites both below and above the escarpments. Minimal activity is observed in the form of apparent Postclassic monument veneration at larger sites such as La Milpa, Dos Hombres, and Chan Chich, and scattered discoveries of arrow points at various sites. The emerging picture is that Postclassic activities in northwest Belize above the escarpments were sparse while more significant settlement in the region and the rest of Belize was closely tied to lacustrine, lagoonal, or coastal resources. In this paper, we review the current evidence for Postclassic Maya presence in the Belizean portion of the Three Rivers Region and previous models for Postclassic political organization of adjacent areas. From these data and models, we attempt to explain the distribution of Postclassic activity and occupation, above and below the escarpments and offer avenues for future research.

Introduction

As is the case with most parts of the Central and Southern Lowlands, the visible features, mounds, and ruins of northwestern Belize primarily reflect the dense settlement and occupation of the area during the Late Classic and Terminal Classic period, particularly around A.D. 650–900. Most research in the area has focused on the Classic period fluorescence of Maya civilization and to a lesser extent on the Preclassic beginnings of Maya settlement.

Perhaps it is to be expected then that the Postclassic is both poorly studied and poorly understood; until recently, no investigators in northwestern Belize had specifically targeted the Postclassic in pre-field research designs. Gradually, as Postclassic discoveries are made in the course of other research, our knowledge of the occupation and utilization of northwest Belize after its Terminal Classic abandonment is improving as our excavated sample of sites increases.

In this paper, we examine the evidence for Postclassic Maya activity in northwest Belize and offer an interpretation of the settlement patterns in light of models for Postclassic occupation and activities for areas to the east. Finally, we identify unresolved questions surrounding the Postclassic and propose future avenues of research related to the period.

Setting

Northwest Belize falls into a geographically defined study area known as the Three Rivers Region (Figure 1), which encompasses adjacent areas of northeastern Guatemala and southeastern Mexico (Adams 1995; Scarborough et al. 2003). Three limestone escarpments define the region’s character. Increasing in height from east to west, the Booth’s River Escarpment, the Río Bravo escarpment, and the La Lucha escarpment form sharp topographic boundaries that separate the low-lying coastal plain of Belize from the Petén Karst Plateau, which extends west into Guatemala (Dunning et al. 2003). At a basic level, the La Lucha and Río Bravo escarpments divide the uplands, to the west, from the lowlands to the east.
The differences in topography - upland versus lowland - affect vegetation, soils, and available surface water. The Río Azul, which begins in the uplands in northeastern Guatemala, courses through a “series of interconnected bajos” that fill with water during the wet season, allowing the river to spread over a wide floodplain (Dunning et al. 2003:14). In the dry season, however, the river is reduced to a series of stagnant pools over much of its channel in Guatemala. The other two rivers, which flow at the base of escarpments rather than across the uplands, are perennial streams. The Río Bravo’s volume fluctuates dramatically between wet and dry seasons, but even during the driest parts of the year it still flows, fed by numerous springs emerging from the base of the La Lucha and Río Bravo Escarpments. Similarly, the Booth’s River is fed by spring discharge in the dry season and overland runoff during the rainy season. At only 10 m elevation above sea level, the Booth’s River’s principal channel “meanders amidst wide perennial wetlands” (Dunning et al. 2003:15).

**Brief Summary of Culture History**

Various aspects of ancient Maya settlement in the area as well as the culture history of the region have recently been reviewed in previous studies (Adams et al.
2004; Hammond and Tourtellot 2004; Houk 1996; Robichaux 1995; Scarborough et al. 2003; Sullivan and Valdez 2003), but a short summary is in order here. Ceramic data indicate that the area was occupied as early as the Middle Preclassic (800 to 400 B.C.); La Milpa (Sagebiel 2005), Dos Hombres (Sullivan 2002; Sullivan and Sagebiel 2003), and Chan Chich (Valdez and Houk 2000) were all occupied by this time as represented by Swasey and/or Mamom ceramics recovered from excavations (e.g., Sagebiel and Sullivan 2003). The area’s population grew markedly during the Late Preclassic as indicated by the widespread occurrence of Chicanel-age deposits at many sites in the area (Sullivan and Sagebiel 2003). La Milpa, Dos Hombres, and Chan Chich had grown into sizeable villages by the end of the Late Preclassic, and many more sites were founded as small hamlets by A.D. 250. During the so-called Protoclassic period (ca. A.D. 150 to 250), the area saw the emergence of paramount rulers as evidenced by royal tombs at Chan Chich and an unnamed small site in the lowlands east of Blue Creek (Houk and Robichaux 2003).

Despite the well-documented Early Classic at the nearby sites of Tikal and Rio Azul (Adams 1995, 1999) our picture of the first part of the Early Classic in the region remains somewhat murky with limited evidence for major construction or occupation at most site centers. New data on settlement patterns and the continued use of Late Preclassic ceramic styles into the Early Classic suggest that what was originally believed to be a major decline in population at the beginning of the Early Classic, may actually be, in part, a shift in elite location (Sullivan 2002; Sullivan and Sagebiel 2003; Sullivan and Valdez 2006).

Population levels rose to their highest during the second half of the Late Classic (Tepeu 2). During this time there was an increase in the number of large sites, the amount of monumental construction, the number of small rural communities, and the extent of agricultural modifications. The majority of ceramics recovered date to this period. By the end of the Terminal Classic the area was virtually abandoned with little to no evidence of rural occupation or construction at the majority of large sites (Robichaux 1995; Sullivan et al. 2007).

Evidence for the Postclassic

Evidence for ancient Maya Postclassic presence in northwest Belize can be subdivided into two categories: 1) occupation and 2) visitation. In both cases, only a handful of examples are currently known, but those examples are shaping our impressions about the Postclassic in the area and may provide future directions for research.

Evidence for Maya occupation - defined as construction of new buildings or reoccupation of old buildings or sites for an extended period of time - is known from La Milpa (Hammond and Tourtellot 2004), Akab Muclil (Padilla 2007), and Gran Cacao (Durst 1996). Evidence for possible Postclassic occupation also comes from the Birds of Paradise Fields. Of these four locations, only La Milpa is in the uplands.

La Milpa’s Postclassic occupation has been discussed by Kerry Sagebiel (2005) concerning the ceramics from the site. Of the total typed sherds from La Milpa, only one percent date to the Postclassic (Sagebiel 2005: Table 19.1). Sagebiel characterizes the Postclassic materials at La Milpa as evidence for reoccupation after the Terminal Classic abandonment of the center, rather than continuation of the previous occupation. The best evidence comes from Structure 86, a Yucatecan style house, dubbed Gair’s House, in the southwest corner of Plaza A. This structure, which Hammond and Tourtellot (2004:300) associate with “occupation of the ‘squatter’
Rethinking the Postclassic in Northwestern Belize

type”, contained Early Postclassic ceramics in the structure and in subfloor fill of the structure. Sagebiel (2005:709) speculates that reoccupation may have also occurred in Groups 48 and 49, northeast of Plaza A, and Group 88, the small acropolis attached to the southwest corner of Plaza A, and based on the presence of pottery similar to that found at Gair’s House. She also suggests that other small samples of Postclassic sherds may represent scattered reoccupation of groups east of the site core and near the far west bajo. She characterizes this reoccupation of the site as “rather short-lived and ultimately unsuccessful” (Sagabiel 2005:710).

Moving off the escarpments, Postclassic occupation has been documented in three areas. The small site of Akab Muclil, which was excavated by the Blue Creek Regional Political Ecology Project in 2005, has evidence of Early Postclassic construction on at least one building as well as occupation of other structures (Padilla 2007). The site, which is situated approximately 4 km from both Blue Creek and Gran Cacao, occupies a small ridge surrounded by generally swampy terrain near the Rio Bravo. It is not clear if the construction on Structure 1 or the use of other buildings at the site represents a continuation of the Terminal Classic occupation of Akab Muclil or a reoccupation of the site after a temporary abandonment (Padilla 2007).

Other possible evidence for Postclassic occupation and/or land use comes from Beach and Luzzadder-Beach’s (Timothy Beach, personal communication, June 2007) excavations in the Birds of Paradise fields. These fields are a ditched-field complex located along the eastern boundary of Programme for Belize Property and below the escarpment about 2 km to the south of Akab Muclil (Padilla 2007). During the summer 2006 excavations were begun at several agricultural features. The only sherd recovered dates to the Late Classic; however, radiocarbon dates on a wooden “structure” range between A.D. 1100 and 1200. Tim Beach suspects this “structure” may be a dam or the remains of a household and plans to investigate these possibilities more fully in the 2008 season (Timothy Beach, personal communication, June 2007).

South of Akab Muclil, Early Postclassic sherds have been found at the larger site of Gran Cacao, although it is not clear as to the extent of actual occupation at the site. The site is located on an upland surface surrounded by the lower areas of the Booth’s River Swamp (Durst 1996). Jeff Durst (1996) encountered Postclassic sherds at two separate operations during a test-pitting program at the site. Operation 31 investigated Structure 31-1, approximately 300 m southwest of the site center. Two of three excavation units yielded Postclassic ceramics in the upper one or two excavation lots. Operation 10 consisted of two excavation units investigating Structure 10-1, “located 1200 m northeast of the site center on the first terrace above the seasonally inundated bajo” (Durst 1996:54). Suboperation B, a 1-x-1-m unit “located on the outside edge of the north side” of the structure, encountered Early Postclassic sherds in the humus layer (Durst 1996).

The nature of Durst’s (1996) investigations at Gran Cacao, however, was such that no structural data were collected. It is therefore impossible to characterize the Postclassic occupation at the site in any detail. Based on similarities in setting between Gran Cacao Structure 10-1 and Acab Muclil, it seems that isolated groups near wetlands at the site may have been occupied by small groups of people during the Early Postclassic.

The second type of Postclassic presence in the area is visitation to the region by small groups staying for short
periods of time. All the known evidence for visitations comes from upland sites in the region including Río Azul, La Milpa, Dos Hombres, Chan Chich, Cha’wak Botob, the Gateway site, and the Medicinal Trail.

At La Milpa, Hammond and Bobo (1994) documented several apparent instances of Postclassic monument veneration and/or stela resetting. Early Postclassic utilitarian pottery, such as that found at Gair’s House and possibly contemporaneous with the use of that structure, was found at the base of Stelae 11 and 14 (Hammond and Bobo 1994:24) and Structure 5 (Sagebiel 2005:710). During the Middle Postclassic, pilgrims left Chac-Hunacti censers in and/or around Structure 1, Structure 5, and Stela 7 in Plaza A (Sagebiel 2005:710). During the Late Postclassic, other visitors to the site deposited a Chen Mul Modeled censer in front of Stela 12, and even later Historic period visitors left behind a glass bottle dating to ca. A.D. 1804–1834 in front of the same monument (Sagebiel 2005:710).

Of the 17 stelae investigated by Hammond and Bobo (1994) at La Milpa only six of them remain where they were originally set (Stelae 7, 8, 10, 11, 12, and 14). The majority of the remaining 11 stelae appear to have been moved since their original dedication. In the line of stelae running north of Stelae 7 and carefully positioned in front of the largest structure at the site (Plaza A/Structure 1), Stelae 6 and 3 appear to have been reset, the resetting of Stelae 1 and 2 was never completed, and Stela 17 is believed to be a “stela fragment re-shaped to serve as an altar” (Hammond and Bobo 1994). Hammond and Bobo (1994) suggest that this pattern may represent an interrupted ritual. Based on the incensario fragments associated with Stela 7 they suggest that the movement and resetting of the stela may have occurred in the Late Postclassic.

Similar evidence of monument veneration by pilgrims to the area has been documented at Dos Hombres, where a Postclassic incensario was excavated at the base of Stela 2 in Plaza B-1 (Houk 1996) and at Chan Chich, where a Lacandon censer was found on the summit of one of the buildings in the Main Plaza (Guderjan 1991). Adams (1999:148) reports “occasional visits about A.D. 1000 are evidenced by incense burners left in the ancient and deteriorating temples” at Río Azul; subsequently, Historic period Maya hunters and gatherers left “distinctive incense burners in the now fallen temples” at the site. In 2007, the remains of a Postclassic censer were found at the Medicinal Trail site (a small agricultural community in the La Milpa suburban area). In front of Structure B1, a 4–5-m high temple/shrine, three censer fragments were found just to the north of a looters’ trench placed where the central staircase would have been (Lauri McInnis Thompson, personal communication, 2007). A Postclassic “jaguar-shaped” plumbate foot was recovered by Stan Walling (personal communication, 2006) from a small site along the Rio Bravo Escarpment; however, there have not (as of yet) been any other Postclassic sherds associated with his excavations at this Late to Terminal Classic commoner residential site.

Finally, scattered finds of small, side-notched Postclassic arrow points at Dos Hombres (Fred Valdez, personal observation 2002), Chan Chich (Houk 1998), and at La Milpa by both Boston University (Sagebiel 2005:709) and most recently by Texas Tech University (Houk, personal observation 2007) provide another line of evidence for Postclassic presence in the uplands. These arrow points may be related to occupations at those sites, but could just as likely have been left behind by either Postclassic religious pilgrims or hunting parties.
Review of Models for Postclassic Activity in Northern Belize

Northwest Belize occupies a blank spot on most maps dealing with the Postclassic Maya. Jones (1989:Map 2) depicts the western boundary of the Colonial Dzulunnicob province passing through the eastern margins of the Three Rivers Region, but it is not clear upon what he based those limits (Figure 2). While Tipu was the Colonial capital of the province, Lamanai - 60 km east of La Milpa - also fell within Dzulunnicob according to Jones (1989:Map 2).

How the Dzulunnicob province was organized prior to Colonial times is not well known, but there are better data for settlement patterning from sites in northern Belize. Rice and Rice (1985) and Masson (2000) have identified a significant change in settlement systems during the 10th to 11th centuries as Postclassic populations settled aquatic-oriented locations in either new settings or upon the remains of earlier sites; in some cases, like Lamanai, settlements grew from existing communities. This same trend is seen in the Peten region as upland sites were abandoned in favor of riverine and lacustrine settings (Rice and Rice 1985). In northern Belize, Early Postclassic riverine settlements have been documented on the New River, the Rio Hondo, Rancho Creek, and Freshwater Creek (Masson 2000). These Early Postclassic sites “located in coastal, riverine, lacustrine, and other aquatic settings…appear affluent, prosperous, and integrated into an expanding, broad-ranging sphere of economic production and exchange” (Masson 2000:4).

Masson (2000:17) compares the Postclassic aquatic settlement to the Preclassic settlement patterns of the region, suggesting that “proximity to perennial aquatic sources permitted the greater autonomy and relatively more decentralized organization of Postclassic period settlement.” The Postclassic sites in these riverine and lacustrine settings are small when compared to the Late Classic ruins in the same region, suggesting that populations were much lower than in the preceding two or three centuries. Coupled with the settlement shift was a return to Preclassic-style subsistence patterns in which hunting and gathering took on a greater level of significance (Masson 2000).

Figure 2. Map of the Three Rivers Region in relation to Postclassic provinces. Map based on Jones 1989:Map2)
A Model for Postclassic Use/Occupation of the Three Rivers Region

The emerging picture of the Postclassic pattern is closely related to the natural physiography of the area, reflecting the strong dichotomy between the upland regions with only seasonally available water and the lowlands with perennial spring-fed streams. With the exception of a short-lived and unsuccessful Early Postclassic occupation at La Milpa, the uplands appear to have been largely devoid of ancient Maya presence. Provided that there were sufficient stands of trees present at the end of the Late Classic, once depopulated the upland areas may have been quickly reclaimed by the forest. The major centers, though quickly falling into ruin, were not entirely forgotten, as evidenced by monument veneration at Río Azul, La Milpa, Dos Hombres, and Chan Chich. Those same large sites were apparently also visited by small hunting parties, as is suggested by the discoveries of arrow points at various locations. At this time, it is impossible to determine whether or not the Maya leaving offerings at the base of stelae and on large buildings were the same ones dropping their projectile points at the sites, but our belief is that they represent different groups visiting the sites for very different reasons.

Off the escarpments, small groups were occupying a handful of sites situated near swampy areas with perennially available water. While these people apparently had a more diverse subsistence economy than their Late Classic predecessors, they were still utilizing the ditched field systems located at the base of the escarpments as evidenced by the recent work of Beach and Luzzadder-Beach (Timothy Beach, personal communication, June 2007). It is likely that the hunters exploiting the uplands were members of these small lowland communities.

We propose that these small sites, or small groups of people occupying one or two architectural groups at larger sites, are a western extension of the Northern Belize aquatic settlement pattern observed by Masson (2000) in northeastern Belize. The sites with evidence of Postclassic occupation in the lowlands, including Akab Muclil and the three areas around Gran Cacao, are all on natural rises surrounded by swampy terrain. It is perhaps worth noting that, while Lamanai is the next closest known Postclassic site, the Postclassic population of the Three Rivers Region may have been more closely linked to the occupants of sites downstream along the Rio Hondo. Canoe travel may have replaced overland travel in the area as the primary means of long-distance exchange and contact.

Unanswered Questions and Avenues for Future Research

While we are beginning to understand the nature of the Postclassic in the Three Rivers Region, there are still important questions that our current data leave unresolved. Masson (2000) enumerates a series of methodological problems we face when examining the Postclassic; chief among these are the difficulties that the nature of Postclassic occupation poses for identifying Postclassic settlement.

The significant evidence for Postclassic Maya presence in the Three Rivers Region is gained from occupational remains and visitation activities. Occupation is exemplified by minor architectural construction, often in the re-use of Classic period materials, and the distinctive ceramics of the Postclassic. Visitation activities are implied from censers often placed at the base of temples and from arrow points at several sites.

A primary issue that remains unresolved about the small sample of
Rethinking the Postclassic in Northwestern Belize

Postclassic occupation we have from the Three Rivers Region is whether or not the materials represent a continuity of occupation from the Terminal Classic or reoccupation of the sites by different groups. This is a fundamentally important question, but excavations to date have not been able to clearly determine the answer (e.g., Padilla 2007), although the generally accepted view is that the Postclassic occupations represent a reoccupation (e.g., Sagebiel 2005).

With the exception of some of the monument veneration activities at La Milpa (e.g., Hammond and Bobo 1994), our current temporal resolution for the limited Postclassic materials we have is not good. More effort should be made to separate Early from Late Postclassic materials when possible. An obvious limiting factor is the poor preservation of shallowly buried organic material, meaning encountering suitable samples for radiocarbon analysis is unlikely.

Despite the gaps in our understanding of the Postclassic presence in the Three Rivers Region, our preliminary model of Postclassic settlement can be used as a guide for future research into the time period. Small sites at the base of the escarpments are potential locations for Postclassic settlements. Carefully designed survey and shallow testing programs may be effective at identifying additional Postclassic sites without extensive excavations. Small excavation units around monuments at upland sites may be useful for finding evidence of pilgrimage activity in the uplands. Careful excavations of the topsoil and shallowly buried summits of mounds and the surfaces of plazas offer the best method for locating possible Postclassic reoccupation or short-term camps at larger sites in the uplands.

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

Valdez, Fred, Jr., and Brett A. Houk
This paper addresses the Postclassic sociopolitical organization of the Freshwater Creek drainage by presenting mortuary data from the island communities of Caye Coco and Laguna de On. During the Postclassic, Caye Coco witnessed the rapid construction of seventeen large platform mounds and the establishment of cemeteries in the courtyards formed by the newly erected platform mounds. While no architectural mounds were built at Laguna de On, a substantial population inhabited this island during the Postclassic Period and burials at this site were also interred in cemeteries. A sample of 51 Postclassic burials is discussed. Data on burial location, orientation and associated grave goods document a similar mortuary program from the two sites and suggest that the drainage formed an integrated cultural area during the Postclassic period. Higher inclusion scores for burials at Caye Coco are consistent with the larger architecture built at the site which provides evidence that this was the regional capital of a Freshwater Creek polity.

Introduction

This paper explores the Postclassic sociopolitical organization of the Freshwater Creek drainage in northern Belize (Figure 1). Along with the well-known Postclassic occupation of the Petén Lakes (Bullard 1970; Rice 1986, 1988; Rice and Rice 1985) and that of Santa Rita (Chase 1985; Chase and Chase 1988) and Lamanai (Pendergast 1981, 1988; White 1988) research carried out by Marilyn Masson and myself help document these relatively prosperous lacustrine locales in the Southern Maya lowland after the so-called Classic period collapse (Masson 2000, 2002, 2003; Masson and Rosenswig 2005; Rosenswig and Masson 2002). The Postclassic (1000-1520 A.D.) period in Mesoamerica marks a significant change in social and political organization from the preceding Classic era and up until recently has been one of the least studied half millennia of Maya past (Chase and Rice 1985; Sabloff 2007).

Excavations in the Freshwater Creek drainage have helped to refine the Late Postclassic ceramic types and have produced numerous AMS dates that confirm the

Figure 1. The Freshwater Creek drainage in northern Belize with sites where burials have been recovered by the Belize Postclassic Project.
occupation of these sites to the Posclassic period (Masson and Rosenswig 2005). Caye Coco and Laguna de On are islands in Progresso and Honey Camp Lagoons that were the local centers of Posclassic occupation in the Freshwater Creek drainage. A review the settlement and architectural evidence from these sites and mortuary data from 51 Postclassic burials excavated during the 1990s are discussed (Briggs 2002; Rosenswig 1998a, 2001).

Laguna de On Island was first excavated by Marilyn Masson for her doctoral project in 1991 and we later returned and excavated there in 1996 and 1997 (Masson 1997, 2000). The island measures 60 x 200 m and contains two small structures.

The site of Caye Coco is on an island that measures 400 x 600 m in the south of Progresso Lagoon where excavation were undertaken in 1998, 1999 and 2000 (Masson 2003; Rosenswig and Masson 2002). Research by Grant Jones (1989) suggests that this may be the site of Chanlacan that briefly enters the historical record as the organizing force behind a 1547 rebellion against the Spanish in Bacalar. The majority of materials excavated from the island date to the Late Postclassic period.

Numerous Postclassic platform mounds have been documented at Caye Coco, the largest of which is located at the center of the island (Rosenswig and Masson 2002). Most structures appear to have had the majority of their construction built in a single episode. Energy expended in architectural construction provides a baseline for assessing the comparative “cost” of each structure. Using Elliot Abrams’ (1994) estimates, each structure can be described in terms of the number of person days required to build it. When the quantity of labor to build a structure exceeded the maximum number of people who would have lived in it, this provides an indication of social status as non-residents would have had to be recruited to make up labor deficits. This was apparently the norm in Maya society and there are historical accounts documented by Roys (1972: 196) and Carmack (1981: 315) of Maya nobles petitioning the Spanish for labor to construct their residences. Assuming that structures were built in a single season, as the stratigraphy indicates, and that the building season lasted approximately 60 days, as Abrams suggests, then the number of people that would have been required to build any one structure would have far exceeded the number of people who lived atop these mounds (see Rosenswig and Masson [2002: 224-229] for a full presentation of these data). Labor requirements exceeded the number of people living on the island which is evidence of political power of the elite expending the labor of others to build their residences.

In summary, there was a settlement hierarchy in the Freshwater Creek drainage during the Postclassic period with a larger community at Caye Coco than at Laguna de On. We have also documented a difference in the architecture between these sites, as well as between the inhabitants of Caye Coco (Masson 2000: 74, 93-95; Rosenswig and Masson 2002). Settlement hierarchy, architectural differences and burials differences are the clearest indicators of social complexity (Rosenswig 2000). Masson (2003) has also documented economic differentiation between the two sites and greater quantities of prestige goods at Caye Coco (Masson 1999). In the remainder of this paper, I present the Postclassic mortuary patterns documented at these sites.

Freshwater Creek Burial Population

A total of 75 burials were excavated in the Freshwater Creek drainage (Table 1). I originally assessed the age and sex profiles
of the interred individuals and described their mortuary treatment (Rosenswig 1998a, 1998b, 2001). Subsequent analysis by Margaret Briggs (2002) for her Master’s thesis at the University of Houston has been more thorough. She has also undertaken a detailed inventory of pathologies as well as metric and non-metric traits. My discussion here is on the mortuary patterns of the 51 interments that date to the Postclassic period.

The Postclassic burial population is a fairly good reflection of expectations for a living population with comparable numbers of male and females. Age profiles are also a relatively good reflection of a living population except for the lack of infants and neo-natals. Eleven of 28 Postclassic individuals with tooth filing are all female. All of these 11 individuals have between four and eight incisor filed to points as opposed to the Terminal Classic individuals that have a more diverse form of filing and inlay. Female tooth filing is consistent with observations made by Landa who observed that Maya women in the Yucatan “…had the custom of filing their teeth leaving them like the teeth of a saw, and this they considered very elegant” (Tozzer 1941: 125). However, other Postclassic sites in the area do not have the same tooth filing traditions. At Chau Hiix the only sexed individuals with filed teeth were male (Havill et al. 1997: 93) and from Lamanai’s Postclassic burial sample of 51 individuals, approximately half of those with dental modification were male (Williams and White 2006). At Santa Rita not one of the 69 interred individuals show any sign of this custom (Chase 1997: 24) and neither did the 10 Postclassic burials from Tipu (Havill et al. 1997).

Overall health was good. However, as with most agricultural populations most individuals had carries and some had calculus build-up such as with an older woman from Laguna de On. Furthermore, of the 51 Postclassic interments, only a single individual from Laguna de On (LOI-16) had a healed parry fracture, which is an injury that suggests violence. Good overall health and little violence speak of a good quality of life for the Postclassic inhabitants of the area.

Laguna de On Island Interments

Twenty burials were encountered at Laguna de On most of which were documented near Structure 1 and in an adjacent area designated Cemetery 1 (Figure 2). Four Postclassic period primary interments were recovered from the rear (i.e., west) of Structure 1 and none of these individuals were interred with any grave goods. Cemetery 1 was encountered in an area near the center of Laguna de On Island at a location devoid of any structures. The Postclassic period inhabitants of the island artificially filled this area as part of the cultural modification of the island. Eight individuals were buried in this area during the Postclassic period. Burial 15 was interred in a seated flexed position with a single quartz bead.

Seated flexed burials placed within pits dug into bedrock are by far the most common burial position we have documented in the Freshwater Creek among Postclassic burial population and is present in 30 of the 41 burials for which body position was discernable. This position is common elsewhere such as an example from Santa Rita published by Thomas Gann (1918; and see Chase 1997: 22), Burials 7 and 8 are two young males also buried in seated flexed positions facing west. Another significant pattern is that none of the Postclassic burial pits encountered to date on Caye Coco or Laguna de On cut into each other. This indicates that either all bodies buried in a cemetery were interred within a relatively short period of time or that there was a lasting memory, perhaps aided by
Figure 2. Location of burials recovered from Laguna de On Island.

Figure 3. Location of Postclassic Burials recovered from Caye Coco.
some sort of surface marker, of previous interments. Either way, the placement of burials appears to be a precise and purposeful act that accomplished more than simply discarding of a dead body. Burial 17 was an older male who was also interred facing west in a seated flexed position. He was interred with a greenstone bead, part of a ceramic effigy, a Payil Red vessel and a carved peccary femur. This individual had the most grave goods of the 20 interments documented at Laguna de On.

Caye Coco Interments

At Caye Coco we have documented 31 Postclassic burials in three cemeteries along the north shore of this island site (Figure 3).

Cemetery 1

Cemetery 1 is located on the west side of the island, 15 m northwest of Structure 10 and approximately 4 m from the north shore. These burials were particularly well preserved as the clay in which they were interred in over the past centuries has kept the bone permanently wet. As a result, we were able to determine the sex of all adult individuals. During our first year of excavations we documented six burials in pits dug into bedrock within a single 2 x 2 m excavation unit.

Unlike at Laguna de On, many of the burials at Caye Coco contained grave goods including a complete Payil Red tripod vessel interred with Burial 3. In addition, burials 7 and 8, both adult, females, shared a third Payil tripod dish as the sole grave good. Large fragments of the same vessel were found in both burial pits and reconstructed later in the lab. Burial 7 was disturbed by the landowner, who removed the skull and possibly additional funerary materials from the pit.

In 1999 and 2000 we returned and excavated 6 more 2 x 2 m units. While we found more burials the density was not as high as the first year. Similar to Laguna de On, all burials in Cemetery 1 were interred in pits dug into bedrock in a seated flexed position. Furthermore, as at Laguna de On no burial pits disturbed other burials and by far the most common burial orientation here was also facing west. Burial PR1-13, an adult male, was interred with a carved bird fashioned from the columella of a conch shell, a complete Payil Red tripod dish and a chert biface. Cemetery 1 is the only locale at Caye Coco where we have documented Payil Red vessels included as grave goods.

Cemetery 2

Cemetery 2 was located in the central part of the island, approximately 30 m northeast of Structure 2 and 40 m from the north shore of the island. This cemetery was first encountered in 1999 and seven interments were recovered from three 2 x 2 m units. Six more burials were recovered during the 2000 season and all 13 interments were found within a 28 sq m area. The burial pits in Cemetery 2 are all above the level of the lagoon and the soil is well drained. The centuries of tropical rain have deteriorated the bone to such a degree that not a single epiphysis was preserved from any of these burials. Unlike the soft, clay like bedrock at Laguna de On and Caye Coco Cemetery 1, the pits at Cemetery 2 were dug through hard stone. The interments in Cemetery 2 were buried with more grave goods than any of the other burial areas.

The interment of an adult male PR1-30 was covered by 38 limestone cobbles and contained a drilled deer femur (similar to the drilled peccary femur found at Laguna in burial LOI-17), a Payil dish, a complete and unused obsidian blade, a painted mano fragment and 3 net weights. The remains
identified as PR1-35 consisted only of a collection of human teeth. The collection of ten teeth included three premolars and five molars with fully formed roots and very light wear, plus two unerupted M3s. No other skeletal material was found within this burial pit, so this very probably represents a cache. Fifteen limestone rocks covered the cache. Burial 29 was flexed on the right side with no grave goods. Burial 27 was seated, tightly flexed and interred with a net weight and a painted mano fragment. Grave goods were recovered with five other Cemetery 2 interments. Child PR1-19 was interred with a Santa Unslipped olla. This is the only child interred with grave goods recovered by the Belize Postclassic Project.

Burial 20 at Caye Coco was recovered from a pit measuring over 1 m in diameter and was by far the most elaborate of any burial context from our sample. Three large (60 cm high) composite incense burner vessels (two of which were reconstructed), one small unslipped olla and a complete lenticular biface were also placed in this grave. The censers had been broken in antiquity and a large, flat cut stone slab stela weighing approximately 30 kg was placed on them. Initial assessment did not determine the sex for PR1-20 but discriminant function analysis yielded probability of membership in the female group ranging from 99.95 to 100% (Briggs 2002).

Cemetery 3

Cemetery 3 is located at the north base of Structure 4. This cemetery was first encountered in 1998 and two burials were recovered from a 1 x 2 m unit. These were primary interments of adults (PR1-05 of undetermined sex, and PR1 – 06, female), each associated with a whole conch shell horn. During the 2000 season, another 16 sq m of excavation encountered only two more burials. This subsequent work revealed the primary interment of one adult (PR1-33) with no grave goods and the interment (PR1-37) of a child’s skull covered by three burned limestone rocks. It is possible that this child’s skull represents a cache, rather than a burial. However, it is equally likely that this was a primary interment whose postcranial materials were destroyed by the same environmental factors that resulted in the extremely poor preservation of the human remains in this area. All of these burials were in a very poor state of preservation as they were deposited in well-drained soils, similar to those described for Cemetery 2. In addition to these four interments, we documented two other pits dug into bedrock that contained no human remains but could represent burial pits where the bones had been removed.

Discussion

The most common Postclassic burial orientation at Caye Coco was west and of the 19 interments for which this could be determined, seven faced west and another seven faced southwest and northwest. This means that 74% (14/19) were facing westward. However, when the cemeteries are examined separately it is evident that the majority of these west facing burials are from Cemetery 1. West is the direction of the setting sun and, in Maya cosmology, is associated with death and the underworld (Gossen 1965). What is more unusual perhaps is that none of the burials in Cemetery 2 were facing west. Of the fourteen west facing burials, eight (i.e., 57 %) were from Cemetery 1 and this indicates that there were differences between the mortuary programs of the residents at Caye Coco. At Laguna de On, of the fifteen burials that orientation could be determined, seven faced west and another three faced southwest and northwest. Thus, 67% (10/15) of the Postclassic burials at Laguna de On faced westward. A west orientation was thus
shared by a majority of residents at the two Postclassic island communities. Further, only certain segments of the population at Caye Coco – a lineage, or other group of related individuals – shared this custom of burying the dead with those at Laguna de On Island.

Remember that the predominance of west oriented burials and the inclusion of Payil Red tripod dishes also distinguishes Cemetery 1 from Cemetery 2. Therefore, while our mortuary data may tell us something about vertical distinctions on an inter-site level, they also appear to be equally revealing of horizontal differences on the intra-site level (Tainter 1978).

Postclassic burials from each cemetery at Caye Coco are as likely to be interred with grave goods as not (Cemetery 1: 8/14 = 57%; Cemetery 2: 6/13 = 46%; and Cemetery 3: 2/4 = 50%). However, the two burials with the highest inclusion scores are both from Cemetery 2 (i.e., PR1-20 with six and PR1-21 with five). We quantitatively summarized and compared burials in terms of their inclusion scores both within (Figure 4) and between (Figure 5) sites. Grave inclusion scores were determined for each burial based on the remains interred along with each body. The inclusion scores are counts of artifact types included in each grave. Therefore, the inclusion of 1 or 5 net weights would both receive a scoring of 1. This method minimizes counting multiple similar inclusions that are associated with each other as other objects (see Rosenswig [2000] and Cannon [1989] for a similar approach). It is not always easy to determine what was intentionally included with a burial and what was not. Items such as net weights and spindle whorls are routinely found in general at the midden on the island and they may well have been added along with basket loads of earth used to inter the burials. Not included were the numerous lithic flakes and ceramic shards recovered from all burial lots. Rosenswig (2001: Appendix 1) provides a list of the grave inclusions used to generate these scores.

Grave inclusions also provide a hint as to the ritual unity of the inhabitants of the Freshwater Creek drainage. The three Payil tripod dishes from Cemetery 1 at Caye Coco and the carved animal femur from Cemetery 2 are similar to LOI-17, the individual with the most grave inclusions at Laguna de On Island. Therefore, despite the relative paucity of grave inclusions at this site, commonalities in customs of burying the dead are evident. Burial ritual can be one of the most important life crisis event and a potent occasion to express social affinities. Similarities in grave inclusions along with burial orientation, position, use of pits and cemeteries all indicate that the members of Caye Coco and Laguna de On Island were in contact and expressed a significant degree of cultural unity. Briggs (2002) non-metric analysis also indicates that some of the individuals from these two sites were related to each other.

One thing evident about the Postclassic grave inclusion scores summarized in Figure 5 is that the inclusion scores at Caye Coco are significantly higher than those at Laguna de On. This is not because of Caye Coco’s markedly large domestic architecture (Rosenswig and Masson 2002), and greater quantities of prestige goods (Masson 1999). Therefore, despite the various caveats against the comparison of energy expended in mortuary ritual as the key to social organization (O’Shea 1984), in our case there does seem to be a general pattern that supports this hypothesis when the two sites are compared. However, as burial pits with a few pots or beads do not represent large expenditures of labor, perhaps it is more productive to approach grave inclusions as simply reflecting social roles (see Binford 1971;
Figure 4. Burial inclusion scores from the three Postclassic cemeteries at Caye Coco.

Figure 5. Burial inclusion scores from the Postclassic burials at Laguna de On and Caye Coco.
Brown 1981). If those individuals with more social roles can be said to possess higher social status this graph can be taken as evidence that the inhabitants of Caye Coco possessed more social status than the inhabitants of Laguna de On. Another pattern we documented is that one of individual with a notably higher grave inclusion score than others was buried on each island. Burials LOI-17 (with a score of four), PR1-20 (with a score of six) and PR1-30 (with a score or 5) each had higher scores than the other interments at their respective sites. One way of interpreting this pattern could conclude that these were community leaders. The possibility that PR1-20 was a cache complicates such a simple interpretation but LOI -17 and PR1-30 both have the most grave goods and were interred with carved animal femurs. This interpretation assumes that we possess a representative sample of burials from both sites. There is no reason to make such an assumption. Therefore, if we make the more modest assumption that the two Postclassic samples are equally representative, then we can assert that certain individuals interred at Caye Coco were of higher social status than the majority of inhabitants of Caye Coco and Laguna de On Island. This is consistent with expectations for hierarchical societies where elites benefited from the labor of others.

Summary and Conclusion

Within the Freshwater Creek drainage, Caye Coco was the largest Postclassic site and contained the only known monumental architecture from this time. Construction effort estimates indicate that the elite at the site enlisted the labor of others to build their residences. Burials of 51 Postclassic individuals approximate a living population in terms of age and sex profiles. These individuals were in relatively good health and a large proportion of women filed their teeth to points. Postclassic residents at Laguna de On and Caye Coco followed similar customs of interring their dead in circular pits dug into bedrock. The most common position was seated-flexed with bodies facing west. Grave goods were similar also with Payil Red dished and carved mammal femurs interred with individuals at both sites. Each of the three cemeteries at Caye Coco contained different types of grave goods, however inclusion scores indicates that overall individuals interred at this site had considerably more accoutrements than those at Laguna de On. These mortuary patterns are consistent with settlement and architectural data that together demonstrate the higher social status of the Postclassic inhabitants of Caye Coco.

It is not possible to posit a uniform or all-encompassing collapse of all societies in the Maya area. There is no doubt that many polities in the southern lowland experienced a collapse that resulted in the abandonment of the most ostentatious aspects of elite artistic and architectural construction. However, the inhabitants of different areas within the Maya region evolved differently during the Postclassic period. A detailed picture is emerging of the structure of the Freshwater Creek polity during this era.

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10 SNAKES ON PLANES: SINUOUS MOTIFS IN THE ART OF LAMANAI

James J. Aimers

After the Late Classic a suite of sinuous motifs become very pronounced in the art of Lamanai. Although some of these motifs are rather abstract or conceptual (e.g., braids and guilloches) others appear to be references to reptiles, especially crocodiles and snakes, and vegetation. The motifs show the connections of Lamanai to other important sites, particularly in the Postclassic period. In this paper I discuss the possible socio-political and religious meanings of this imagery on ceramics from burials and caches at the site. I relate the use of the motifs at the site to Lamanai’s role as a cosmopolitan trade centre in the Postclassic period.

Introduction

In the Postclassic period a suite of sinuous motifs become quite pronounced in the art of Lamanai. Although some of these motifs are rather abstract or conceptual (e.g., braids and guilloches) others appear to be references to vegetation and reptiles (Figure 1). Here I focus on the Maya serpent motif, which is probably a combination of elements representing snakes, lizards, iguanas, and crocodiles and/or caimans (Rice 1983). The presence of this motif indicates the connections of Lamanai to other important sites and regions. In this paper I discuss several alternative socio-political and religious interpretations of this imagery on ceramics at the site and present some preliminary ideas of my own.

Sinuous Motifs in Mesoamerica

The designs found on Lamanai pottery in the Postclassic period (ca. A.D. 950 to ca. A.D. 1492) resemble those of Silho (or “X”) Fine Orange, and serpentine and scroll forms depictions are important elements of these incised designs (Figure 2). These elements were not new; they had been present in Mesoamerican art from the Olmec period through Izapa to the Aztecs. The presence of these motifs on Fine Orange indicates stylistic linkages to the Gulf Coast and, I think more interestingly, to Veracruz which may be their ultimate origin (Aimers 2007). Other important parallels are to the pottery of the Mixtec and Zapotec areas, particularly the Mixteca-Puebla or Cholulteca styles and the black-on-orange ceramics of the southern Valley of Mexico (the Aztec I and II styles which date to about A.D. 900-1200, an era that partially overlaps with Buk Phase ceramics at Lamanai) (Rice 1983, 1985).

Figure 1. Sinuous motifs at Lamanai (Lot 95, vessels 7, 6 and 8, drawings by Louise Belanger).
Figure 2: Kilikan Composite of the Silho Fine Orange Group (Smith 1957: Fig 11).
“Mexicanized Maya”? 

The most important interpretations of these motifs and styles is that they represent the movement of “Mexicanized” Maya people from the Gulf Coast and Campeche into the Maya heartland during and after the Terminal Classic (Thompson 1970), or some sort of vaguely defined “influence” of Mexicanized groups from the Gulf Coast or Yucatán (McVicker 1985). The Mexicanized group usually discussed in this light are the Chontal or Putun Maya.

For example, in a discussion of the early ninth century Xcocom phase at Becan, Ball (1977:173) argued that Fine Orange pottery was part of a package of innovations associated with ethnic change: "It is difficult to see Xcocom as anything other than the ceramic reflection of warrior elite groups invading Rio Bec from the northwest." In Ball’s model the Putun (sometimes also called the Itza) moved northward up the coast inland to the Puuc region, then south to Chenes, Rio Bec, and eventually the Petén and Pasión drainage. Others, however, see the same elements as evidence of more localized change without invasion. In this alternative view, local status rivalries provoked interregional alliances that could be quite far flung. For example, in a discussion of the ceramics of the northern lowlands, Stanton and Gallereta Negron (2001:231) note: "Elite factions and, we may suspect, other members of the social hierarchy developed large-scale alliance networks that cut across polity boundaries... a prestige-goods economy, including ceramics, appears to have played a major role in alliance networks.”

Style and Ethnicity

I use Weissner’s definition of style as “a form of non-verbal communication through doing something in a certain way that communicates information about relative identity” (Wiessner 1990:108). Ethnicity is a much more problematic concept. Ethnicity may elude “translation into archaeological terms, particularly in non-state societies” (Stark 1998:20). This is an important point to which I will return. Nevertheless, anthropologists generally agree that ethnicity is a purposeful expression of group identity: "ethnicity does not simply exist; it is something that people do"(Hegmon 1998:272).

Archaeologists might profitably abandon the word ethnicity altogether but whatever term one uses; the concepts of style and ethnicity are strikingly similar: ethnicity is a style of being. Although we are all born into an ethnic group we may chose to stress it or ignore it at different times and in different contexts, and we can indeed change our ethnicity. I am inclined to think of Madonna, who ever since she moved to England has been speaking and to some degree acting as English as crumpets and tea. Identity is malleable and situational - it is not fixed now and it probably never has been.

Us versus Us: Foreign as Status

So, what do the stylistic changes of the Buk phase at Lamanai represent — migration or even invasion of an ethnic group to the site or the adoption of exotic motifs by indigenous people there? In an influential paper, Kent Flannery, (1968) made the case that Olmec style artefacts may not have marked actual movements of ethnically distinct people, but the adoption of a exotic style by Preclassic social climbers throughout Mesoamerica. For Terminal Classic-Early Postclassic Yucatan, Stone (1989:166) noted that virtually all the powerful groups in this period are identified as foreigners, namely, as Mexicans. The Itzá were considered foreign even after hundreds of years in
Sinuous Motifs in Art at Lamanai

Yucatán. Stone (1989:167) shows that this process was in place in the southern lowlands by at least the Late Classic as evidence in the stelae of Piedras Negras. Thus, there is a thread of "foreignness" that seems to wind through Mesoamerican history, making it very difficult to separate assumed identity from historical identity. Freidel (1983:303) has called this a "cult of foreignness" but it seems to have a fairly simple meaning: power.

Class as Ethnicity; Style and Religion

It may be useful, then, to look at an elite as a sort of ethnic group, or at least as a special interest group (Graham 2006, Hodder 1979:452). If the adoption of a "foreign" style represents not ethnicity but status, then “foreign” motifs represent not ethnicity but socio-political and economic identity (that is, class). The issue for me is that class almost always crosscuts ethnic groupings. Further complicating things is religion. In the cases I mentioned above, the adoption of a foreign religious style in burials and caches may have identified “the ruling elites with the supernatural” (Earle 1990:75). Thus, style may mask relationships of inequality and domination as part of a religious world view.

Population Movement and Ceramics

Because of the unreliable connection between foreign styles and foreign peoples in Mesoamerica, archaeologists sometimes assume that migration or invasion can only be inferred if we find large quantities of imported or foreign-style ceramics (this is Ball’s argument above). Thus, trade has been a favourite explanation for small amounts of imports. However, even this seemingly conservative assumption has to be questioned. Examples such as the Aztec and Spanish conquests of the Mixtecs make it apparent that only a few foreign ceramics might indicate full blown conquest (Lind 1987:114). This is the case at Lamanai, where the introduction of a few Spanish types does little to disrupt existing ceramics patterns at conquest. So, associating a foreign style with either population movement or elite emulation is problematic if even small amounts of new pottery in an area may reflect large migrations or even invasion.

The Serpent Motif and Elite Identity

Rice (1983, 1989) has discussed in detail the possible significance of the serpent motif found at Lamanai, Tipu, and the Central Petén Lakes. For Rice, as well as Kepecs (1994), serpent motifs were “Symbols of deities such as Quetzalcoatl/ Kukulcan [and] . . . were pan-Mesoamerican markers of elite identity”(Kepecs, et al. 1994:145). The mat motif that also appears on these incised vessels may also be associated with rule and power (Robicsek 1975). The resemblance of intertwined snakes to a woven mat and the actual juxtaposition of serpent and mat motifs on some Postclassic pottery (e.g., at Topoxte) further suggests the association of the serpent motif and socio-political power.

The Serpent Motif and Religious Identity

Other explanations more strongly stress the religious significance of the snake-scroll motifs. The reptile eye motif in Central Petén and at Lamanai resembles the Late Classic Zapotec Glyph C and may represent a version of "composite reptilian creatures" such as the Maya Itzamna, Nahautl Cipactli or Zapotec Chila (Rice 1983:872). Glyph C appears on the headdresses of Mixtec censers, and clearly had important social and religious significance. Its use on chalices at Lamanai which were deposited in burials and caches reinforces this idea. As Pendergast (1998) has noted for Lamanai and Altun Ha, caching behaviour seems to be related to
empowering and rejuvenating specific ritual loci. Since we also find fragments in rich middens in the site core they may also have been associated with feasting. They may have been exchanged as gifts—perhaps to forge or reinforce alliances—and then might have been broken during ritual feasting (Stanton and Negrón 2001:233).

Miller (1982: 93-94) notes that serpents were used as intertwined borders in late Teotihuacán murals and on the facades of many Maya structures from the Classic period (Miller 1982:95). He presents evidence that the Maya made a symbolic connection between these snake borders and umbilical cords, for example in the Ritual of the Bacabs, on Stela 50 from Izapa (Norman 1973: Plate 50) and on a stucco panel from Palenque’s Temple of Inscriptions. Miller concludes that "the cosmic umbilical cord is a visual metaphor for a link between death and life and between the supernatural and natural worlds" (Miller 1982: 95).

Ringle et al. (1998:266) have suggested that the serpent motifs were adopted as part of the spread of a "Cult of Quetzalcoatl" and thus these motifs express not an ethnic identity but a religious one which might crosscut ethnicities. However, this cult would still have been a source of political power. There are interesting hints of this supposed cult of Quetzalcoatl at Lamanai. For example, the step terrace flange can be seen as an Ik sign that means wind which is associated with Quetzalcoat/Kukulkan in his manifestation as the wind god Ehecatl. Ehecatl is also represented at Lamanai (Figure 3).

**Serpents as Lineage Symbols**

Masson (2000:248-9) noted that serpent imagery on murals and stuccos at Mayapán, Tulum, and Santa Rita linked historical individuals, deified ancestors and gods through calendrical ritual: “Serpent imagery has long been linked to lineage descent. . . Postclassic political iconography . . . portrays elements of divine kinship that have their roots in past traditions along with newly redefined institutions that celebrate the importance of lineage power and the integration of multiple factions within communities and regions.”

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**Figure 3**: Quetzalcoat elements at Lamanai? Top: Ik flanges, Lot 247, Bottom: Ehecatl, Lot 390

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**The Mesoamerican World System**

Whatever their significance (ethnicity, status, religion, or lineage), the serpent motifs were part of a stylistic lingua franca understood throughout most of Terminal Classic and Postclassic Mesoamerica, but with clear and specific ties to Central Mexico through Veracruz, the Gulf Coast and Campeche. Although Thompson drew attention to the Gulf Coast in his Putun hypothesis, by 1468 the Aztec
empire extended as far as southern Veracruz with an enclave as far east as Campeche Tozzer (Tozzer 1941:32) so Central Mexico was no doubt involved. Masson (2003: Fig 25.8) has also illustrated the similarity of Palmul Incised motifs to those of the Aztec Codex Borbonicus. We also know that there were overland routes from the Gulf Coast to the Peten and on to the Caribbean in the early 16th century (Rice 1983:874).

Two models have been discussed above: In one, serpent and scroll motifs are equated with foreign invasion or migration. In the other, pottery in exotic or "foreign" style is equated with status or ideology with no substantial migration needed to explain it. To conclude I will review some variations on these arguments:

Invasion

Some people have suggested that Lamanai was invaded or taken over by Itza people in the Terminal Classic-Early Postclassic. This is untenable for a number of reasons. The Maya serpent motif is hardly new at Postclassic Lamanai. Its prominent place on the Early Classic masks of Structure N9-56 shows that the religious or political significance of reptiles at the site named submerged crocodile has a long significance at Lamanai and was not a foreign concept introduced in the Terminal Classic or Postclassic. More importantly, other key Itza marker are rare or absent at Lamanai, including round temples, large amounts of Fine Orange pottery, Plumbate, and other Sotuta ceramic styles. Overall, Lamanai shares striking stylistic similarities to Mayapán and later, Tulum, but not many with Chichén Itzá—the absence of clear Chichén markers at Lamanai is in fact much more interesting than the few that are present.

Contact and Hybridization

Rice notes that the international style elements of the Maya serpent motif are "expressed within regionalized elite substyles" (Rice 1983:876). The scroll motifs at Lamanai are looser and more curvilinear than the Mexican versions at Chichén Itzá and later at Tulum and they incorporate a particularly southern Maya sense of movement. I think they represent the fusion and hybridization of style that is typical of spatial liminal areas. This hybrid quality suggests what Fry (1985:296) has proposed for Chichén Itzá: "a mutual assimilation of lowlanders and outsiders" in the Terminal Classic. Early Postclassic Buk style at Lamanai seems to me to be the physical manifestation of the elite of a powerful trading and pottery-producing site expressing their sophistication, power, and international reach through an important international art movement.

Population Movement

For the Belize Valley, I have argued that the appearance of griddles and grater bowls (both of which originate in Central Mexico) suggest that there were new people living there after the Classic (Aimers 2004). Cuisine, like language, is intimately associated with identity, and changes are rarely adopted casually. We also have griddles and graters at Lamanai. Igneous rock inclusions in griddles at Lamanai are exciting because they suggest that the large, friable, certainly fragile griddles may have been produced in the Maya mountains (Linda Howie, personal communication 2007). If so, they did not walk to Lamanai on their own-- they may be the physical manifestation of population movement but, so far, anyway, we have absolutely no evidence that this population movement was anything other than peaceful at Lamanai. In fact, artefacts and osteological analysis of the Late Postclassic “Loving Couple” burial
from Structure N11-5 by Christine White suggests that people of different geographical origins—in this case from West Mexico-lived, died, and were buried in rich burials in the site core of Lamanai. We are starting to have evidence from multiple artefact categories that Lamanai was a cosmopolitan, multiethnic site. So I do not think that the Postclassic style that Lamanai developed represents either ethnic change or simply stylistic emulation by elites. What does it mean then? I think the answer at a site like Lamanai has to be linked to trade.

**Lamanai, Mesoamerica**

I suspect that the Maya serpent motif at Lamanai is religious iconography linked not to ethnic change but to merchants and trade, the kinds of interaction that existed centuries before the Postclassic period. Merchants in ancient Mesoamerica, the best known example being the Aztec pochteca, were simultaneously an ethnic group and a class, and they also had patron gods. They travelled widely and freely yet they were also warriors and spies. They simply do not fit into our categories (Bittman and Sullivan 1978).

We know that all kinds of people were moving through Lamanai along the New River, and although this was not new to the Postclassic period, it is certainly clear at that time. The great diversity of stylistic types Linda Howie, Stephen Merkel and I examined from deposits directly adjacent to the lagoon in 2007 are almost the perfect material signature of what would result from a busy port where people of all sorts were stopping to rest, to eat, to trade, to worship, and perhaps to fall in love. Whatever their exact activities it was not just people and goods moving along the river, it was ideas. But, the fact that later Postclassic deposits at Lamanai are rich with Red Payil group ceramics from the east coast suggests that connections made in the early part of the Postclassic led to much more intense trade and interaction in the latter part of the era.

**Conclusions - Lamanai, Belize**

In my opinion, Lamanai succeeded where Chichén Itzá failed. It also succeeded where, somewhat later, Mayapán failed. Both of those sites attempted to share power among different lineages and ethnic groups but neither was more than a flash in the pan compared to Lamanai. After a few hundred years, both of them collapsed in war and chaos. We have no good evidence of violence and certainly no evidence of collapse at Lamanai. Somehow, Lamanai—like a precursor to modern Belize—made diversity work.

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Recent investigations at Lamanai, Belize have resulted in new insights into the nature of a technology that appeared very late in the Maya area – metallurgy. More copper artifacts have been recovered at Lamanai than at any other site in the Southern Lowlands and there is compelling evidence that copper production was taking place at the site beginning in Late Postclassic times. Chemical compositional analyses indicate that during the Early Postclassic Period finished copper status or ritual objects, including finger rings, bells and decorative clothing ornaments were being imported into Lamanai from West Mexico. But it appears by Late Postclassic times copper craft specialists were producing both status and utilitarian objects, including axes, fish hooks and sewing needles. Artifact chemistries suggest that metalsmiths were recycling older copper artifacts and recasting them into new forms. The contexts in which imported and locally manufactured copper objects have been recovered reveal much about the meanings metal objects appear to have had for the Maya. New data on both the contexts in which copper artifacts have been found and the technology used in their production are presented here along with interpretations of how metal objects may have been regarded and used by the Maya of Lamanai.

Introduction

The Postclassic Period in the Maya Lowlands was a time of both dynamic transformation as well as long-standing continuity in Maya society. In northern Belize, archaeological investigations at several prominent Postclassic Period sites, including Santa Rita and Lamanai, have provided considerable information on the nature of both continuity and change in Maya society during this time (Chase and Chase 1988; Pendergast 1981, 1986; Simmons 2005). Recent investigations by the Maya Archaeometallurgy Project (MAP) have been undertaken at Lamanai to help shed more light on this critical period of Maya history (Figure 1). This paper provides an overview of the work that has been conducted by the MAP from 2004-2007. Many of the new insights that have been gained in the last several years have come from a thorough examination of the archaeological contexts in which copper objects have been found along with analyses of the chemistries and microstructures of the metal objects themselves (Hosler 1994;
Shugar and Simmons 2008; Simmons et al. 2008). These new insights are reported here.

Very few studies of metal artifacts have been conducted in the Maya area. This is in part because metal objects were introduced relatively late in Maya history (Hosler 2003) and only a limited number of sites in the Lowland area have produced metal artifacts (Bray 1977; Chase and Chase 1988; Hosler 1994; Lothrop 1952; Paris 2008; Pendergast 1962; Simmons 2005). As a result, little is currently known about the organization of metal production, the identities of the metalsmith, and the roles that copper objects and their production may have played in Maya society during Postclassic and Spanish Colonial times (Simmons et al. 2008). Research is ongoing in these and other related areas of inquiry, but the aims of this paper are more limited in overall scope. The principal goals of this paper are to: 1) describe the archaeological contexts in which Lamanai’s copper artifacts have been found and 2) present new data on both the artifact chemistries and formation technologies used in the production of copper artifacts that have been recovered in recent years.

The Origins of Copper Artifacts from Lamanai

Copper ores are not locally available in the Maya lowland area (Bateson and Hall 1977; Bray 1977; West 1994). As a result, all 187 of the copper objects recovered thus far at Lamanai were either imported as finished items or were produced on-site from raw materials such as the ingots and blanks that have been recovered during excavations in the Spanish Church Zone (Figure 2). In the Early Postclassic Buk ceramic phase (ca. mid-11th to the mid-13th century) copper objects arrived at Lamanai from West Mexican and southeastern Mesoamerican sources (Hosler 1994:208-213). The artifact chemistries as well as the forms and stylistic elements of many of the bells, finger rings, tweezers and elaborate ornaments dating from this time identify the Mexican states of Michoacan and Guerrero as probable places of origin. Very few copper objects have been recovered from Late Postclassic contexts at Lamanai (Table 1). This is not likely the result of some sampling bias but instead may reflect recycling of metal that took place in the Spanish Colonial Period, and very likely as early as the end of Late Postclassic times (see below). In any case, copper objects continued to be imported from West Mexican and as yet unidentified southeastern Mesoamerican sources during at least the early part of the Late Postclassic Cib ceramic phase.

Figure 2. Copper bells and bell fragments in recent investigation in the Spanish Church Zone at Lamanai. Mis-cast bells are missing suspension loops, have prominent holes in bell walls, or are represented only by partial sections of bell walls. The two specimens on the left in the bottom row have been mashed, possibly to facilitate melting and re-casting.

The introduction of Yglesias style ceramic vessels coincides with experimentation in copper metallurgy at
Lamanai during Spanish Colonial times. A total of 143 of the 187 (76.5 percent) copper objects found at Lamanai have been recovered from deposits dating shortly before mid-16th century Spanish contact to the early 17th century. It was during this time that Maya metalsmith were actively experimenting with the production of metal objects on-site. Hosler (1994:214) notes that “artisans were crafting objects at Lamanai itself, and they seem to have been doing so by using recycled metal.”

The Contexts and Meanings of Copper Objects from Lamanai

An examination of the contexts in which copper artifacts have been found at Lamanai indicates considerable variation through time (Table 1). Archaeological investigations conducted by Pendergast (1981) at two principal structures used in Buk and Cib times, N10-2 and N10-4, resulted in the recovery of 27 copper artifacts, 25 of which were associated with elite burials (Area A in Figure 1). By comparison, a substantial majority of the 143 copper objects from Yglesias phase deposits were recovered from middens or from architectural contexts and a considerable number appear to have been manufactured on-site, probably within the Spanish Church Zone (Figure 1).

Table 1 shows that 83 of the 187 (44.4%) copper artifacts recovered thus far at Lamanai were recovered from midden deposits on site. Because the Maya at Lamanai were producing copper objects from what Hosler (1994:214) describes as “stock metal derived from melted-down artifacts,” we find it puzzling that such a large proportion (58 percent) of those from Yglesias contexts were discarded along with domestic refuse. Potentially recyclable bells, rings, needles and other finished objects have been recovered in substantial numbers during our excavations in Terminal Postclassic-Contact Period middens in the vicinity of the Spanish churches. In addition, raw materials for production, such as the axe fragments and lost-wax casting reservoirs that are discussed below, along with all four copper pigs/ingots, come from rubbish dumps or locations without apparent structural association.

The contexts in which copper objects are found reveal a good deal about the ways in which they functioned and were perceived in the community during Postclassic times. For example, metal artifacts appear to have had an entirely personal association and meaning in Buk and Cib-phase times. The occurrence of metals most frequently in interments marked by a considerable range of grave goods reinforces recognition of the role of the objects as indicators of the owners’ elevated standing in the community. Indeed, all but one of the 27 Buk and Cib copper artifacts recovered in Area A at Lamanai (Figure 1) are what Hosler (1994:208) describes as status display or ritual objects. These include bells (one of which was a center piece in a jade & shell necklace), elaborately made false wirework and dome-shaped ornaments, and finely crafted filigree finger rings (Pendergast 1981).

Ethnohistoric accounts indicate that such objects were symbols of elevated social rank among the Maya; their gleaming visual quality, which may have been seen as reflecting the power of the sun on those who wore them, helped to reify that status (Simmons et al. 2008). It seems very likely that the exotic designs and origins of these and other metal artifacts from the period, all crafted from an unfamiliar material with unique properties, helped to make such objects highly appealing to elite members of the community. The flow of exotic items such as these into Lamanai has been cited as one of the clear indicators of the community’s continued vitality, as reflected
in long-distance personal or commercial ties, following the ‘collapse’ of so many other southern lowlands Maya polities in the ninth century AD (Pendergast 1991, 1986).

Whereas copper objects imported from outside the Maya area in the earlier part of the Postclassic Period were exclusively for status display purposes, those produced in Yglesias times were both decorative and utilitarian in nature. Utilitarian objects include sewing needles, fish hooks, axes and other woodworking tools. At this juncture we do not know when copper metallurgy began at Lamanai, but there is compelling evidence that the Maya were experimenting with metallurgy at the site prior to Spanish contact, sometime near the end of the Late Postclassic Cib ceramic phase. The strongest evidence we have at present for indigenous metallurgy at Lamanai comes entirely from Yglesias Phase contexts and consists of four pigs/ingots, nine prills, an axe blank (or ingot, possibly), 24 mis-cast bells and two probable lost-wax casting/pouring reservoirs, all of which are very likely to represent production materials and all of which come from two different locales (Areas B & C) in the Spanish Church Zone (Figure 1). The distribution of this material suggests that copper production activities in Yglesias times may have taken place both in the immediate area of Structures N11-18 and N11-27 as well as just east of the Spanish churches, located some 285m to the south. Str. N11-18 may represent the residence of Lamanai’s Colonial Period cacique, the native political authority of Lamanai (Pendergast 1986). The latter area, investigated preliminarily in 2003, 2004 and 2006, appears to represent a non-elite residential area located just east of the Spanish churches that was occupied during Terminal Postclassic-Spanish Colonial times (Wiewall 2005; Simmons 2006).

Copper Production at Lamanai: Recent Insights from Microstructural and Chemical Analyses

Studies of ancient metallurgy typically focus on identifying the chemical compositions of metal artifacts as well as the fabrication technologies used in their manufacture. Here we briefly discuss the results of recent chemical and microstructural analyses of several recently discovered copper artifacts from Yglesias phase deposits in Lamanai’s Spanish Church Zone. More detailed discussions of the results of both kinds of analyses will be presented in a forthcoming paper (Shugar and Simmons 2008).

Metal fabrication technology, the process by which metal objects were created, entailed steps such as casting, hammering, sharpening, and surface decoration. The standard method of analysis used for identifying the processes used in productive activities is optical light microscopy, the technique used in this particular study. A small piece of the artifact is removed for sampling, mounted in epoxy resin, and ground and polished to a mirror-like finish. The sample can then be viewed under a microscope, where its microstructure provides a clear indication of the manufacturing technology that formed the object (Figures 3 and 4).

Following are two examples of how recently conducted microstructural analyses have shed new light on the technological skills of Lamanai’s coppersmiths. The first investigation deals with the analysis of copper prills. Prills are small, round balls of copper which can form during either the smelting process or the casting process. During casting, molten copper may bounce away from open molds and cool while traveling through the air. This action causes the metal to form circular balls or prills, which typically fall to the ground and are found surrounding the metal casting area.
Figure 3. On the left (LA-2909-6) is a normal prill showing classic dendritic coring caused by fast cooling. The right (LA 2081-2) is formed bell clapper showing intense working with distorted slip lines, and a prominent fold in the metal to the right.

Figure 4. Axe bit from LA2790

Alternatively, when performing a lost wax casting, if there is any wax remaining in the mold a violent reaction can occur, causing the molten metal to spurt out of the mold’s pouring reservoir (Figure 5). This action will also cause prills to be spread around the casting area. The nine prills found thus far in the Spanish Church Zone at Lamanai range from approximately 2-5 mm in diameter; those that are larger in size were ideal for use as bell clappers.

Copper prills are expected to have a specific microstructure based on their formation history. The microstructure should be a core dendritic structure with chill crystals at the surface of the prill and a relatively small grain structure (Figure 3). As expected, several of the prills we investigated showed this exact feature. In one unique case, an entirely different microstructure was observed. For this one “prill” the microstructure shows evidence of heavy cold working. The grains are distorted, there are many working lines, and a clear indication of a fold indicative of a major reshaping of the metal exists (Figure 3). What originally appeared to be a prill appears now to represent a manufactured bell clapper. At this point in time it is not possible to determine whether this particular clapper was produced at Lamanai or arrived on site already in functional use inside a bell.
Copper Metallurgy at Postclassic Lamanai, Belize

Figure 5. Schematic of a lost wax mold showing one of the two pouring reservoirs recovered at Lamanai (LA-2790-4), down sprue and a bell-headed pin (LA 91-1) that was recovered with Burial N10-4/29. The reservoir would have to be separated from the down sprue, leaving the kind of small protrusion seen near the poll of axe fragment LA 2970-5. (See Figure 6)

The second investigation deals with the production of axes. Twenty-three axes and axe fragments have been found thus far at Lamanai (Simmons et al. 2008). Based on the limited ethnohistoric information currently available it appears that axes were produced by pouring molten metal into an open-shaped axe mold. The Florentine Codex shows a Mesoamerican metalsmith casting a metal axe into an opencast mold (Sahagún 1959:Folio 796). These castings, typically called blanks, needed to be heavily worked into shape to achieve their final form. In many cases, such blanks have extension lips which form when the poured metal extends over the edges of the mold. These lips can be hammered back or filed to achieve the final axe shape. The process of hammering and sharpening the bit edge of the blade increases the hardness of the metal but at the same time decreases the metal’s ductility (Rothenberg et al. 1978). It would therefore be important for the metalsmith to occasionally anneal the object and recrystallize the metal, which would restore its ductility (malleability) and decrease its hardness or brittleness.

Each of these production stages leaves recognizable signatures in the metal’s microstructure. For example, examination of the microstructure of a typical hammered and annealed axe reveals a small, heavily distorted grained structure with stress lines near the blade edge. Also evident are bent and twisted annealing twins indicative of heavy working of the object. Examination of the microstructure of axe LA 2790-6 revealed a homogenous large grain structure with evidence of high porosity and heavy working near the bit of the blade (Figure 4). In addition, there was evidence for partial recrystallization of the metal. This may be due to either the axe being only partially annealed at lower than sufficient temperatures to allow for full recrystallization or the axe may have been partially hot worked. In either case, it is clear that by the time of Spanish contact in Belize Maya metalsmiths had a fairly sophisticated knowledge of metal formation technology. The results of microstructural analyses indicate that these craft specialists understood the importance of annealing as a way to successfully decrease the brittleness of the working portions of copper axes and thereby lengthen their effective use-lives.

Close examination of another axe fragment (LA 2970-5) recovered in 2004 by Darcy Wiewall just east of the Spanish churches (Figure 1) revealed additional information on Maya metalworking technology at Lamanai. Removal of some of the corrosion from the surface of this artifact revealed a roughly round-shaped, raised area located very close to the poll or haft end of the axe (Figure 6). Although no casting molds have yet been found at Lamanai this feature provides compelling
evidence that some copper objects, such as this axe, were most likely made in a bivalve or “lost wax” mold rather than being open cast. Since the Maya well understood the lost wax casting process (Hosler 1994) it is likely that the same technology was used to produce these axes. A mold was likely formed around a blank in wax, coated in clay, heated to remove the wax and filled with molten copper. Removal of the down sprue (similar to a funnel) would leave a small protrusion on the surface of the axe similar to the one seen in Figure 6. This is the first recorded occurrence of Maya copper axes being made in bivalve molds.

Figure 6. Raking light image of the slightly flattened down sprue protrusion near poll of axe LA 2970-5.

In addition to the study of the formation technologies used in the creation of these copper artifacts SEM-EDX analysis was performed to determine the chemical composition of the prills and the axe fragments recently recovered in the Spanish Church Zone. The results of SEM analysis revealed that both the prill and the clapper have very similar compositions (Table 2). They both have very pure copper compositions with traces of tin, arsenic, iron and silver. In fact, their trace element compositions are so close they could be from the same molten batch. At this point in time it is not possible to determine whether this particular clapper was produced at Lamanai, or arrived on site already in functional use in a bell.

The chemical composition of the axes reveals two separate production process (Table 2). The axe fragment LA 2790-5 (Figure 6) has a complex copper alloy of tin (1.5%) and arsenic (1.4%). Even though the alloy composition appears significant, these levels are almost certainly related to re-melting of higher alloyed metals as discussed by Hosler (1994). As suggested by microstructural analysis, this alloy composition would benefit the functionality of the axe by increasing the hardness of the metal, allowing for a sharper edge with greater longevity. Axe fragment LA 2790-6 has a very pure copper composition which closely resembles the composition of the prill and clapper. The slightly higher level of arsenic (0.8%) likely resulted from the co-melting of pure copper objects with alloyed arsenic-rich copper objects, some of which may have been imported to the site in Early Postclassic times. This closely matches observed characteristics of other copper artifacts from Lamanai (Shugar and Simmons 2008).

The results of the chemical compositional and microstructural analysis reported here strengthen the argument for the localized re-melting and casting of copper based artifacts at Lamanai. The tight compositional data from the clapper, prill and one axe (LA 2790-6) suggest they were produced from similar molten batches while axe LA 2790-5 shows indications of having been created by co-melting several alloyed objects.

Conclusions

Recent investigations by the Maya Archaeometallurgy Project have resulted in the identification of specific processes used by the Contact Period Maya in the production of copper objects at Lamanai.
Table 1. The Contexts of Copper Artifacts from Lamanai, Belize.

<table>
<thead>
<tr>
<th>Context</th>
<th>Burial</th>
<th>Midden</th>
<th>Architecture</th>
<th>Cache</th>
<th>Surface</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Postclassic Buk</td>
<td>16</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Late Postclassic Cib</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Terminal Postclassic-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish Colonial Yglesias</td>
<td>18</td>
<td>82</td>
<td>41</td>
<td>2</td>
<td>0</td>
<td>143</td>
</tr>
<tr>
<td>Unknown</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>49</td>
<td>83</td>
<td>41</td>
<td>3</td>
<td>11</td>
<td>187</td>
</tr>
</tbody>
</table>

Table 2. Quantitative SEM-EDX data on the chemistries of four Terminal Postclassic-Spanish Colonial Period Copper Artifacts recovered in the Spanish Church Zone at Lamanai, Belize. One axe fragment (LA 2790-5) shows high levels of tin (Sn) and arsenic (As) from alloying. The other three artifacts have very pure copper compositions.

<table>
<thead>
<tr>
<th>Axes</th>
<th>Cu</th>
<th>Sn</th>
<th>As</th>
<th>Fe</th>
<th>Ag</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA-2790-5</td>
<td>95.7</td>
<td>1.7</td>
<td>1.7</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td>LA-2790-5</td>
<td>96.4</td>
<td>1.4</td>
<td>1.2</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>96.0</td>
<td>1.5</td>
<td>1.4</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td>LA 2790-6</td>
<td>98.5</td>
<td>0.3</td>
<td>0.6</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>LA 2790-6</td>
<td>98.1</td>
<td>0.3</td>
<td>0.9</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>98.3</td>
<td>0.3</td>
<td>0.8</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Prill</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA 2909-6</td>
<td>99.1</td>
<td>0.3</td>
<td>0.0</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>LA 2909-6</td>
<td>98.1</td>
<td>0.6</td>
<td>0.7</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>98.6</td>
<td>0.5</td>
<td>0.3</td>
<td>0.4</td>
<td>0.1</td>
</tr>
<tr>
<td>Clapper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA 2081-2</td>
<td>98.4</td>
<td>0.4</td>
<td>0.5</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>LA 2081-2</td>
<td>98.2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>98.3</td>
<td>0.4</td>
<td>0.5</td>
<td>0.3</td>
<td>0.2</td>
</tr>
</tbody>
</table>

These studies have revealed that Maya metalsmiths had an intimate understanding of metallurgical properties and used that knowledge to create both status display/ritual objects, such as finger rings and bells, as well as tools important in domestic economic activities, including needles, fish hooks and axes. Experimental work is currently being undertaken at Buffalo State College’s Art Conservation Department to investigate the various molds that may have been used in copper casting, the rates at which the molten metal cooled, and the working methodology that was used by the Maya to produce the specific microstructures seen in these and other copper artifacts recovered at the site. Future MAP investigations at Lamanai will
concentrate more closely on identifying copper production areas, where re-melting and casting activities occurred. This will include more complete investigations of those areas already identified as possible production locales within the Spanish Church Zone (Areas B and C in Figure 1).

In addition, the results of contextual analyses have revealed differences in the significance copper objects had over time for the Maya of Lamanai. By the time of Spanish contact copper objects were both decorative and utilitarian in nature, whereas those imported from outside the Maya area in earlier centuries were exclusively for status display or ritual purposes. The spatial and temporal distributions of certain types of copper objects indicate that during the Yglesiass phase both elite and non-elite individuals appear to have had access to status/ritual copper objects imported from West Mexico and southeastern Mesoamerica. Objects made of recycled copper produced by metalsmiths who may have been working in two separate areas at Lamanai were also available for local use. Preliminary investigations in each of these two possible production locales suggest that both elites and non-elites may have been involved in this specialized craft activity. Further investigations are aimed at clarifying the roles of both copper producers and consumers in Lamanai’s Late Postclassic and Spanish Colonial Period domestic and political economies.

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This paper documents a Late Postclassic turtle burial at Saktunja, in Northern Belize and discusses the ritual symbolism ascribed to marine life by the ancient Maya. Tozzer[1941:1942] notes that “there are some wonderfully large turtles, for there are some much larger than large shields and they are good eating and have plenty of flesh. They lay their eggs as large as those of hen and they lay one hundred and fifty and two hundred”.

Introduction

The archaeology of coastal communities in northern Belize has become increasingly relevant to a broader understanding of settlement patterns, economies, and ideology among Maya during the Postclassic period (A.D. 1100-Contact). Geographers such as Romney (1960) and Vermeer (1959) were among the first visitors to explore and document archaeological sites in the many lagoons lining the northern coast of central Belize. Craig (1965:46), a geographer, used aerial photography of the coastline to document the presence of "extensive aboriginal populations." Sites investigated as part of the Northern Belize Coastal Project (NBCP) from 1994 to 2007 fringe a series of littoral lagoons stretching for sixty kilometers along the coast from Pott’s Creek site in the north to Spanish Point (for map refer to Mock 2004:360, 2005:426; see also Bennyhoff and Meighan papers (1952).

Communities on this swath of coast are typified by a shift in ideology heralded by a new set of ceramic types and forms noted elsewhere during the Maya Postclassic (D. Chase 1982; Graham 1987; Mock 1994b, 1996, 1999, 2000; Sanders 1955; Smith 1971; Valdez 1987; Walker 1990) and found layered on Late to Terminal Classic deposits. These coastal communities
and ecofact inventories. The NBCP Project recovered a complete household assemblage of ground stone, obsidian blades (utilized and non-utilized), Colha manufactured chert tools, presentation and processing ceramics, fish bone and bone tools.

**Chili Pepper Structure 4 Excavations**

The Late Postclassic is well represented at Chili Pepper Mound in 2004, and NBCP staff encountered small turtle bones in shallow deposits at 10-20 cm in a 1-x-2 m unit on Chili Pepper Mound (Mock 2006).

NBCP staff returned in 2005 and expanded the unit to 2-x-3 m; the extension limited by plantains and decayed coconut stumps typical of the plantation site. Diagnostic ceramic markers include Payil Red parenthesis rim jars, collared jars and footed serving dishes, and small jars or ollas with a gray flannel surface (Mock 2002, 2005, 2006). Excavations revealed a disintegrated floor in association with the turtle that extended across the rest of the unit varying from 20 to 35 cm in depth. Deposits under the floor included more dense concentrations of plastron scutes and inframarginal scutes, ribs, a femur and part of a humerus, fin carpals, and unidentifiable bones (Figure 1). (see Carr 1967, 1995) for a comprehensive description of turtle bones). In direct association with the turtle femur was a Late Postclassic lenticular biface with an impact fracture (placed east to west) (Figure 2a). Included in the bone concentration was a Payil Red trumpet foot and net weight (Figure 2b).

As excavations continued a series of artifacts were recovered under the floor and in association with more dense concentrations of turtle bone: these are net weights, censer fragment, and two complete obsidian blades parallel to each other (Figure 3f). Two more lenticular bifaces (one with impact fractures) (Figure 3a, b) and two zoomorphic clay whistles, one representing a bird in flight and the other resembling a mammal were recovered within twenty cm. of each other (Figure 3c, d). The whistles are not typical Lubantuun style molded whistles (e.g., Joyce: 1933) but are identical to whistles found at Chichén Itzá and Mayapán, coincidentally, in some cases, representing birds (Smith 1971:57, Figure 35c). A modeled ceramic head (Figure 4) was recovered with the whistles. Although the bone and associated artifacts may have been disturbed by the coconuts and plantains, the context of the artifacts in this prescribed area points to their burial with the turtle bone.

![Figure 2. (a.) Turtle femur and utilized lenticular biface; (b.) Payil Red trumpet support, plastron and turtle bone.](image-url)
At this point, we expanded the unit with a 60 cm-x-3 m trench to follow the bottom of the cobble floor, the turtle bone, and artifact depositions, that by this time suggested deliberate placement in a ritual connected to the turtle bone. Dense concentrations of bone continued, associated with a queen conch shell, an altered conch shell, an olivella shell, two anthropomorphic vessel supports, and another lenticular biface (Figure 5a,b,c). Adjacent to the conch we uncovered another clay whistle, also in the shape of a bird and a side-notched point (Figure 6). Their position and proximate elevations suggest that they also were intentionally deposited with the turtle bone and were in association with the concentrations in Unit A. Turtle typically would be laid on its side and the carapace split from the plastron, revealing the interior skeletal structure and body, and then dismembered.

Along the length of the trench we encountered a concentration of utilized chert cobbles, presumably the butchering tools (Figure 7). As Figure 8 shows, the bone was split with a heavy object, presumably by ad hoc tools. The blades were also recovered in the trench extension and cut marks occurring on the turtle femur represent defleshing, presumably by the obsidian blades (Figure 9).

At this point in the trench extension eroded Late Classic sherds and disturbed deposits, created by the coconut tree roots and plantain trees were found and the excavations were terminated. With the onset of the rainy season the unit was backfilled with expectations of returning in 2006. Clearly the turtle was butchered by the Chili Mound residents and provided a substantial amount of meat. The artifacts recovered in association with the butchered turtle also suggest that their depositions were not random, but were part of a ritual event.

Figure 3. (a) lenticular biface; (b) lenticular fbiface; (c) bird whistle; (d) mammal whistle; (e) bird whistle; (f) obsidian blade

Figure 4. Modeled ceramic head

Hunting Sea Turtles in Belize

Of all reptiles, turtles are the most heavily exploited for human consumption. Although they spend their entire lives in the ocean, as air-breathing reptiles covered with impermeable skin, sea turtles are one of the few marine species that are suited for terrestrial life (Carr 1995; Witzell 1994: 1-2). Sea turtles differ in ecosystem habitat, diets, and diving and breathing characteristics and display different physical characteristics such as size and weight but also in the number of carapace scutes, shell color, type of beaks and other attributes. Because species-specific diagnostics were
not recovered the turtle could not be identified (Carr 1995).

Green sea turtles (Chelonia mydas) which are on the endangered species list in Belize (Platt et al. 1999) generally reach about 78 to 112 cm in length and 68 to 186 kg in weight, and are distinguished by an oval smooth carapace. They are reported to nest by the hundreds from June to August on cays in Belize. They migrate through Belize coastal waters arriving in November and departing in March. Although we cannot know Maya gastronomic preferences of the past, in historic commercial exploitation of turtles, the meat of the green was favored for food because the hawksbill and the loggerhead had dark, strong tasting flesh (Munroe 1898 cited in Witzell 1994:4). The fatty tissue found under the shell of the green turtle, called *calippe* and *calipash*, was dried and used to make the turtle soup so popular in the 18th and 19th centuries. The name "green turtle" refers to the color of this fat, not the shell (Witzell 1994:4).

Hawksbills, also on the endangered species list (Platt et al. 1999) with distinct bills, reach about 53 to 114 cm in length and weigh 27 to 86 kg. According to early explorers in Belize, the very light, or “blond,” beautifully patterned, tapered shell of the hawksbill was preferred, and a large hawksbill could provide 6-7 kg of shell (Carr 1995; Witzell 1994:4). The carnivorous loggerheads (Caretta caretta), listed as vulnerable in Belize (Platt et al. 1999), the largest turtle of the Cheloniidae family, can reach about 82 to 105 cm in length and weigh from 66 to 101 kg (Carr 1995; Witzell 1994). Unlike the hawksbill and green turtles, it has five or more costal scutes which are rough and often covered with barnacles.

**Turtle exploitation in ancient Maya economy**

Turtle remains were recovered in Belize at ancient sites such as Santa Rita Corozal (Morton 1988:119) in northern Belize to southern sites such Kakalche and Watson Islands (Graham 1994:37, 55, 250, 252). Butchered turtle remains also are common at sites in Yucatán such as Cozumel (Hamblin 1984:176), the area between El Meco and Islá Mujeres and Islá Cerritos, the major Postclassic trading port for Chichén Itzá (Andrews et al. 1988) and Islá Cancuen (Andrews 1965:45).

There are a number of methods of turtle captures and exploitation practices differ due to seasonal variations in behavior and ecosystem locations, but also we may assume due to cultural preferences among the Maya. Craig (1966: 50) reports that the active season for turtle in Belize was June-July during the rainy season. Female turtles
are easy prey when they gather to nest on beaches and no boats, nets, or other equipment is needed. The females emerge from the ocean in great numbers (arrribadas) to lay their eggs at night usually under a waning moon. On such occasions a group or groups of Maya fishermen in seaworthy canoes could locate the females by torchlight. First, they would collect the eggs that had been incubating in deep holes in the warm sand before hatching. Gann (1918:24) reports that turtle eggs captured during the breeding season were a great delicacy to Indians living near Tulum (see Price 1962: 1365). Turtle eggs are large, reported to be as large as ping pong balls.

Craig (1966:49) reports that the net with small weights was preferred by Belize fishermen, “not more than ten or twelve fathoms in length with oversize mesh typical of the “gill” net set in shallow coastal channels and lagoons. It is similar to the European turtle net, the folle, widely used in the Caribbean (Price 1962: 1374). Net manufacture, engineering, and placement required exacting skills and it was sometimes used in conjunction with a painted decoy (Craig 1966:49).

Figure 7. Chert “ad hoc” butchering tools

The egg laying females also could be turned on their backs and captured with no injuries, and kept alive in “pens” or “kraals” for long periods of time as “food banks” or butchered on the spot (Craig 1966:50; Witzell 1994:2). The green turtle can be kept in captivity for extended periods and it may have provided the meat needed to enable early sailors to explore, colonize, and exploit the New World on extended voyages Craig (1966:18); King, 1981; Munroe 1898 cited in Witzell 1994:2; Parsons 1962). In colonial times Craig (1966:20); see also Parsons 1962) reports that cargoes often consisted of live turtles transported in specially made tanks.

Harpooning was a common technology used to catch turtle in the colonial past of Belize and it is likely that it was of similar importance among the Maya, especially in shallow coastal waters. A subset of chert tool forms (e.g., Hester 1985) suitable for harpoons or spears, such as the recovered lenticular bifaces would serve as a primary procurement tool as recorded in ethnographic accounts (e.g., Nietschmann 1973). Turtle has been reported at inland Colha in Postclassic deposits (Scott 1982: 203), the source of the diagnostic lenticular bifaces recovered at Chili Pepper Mound.

Catching and harpooning turtle involved the communal efforts of fishermen in a sturdy boat as Craig reports for the colonial period, in parties of four or five. It was dangerous because sea turtles do not
surrender without a fight and were difficult to get into a small boat. The heavy beak of the loggerhead turtle and flailing flippers can damage the boat and cause serious injuries to the fisherman. Although it did not affect the meat, harpooning also was likely to damage the carapace valued by the Maya (Craig 1966:19, 50). Subsequent to butchering, the left over meat, like fish, would have been salted to preserve it for local consumption or for trade inland (See Mock 1994a, 1999). Turtle fishermen would have had status in the Postclassic community because of their knowledge steeped in lore and experience and skills.

Figure 9. Defleshing marks made by obsidian blades on turtle femur.

Turtle and Maya symbolism - A Gift from the Sea

Although turtle bone is reported at Belize archaeological sites there are no recorded instances of turtle buried with artifacts that suggest a ritual event. Symbolic meanings were attached to products from the sea by Maya (Lange 1971) creating, maintaining, and manipulating belief systems, and relationships and we may assume this predilection is true of the Postclassic occupants of Chili Pepper mound, permeating all levels of society.

Due to expanding markets for turtle shell, substantial fortunes were made in colonial Belize (Craig 1966:20) and a similar value was placed on turtle among the Maya. The carapace was used to fashion a number of artifacts highly valued in inland/coastal trading networks (see Scholes and Roys 1948:29, 244; Thompson 1966:218) and we may assume that the Chili Pepper fishermen separated the carapace from the meat for this reason. Turtle shell was fashioned into shields, rattles, drums, and vessels (Lange 1971:73; Parson 1962: 85; Rupert et al. 1955:49, 60). Turtle carapace drums are prominently displayed in Maya iconography on murals such as the Bonampak palace scenes (see Lang 1971:73; Thompson 1966:218); and those of San Bartollo (Saturno et al. 2005), and on polychrome vases (Zender 2006:8). The playing of the turtle shell drum was a sacred action, symbolizing water, earth, fertility, and the underworld perhaps connected to the sound of thunder and rainmaking clouds (Taube 1992:99; Zender 2006:8).

Stone (1995:65-66, 78-79, 82, 84, 140, 201, 238) records numerous paintings in the caves of Yucatán with iconography related to turtles. In a procession of three figures, one plays a turtle carapace drum with a deer antler (see also Zender 2006: 9, Figure 9). The Codex Borgia shows a turtle playing a drum with a conch trumpet (Miller and Taube 1993:174).

The presence of the three whistles recovered in the excavations on Chili Pepper
Mound is not coincidental and suggests a sequential ritual event connected to the final deposition of the butchered turtle. An associated musical instrument may have been played that has not survived in the archaeological record such as a wooden flute or drum.

The splitting of the turtle carapace from the plastron in the butchering process is directly related to the emergence of the Maize god from the cleft in a turtle carapace, an important theme in Maya iconography (see Kappleman 2002:78; Zender 2006). The ventral plastron also is pictured in the iconography with the carapace shell. The Maya God N is depicted in a number of combinations and substitutions but he is often shown wearing a turtle carapace (Martin and Grube 2000; Miller and Taube 1993:132, 175; Taube 1992:92, 94; Zender 2006:9) as is Pawahtan (Schele and Mathews:1998, 214, Figure 6.10A1). An illustration in Schele and Mathews (1998: Figure 6.7) shows God N standing in the cracked carapace while another figure holds a turtle drum. The turtle is linked to the three stone place of creation in the belt of Orion (Reilly 2002 55, 60: Figure 4.13; Tedlock 1985). Zender’s (2006) comprehensive examination of turtle iconography focused on stylized versions of turtle plastron and carapace highlight the prominence of the turtle as one of the most ancient Maya symbols of power. The Maya conceptualized the earth as a large disk shaped like the back of a turtle and the solar disk figure resembles a turtle (Miller and Taube 1993:175; Stone 1995:22). Taube (1988: 199) posits that the rounded carapace represents the Maya interpretation of a circular earth, as a model “for recording and conceiving of the passage of time” in association with the completion of the Katun cycle (see also Miller and Taube 1993:69). A turtle’s most obvious characteristic is its protective, oval shaped shell plate and on some turtles the annual growth rings are visible (Gibbons 1987). The correlation of the egg laying season in June-July with the onset of the rainy season in Belize provides additional evidence relating turtle iconography and rituals with thunder, rainmaking, and elements of time as discussed above. The turtle eggs laid by females in deep holes in the beach sand are round and resemble copal balls or rounded...
balls of “ground maize” again symbolizing the association with the birth of the Maize God (Taube 1988:198)

The occupants of Chili Pepper mound at Saktunja butchered a large sea turtle after removing the highly valued carapace. In a reverential event following the butchering, perhaps with music supplied by the three whistles, they deposited offerings such as supports from their red-slipped serving vessels, marine shell, and four lenticular bifaces, perhaps used to harpoon the turtle. These Postclassic Maya living on the edge of the sea, not of high status, perhaps common fishermen, also shared in the pan Maya belief system of the Postclassic and understanding of their terrestrial and celestial worlds. They too conceptualized the cyclical passage of time and the wet and dry seasons through the turtle in relation to its biological features and patterns of behavior within its marine ecosystem. Here too, the life cycle of the sea turtle and its manifestations as God N mirrored the birth of the Maize god. Indeed, this sea turtle was a Gift from the Sea to the inhabitants of Saktunja.

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SECTION TWO: GENERAL RESEARCH PAPERS

Selected Archaeological Sites of Belize
Map: C. Helmke
13 COMMUNITY ARCHAEOLOGY AT MINANHA: SOME PRELIMINARY INSIGHTS FROM THE PHASE II SETTLEMENT STUDY

Gyles Iannone, Carmen McCormick and James Conolly

The archaeology of community approach was initiated at Minanha in 1998. During the first eight years of the project our research was concentrated in the epicentral court complex. These investigations were aimed at developing a sequence for the rise and fall of the Minanha royal court, which we now know existed for a relatively brief period spanning the 8th century. In 2006 we began Phase II of the project. This research was designed to generate a balanced understanding of the Minanha community through an examination of the support population. Some preliminary insights from the Phase II investigations will be presented in this paper.

Introduction

In this chapter we discuss some of the preliminary results of the Phase II settlement study at the ancient Maya centre of Minanha (Figure 1). This phase of investigations was designed to have three main objectives:

- to compare the settlement densities and composition of two settlement zones of varying distance from the Minanha epicenter;
- to excavate and analyse a stratified sample of settlement units in both study zones; and,
- to map the terrace agricultural system associated with one of the settlement zones.

With this data in hand, we will address the following questions:

- How did the pre-existing communities in the two study areas react to the establishment of the Minanha royal court?
- To what degree, and through what means, were they integrated into the new socio-political and socioeconomic hierarchies?
- How did they change during the life-span of the royal court?
- What roles did they play in upholding and/or undermining the royal court?
- How did they respond to the demise of the royal court? and,
- How did the communities that survived the downfall of the royal court differ from those that had preceeded them?

The two settlement zones that were selected for examination during the Phase II study differ significantly in their spatial, environmental, and compositional characteristics (Figure 1). The first settlement zone, the Site Core Zone, comprises the 1 km square immediately surrounding the epicenter itself. The second 1 km square, the Contreras Zone, is focused on the Contreras Valley, located ca. 1 km southeast of the epicenter, in the midst of an extensive agricultural terrace system. These study areas were chosen for analysis because they will allow us to explore diverse segments of the greater Minanha community.

In terms of our on-the-ground research, full-coverage survey and mapping has already been completed in the Site Core Survey Zone (Zone 1). An inventory of settlement units has also been generated for the Contreras Zone (Zone 2), and we are currently mapping these, as well as the extensive agricultural terrace system. We have also selected a 20% sample of settlement units for excavation from each survey zone (Figure 2). For comparative purposes, each sample was stratified based on the Xunantunich classification system, which divides settlement units into seven
types based on the number of structures, the degree of formal arrangement, and maximum structure height (e.g., Ashmore et al. 1994; Ehret et al. 1995). Extensive excavation of the settlement units comprising each sample was initiated in the Site Core Zone in 2006 and in the Contreras Zone in 2007.

Community Archaeology at Minanha: Preliminary Results

In the remainder of this chapter we present some of the preliminary findings of our ongoing Phase II investigations. In doing so, we make reference to some of the key developments that impacted the various local, micro-regional, and regional communities that once intersected at the place we now call Minanha.

The Terminal Preclassic (ca. 100-120 A.D.) Community

Although Terminal Preclassic sherds have been recovered from some of the settlement units examined during our Phase II investigations (e.g., 74S-2nd), we have not isolated any construction phases that can be solidly dated to this early time period. This suggests that the earliest Minanha settlers were concentrated in the area that would eventually develop into the Minanha epicentral court complex.

The Early Classic (ca. 250-550 A.D.)/Middle Classic (ca. 550-675 A.D.) Community

The 6th and 7th centuries appear to have been a time of moderate community expansion outside of the epicentre proper. Specifically, two of the six groups excavated in the Site Core Zone during the 2006-2007 field seasons had construction phases dating to this time (Groups S and AQ; Mosher and Seibert 2006; Zehrt 2006). It is significant that one of these settlement units, Group S, is the single largest residential group outside of the Minanha epicentre. Unfortunately, we have few artefacts to inform us as to the daily life of these early settlers. In fact, most of what we know about them derives from their architecture and ritual practices, and both data sets continue to be quite limited in scope.

All of the Early to Middle Classic buildings discovered in our settlement study thus far were constructed over compact, levelled base surfaces using dry-stone fill overlain by a layer of compact aggregate fill, and thick, hard, plaster floors. The aggregate layers and floors were characteristically buff or pinkish-orange in colour. The early builders used well-made cut-stones for the facings of the buildings, all of which appear to have had perishable walls and roofs.

The ritual deposits recovered so far provide tantalizing glimpses into the nature of the Minanha community during the 6th and 7th centuries. Specifically, there appears to have been a conscious effort on the part of all residential groups to ritually demonstrate ancestral connections to the landscape through the interment of ancestors, and portions of ancestors (i.e., the inclusion of partial human remains in burial or cache contexts), in eastern buildings.

Finally, there is evidence to suggest that the community of Minanha itself was becoming more complex, and we see some initial signs of overt status differentiation. This is primarily reflected architecturally in the comparatively large size, and multifaceted composition, of the Group S residential courtyard when compared to the other settlement units dating to this time period. Nevertheless, although there is some evidence for a small cluster of ritual-residential architecture in the area that would eventually develop into the Late Classic royal court complex, the Minanha community likely continued to be rather small, and mainly rural in character, until the onset of the Late Classic period.
The Late Classic (ca. 675-810 A.D.) Community

The Late Classic period was a time of dramatic change at Minanha, as it was a period of significant population growth, and socio-political re-organization. In particular, the establishment of the 8th century Minanha royal court must have brought momentous changes to the economic, social, political, and ideological characteristics of the greater Minanha community. In terms of the distribution of settlement, and its composition, much of what we see on the surface today reflects the nature of the community during the Late Classic period. Previous reconnaissance has indicated that 39 separate settlement units exist in the Site Core Survey Zone (Zone 1). This seemingly small number is, in reality, a direct reflection of the fact that the center of this survey zone is dominated by the 9.5 hectare epicentral court complex, the buildings of...
which are not included in the Phase II settlement count (see Figure 1). If these epicentral buildings are included in the total count for the zone, there are 58 settlement units comprising 178 separate buildings in the 1 km square. During the 2006-2007 field seasons, extensive reconnaissance in the Contreras Survey Zone (Zone 2) indicated that at least 85 distinct settlement units, comprising 160 (minimally) individual buildings, were present in this 1 km square survey block (Figure 1). In summary, both survey zones were densely settled during the Late Classic period, although the Site Core Zone is unique because the royal court complex dominates much of this 1 km square survey zone.

In terms of overall distribution across the landscape, the Late Classic settlement units in the Site Core Survey Zone are primarily concentrated on a flat terrace surrounding the Minanha epicentre. In fact, the presence of flat terrain and proximity to the epicentre appear to be the primary factors that influenced settlement location in this zone. Within the Contreras Survey Zone the Late Classic settlement is, for the most part, evenly dispersed. However, there is a clear pattern wherein many of the settlement units are situated on the terraced hillsides surrounding the valley proper. This distribution likely reflects a conscious effort not to build on the rich soils of the valley bottom, as this was the most productive farmland.

Our preliminary reconnaissance has also allowed us to recognize some significant differences between the two survey zones with respect to their settlement composition. As discussed earlier in this chapter, for comparative purposes the Minanha settlement study has employed the settlement unit classification scheme established by the Xunantunich Archaeological Project (see Figure 2; Ashmore et al. 1994; Ehret et al. 1995). This scheme is based on differences in the number of structures present, their formal arrangement, and the height of the actual buildings. It is assumed that these differences have social implications.

As one can see in Figure 2, settlement in the Contreras Zone is dominated by Type I and II settlement units, with 61% of the units falling into one or the other of these categories. This implies that most of the settlement units are comprised of a limited number of buildings, and most are informally arranged. Almost half of the settlement units (i.e., 44.7%) are solitary mounds. In addition, there are few large groups. Interestingly, those settlement units that are situated in the rich farmland of the valley bottom include a number of solitary buildings (Type I), many of the more formal patio groups (Type IIIIs), and the largest residential courtyard (MRS 4, a Type VI settlement unit). It is possible that the larger, formal groups represent well-established rural families, whereas the solitary mounds might represent special function, or field, buildings (e.g., trojas). A number of the larger, and more formal settlement units are also concentrated on the hilltops overlooking the valley. These include both residential and ritually oriented complexes.

The Site Core Zone composition statistics are quite different from those of the Contreras Survey Zone (see Figure 2). Here, close to half of the settlement units fall into the Type III category (i.e., 46.2%), indicating that they are formally arranged groups with multiple structures. There are also roughly half as many solitary mounds compared to what has been documented for the Contreras Zone (i.e., 25.6%). Finally, there are twice as many Type V and VI units in the Site Core Zone. In summary, the settlement units in the Site Core Survey Zone are consistently more formal in their arrangement, and they often contain more
Figure 2. Minanha Phase II Settlement Study: Research Sample and Compositional Data.
Community Archaeology at Minanha, Belize

descriptions, and include structures of greater height.

There are many reasons why the settlement composition of these two survey zones would differ to the degree that they do. It can be assumed that these divergences are at least partially reflective of differences in the status of the occupants of, and/or variation in the activities carried out within, individual settlement units. Specifically, the settlement pattern in the Contreras Zone seems to be agrarian in focus, given the nature of the settlement units and artifact assemblages, the abundance of *trojas*, and the ubiquity of terraced fields. In contrast, settlement in the Site Core Zone seems to be less agrarian, and likely more specialized, given the paucity of *trojas*, and the shortage of suitable farmlands within the zone. Many of the inhabitants of this sector of the greater Minanha community were likely much more involved in the daily maintenance of the nearby royal court.

The differences in settlement composition might also be tied to the temporal qualities of the two settlement samples. Specifically, it is plausible that the settlement composition of the two zones differs because the Site Core Zone was home to more established households whose residential compounds had grown incrementally, and in an organized fashion, over the course of the Early, Middle, and Late Classic periods (i.e., 250-810 A.D.), whereas the prevalence of groups lacking formal organization may imply that much of the population of the Contreras Survey Zone was comprised of settlers who were late-comers to the area. Whether these settlers were first attracted by the perceived benefits that came with living in close proximity to a “full-service” center, or whether there was some form of coercive population relocation undertaken by the newly established royal court (see de Montmollin 1989) remains to be determined. Nevertheless, it seems likely that length of land tenure will be a key factor in the settlement composition differences recognized during the first field season.

It is also worth noting here that our preliminary investigations suggest that there was a recognizable change in construction methods over time. In contrast to the Early and Middle Classic buildings described above, Late Classic buildings often employed a combination of cut-stones and crudely shaped, compact limestone blocks in their facings, with the roughly hewn blocks serving as the basal courses, and the cut-stones comprising the upper courses. These later buildings sometimes also incorporated bedrock into their facings. Late Classic fill was customarily of the dry-stone variety, with sporadic use of compact, aggregate materials. This data suggests a decline in construction techniques, and hence quality, overtime.

The vast majority of the Late Classic buildings excavated to date consisted of masonry building platforms surmounted by perishable buildings, often with interior benches. This architecture is characteristic of lower status residential groups. The artefact assemblage recovered during our excavations also confirms that the majority of these settlement units were the residences of lower status individuals. The most common items were grinding stones, such as manos and metates, cutting implements, such as obsidian blades, sherds from cooking and storage vessels, and hunting implements, such as projectile points.

There are, however, some groups that appear to have been positioned higher up in the settlement hierarchy. In fact, both survey zones have at least one apparent residential unit that is larger, and more elaborate, than the others. In the Site Core Zone, Group S was clearly an important residential group, as is attested by its thirteen buildings, elevated sustaining
platform, and prominent eastern shrine complex (see Figure 1). This courtyard was established in the early 7th century, and it went through a series of modifications and expansions during the 8th century. The MRS4 Group, located in the north central portion of the Contreras Valley, near an active spring, is also larger than most of the nearby settlement units (it contains seven buildings), and it too has a prominent eastern ancestor shrine (MRS4-M3; Schwake 2003; see Figure 1). Both Group S and MRS4 appear to have been home to well-established families, or residential corporate groups, and their inhabitants therefore likely played key roles in the economic, social, political, and ritual spheres of their surrounding communities.

The presence of the prominent eastern shrines also implies that these groups were firmly tethered to the landscape through their ancestors, who may in fact have been community founders (see McAnany 1995).

Another data set also indicates that the residents of the Group S and MRS4 courtyards actively signified their identity as members of the greater Minanha community. This is suggested by the use of slate capstones (minimally one) in association with the MRS4-M3-B/1 burial, the remains of which were found in association with the MRS4-M3 eastern shrine and in the 77S-B/1 multiple burial. Over the course of our excavations at Minanha slate capstones have emerged as a fairly consistent component of many Late Classic graves and caches in all three survey zones. The widespread use of slate as capstones in burials, and as cache items, does appear to reflect shared ritual practices that had a strong identity element associated with them; and the presence of these slate items within contexts associated with social groups from various socioeconomic and sociopolitical backgrounds implies that this “identity” was shared by members of various sectors of the Minanha community.

The Terminal Classic (810-900 A.D.) Community

With the onset of the Terminal Classic period the Minanha community would again enter a period of dramatic change. Much of this was precipitated by the demise of the royal court (Iannone 2005). But, this does not mean that the Terminal Classic was a period of decline for everyone. We do have evidence for Terminal Classic occupation in the epicentre (Groups J, L, and M), as well as in most of the settlement units tested so far in the Site Core Survey Zone (Groups S, U, X, AQ). In contrast, there is less evidence for Terminal Classic occupation in the Contreras Survey Zone, with only MRS89 providing solid evidence for habitation dating to this time. This data tentatively suggests that the more recently settled Contreras Zone was abandoned earlier than the longer occupied Epicentral and Site Core Zones.

It is important to note here that much of the Terminal Classic occupation is ephemeral in nature. That is, in most cases it simply involves the continued occupation of architecture built during the Late Classic. However, in some instances there is evidence for early Terminal Classic construction, as in the case of Group J in the Epicentral Zone, and Groups S and U in the Site Core Zone. The vitality of this Terminal Classic community is implied by the massive infilling event that was associated with the burial of the Late Classic royal residential courtyard (Group J) sometime in the early 9th century. This event suggests a significant level of community vigour because, regardless of whether external or internal forces were responsible for initiating this infilling, the local community must have supplied the labour force to see it through to fruition (Iannone 2005).
As was seen during the Late Classic, the Terminal Classic buildings employed a combination of cut-stones and roughly hewn, compact limestone blocks in their facings. Once again, the roughly shaped compact limestone blocks were predominately used in the basal courses, with the upper courses being comprised of well-cut soft limestone bricks. The fill for these structures continued to be of the dry-stone variety, with sporadic use of compact, aggregate materials. In some of the groups with longer histories (i.e., Groups J and S), the Terminal Classic buildings were not erected upon compact, levelled base surfaces, but rather relied on the sturdiness of underlying architecture for their stability. This represents less labour investment in construction methods than was true for the earlier construction phases at Minanha, where the construction of compact, levelled base surfaces prior to erecting buildings was the norm.

Most of the architecture that was built during the Terminal Classic period was of the low status variety, and the majority appears to have been residential and/or domestic in nature. One exception to this was 76S-1st, which is a fine example of a Terminal Classic (ca. 810-900 A.D.) c-shaped structure. This building, which comprised the northern structure of the eastern shrine complex in Group S, may have been a ritual structure that was employed without a superstructure. For the most part, the artifacts associated with the Terminal Classic occupation are also low status, and domestic in character.

The End Game

All of the evidence suggests that the Minanha was slowly abandoned over the course of the 9th and early 10th centuries. In terms of the end game, we have evidence to suggest that a variety of termination rituals took place as part of the final abandonment of the Minanha Epicentral, Site Core, and Contreras Survey Zones. The most extensive of these rituals were associated with Structure 45L-1st in the Epicentral Zone, the Structure 76S-1st c-shaped structure in the Site Core Zone, and Structure MRS89-M1 in the Contreras Zone. In these cases dense concentrations of broken pottery were found on the stairs and floor surfaces of the buildings. Most of these sherds can be reftitted to form partial vessels. The assemblages are comprised of vessels exhibiting a variety of forms and surface decorations. Many of the sherds were at one time part of serving vessels, such as red-slipped dishes with rattle feet, and cylinder vases. Various censer forms, including Chaquistero Composite and “scored” censers, are also common elements in these ceramic scatters. Considered as a whole, these ceramic assemblages appear to be typical of feasting events. In the case of 76S-1st, a cache (76S-F/1) was also found within the small interior space formed by the c-shaped bench feature. This offering appears to have been comprised of perishable items, possibly food stuffs, which were deposited prior to blocking up the “doorway” of the building, and covering the small chamber that was created by the door blockage with capstones.

It is plausible, given the data discussed above, that ceremonial feasting was a key component in the larger termination rituals that were conducted to decommission these buildings prior to final abandonment of the larger groups of which they were part. The fact that the major spring associated with the Contreras Valley was eventually covered by rubble and hidden away until it was recently rediscovered by a family of contemporary subsistence farmers (Connell 2000:69) implies that the surrounding landscape itself may have also been terminated as the population slowly emigrated to other parts.
of the Maya lowlands. The recovery of a small side-notched point and ceramic scroll-feet in association with ritually charged buildings in the Minanha epicentre, such as the ballcourt (Structures 1A and 2A), and the eastern ancestor shrine (Structure 3A) does, however, suggest that a small population continued to live in the vicinity of the Minanha epicentre into the Early Post Classic (900-1200 A.D). The members of this increasingly “deep rural” community may have in fact continued to conduct small-scale rituals in association with the epicentral ruins in order to reconnect with a time and place that was increasingly more distant, and foreign to them.

Conclusions

In conclusion, this chapter has presented some preliminary observations based on the results of the first two seasons of our Phase II settlement study. It is imperative to stress that all of these observations should be considered with a certain degree of caution because our excavations are not yet complete, and our artifact analysis is only in its infancy. Nevertheless, at this juncture the data points us in certain directions that we find intriguing. For one, it is likely significant that the largest and most complex settlement unit outside of the epicentral court complex, Group S, also has one of the longest occupational histories – it appears to have been established very early in the 7th century. This is significant, because it means that the leaders of this residential group were likely influential in the community long before the Minanha royal court was established. How the leaders of groups such as this were incorporated into the new power structures that emerged in conjunction with the establishment of the Late Classic royal court remains to be determined. It is likely, however, that there were some significant conflicts and contradictions that needed to be mediated in order for the royal court to function effectively.

The chronological and compositional differences between the Site Core and Contreras Survey Zones are also interesting. Further analysis of these divergences should generate some key insights into the development of the greater Minanha community, the broader ramifications of the rise and fall of the royal court, and the complexities of socio-political and socio-economic interaction within a small city-state.

Finally, it also noteworthy that, after the fall of the Minanha royal court in the early 9th century, some of the courtyards in the royal court complex were actually repopulated by lesser status occupants – sometimes they initiated significant construction phases, in others they simply “squatted” in the extant buildings. Many of the social groups in the Site Core Survey Zone, and some of those living in the Contreras Survey Zone, also apparently outlived the Minanha royal court. In fact, a number of them actually seem to have prospered after its demise. In some cases this prosperity is reflected in significant Terminal Classic building programs. In other instances Terminal Classic construction is not evident, but there was clearly continued occupation during this time period. That the inhabitants of long-standing residential corporate groups, such as those who lived in Group S, seem to have effectively weathered the fall of the royal court suggests that they may have been able to maintain a certain level of political autonomy, and control over their economic base, during the reign of the Minanha kings. In the end, this data set is important, because it suggests that the Terminal Classic collapse was first and foremost a momentous political truncation that only later involved significant population movements and declines (Morris et al. 2007).
Acknowledgements  We express our gratitude to the Institute of Archaeology in Belize, for their continued support of the Minanha research. The Social Sciences and Humanities Research Council of Canada is also thanked for providing the funding for the research reported on herein. The ideas discussed in this chapter employ data generated by a number of top-notch excavators, supervised by Jeff Seibert, Claudia Zehrt, Carmen McCormick, Matt Mosher, Sonja Schwake, Lazaro Martinez, and Joe Martinez, as well as a great survey team, headed by Scott Macrae, Mike Stringer, and Jesse Phillips. We thank them, and all the members of the Social Archaeology Research Program, for all their hard work and good humour over the years. Finally, we are deeply grateful to everyone in Belize who contributes to the success of the project every year. Without them, none of this would be possible.

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14 Architectural Manifestations of Power and Prestige: Examples from Classic Period Monumental Architecture at Cahal Pech, Xunantunich and Caracol, Belize

Jaime J. Awe

From the construction of the earliest masonry buildings in the Middle Preclassic period, the Maya of western Belize, like their contemporaries in greater Mesoamerica, utilized architecture as a medium for artistic expression and as manifestations of elite power and prestige. This practice culminates in the Late Classic period when monumental architecture at these lowland sites was deliberately used to also demarcate public from private spaces. This paper examines the architectural morphology of important structures at Cahal Pech, Xunantunich and Caracol, three very different Classic period Maya polities, and demonstrates how these distinct communities utilized different architectural forms to convey similar expressions of power and socio-political stature.

Introduction
In a historical review of the study of ancient Maya social structure, Marshall Becker (1979) cited J. Eric S. Thompson as one of the first scholars to infer social status and interaction from his observation of the Maya settlement landscape. Indeed, as early as 1927 Thompson began to popularize the notion of Maya “ceremonial centres” based on a dichotomous priest-peasant hypothesis of social organization. Several decades later, Brainerd (1956), in a brief but insightful paper, further illustrated the significance of settlement pattern studies “and the inferences that could be made there from regarding social classes” (Becker 1979:15). In the mid 1960’s and early 1970’s, Haviland (1968, 1970, 1972) and Hammond (1972) also demonstrated, at Tikal and Lubaantun respectively, that a systematic process in data collection and careful analysis of settlement morphology were important tools in the study of ancient Maya society. Since then Mayanists have generally accepted the premise that spatial organization reflects social organization (Ashmore 1981), and numerous scholars have provided excellent diachronic examples of the use of architecture and archaeological data for determining ancient Maya social structure (Chase 1992; A. Chase and D. Chase 1997, 2001; D. Chase and A. Chase 1992, 1994; Havilland and Moholy–Nagy1992; Houston 1998; Inomata and Triadan 2003; McAnany 1998; Webster 1998).

Given that few archaeologists working in western Belize had addressed questions of this nature, I decided to examine the architectural configuration of the central precincts of Cahal Pech, Xunantunich and Caracol in an effort to ascertain whether linkages could be made between site core morphology and social organization. More specifically, the study sought to determine whether the Belize Valley Maya incorporated particular ideological concepts in their built environment, and to ascertain whether the architectural configurations of the three site central precints could be used to make inferences about the social structure of the Classic period Maya who inhabited this sub-region of the Maya lowlands.
Architectural Manifestations of Power and Prestige

The Cahal Pech Site Core

The core area of Cahal Pech consists of at least 34 structures compacted on top of an acropolis slightly larger that one hectare in size (Figs. 1 & 2). Most of these 34 structures are located around seven (7) plazas and include two ballcourts, temple pyramids and several range-type buildings (Awe 1992, 2005, Awe et al. 1991). Investigations in the site core also recorded 8 plain stelae, 1 altar and possibly a sweathouse (Awe 1992; Satterthwaite 1951).
A ninth, carved, Preclassic, stela was discovered in a large sacbe termini complex to the south of the site core (Awe and Grube 2001; Cheetham 2004).

During the past 20 years, research at Cahal Pech (Awe 1992; Ball and Taschek 2001; Healy and Awe 1995, 1996, Garber and Awe 2006, Garber et al. 2004; Taschek and Ball 2004) established that the site was continuously occupied from the Terminal Early Formative (1200 - 900 B.C.) through the Late Classic Period (600-800 A.D.). For the purpose of this study, however, only the Classic period architecture, or terminal construction phase, will be discussed.

The 34 structures within the acropoline site core of Cahal Pech delineate seven plazas. When examined topographically, it becomes clear that the core area has an east–west orientation and which can be divided into two sections: a higher elevated western sector that includes Plazas A, D and E, and a lower eastern sector comprised of Plazas B, C, F and G. The mounds bordering the western plazas are tightly clustered, and practically restrict access to and from the lower eastern sector. Mounds delimiting the eastern plazas are less clustered than those of the western sector, they do not restrict access from other plazas in the eastern sector, and are located near or next to the only points of access into the central precinct. These access points are located north and south of the juncture between Plazas B and C (see Figs. 1 and 2). They are also the only areas that provide a gradually ascending approach to the site core. All other points around the perimeter of the core area have a sheer rise of between five and 20 meters. Range-type structures, which almost entirely circumscribe the site core, further add to the acropoline nature of the central precinct.

To the south, west and east of the Cahal Pech site core the terrain is dominated by rolling hills with natural and constructed terraces upon which are several dispersed plazuela groups. Settlement on the northern periphery is not as dense as in other areas and contains only a few scattered plazuela groups such as the Melhado site (Awe 1992). It is likely that this settlement pattern may have been influenced by the fact that this area is susceptible to periodic flooding. Because it contains some of the most arable soils in the region it may have been used primarily for agricultural pursuits rather than for residential purposes.

In summary, Cahal Pech exhibits features typical of most Lowland Maya sites. The site core can be defined as the spatial unit that: a) exhibits the greatest concentration of large mounds and plazas, b) is higher in elevation than the surrounding area, and c) is delimited by structures circumscribing a natural acropolis or central precinct.

Semi-Restricted and Restricted Access Plazas

As indicated above, we can identify two distinct plaza types in the site core of Cahal Pech: 1) semi-restricted access plazas within the western sector, and 2) restricted access plazas in the eastern sector of the site. Plazas B, C, F and G are semi-restricted access plazas and are bounded, but not completely enclosed, by the architecture (see Figs. 1 and 2). Entry to the site core from the periphery is also only possible through the two access points which lead into Plazas B, C and F. This indicates that the flow of traffic into the site core was purposely channeled through and into these courtyards via these two access routes.

In contrast to Plazas B, C, F, and G, the western Plazas A, D and E are restricted access plazas, and are entirely bounded on all sides by elite, residential/administrative, architecture. Access between the restricted and the semi-restricted access plazas is also
Architectural Manifestations of Power and Prestige

Table 1. Dimensions of Plazas in the site core at Cahal Pech

<table>
<thead>
<tr>
<th>Plaza #</th>
<th>Restricted</th>
<th>Partly Restricted</th>
<th>Semi-Restricted</th>
<th>Unrestricted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaza A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plaza B</td>
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<td></td>
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<tr>
<td>Plaza C</td>
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<td>Plaza D</td>
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<tr>
<td>Plaza E</td>
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<tr>
<td>Plaza F</td>
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<td></td>
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<td></td>
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<tr>
<td>Plaza G</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

only possible through two doorways within the structures that separate the two plaza types, or via a narrow vaulted tunnel that leads into Plaza A from the south. One of the two doorways links restricted Plaza A to the large semi-restricted Plaza B and is also located at the center of Structure A-2, a large double vaulted, range-type building that has 13 doorways facing Plaza B to the east. The only access into Plaza A from the semi-restricted plazas is therefore through this one doorway or through the small tunnel between Plaza A and Plaza F.

Table 2. Elevation of Plazas in the site core at Cahal Pech

<table>
<thead>
<tr>
<th>Plaza #</th>
<th>C</th>
<th>F</th>
<th>B</th>
<th>A</th>
<th>L</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation (m)</td>
<td>160</td>
<td>162</td>
<td>164</td>
<td>166</td>
<td>168</td>
<td>170</td>
</tr>
</tbody>
</table>

Returning to the analysis of the two plaza types we can identify several other morphological differences between them. For example, Tables 1, 2, 3 and 4 demonstrate that the restricted access plazas (A, D and E) are predominantly smaller in size, higher in elevation, and further from the points of access to the site core than the semi-restricted plazas (B, C, F and G). The limited accessibility of Plazas A, D, and E suggests that activities in these courtyards were restrictive or private, and that residence in their perimeter buildings was exclusive of membership. Conversely, the accessibility of Plazas B, C F and G suggests that these plazas were less private and that activities within them were less restrictive. This architectural configuration further indicates that the less restrictive plazas (especially Plaza B) were likely used for more public, perhaps community-related, functions. Interestingly, the morphology of Strs. B-1, B-2 and B-3 and their eastern location in Plaza B reflect a pattern that resembles a variant of E-group complexes like those identified at Uaxactun (Ruppert 1940). Because of architectural differences, however, we refer to these eastern Belize Valley structures as “In-line Triadic Eastern Shrines”. In his examination of these Triadic Eastern Structures in the Belize Valley, Aimers (1998) recently noted that they likely did not function like typical E-Groups. Despite this observation, these architectural complexes are consistently found in large, public access plazas throughout the Belize River Valley region. Their excavation at Cahal Pech (Awe 1992, Baking Pot (Aimers 1998; Audet 2007; Audet and Awe), and Pacbitun (Healy 1990, Healy et al. 1995) produced numerous elite burials and caches, suggesting that they (particularly the larger and taller central structures) likely functioned as the primary ancestral shrines for these sites. Since the In-Line Triadic Eastern Structures at Cahal Pech are found in Plaza B it further supports the argument that this plaza was particularly accessible because activities held within the
courtyard were periodically open for public viewing and participation.

Two other types of activities that would have allowed public participation are ballgames and markets. The location of the eastern ballcourt just across in Plaza C may therefore represent a purposeful construction. By locating this complex next door to the ancestral shrine, and by placing it within an area of more open access, the architects or designers of the site core ensured public participation in the activities that took place within this section of the site. Determining whether Plaza B could have been used for periodic markets is more difficult to ascertain. This courtyard is by far the largest at the site. It is also the most accessible, and by extension the most public, plaza at Cahal Pech. If markets were held periodically in the site core, then Plaza B, by nature of its accessibility, large size, and general morphology, would be the market’s most practical location.

Another feature that hints to the public nature of Plaza B is the location and architectural configuration of Str. A2. This long, range-type, multi-roomed building borders restricted access to Plaza A and the more open access Plaza B. Structure A2 thus clearly marks liminal space. It is quite obviously a point of transition between public and private space and for this reason buildings like these are often referred to as Audiencias (Taschek and Ball 2004).

Another interesting characteristic of Structure A2 are the 13 doorways on the building’s eastern facade. Why does the building have 13 doorways on the east side and less on its west side? And why is it that only the central, or seventh, doorway allows access between Plazas A and B? I propose that the builders purposely constructed the building with these features for both symbolic and practical reasons. Thirteen reflects the number of levels in the Maya heavens. By putting 13 doorways in the building that separates public space from private elite space, the rulers at Cahal Pech were symbolically representing their elevated and perhaps deified status. They also ensured that the public who entered Plaza B would see the celestial symbolism marking the point of access into the elite enclave of the site.

The eastern section of Structure A2 (with its 13 doorways) is also in an ideal location for serving administrative purposes. The structure’s position at the point of transition between public and private elite space would have allowed the elite rulers who resided in the restricted access plazas to administer to civic responsibilities and to collect tribute during public events such as market days. The single doorway at the center of
Structure A2 would in effect limit access to Plaza A from Plaza B, while at the same time allow the rulers residing in the restricted plazas to access the elevated platform of Str. A2 and to view the events from this vantage point without having to actually mingle with the public in Plaza B.

It is important to note that the above settlement configuration at Cahal Pech only comes into vogue between the 6th and 7th centuries A.D. Excavations on Structures A-1, A-2, A-4, D-2 and E-1 indicate that prior to this period Plazas A, D and E were not enclosed by mounds and that there was open access between them and Plaza B. Formative period settlement in the core area can therefore best be described as open in character. This “open” pattern is similar to the settlement configuration evident at other sites during the Preclassic Period (Scarborough 1980:305; Potter 1985). In a discussion regarding the trends in Maya urban planning, Lothar von Falkenhausen (1985:130) stated that through time, “Particularly within complexes, there is a trend from open towards enclosed spaces…” In the same volume, Potter (1985:142) adds that monumental architecture at some sites “…changed from fundamentally ritual-oriented, open access” to private restricted access. The Cahal Pech data is consistent with these observations and suggests that between Preclassic and Late Classic times the morphology of the site core had evolved from an “open” configuration of structures to a highly complex configuration of restricted and semi-restricted plaza groups.

The Xunantunich Site Core

The site core of Xunantunich (Fig. 3 and 4) is situated on an artificially leveled limestone ridge with a commanding view of the Mopan River valley. From this core area the site radiates outward, encompassing settlements that extend for several square kilometers (LeCount et al. 2002; Leventhal and Ashmore 2004). The Xunantunich epicenter consists of four major architectural groups. The most prominent is Group A, which has a north south orientation and is usually subdivided into three courtyards: Plazas AI, AII and AIII.

Plaza AI is the southernmost courtyard in Group A and is dominated by the 40 meter tall Structure A-6, also known as “El Castillo”. In addition to the Castillo, there are four pyramidal structures (Strs. A1, A2, A3 and A4) that enclose Plaza AI to the north, east and west. Plaza AII lies between Plazas AI and AIII and is bounded by pyramidal structures on the south, east and west. At the north side of the plaza is Structure A13, a large, range-type, building that is actually the eastern structure of an elevated palace complex. At the center of this elevated complex is Plaza AIII, enclosed by A13 and three other residential, palace style, buildings (A10, A11, and A12) that are located on the north, east and west sides of the courtyard.

Eight stelae and four altars were found in Plaza A at Xunantunich. Only three of the stelae and one of the altars were carved and these were all discovered along the southern base of Str. A-1 in Plaza AI. Inscriptions carved on these monuments all make reference to Late Classic events (LeCount et al. 2002). A similar date is reflected on a recently discovered panel on the north face of the Castillo. This panel also provides a toponym for Xunantunich that translates as Kat Witz or Clay Mountain (Helmke and Awe 2005). Group A also contains two ball courts. The earliest (Strs. A18 and A19) was discovered partly buried on the western base of Str. A1 (Leventhal and Ashmore 2004). The second, larger, ballcourt is adjacent to, and easily accessible from, Plaza A1. None of the ballcourts contained markers.
Figure 3. Plan View of Xunantunich Site Core (after LeCount et al. 2002).

Figure 4. Reconstruction Plan of Xunantunich Site Core (after LeCount et al. 2002).
Groups B and C are located to the west and south respectively of Group A. Previous research in Groups B and C suggest that most of the structures in these courtyards may have served as residences for people of relatively high status. In contrast to Group B, however, Group C may also have a third small ballcourt (Leventhal and Ashmore 2004).

Located about half a kilometer downhill and to the southeast of the Castillo, Group D consists of 16 mounds. Most of these structures focus towards a large pyramidal mound that sits on the east side of an impressive courtyard group. Two plain stelae were discovered in the courtyard as well as a sacbe (causeway) which links Group D to the main causeway that leads into Group A.

Among these courtyards the most relevant to our discussion are the three plazas of the A Group that form the central precinct of Xunantunich. At first glance it appears that these plazas and their architecture bear no semblance or share any similarities with the site core at Cahal Pech. The north – south orientation of the Xunantunich core differs from the east – west orientation of Cahal Pech and there appears to be no clear subdivision between restricted and semi-restricted access plazas. As I indicate below, however, these are but minor differences and there are actually considerable similarities between the two centers.

But before we can demonstrate the similarities between the two sites we must first dispel an important misconception of the nature of the Castillo. This massive structure is often misinterpreted as the primary temple at Xunantunich. This is simply not the case. If we examine the Castillo carefully we will note that on its south side and about midway up the structure there are at least three, small, restricted access, courtyards that are enclosed by multi-roomed, residential type, buildings (see Fig. 4). These are very much like the palace complex represented by Plazas D and E on the western sector of Cahal Pech. Towards the eastern and western summit of the Castillo are large stucco friezes whose carved elements primarily consist of celestial and astronomical symbols (Fields 2004). During the Late Classic period sections of this frieze also adorned the roofs of the palaces whose doorways still face the north and south sides of the structure. On the north side of the Castillo, and midway up the structure, is a large, range-type, building (Structure A32) that has 13 doorways facing Plaza A1. Like Structure A2 at Cahal Pech, only the seventh or central doorway provides access beyond this building. Like its counterpart at Cahal Pech it therefore marks a point of transition between private space (the upper sections of the Castillo) and public space (the Plaza A1 courtyard) and therefore likely served as the Xunantunich Audiencia. Like at Cahal Pech, the Xunantunich rulers could have used this building to view public events in Plaza A1 from a discrete vantage point. That Plaza A1 was used for events that allowed public participation is suggested by the fact that the site’s two major causeways terminate at the A1 courtyard, just below this Audiencia at the eastern and western base of the Castillo. Coincidentally, like Plaza B at Cahal Pech, Plazas A1 – AII at Xunantunich are bounded on the east by an In-Line Triadic Eastern Shrine, and they contain the largest number of monuments at the site. In summary, the architectural features described above provide convincing evidence to support the contention that the Castillo represents a large, multi-function, acropoline, complex that included the dwellings, private shrines and administrative hub for the elite rulers of Xunantunich.
Besides the Castillo, the only other palace complex within the Xunantunich site core is located at the north end of the central precinct. This complex is represented by four range type structures that enclose elevated Plaza AIII and include Structures A10, A11, A12, and A13. Interestingly, when elevations are taken of all the courtyards at Xunantunich (Table 5), it becomes readily apparent that the restricted plazas atop the Castillo, and that of Plaza AIII at the north end of the precinct, are the most elevated courtyards within the site core, a configuration that reflects the pattern of the restricted access plazas at Cahal Pech.

Table 5. Elevation of Plazas in the site core at Xunantunich.

The Caracol Site Core

Caracol is located on the western edge of the Maya Mountains about 500 meters above sea level. Investigations by Arlen and Diane Chase (1987, 2001, also D. Chase and A. Chase 1992, 1994) indicates that the site was first occupied between the Middle and Late Preclassic periods (600-300 B.C.). By the Early Classic (A.D. 300-550), its inhabitants were active participants in a pan-Maya cultural tradition that included the construction of monumental architecture, the use of hieroglyphic inscriptions, long distance trade and exchange, and complex socio-political and religious systems. Caracol’s greatest prominence, however, was achieved during the Late Classic (A.D. 550-900) period, when most of the monumental architecture in the epicentre was constructed (A. Chase and D. Chase 2001; Martin and Grube 2000:84-99; Ishihara et al. 2006).

The core area of Caracol is divided into two main sections: Group A and Group B. Group A is situated in the western sector of the site core and has several architectural complexes that radiate outward from Plaza A. The dominant architectural complexes in the A Group are the South and Central Acropoli, the A-Ballcourt, and several pyramidal structures that border Plaza A proper. Plaza A is architecturally very distinct for it contains a large, Uaxactun-style, E-Group (albeit with some unique characteristics), and it has absolutely no residential, range-type, building. Indeed, besides the E-Group (Strs. A4, 5, 6, 7, 8) all the structures in the A Plaza are large temple pyramids. The two main architectural complexes with range-type, residential buildings in the A Group are the Central and South Acropoli and, like at Cahal Pech and Xunantunich, these are positioned on very elevated platforms to the east and south of Plaza A respectively.

Group B is located to the northeast of Group A and includes some of the most impressive monumental architecture at Caracol. The B Group is comprised of Caana, Ballcourt B, the North Acropolis, the Barrio Complex, and several other large courtyards enclosed by residential type buildings with eastern shrines. The focal point of the B Group is Plaza B, a large courtyard with numerous carved monuments, and from which radiates large causeways that connect important settlements in the site’s periphery. Bordering Plaza B are also the massive architectural complex known as Caana to the north, the Group B Ballcourt to the west, and two In-Line Triadic Shrines to the south and east.
Figure 5. Plan View of Caana Complex, Caracol (after Chase and Chase 2001)

Figure 6. Reconstruction Plan of Caana Complex, Caracol (after Martin and Grube 2000)
Particularly important to our discussion here is Caana, for like the Castillo at Xunantunich, this massive, 43 meters high, architectural complex did not serve as the primary temple at Caracol (Figs. 5 and 6). Like the Castillo, Caana was a large multi-purpose complex that contained the residences, private shrines, and administrative quarters for the ruling, Late Classic, elite family at Caracol. The residential complexes (e.g. the Northeast and Southeast Quads) and pyramidal Structures B18, B19, and B20 at the summit of Caana are among the most elevated and elaborate architectural constructions known from the Classic Period in the Southern Maya Lowlands. Rooms in the elaborately decorated summit palaces probably served as the ruling elite residences while Strs. B19 and B20 likely represent their private family shrines. Supporting this position is a stucco text on the east flank of Structure B19 that records the celebration of a Katun ending by Lord Kan II on A.D. 640.

Facing Plaza B to the south, Caana also has two large, range-type, buildings. The lowermost of these is an (Structure B14-15) Audiencia style building with 13 doorways that face Plaza B some 10 meters below. Like at Cahal Pech and Xunantunich, only the central (or seventh) doorway allows access beyond the building, thus constricting the access to the private shrines and elite residences above while allowing the elite a vantage place from which to view events that took place in Plaza B below. Like its Cahal Pech and Xunantunich counterparts, the Audiencia style building on Caana therefore marks the point of transition between very private and public space. The second range type building (structure 16-17) on Caana also faces Plaza B to the south but is at the summit of the structure. In contrast to the Audiencia style lower building, however, it only has 7 doorways and it borders the small courtyard at the top of the structure. From a Maya cosmological point of view, it appears that the Caracol elite purposely constructed this structure, and the Audiencia, with seven and 13 doorways respectively. In Maya cosmology the seventh level of the heavens is at its zenith thus it is quite possible that this feature was purposely used to symbolically demonstrate the deified status of the elite who resided at the summit of Caana. In this respect we can say that, like the Castillo at Xunantunich and the western sector of Cahal Pech, the Caana architectural complex reflects a similar pattern of elevated, restricted access, elite domains. It can further be argued that Plaza B, with its causeways, ballcourt and numerous monuments may have been the loci of important public events, and that the Caana Audiencia likely served as the point of interaction between the elite who resided at the summit of the structure and the public below.

Discussion

In his analysis of the site core morphology at Lubaantun, Hammond (1972:285) states that common sense suggests that the traffic plan at Maya centers would call for low accessibility into private, residential areas, and high accessibility into public areas. Furthermore, the accessibility of particular sections of the site likely reflected their degree of elitism and exclusivity (Inomata and Triadan 2003). The degree of elevation, restrictiveness and/or accessibility of plazas at Maya sites are therefore clearly indicative of this socio-political hierarchical system and it is quite evident that architecture was purposely and effectively used by the ancient Maya to distinguish between private elite space and public space.
If we accept this premise, the difference between the two types of plaza configurations (restrictive vs. semi-restrictive) at Cahal Pech, Xunantunich and Caracol provide clear examples of this hierarchical system. Elite living in the more elevated and restricted access plazas may have enjoyed a higher status than elite living in less elevated, less restricted courtyards. Furthermore, the physical boundaries between the restricted access plazas, plus differences in the size and quality of their architecture, may also indicate differences in rank among the elite residing in these respective courtyards.

According to Freidel (1981) this type of spatial segregation is typical of societies exhibiting a social hierarchical system.

“The normal pattern in nucleated complex communities is spatial segregation into distinct districts or neighborhoods reflecting social class. Spatial segregation inhibits casual face-to-face interaction between social unequals and permits an upperclass monopoly on information” (Friedel 1981:375).

In a related article Webster (1980) drew further attention to the relationship between site morphology and social organization. In his study of Chacchob, Cuca and Dzonot Ake in the Yucatan, he suggests that settlement configuration can imply “social barriers that spatially segregated, in symbolic terms, a population already politically and economically stratified” (Webster 1980:483). He adds that the clustering of major architectural complexes examined from an extended household perspective…

“suggests that there were several elite establishments which, although probably ranked in terms of political influence and wealth, nevertheless were spatially and to some extent socially distinct segments of a larger organizational center”. (Webster 1980:842).

Based on the premise that spatially distinct units represent socially distinct segments of society, we can therefore propose that the spatial distinction observed between the restricted and semi-restricted access plazas at Cahal Pech, Xunantunich, and Caracol is indicative of social inequality between the inhabitants of these two types of plazas. Secondly, that the spatial configuration and architecture observed at Cahal Pech, Xunantunich, and Caracol provides very good evidence for the presence of several differentially ranked elite households residing in the site cores of these sites. Thirdly, the evidence suggests that elevation was a much more important criterion than cardinal direction for distinguishing status in Classic period Maya cities. Fourthly, the data suggests that, at least in western Belize, large range-type buildings with 13 doorways were often used to demarcate points of transition between private elite space and public access space, and that these building types may have served administrative rather than residential purpose.

**Conclusion**

The site core morphology and the typological distinction between plazas based on configuration, accessibility, size and elevation infers the presence of a highly complex hierarchical social system at Maya centers during the Late Classic Period. Furthermore, it appears that elevated, restricted access, plazas are indicative of private space reserved for the upper echelon of the society. Conversely, some semi-restricted access plazas probably served as residence for elite of lower status and as civic spaces for public ceremonies, administration and possibly market places. Finally, it is also apparent that although considerably different in size, prominence and orientation, the architecture of Cahal Pech, Xunantunich and Caracol, three very
different Classic Period Maya polities, all convey similar expressions of power, prestige, and socio-political stature.

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This paper examines avenues by which hierarchies were established during the Middle Preclassic period in the Belize River Valley. Data suggest that sometime during the Middle Preclassic, an important transformation occurred in the valley. Egalitarian societies in which leaders competed using feasting and various other social mechanisms developed into more hierarchical societies in which rulers were differentiated through special access to ceremonial architecture and ritual activities that occurred there. The analysis of two problematic deposits from the site of Blackman Eddy provides evidence that feasting rituals and the construction and dedication of public architecture were ways that emerging elites set themselves apart, leading to the establishment of a hierarchical social order in the Middle Preclassic. Documenting feasting, however, is difficult and necessarily involves a detailed contextual analysis of not only ceramics, but also the remains of foods that may have been consumed as well. Both faunal and botanical analyses were conducted, and the results support the interpretation of ritual feasting.

Introduction

Recent investigations addressing the Preclassic occupation of the Belize Valley have broadened our knowledge of this early landscape. Evidence indicates that communities were founded in the Early Preclassic throughout the valley at sites like Blackman Eddy, Cahal Pech, and Xunantunich, with larger more formally organized centers emerging during the Middle Preclassic at sites strategically placed on hilltops such as Blackman Eddy, Cahal Pech, Actuncan, Nohoch Ek, and Xunantunich’s Group E. Additional data suggest that sometime during the Middle Preclassic, an important shift occurred in the valley, as egalitarian societies where leaders competed using feasting and various other social mechanisms developed into more hierarchical societies in which rulers were differentiated through special access to ceremonial architecture and ritual activities that took place there (Brown 2003; Garber et al. 2004; Brown and Garber 2005). This paper examines two deposits associated with low, broad public platforms and argues that they demonstrate the importance of ritual feasting as a mechanism of social differentiation at the time when this social transformation was occurring.

In 1988, David Freidel and Linda Schele suggested that the institution of Maya kingship (ahaw) originated in the first century BC in order to accommodate “contradictions in Maya society between an ethos of egalitarianism and an actual condition of flourishing elitism brought on by successful trade and interaction between the Lowland Maya and their hierarchically-organized neighbors over the course of the Preclassic era” (Freidel and Schele 1988:549). They argued that an “empirical difficulty with investigating the origins of the Late Preclassic institution of ahaw is the paucity of antecedent evidence pertaining to ideology because of the simplicity and ambiguity of the material symbol systems prior to the Late Preclassic transformation” (Freidel and Schele 1988:549). While the broad process they outline for the development of the institution of kingship is quite plausible, new data like that presented here require modifying their model in three ways: first, the process occurred much
earlier; second, it was not as rapid as they suggested; and third, the antecedent material symbol systems can be discerned clearly in the archaeological record. In the Belize Valley, material symbols such as incised serving vessels were being used as early as the terminal Early Preclassic. These vessels were clearly ancestral to material symbols that would eventually legitimate asymmetrical social relations.

Blackman Eddy and Cahal Pech
Extensive work at Blackman Eddy and Cahal Pech provides the largest data sets for understanding the roots of this process, going back to the terminal Early Preclassic Cunil / Kanocha ceramic complexes of 1100 or 1000 BC (Awe 1992; Brown 2003; Garber et al. 2004) (Figure 1). The role of ritual and religion in the rise of complexity, as well as the changing nature of public architecture and sacred space is important to the understanding of this process and can be examined from data collected at both sites. Understanding the remains of ritual behavior, however, requires detailed contextual examination of the material culture. Special attention will be given to the recent analysis of two problematic deposits from Blackman Eddy dating to the Middle Preclassic that likely represent the remains of ancient ritual feasting events associated with the dedication of public platforms (Brown 2007). Comparison with later caches at the site shows a shift in ritual behavior from communal activities to rituals celebrated by a decidedly smaller segment of the population.

I am particularly interested in how people used material implements of power, including objects and ceremonial/public architecture, to constitute and reinforce an emerging hierarchical society. I would argue that the use of some of these objects, specifically ceramic serving vessels, begun in the Terminal Early Preclassic, when it appears that Maya society was egalitarian (Brown 2007). A subset of the earliest pottery from the Belize River valley was incised with important iconographic motifs that clearly connected the early communities to other regions in Mesoamerica through a pan-Mesoamerican symbol system. Elsewhere in Mesoamerica, these symbols, the flamebrow for instance, were used by elites to distinguish them from others as special and therefore, legitimize hierarchical social relations, but in the Belize valley at this time, there is no evidence for that degree of social differentiation. Ceremonial architecture appears slightly later, during the early Middle Preclassic period at both Blackman Eddy and Cahal Pech (Awe 1992; Brown 2003, Brown and Garber 2005; Garber et al. 2004; Healy et al. 2004).

Rituals provided key venues for the use of these material symbols, as nascent elites used religious ideology to ensure the acceptance of new social conventions (Brown and Awe 2007). These rituals initially appear to be communal in nature, notably feasting, but through time, the rituals shift to become more restricted in terms of their participants. The role of feasting as a practice by which sponsors
create uneven social relations with other participants has been examined by numerous scholars (e.g., Blitz 1993; Clark and Blake 1994; Dietler 2001; Hayden 2001) and will not be addressed in detail in this paper. Instead, this chapter will focus on the evidence for rituals, such as feasting, which sanctified hierarchies. Feasting, however, is often difficult to document archaeologically, and it has recently become a popular “catch all” term for ambiguous deposits. Michael Dietler and Brian Hayden (2001:2) argue that scholars need to think both seriously and critically about the remains of feasting and how we can detect and interpret these deposits, “otherwise, they risk becoming one more ill-digested archaeological interpretive fad.” Detailed contextual analysis of ambiguous deposits is absolutely necessary in order to determine the social activities that created them.

In order to understand how changes in ritual activities relate to the establishment of social hierarchies, we must examine the archaeological data in a diachronic fashion, beginning with the terminal Early Preclassic. The current evidence at both Blackman Eddy and Cahal Pech suggests that small egalitarian farming villages were established by the terminal Early Preclassic. The architecture appears to be fairly simple, including wattle and daub buildings with tamped marl surfaces (Awe 1992; Brown 2003; Garber et al. 2004). Awe (1992:208) suggests that “most of the Cunil phase architecture probably served as dwellings and/or ancillary buildings (i.e. kitchens or storage facilities).” Ceremonial/public architecture appears to be absent at this early date, although, this may be a sampling problem. However, it seems unlikely that there was large architecture present.

The early ceramics, the Cunil and Kanocha assemblages, from Cahal Pech and Blackman Eddy respectively, consist of both utilitarian wares and a special ritual sub-assemblage of volcanic ash tempered, slipped serving vessels, often incised with ideologically related motifs. The motifs present within the assemblage include, the Kan Cross, the Cleft, lightning, and a motif that has been interpreted as a stylized avian-serpent motif (Awe 1994; Cheetham 1998). Incising these early ceramics with symbols such as the Kan Cross makes the vessel sacred (Awe 1994). Serving vessels with these incised motifs were likely made for communal rituals that involved food consumption. Current evidence suggests that few if any institutions of inequality were present within these early Maya villages, although, the hosts of communal rituals involving feasting were probably creating obligations of reciprocity that through time would have lead to uneven social relationships.

It is during the following period, the early Middle Preclassic (ca. 800 to 600 BC) that we find the earliest demonstrable evidence of ceremonial architecture and special function buildings. Jaime Awe (1992) suggests that the first Kanluk phase platform encountered (Str. B4-5th) may have been a family shrine due to the size, relative complexity of the building, as well as the numerous figurines found within the construction fill. At Blackman Eddy, we see a shift to plastered rectangular platforms that were low and broad in form. The author and James Garber have argued elsewhere that these platforms were public in function (Brown 2003; Brown and Garber 2005, 2008; Garber et al. 2004), likely serving as venues for communal feasting that integrated this early community. New ceramic types appear in the archaeological record at this time, including chocolate pots and stirrup spouted vessels that indicate an emphasis on the display and serving of desirable food and beverage items.
**Blackman Eddy, Structure B1 Op. 20i-9**

A very interesting deposit was encountered at Blackman Eddy dating to the transition between the early and late Middle Preclassic. The deposit may be related to the construction of Structure B1-5th, an inline triadic platform that was partially destroyed by modern bulldozing activity at the site (Garber et al. 2004). This deposit was located to the north of Structure B1-5th and slightly lower in elevation (Figure 2). The problematic deposit was spread over several meters and directly overlaid a plaster floor surface approximately 3 meters in diameter. Initially, it appeared that both the floor surface and problematic deposit dated to the terminal Early Preclassic time period because of their location in the Structure B1 architectural sequence and because the deposit contained a high frequency of volcanic ash tempered sherds similar to the ash tempered pottery of the Kanocha period (Brown 2007). A detailed analysis of the ceramic assemblage, however, found that many of the sherds were from the Jocote and Savanna Groups and forms were consistent with a later date (transition between the early and late facet Jenney Creek), and the ash tempered pottery are not Kanocha types or forms. The deposit was re-assigned a Middle Preclassic date and two radiometric dates (AMS) confirmed this interpretation (Table 1). A portion of the deposit remains unexcavated to date.

![Figure 2. Isometric Drawing of Structure B1-5th Showing Location of Problematic Deposit](image)

Contextual analysis of this primary deposit suggests that it was the remains of a ritual that involved feasting. This deposit consisted of a dense concentration of broken ceramic material associated with faunal remains, carbon, and exotics such as marine shell and obsidian. Ten partial vessels were recovered, all of which were serving vessels. The partial vessels included three Savanna Orange bowls, a Savanna Orange stirrup spout, a chocolate pot (Reforma Incised: Mucnal Variety), a volcanic ash tempered Joventud Red bowl, a Jocote Orange-brown jar, and two unusual red slipped volcanic ash tempered bowls (Figures 3 and 4), one of which appears to be a new type within the Savanna Group, while the other has more affinities to the Joventud Group. It is important to note that numerous sherd refits were also found within the deposit and it is suspected that several other whole or partial vessels may be present within the unexcavated section of the deposit.

The predominance of serving vessels suggests that this deposit is the product of some type of event involving food consumption. However, as discussed above, documenting feasting is difficult and necessarily involves a detailed contextual analysis of the deposit including the remains of the foods that may have been consumed as well. Analysis of the faunal material, 197 bone fragments, by Carolyn Freiwald (2008) demonstrated a surprising diversity of animal species with at least 18 (MNI) animals present. Two bone fragments exhibited evidence of burning, while thirty-two limb bone fragments exhibited chop marks or spiral fracture patterns indicating intentional breakage quite possibly a product of food preparation (Freiwald 2008).

The detailed analysis identified two white tail deer, one brocket deer, one rabbit, one armadillo, one opossum, one agouti, one iguana, one cane toad, one crab, one turtle, three fish, and two other medium sized...
mammals possibly raccoon or weasel. Many of these species were desired food animals by the ancient Maya. Numerous jute and freshwater mussel specimens were also encountered within the deposit, suggesting the use of riverine food resources as well. The wide diversity of animal species present is consistent with a communal gathering in which participants each contributed food items.

Freiwald (2008) also identified an interesting pattern in her excavation which yielded faunal deposits of immature animals. One of the white tail deer specimens and the brocket deer appear to be juveniles as evidenced from the tooth formation and unfused epiphyses of the lower limb bones. Two other medium sized animals were also juveniles. This may indicate a preference for younger animals for feasting, although this interpretation needs to be examined through further studies of faunal assemblages from both household midden contexts and other ritual feasting deposits.

The analysis of faunal remains provides information pertaining to the types of animals that might have been consumed or used in some other ritual fashion. However, it is also important to examine botanical evidence as well. In order to shed light on plant types ritually utilized or consumed, ceramic residue analysis was conducted. Two samples were collected from the deposit, one from the interior of a stirrup spout and the other from charred organic material adhering to the base of a jar. These samples were analyzed for phytoliths and other biosilicates by Steven Bozarth at the University of Kansas. Stirrup spouted vessels are very rare in the Maya Lowlands and were most likely used to serve some form of beverage. The analysis of sediment from the interior of the stirrup spout indicated maize phytoliths were present (Bozarth 2007), suggesting that the beverage served was corn based, quite possibly corn beer or atole. In addition, the phytolith data suggests maize kernels, as well as some chaff, were present within the sample. This led Bozarth (2007) to suggest that an offering of maize may have been placed above the cluster of ceramic material from which the stirrup spout was recovered.

Interestingly, no phytoliths from domesticated plants were found in the second sample of charred organic material, despite the high concentration of phytoliths (100,166). This high concentration suggests that plant material was intentionally burned within this vessel possibly indicating that it was used as some form of censor (Bozarth 2007). The vessel itself was the lower portion of a large olla, which may have been
utilized as an open dish/bowl for burning incense.

I have argued elsewhere that this deposit represents the remains of ritual feasting, quite possibly related to the construction of Structure B1-5th (Brown 2007). Although the evidence for feasting is quite strong, I would also like to address the evidence that this deposit was ritual in nature and that the material remains were purposely left as an offering. First, one of the vessels was placed above nine chert flakes, which may symbolically relate to the nine layers of the underworld. Although this is a rather simple cosmological offering, it does have implications related to the ritual nature of the deposit. Second, several of the partial vessels were intentionally halved or quartered. The ‘broken’ edge of three of the partial vessels is so regular that it may have been cut with a string saw (Figure 5).

Figure 5. Overview of Three Halved Bowls from Problematic Deposit

The deliberate breaking of vessels into halves and/or quarters may be related to the notion of partitioning the universe, an event that was reenacted with the setting of corner posts in a new building, whether it was a simple house or an elaborate temple structure. Third, the phytolith evidence discussed above suggests the possible burning of incense which clearly reinforces the ritual aspect of this deposit. Additional phytolith data suggests the possibility of a maize kernel offering purposely placed within the deposit. Fourth, several exotic items were found within the deposit including marine shell and obsidian. The marine shell included six beads, two tinkler pendants, and 61 pieces of marine shell debitage (Cochran 2008). Jennifer Cochran (2008) has identified a pattern of placing offerings of both finished marine shell artifacts as well as debitage in Middle Preclassic special deposits. The presence of both worked and unworked marine shell clearly indicates the importance of this material category and the symbolic reference to water. Fifth, the faunal remains have implications for rituals related to both feasting and possibly renewal ceremonies. Ethnohistoric and iconographic data suggest that deer were significant in ancient Maya religion (Pohl 1983). Mary Pohl (1983) argues that deer were used in the ritual drama of the Maya ceremonial cycle and were associated with the ritual that marked the New Year. Other animals may have been associated with renewal rites as well including monkey, dog, jaguar, opossum, armadillo, crocodile, turtle, snake, and fish (Pohl 1983). Freiwald (2008) notes that the faunal assemblage from this deposit resembles other faunal assemblages that have been linked to the cuch ritual, an agricultural renewal ceremony. Often these ceremonies utilize both immature and small animals and include fishing, all of which are present within the faunal assemblage (Freiwald 2008).

Blackman Eddy, Structure B1 Op. 20i-8

A slightly later deposit clearly resembles this problematic deposit in form and composition. This deposit was also associated with Structure B1-5th, but it was placed on the platform itself and most likely represents a ritual feasting event associated
with the subsequent construction phase, Structure B1-
4th. This deposit also consisted
of a variety of faunal material including
deer, and other small mammals, as well as
whole and partial serving vessels. Several
of these vessels were intentionally halved,
including a stirrup spouted bowl, a Jocote
Orange-brown jar, and a Joventud Red plate.
A single jade bead was placed upon the
halved Joventud Red plate, indicating that it
was an offering. Four restorable vessels and
several partial vessels were encountered
within this deposit, two of which were
Savana Orange; Rejolla Variety stirrup-
spouted vessels that suggest an emphasis on
ritual beverages. It is significant to note that
a volcanic ash tempered bowl from the
Joventud Group was also found within this
deposit, indicating that volcanic ash was
commonly used during this time period.
This is important because volcanic ash
temper has been considered a hallmark of
the Kanocha and Cunil ceramic complexes.
The presence of ash tempered red wares in
Jenney Creek phase deposits, however,
shows that we should not assign sherds to
terminal Early Preclassic complexes based
on paste and slip alone (Brown 2007).

Conclusion
These two deposits clearly served a
similar function, as both appear to exhibit
evidence for ceremonial feasting activities
as well as rituals related to the construction
and dedication of public platforms. It is
interesting to note that later ritual deposits at
the site, beginning at the end of the late
Middle Preclassic, were restrictive in nature,
such as subfloor, dedicatory caches. These
caches were associated with pyramidal
forms of architecture that in itself restrict
participation, both physically and visually,
which in turn reinforces the separation of
certain individuals as ritual specialists
(Brown 2003). Although the rituals
associated with the later caches appear to be
no longer communal in nature, ceramic
vessels were still very important and were
often the central component of cached
offerings.

In conclusion, detailed contextual
analysis of two problematic deposits from
Blackman Eddy provides strong evidence
that ritual practices involving feasting and
the construction of public buildings were
two ways that nascent elites set themselves
apart, leading to the establishment of a
hierarchical society in the late Middle
Preclassic.

Although Freidel and Schele
(1988:549) originally suggested that the
development of Maya kingship was a rapid
process, in which a transformation of Maya
ideology was followed by “a sudden surge
of construction in centers throughout the
southern lowlands accompanied by a rapid
elevation of the material implements of
power used by rulers and other elites,” data

<table>
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<th>Provenience</th>
<th>Phase</th>
<th>Beta #</th>
<th>Conventional Radiocarbon age</th>
<th>Calibrated 1 sigma BC</th>
<th>Calibrated 2 sigma BC</th>
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<td>Early Facet Jenney Creek/Late Facet Jenney Creek</td>
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<td>2400 +/- 40 BP</td>
<td>520-400</td>
<td>740-690 and 660-640 and 550-390</td>
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<td>229801</td>
<td>2380 +/- 40 BP</td>
<td>490-460 and 420-400</td>
<td>720-700 and 540-390</td>
</tr>
</tbody>
</table>

Table 1. Radiocarbon Dates from Problematic Deposit (possible feasting deposit)
The Middle Preclassic Belize River Valley

from Blackman Eddy and Cahal Pech suggest that the process was much more gradual, with its roots extending back centuries. In the terminal Early Preclassic period, Cunil and Kanocha serving vessels incised with powerful symbols were clearly important objects within these early villages and suggest an emphasis on communal gatherings where these ideologically charged symbols could be displayed. Although serving vessels cease to be decorated in this way during the early and late Middle Preclassic periods, new special forms such as chocolate pots and stirrup spouted vessels appear, indicating the continued importance of food and drink in rituals and social occasions, like feasts. Prominent individuals deployed these implements of power in various settings, including feasts, to reinforce their position in society, ultimately leading to the establishment of a hierarchical social structure in the late Middle Preclassic. This important social transition was accompanied by a transformation in public architecture and rituals, as rulers now had special access to these buildings and the ritual activities that took place there.

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Investigations at Cahal Pech have revealed a substantial Middle Formative occupation. The excavations have uncovered architecture and a rich artifact assemblage in a variety of contexts. This article focuses on the excavation of Platform B, a large Middle Formative platform buried in Plaza B of the Cahal Pech site core. Ritual deposits were encountered in each of the four corners of the platform. These deposits are interpreted as the remains of a ritual circuit associated with the death of an individual. The purpose of this ritual was to resurrect that individual and symbolically place him in the sky as a revered ancestor.

Introduction

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 (Figure 1). Previous investigations at Cahal Pech and its settlement zone have revealed evidence of a substantial Middle Formative occupation. Within the site core, these remains directly overly the initial Terminal Early Formative Cunil (1100-900 BC) occupation located on bedrock (Awe 1992, Garber et al. 2005). The excavation of these Middle Formative deposits revealed low platforms and associated ritual deposits and caches. Evidence of exotic items and a marine shell workshop were also encountered and have implications for emerging social stratification at this early date.

The 2006 field season marks the third year of excavations in Plaza B at Cahal Pech for the Texas State University Belize Valley Archaeological Project (BVAP). A north-south trench was excavated in Plaza B (Garber et al. 2005, 2006) (Figure 2). The focus of the work was to further document Early 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; Healy et al. 2004).

The trench excavations revealed an expansive Middle Formative platform (Platform B) measuring 17.5 meters on each side. Within each of the corners was a ritual deposit. These represent a set and are interpreted here as the remains of a ritual circuit associated with the death of an individual. To offer an interpretation of these rituals it is first necessary to review some relevant aspects of Maya cosmology and thought.

Maya Cosmology

There are several sources that illuminate the Maya concepts of creation, cosmology, and how the world came to be as it is. The most notable is the Popul Vuh – the 16th century creation story of the Quiche Maya of Highland Guatemala (Tedlock
Middle Formative Architecture and Ritual at Cahal Pech

1985). Although this story has been known to researchers for some time, it has only been in the last two decades that researchers have come to the realization that many elements of the Popul Vuh go back several centuries earlier and were an essential part of Classic Period Maya thinking. Developments in the translations of Classic Period Maya hieroglyphic texts have revealed creation texts and cosmological concepts that are clear antecedents of the Popul Vuh. Through the work of Michael Coe, it has been shown that a great many scenes on the polychrome vases of the Classic are depictions of segments from the creation story. Many of these have direct parallels in the Popul Vuh and others appear to be elements of the story that are not incorporated into the 16th century version.

It has also been shown that a wide variety of caches from throughout the lowlands are symbolic representations of the cosmos. Wendy Ashmore (1991) demonstrates that concepts of creation and world order are manifest in the architectural arrangements of Classic Maya ceremonial centers. Subsequently, Matthews and Garber (2004) also demonstrate that creation and cosmic order, particularly the concepts of horizontal quadripartitioning and vertical layering, are critical elements of Maya life (past and present) such as the construction of simple altars, Milpas, houses, platforms, temple pyramids, plazas, cities and even perceived regional landscapes. It is also clear that these concepts are a part of the mind set of both elite and commoner.

Research by Kent Reilly (1994, 1995) has shown that many of these concepts first appear among the Gulf Coast Olmec. Others have demonstrated their pervasiveness throughout Mesoamerica. The central elements of the Maya creation story and concepts regarding the structure of the cosmos are pan-Mesoamerican and are present at the very beginnings of the emergence of social complexity throughout Mesoamerica.

The Cahal Pech Excavations

Excavations in Plaza B at Cahal Pech have revealed a series of Middle Formative ritual deposits that reflect these cosmological concepts and are some of the earliest expressions of these in the Maya Lowlands. Excavations in 2004 and 2005 revealed the eastern edge of a low expansive Middle Formative platform (Platform B), measuring 17.5 meters north-south. Ritual deposits were recovered in both the north and south corners. Excavations in 2006 were conducted to examine the northwest and southwest corners of that platform (Figure 2). Ritual deposits were encountered in both these corners as well that clearly relate to those of the previously revealed deposits in the northeast and southeast corners. Taken as a group, they represent a complex ritual program that reflects the ideology of vertical layering, horizontal quadripartitioning, death, resurrection, and cosmic order. Thus, many of the concepts expressed in texts of the Classic and Post Classic Periods clearly have their symbolic antecedents in the constructed environment of the Middle Formative occupation at Cahal Pech.

![Figure 2. Plaza B at Cahal Pech (after Healy et al. 2004).](image-url)
To explain this set, it is first necessary to review the ritual deposits of the northeast and southeast corners that have been reported elsewhere in detail (Garber et al. 2007). Excavations in the southeast corner of the building revealed a limestone slab capped crypt in which was a Sampopero Red: Variety Unspecified bowl containing a fragmented, but complete, human skull and six greenstone beads (Figure 3). Immediately to the north, in a separate crypt, was an articulated headless skeleton. It is assumed that the head and body are of the same individual. It is not known if the decapitation was pre- or post-mortem. We suggest that the decapitation was post-mortem and that it was a reverential act. A re-occurring theme found throughout the Maya iconographic corpus is the concept of life, death, and renewal (Mock 1998). In the Maya creation story, after the Hero Twins have defeated the Lords of the Death, they retrieve the severed head of their father. The head is then taken to the Three Stone Place of creation where it is then resurrected as the Maize God. The Maize God then creates the world by raising the world tree, separating earth and sky. He then partitions the world and creates the first four humans.

Immediately above these was a Jenney Creek Phase headless ceramic figurine. Above this was a tightly arranged cluster of polished greenstones. This deposit represents the created universe which took place at the Three Stone Place of creation as defined in Classic Period hieroglyphic texts and indicated here by the presence of the three slate bars. The 13 greenstones represent the 13 layers of the Upperworld and the firmament. The figurine represents the resurrected headless individual within the crypt of the southeast corner. According to the Classic Period texts, this occurs at the Three Stone Place of creation and the state of the created universe, in particular the north house, is called the “Raised-up-Sky-Place” (Freidel et al. 1993:71).

The ritual deposits found in the northwest and southwest corners of the platform during the 2006 field season are also a part of this symbolic ritual program. In the northwest corner of the platform is another layered “cosmogram” deposit (Figures 3 and 4). This one, however, is the reciprocal opposite and refers to the “Lying-Down-Sky, First-Three-Stone-Place” described in the text of Stela C at Quirigua and on the Tablet of the Cross at Palenque (Freidel et al. 1993:67-69). At the bottom of the deposit were 13 obsidian chips (Lying-Down-Sky). Immediately above these was a black “death head” ceramic figurine (Figure 5). This head shows the same features of the
“death head” version of Late Preclassic greenstone bib-style heads which include swollen eyes and a central crest (Garber et al. 2007). Above the head were three elongated river-rolled pebbles (First-Three-Stone-Place). This deposit has the same basic structure of the deposit in the northeast corner but it represents a different stage of the creation process. The Classic Period text at Quirigua (Stela C) refers to this as the “Lying-Down-Sky, First-Three-Stone-Place” - the creation place prior to the raising of the world tree that raises the sky separating it from the earth.

Figure 5. “Death head” figurines: a. Cahal Pech; b. Cerros; c. Nohmul

The objective of Op. 4a (see Figure 2) was to locate the southwest corner of Platform B. The uppermost meter of fill in this unit had been disturbed by Late Classic constructions that had removed the Plaza B floors and the uppermost portion of Platform B. Within the fill corresponding to the corner of Platform B a large Jenney Creek Phase ceramic figurine head was recovered (Figure 6). The deposition of this head is interpreted here as a part of the ritual program associated with the ritual deposits found in the other three corners of the platform. Several figurine heads showing the same characteristic features have been recovered elsewhere at Cahal Pech and have also been found at Blackman Eddy (Garber et al. 2004).

Figure 6. Figurine head from southwest corner of Platform B

The authors have initiated a study of the Middle Formative figurines of the Belize River Valley. The preliminary analysis has identified several distinct types based on overall form, ornamentation, and facial features. The individual or entity of the figurine found in Op. 4a is the most common and is found in both early and late facet Jenney Creek contexts. The identity of this individual or entity has not been determined at this time, but we suspect that it represents a mythical ancestor, perhaps one or both of the Hero Twins. It is important to note the serrated ears of this individual. This is one of the characteristic features of this type. The same serrated ears can be seen on the “death head” figurine.
recovered in the northwest corner of the platform (Figure 5). Together, these represent the living and dead forms of the same individual.

Figure 7. Ritual circuit of Platform B, Cahal Pech.

Conclusion

The ritual deposits of the platform corners are interpreted here as the remains of a ritual circuit associated with the death of an important individual. The purpose of this ritual was to symbolically resurrect that individual and place him in the sky—the place of revered ancestors (Figure 7). The sequence of the procession is as follows: SE, SW, NW, NE. It starts in the southeast corner where the deceased’s head and body are buried in separate crypts. A living form figurine head is then buried in the southwest corner. Next in the sequence is the northwest corner where the ancestor, shown in death form, is taken to the “Lying-Down-Sky, First-Three-Stone-Place” symbolized by the 13 obsidians and 3 river stones. The deceased is being prepared for resurrection. This takes place in the northeast corner, where he is shown resurrected as the axis mundi at the “Three-Stone-Place” where the sky has been raised.

The excavations at Cahal Pech have revealed a series of ritual deposits that represent a complex ritual system. This system has strong parallels to a variety of elements in the iconographic and hieroglyphic systems of the Classic Period and demonstrate that the kings of the Classic Period were utilizing a system who’s basic components had been developed several centuries earlier. The ritual components of Platform B at Cahal Pech are some of the earliest expressions of this system in the Maya Lowlands.

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THE CHIPPED CHERT AND CHALCEDONY LITHIC ASSEMBLAGE FROM POOK’S HILL, CAYO DISTRICT, BELIZE: THE ORGANIZATION OF TOOL PRODUCTION AND USE

W. James Stemp and Christophe G.B. Helmke

This paper is a summary of the chipped stone tools recovered from Pook’s Hill excavations for the 2001-2005 field seasons. The majority of the lithic artefacts were manufactured from local chert and chalcedony primarily acquired within the local vicinity of the site. Both the tool types and associated reduction debitage reveal that formal tool production of large and small bifaces occurred at Pook’s Hill, in addition to the reduction of cores to produce informal flakes and minimally designed flake tools. The wide range of tool types and debitage recovered throughout the site suggests a generalized assemblage with little evidence of concentrated areas for spatially segregated, specialized tool production. Relatively small percentages of various kinds of formal and informal tools in the sub-assemblages of different structures appear to represent subsistence-related and other domestic ‘tool kits’ with some evidence for minor craft-production. These craft activities included bead production, stone-work, and some woodwork, but few of these activities were obviously spatially restricted.

Introduction

Excavations undertaken between 2001 and 2005 by the Belize Valley Archaeological Reconnaissance Project at the ancient Maya site of Pook’s Hill, located in the Cayo District of Belize, Central America, yielded 2800 non-obsidian chipped stone tools. The primarily chert and chalcedony lithics were recovered from the plazuela group of Pook’s Hill. The plazuela platform itself, as well as Structures 1A, 1B, 1C, 2A, 2B, 4A and 4B were excavated by the junior author and his team. A small quantity of additional lithic artefacts were recovered as surface finds, some originally found in 1992, and from digging in Structure PKH-M1, a small house mound located to the southeast of the main plazuela.

Pook’s Hill Site Description

The site of Pook’s Hill is located in the Belize River Valley of western Belize (Helmke 2001, 2003, 2006a, 2006b; Helmke et al. 2003) (Figure 1). Pook’s Hill is a medium-sized plazuela group located in the karstic foothills forming the western outline of the Roaring Creek Valley, overlooking the fertile alluvial plain below.

Investigations at Pook’s Hill have focused on the site’s terminal occupation, which dates to the Late to Terminal Classic period (ca. A.D. 750-950), though primary context deposits date back to at least the Middle Classic (ca. A.D. 550) and earlier materials have been found in secondary mixed deposits (Helmke 2001, 2003, 2006a, 2006b, 2006c; Helmke et al. 2003).

It is situated less than 5 km north of a group of caves that were utilized by the local inhabitants throughout the Classic period and most intensively during the Terminal Classic (as is attested by speleothems discovered at Pook’s Hill). In relation to ancient surface sites, the plazuela lies 4.7 km north of the major center known as Cahal Uitz Na and 1 km northwest of the minor center of Chaac Mool Ha. Based on current evidence, the site of Cahal Uitz Na appears to have served as the regal capital to the local polity during the Classic period. Pook’s Hill is comprised of the remains of nine masonry building platforms. Each side of the plazuela is delimited by two building platforms, save the three defining the northern perimeter (Helmke 2006a). Most of the structures at Pook’s Hill are rectangular.
in plan based on mounded surface features as well as exposed terminal architecture, and of the plazuela is delimited by two building platforms, save the three defining the northern perimeter (Helmke 2006a). Most of the structures at Pook’s Hill are rectangular in plan based on mounded surface features as well as exposed terminal architecture, and can be categorized as ‘range structures’ (Figure 2).

Pook’s Hill was relatively affluent as marked by access to minor quantities of exotic goods (i.e. jadeite, marine resources, obsidian, and pyrite) and a wide variety of animal and plants resources and foodstuffs (Morehart 2001; Stanchly 2006). The site was likely incorporated into the Cahal Uitz Na polity –possibly via tributary networks– through Chaac Mool Ha.

**Lithic Raw Material Types and Tool Types from Pook’s Hill**

In terms of basic technological/morphological sub-divisions within the assemblage, the non-obsidian lithic artefacts were classified as formal (332 or 11.9%), while the remaining were considered informal tools (2468 or 88.1%). Formal tools included large and small bifaces, biface edges, blades, biface preforms, some drills, gravers, and scrapers, stemmed macroblades and stemmed blades (Table 1), whereas informal technology was primarily represented by production debitage (i.e. flakes, cores and blocky...
fragments, and a small number of minimally modified, unifacially retouched flakes or flake-blades) (Table 2).

Figure 2. Map of Pook’s Hill 1 Plazuela (plan by Christophe Helmke).

The non-obsidian chipped stone tools from the site were produced from variable quality cherts and chalcedonies obtained within the local vicinity of the site from both the limestone matrix and in the form of cobbles retrieved from Roaring Creek itself. Much smaller quantities of chipped stone were represented by ‘non-local’ chert, dolomitic limestone, and quartzite. Of the 2800 lithic artefacts recovered, 1605 (57.3%) were produced from ‘local’ chert, 125 (4.5%) were made from ‘river cobble’ chert, 77 (2.8%) were manufactured from chalcedony, 3 (0.1%) were made from ‘river cobble’ chalcedony, 4 (0.1%) were produced on imported/non-local chert, 949 (33.9%) were of ‘unknown’ chert or chalcedony types, 31 (1.1%) were manufactured from dolomitic limestone and 6 (0.2%) were made from quartzite (Figure 3).

Not surprisingly, local chert is represented in all tool classes based on its availability and the general ease with which it can be transformed into standardized formal tools and more informal or ad hoc flake tools. Large bifaces of different types, both thin and thick, and various forms of smaller bifaces are regularly made from local chert. Local chert preforms and flaking debitage all point toward the manufacture of formal tools at the site as do the blades and single blade core fragment.

‘River cobble’ chert, although less abundant than local chert derived from the limestone matrix directly, is also used to produce formal tools. In this case, large bifaces (oval, general utility), adzes, and some thinner bifaces constitute primary tool types made from this raw material. There are some flakes, simple flake core fragments and one flake core, but informal tool production is less frequently represented.

Chalcedony was used to manufacture some formal tools, primarily thin bifaces, but is also represented by some blade fragments. Production debitage occurs in the form of flakes and blocky fragments, but no chalcedony cores or core fragments were recovered during excavations.

There are extremely few lithic artefacts made from ‘river cobble’ chalcedony at Pook’s Hill. It appears this raw material was not necessarily that abundant or was not chosen. This raw material type is represented by flakes and flake fragments, one of which is a tertiary bifacial thinning flake that implies the use of ‘river cobble’ chalcedony in biface manufacture. There may also be another reason why this raw material is not heavily represented in the assemblage at Pook’s Hill. Both chert and chalcedony from Roaring Creek were primarily identified based on their exterior cortical rinds. If an artefact did not retain any cortex, it was usually not classified as a ‘river cobble’ material.

Non-local/imported stone is very rare at this site. Material categorized as this stone type was typically of high quality, being very fine-grained and possessing colors and color combinations/patterns that were not observed in the Roaring Creek Valley. It is assumed one of the lenticular bifaces at Pook’s Hill was imported in finished form.
The Organization of Stone Tool and Use, Pooks Hills

Percentage of Lithic Raw Material Types at Pook’s Hill, Belize (N = 2800)

Figure 3: Percentage of Lithic Raw Material Types at Pook’s Hill.

Table 1: Formal Tool Types by Raw Material Type at Pook’s Hill.

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>Local chert</th>
<th>‘River cobble’ chert</th>
<th>Chalcedony</th>
<th>‘River cobble’ chalcedony</th>
<th>Non-local chert</th>
<th>‘Unknown’ chert or chalcedony</th>
<th>Dolomitic limestone</th>
<th>Quartzite</th>
<th>Total</th>
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<td>Biface hammerstones</td>
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<td>53</td>
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<td>Biface preforms</td>
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<td>0</td>
<td>4</td>
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<td>0</td>
<td>11</td>
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<td>Bifaces recycled into hammerstones</td>
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<td>0</td>
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<tr>
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<td>1</td>
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<tr>
<td>Stemmed Macroblades</td>
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<tr>
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<td>0</td>
<td>0</td>
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<td>0</td>
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<td>3</td>
</tr>
<tr>
<td>Stemmed blades</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>183</strong></td>
<td><strong>36</strong></td>
<td><strong>10</strong></td>
<td><strong>0</strong></td>
<td><strong>102</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>332</strong></td>
</tr>
</tbody>
</table>
The other lithics are so few in number that it is difficult to say anything more substantial about them, with the exception of their origins outside the local vicinity.

Although most lithic artefacts are patinated to some degree and many show traces of burning, only those tools that were heavily burnt and/or completely patinated were classified as ‘unknown’. In reality, they could be of various types of stone from many different locales. There are no obvious burning or patination patterns by raw material type and at least some tools in all classes have been placed in the ‘unknown’ raw material category.

Dolomitic limestone was restricted to informal core reduction to produce expedient flakes. Only cortical and non-cortical flakes and flake-blades and some blocky fragments made from this raw material were recovered from the site. Similarly, the crystalline structure of quartzite influenced Maya stone tools production with this raw material. At Pook’s Hill, quartzite is restricted to informal tool production in the form of one tertiary flake fragment and some blocky fragments.

Lithic Evidence for the Organization of Stone Tool Production and Use

When reconstructing the role of the non-obsidian chipped stone tools in the socio-economy of Late Classic Pook’s Hill, both the evidence for stone tool production at the site and the use of stone tools in subsistence and craft activities must be considered.

In terms of tool production, there is ample evidence to suggest that the Maya at this site were making their own tools from the locally available chert and chalcedony. Tool production includes both the reduction of multidirectional, pyramidal, and discoidal cores to make simple cortical and non-cortical flakes for primarily ad hoc use and manufacture of formal tools such as large bifaces, lenticular bifaces, adzes, thick narrow bifaces, and various thin and thick point forms. Evidence for blade manufacture is based on the recovery of two blade core fragments and some blade fragments, but blade production is rather limited. The reliance on local stone for tool production with variable use of other silicates can be seen in the percentages of raw material in the sub-assemblages from different structures/locations throughout the site, with the exception Structure 4a – Burials (Table 3).

Consistently, the Maya at these different locations are relying on local stone, both cherts and chalcedonies, for tool production. Minor variations in ‘river’ cobble’ chert and chalcedony do occur, but reasons for this are difficult to determine. At least one explanation for some differences in the percentages of cherts and chalcedonies throughout the plazuela relates to the variable quantities of heavily burnt and patinated lithics at each location. Although the percentages for all burnt raw material do not vary tremendously by structure/location (except Structure 4A – Burials), there is some variation in the ‘unknown’ stone category based on very heavy to extreme burning that obfuscated reliable attempts to identify stone type more conclusively (Table 4). At locations where tools were more heavily patinated or burnt, there was more unknown chert, which obviously reduced the relative frequency of other stone types. However, the majority of all structures contained roughly equal quantities of local chert and chalcedony and minor variations in other raw material types. Overall, 946 (33.8%) of the 2800 chipped stone artefacts possessed evidence of some burning, while 2658 (94.9%) were patinated to some degree.
Table 2: Informal Tool Types by Raw Material Type from Pook’s Hill.

Evidence that identifies a site like Colha as a stone tool production center, such as substantial quantities of reduction debitage, tool preforms (i.e. large biface), manufacturing failures and exhausted production implements, including hammerstones, and other tool forms recycled into hammerstones (see Hester and Shafer 1991:156, Fig.1; Shafer and Hester 1983:523, 535), is present at Pook’s Hill, but, obviously, on a much reduced scale. Most lithic evidence recovered indicates that informal and formal tool production was fairly evenly distributed throughout the plazuela with no obvious foci for the exclusive production of tool forms.

This seems similar to the kind of individual production reported by Ford and Olson (1989) for valley settlement households in the Upper Belize River Area, but much different from the chert tool production locus [LDF] discovered at the
center of El Pilar (Ford and Fedick 1992: 43). At Pook’s Hill, most recovered lithic evidence indicates that informal and formal tool production was fairly evenly distributed throughout the plazuela with no obvious foci for the exclusive production of tool forms.

This site possesses high percentages of cortical debitage (42.3% of all flakes; 83.4% of all blocky fragments), as would be expected, given the reduction of cores to produce flakes and the reduction of some nodules to manufacture bifaces. The data strongly suggest that the inhabitants of Pook’s Hill were primarily manufacturing, repairing and reworking their tools with the full range of debitage from the earliest to end stages. (Figure 4).

![Figure 4: Percentage of Cortical and Non-cortical Flakes by Raw Material Type at Pook’s Hill.](image)

It appears that biface manufacture was performed at this site based on the ratio of lithic debris to whole bifaces and the number biface preforms and preform fragments recovered (see Table 5). A comparison of the reduction debris frequency estimates from Pook’s Hill with those produced during experimental biface reduction indicates that similar reduction was likely occurring. However, smaller percentages of primary and secondary whole flakes at Pook’s Hill suggest that at least some large bifaces, particularly some oval bifaces and lenticular bifaces, were being produced on macroflake blanks. The relatively higher percentage of secondary debitage seems to suggest some decortication of the biface blanks had already occurred prior to biface production. Of note, the large percentage of secondary flakes of ‘river cobble’ chert suggest a different pattern of reduction than observed for local chert (see above).

In addition to local production of formal tools at Pook’s Hill, there was an obvious reliance on core reduction to produce flakes or simple flake tools as seen, to various degrees of reliance, at a number of sites in Northern Belize, including Cerros, Cuello, Laguna de On, Marco Gonzalez, Saktunha, San Pedro (Mitchum 1991; Oland 1999; Speal 2006; Stemp 2001, 2004a, 2004b, 2006; McSwain 1991), as well as in Western Belize in the valley households of the Upper Belize River (Ford and Olson 1989) and at Minanha in the North Vaca Plateau (Stemp 2004c). At Pook’s Hill, the ratio of flakes and flake fragments to whole cores was 36.9:1, providing good evidence for core reduction to produce flakes, particularly in the early stages (see McAnany 1986; Dockall and Shafer 1993). If this ratio was recalculated with the inclusion of the whole large bifaces recovered between 2001-2005, the result would be 29.9:1. Again, this is considered good support for arguing core reduction and biface production at the site.

The percentages of flake fragments (21.8%) and blocky fragments (22.9%) in the assemblage at this site attest to simple core reduction as a deliberate strategy to produce useable flakes. By contrast, there is very little production of any other more standardized tools at the site, such as drills (0.8%), and almost no production of scrapers, gravers, or burins (0.3%). Similarly, blades are not very abundant in the Pook’s Hill assemblage. Less than 1% of the assemblage consisted of
The Organization of Stone Tool and Use, Pook’s Hills

Table 3. Percentage of Lithic Raw Material Types by Structure/Location at Pook’s Hill.

<table>
<thead>
<tr>
<th>Raw Material</th>
<th>PKH-M1</th>
<th>Plaza platform</th>
<th>Structure 1A</th>
<th>Structure 1B</th>
<th>Structure 1C</th>
<th>Structure 2A</th>
<th>Structure 2B</th>
<th>Structure 4A (Burials)</th>
<th>Structure 4A</th>
<th>Structure 4B</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chert</td>
<td>52.4</td>
<td>55.7</td>
<td>61.4</td>
<td>61.3</td>
<td>50.6</td>
<td>56.7</td>
<td>59.2</td>
<td>21.2</td>
<td>45.8</td>
<td>59.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Roaring Creek chert</td>
<td>0.0</td>
<td>3.4</td>
<td>6.7</td>
<td>3.4</td>
<td>0.8</td>
<td>4.4</td>
<td>4.7</td>
<td>3.0</td>
<td>7.1</td>
<td>3.3</td>
<td>16.7</td>
</tr>
<tr>
<td>Chalcedony</td>
<td>0.0</td>
<td>7.2</td>
<td>1.6</td>
<td>3.4</td>
<td>0.0</td>
<td>4.4</td>
<td>3.4</td>
<td>0.0</td>
<td>0.6</td>
<td>1.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Roaring Creek chalcedony</td>
<td>0.0</td>
<td>0.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
<td>0.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Non-local chert</td>
<td>0.0</td>
<td>0.4</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>47.6</td>
<td>32.5</td>
<td>29.3</td>
<td>30.2</td>
<td>47.3</td>
<td>32.8</td>
<td>29.1</td>
<td>69.7</td>
<td>44.6</td>
<td>33.9</td>
<td>33.3</td>
</tr>
<tr>
<td>Dolomitic limestone</td>
<td>0.0</td>
<td>0.4</td>
<td>0.5</td>
<td>1.1</td>
<td>1.2</td>
<td>1.1</td>
<td>2.1</td>
<td>6.1</td>
<td>1.2</td>
<td>1.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Quartzite</td>
<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
<td>0.2</td>
<td>0.0</td>
<td>0.2</td>
<td>0.4</td>
<td>0.0</td>
<td>0.6</td>
<td>0.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Total number of tools</td>
<td>21.0</td>
<td>237.</td>
<td>638.</td>
<td>473.</td>
<td>243.</td>
<td>476.</td>
<td>234.</td>
<td>33.0</td>
<td>168.</td>
<td>271.</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Table 4. Percentage of Burnt Tools by Structure/Location at Pook’s Hill.

<table>
<thead>
<tr>
<th>PKH-M1</th>
<th>Plaza platform</th>
<th>Structure 1A</th>
<th>Structure 1B</th>
<th>Structure 1C</th>
<th>Structure 2A</th>
<th>Structure 2B</th>
<th>Structure 4A (Burials)</th>
<th>Structure 4A</th>
<th>Structure 4B</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.6</td>
<td>28.7</td>
<td>29.3</td>
<td>30.0</td>
<td>37.2</td>
<td>41.1</td>
<td>29.9</td>
<td>69.7</td>
<td>45.8</td>
<td>33.9</td>
<td>16.7</td>
</tr>
</tbody>
</table>

Figure 5. Percentage of Cortical and Non-cortical Flakes at Pook’s Hill by Structure/Location.
blades, retouched blades, and stemmed blades. Minor evidence for local blade production is based on the recovery of the two blade core fragments manufactured from local and unknown cherts. The Maya at Pook’s Hill did not retouch or modify the vast majority of their flakes or blades. They seem to have incorporated any flakes into their tool inventories without further modification of shapes or edges.

In terms of the production locales of the stone tools, accumulations of lithic debitage are primarily represented by construction fill and some midden deposits, obviously indicating secondary refuse. This tends to demonstrate that local production by individuals was likely occurring in or near individual households rather than more specific, circumscribed workshop areas. Although there are a few small bifacial thinning pressure flakes and uniface retouch flakes in the assemblage, the relative lack of microdebitage and ‘chipping dust’ recovered in these deposits at Pook’s Hill (see Clark 1986; Moholy-Nagy 1990) indicates that most stone tool production occurred in individual households for local use as demand required with disposal of waste nearby (see Hayden 1987; Hayden and Cannon 1983, Fig. 16; Moholy-Nagy 1997; Santley and Kneebone 1993).

**Raw Material Availability, Curation, Expediency and Bi-polar Technology**

Despite the fact that some tools were heavily used, repaired, resharpened and/or recycled at Pook’s Hill, there is no regular pattern of excessive curation. Any prolongation or extension of tool use-life (Shott 1989, 1995, 1996; Nelson 1991) is mostly seen on tools that demonstrate some investment in skill and time to produce or that were designed for some more specific tasks. As such, curated tools are primarily large bifaces (general utility or oval). There is no extremely heavy use of large bifaces or fragments, no sequence of large biface use and modification into hammerstones (i.e. sites on Ambergris Caye - Stemp 2001, 2006; Hult and Hester 1995 or Pulltrouser Swamp - McAnany 1986, 1989), and minimal edge repair on smaller bifaces. No other classes of tools show any extreme use, in the form of very steep edges (due to cycles of use and repair), substantial edge crushing or stacked microflakes with stepped or hinged terminations (i.e. edge rows). There are very few tools modified or used after breakage and no regular pattern of concerted attempts to regularly recycle exhausted or broken tools for any additional, expedient or *ad hoc* use.

Very few examples of bipolar reduction have been noted in the assemblage. This suggests that there was little need to exhaust available stone to produce useable tools. Bipolar reduction has been minimally identified by the presence of flakes or blocky fragments with crushed platforms/initiations at opposite ends of the longitudinal axis and patterns of concentric compression rings that originate from these same opposite ends (Andrefsky 2005: 125, Fig. 6.3; see Crabtree 1972; Hayden 1980).

The primary reason for the lack of curation or bipolar reduction is that the Pook’s Hill Maya seem to have had ready access to good quality chert and chalcedony throughout their occupation at this site (see Odell 1996; Bamforth 1986). They also produced relatively few specialized tools that would need to be frequently replaced or maintained for prolonged periods.
The Organization of Stone Tool and Use, Pooks Hills

Table 5. A Comparison of Production Debris Frequencies from Experimental Biface Reduction with Archaeological Lithic Remains at Pook’s Hill.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14 x 12 x 5</td>
<td>16.2 x 13.2 x 8 (rectangular core)</td>
<td>8.8 x 6.5 x 2.4 (lenticular chert nodule)</td>
<td>17 x 8.2 x 4.1 (flat oval core) NA</td>
</tr>
<tr>
<td>Biface dimensions (cm)</td>
<td>10.5 x 6 x 4.4</td>
<td>9.9 x 6.8 x 5.8</td>
<td>8.2 x 4.4 x 1.0</td>
<td>13.6 x 4.3 x 1.6 NA</td>
</tr>
<tr>
<td>Primary flakes [100% cortex]</td>
<td>5 (7%)</td>
<td>6 (7.5%)</td>
<td>10 (5.4%)</td>
<td>9 (5.8%)</td>
</tr>
<tr>
<td>Secondary (3) flakes [&gt;50% cortex]</td>
<td>24 (34%)</td>
<td>11 (13.8%)</td>
<td>21 (11.4%)</td>
<td>19 (12.3%)</td>
</tr>
<tr>
<td>Secondary (2) flakes [&lt;50% cortex]</td>
<td>18 (22.5%)</td>
<td>42 (22.8%)</td>
<td>36 (23.4%)</td>
<td>49.5 (35.1%)</td>
</tr>
<tr>
<td>Tertiary flakes [0% cortex]</td>
<td>42 (56.3%)</td>
<td>45 (56.3%)</td>
<td>111 (60.3%)</td>
<td>90 (58.4%)</td>
</tr>
<tr>
<td>Blocky fragments</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Flake fragments</td>
<td>33</td>
<td>29 (13 cortical)</td>
<td>small flake fragments²</td>
<td>67 (19 cortical)</td>
</tr>
</tbody>
</table>

1 The estimated debris ratio from Marco Gonzalez is calculated in terms of the total number of cortical and non-cortical flakes and blocky fragments recovered from the site divided by the total number of large whole bifaces (i.e. - for 1 biface there were 2.7 primary flakes).

2 Flake fragments are included in the flake categories (primary, secondary 3, secondary 2, tertiary) above. An additional 2,051 flakes, fragments, and chunks passed through ¼ inch mesh.

Stone Tools and Craft-specialization at Pook’s Hill

The lithic evidence for tool production and craft-specialization at Pook’s Hill seems organized along the lines of a community-wide, cooperative enterprise based on primarily integrated, independent household production (Brumfiel and Earle 1987: 5). Community cooperation, in this instance, was likely reinforced by family/kin-based connections in this small plazuela group. However, it is difficult to say what specific kinds of kin-based relationships they were (Gonlin 2004: 228; see Robin 2003: 331-333; Inomata and Stiver 1998). Significant redundancy in the
tool sub-assemblages associated with different structures or locations at Pook’s Hill might be indicative of different households with some degree of autonomy from one another within the larger group. At Pook’s Hill, there is little variation in debitage distribution at various loci/structures; a similar situation is described for Late to Terminal Classic Saktunha/Cabbage Ridge (Speal 2006). Based on the frequencies of tools types in the sub-assemblages at Pook’s Hill, there is strong evidence for some redundancy of tool type distribution and little evidence for any substantial accumulations of tools in spatially restricted/segregated locations.

In terms of flakes and bifacial thinning flakes, the percentages of cortical and non-cortical flakes are variable, but there are no extreme anomalies indicative of substantially different reduction patterns from locations with abundant debitage (Figure 5). The data from PKH-M1 and the Structure 4A – Burials are anomalous in part due to the very small quantities of flakes recovered from either location. At all locations, flat striking platforms are most frequently observed on flakes, followed by cortical platforms (with the exception of Structure 4A – Burials). On the bifacial thinning flakes, there is evidence for both hard-hammer and soft-hammer reduction of bifaces (Table 6). Whereas the plazuela platform and Structures 1A, 1B, and 2B tend to provide more evidence of soft-hammer flaking, Structures 1C, 2A, 4A, and 4B indicate higher levels of hard-hammer production based on the distributions of flat, faceted, and lipped striking platform tools throughout the site. The terminations on the flakes and distal flake fragments were consistently represented by feather terminations at all locations (except Structure 4A – Burials). The same pattern is more strongly represented by the termination types of the bifacial thinning flakes, suggesting skilful production of bifaces, with comparatively minimal hinge flaking (Table 7).

Based on the lithic evidence from Pook’s Hill, there appears to be unequivocal support for greater economic autonomy of the inhabitants of this site producing most of their tools from locally retrieved stone for their own use and likely for some trade or exchange with neighbouring, but not substantially distant, communities. Unlike the evidence from a coastal site like Marco Gonzalez that was incredibly dependent on the acquisition of stone tools from workshops like Colha (Hester and Shafer 1994) and seems to have been socio-politically and socio-economically tied to Lamanai as a coastal transhipment point (Stemp 2001; Stemp and Graham 2006), Pook’s Hill appears to have been a much more self-sufficient and internally managed place in the Late Classic period. Pook’s Hill was clearly not a stone tool ‘consumer’ site, such as Santa Rita Corozal (Dockall and Shafer 1993), Cerros (Mitchum 1994), Northern River Lagoon (Mock 1994), Marco Gonzalez, San Pedro (Stemp 2001), San Juan, Ek Luum, Chan Balam (Hult and Hester 1995), and Pulltrouser Swamp (McAnany 1986, 1989), among others. It may have been similar in some ways to sites like Saktunha (Speal 2006), based on this site’s relative lack of dependence on other stone tool producers as seen through debitage patterning and raw material types, or those in the valley settlements of the upper portion of the Belize River (Ford and Olson 1989).

Some locations at Pook’s Hill may minimally represent some specialized production based on the tool types recovered. Specifically, there were slightly greater frequencies of drills in the overall sub-assemblages at Structures 1C, 2A and 4A (Table 8). There is slightly greater evidence for blade production at Structure
### Table 6. Percentage of Striking Platform Types on Whole Flakes and Blades and Proximal Fragments from Pook’s Hill.

<table>
<thead>
<tr>
<th>Platform types</th>
<th>Flakes</th>
<th>Bif. thin./ repair</th>
<th>Blades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortical</td>
<td>19.9</td>
<td>3.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Flat</td>
<td>53.0</td>
<td>11.1</td>
<td>54.5</td>
</tr>
<tr>
<td>Flat-lipped</td>
<td>4.7</td>
<td>16.7</td>
<td>36.4</td>
</tr>
<tr>
<td>Dihedral</td>
<td>7.1</td>
<td>3.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Facetted</td>
<td>8.8</td>
<td>32.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Facetted-lipped</td>
<td>1.8</td>
<td>32.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Linear</td>
<td>1.3</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Punctiform</td>
<td>2.1</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Crushed</td>
<td>1.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

### Table 7. Percentage of Termination Types on Whole Flakes and Distal Fragments from Pook’s Hill.

<table>
<thead>
<tr>
<th>Termination types</th>
<th>Flakes</th>
<th>Bif. thin./repair flakes</th>
<th>Blades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feather</td>
<td>78.4</td>
<td>85.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Step</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Hinge</td>
<td>19.0</td>
<td>14.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Snap/½ moon</td>
<td>0.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

### Table 8. Percentages of Large Bifaces and Fragments in Sub-assemblages by Structure/Location at Pook’s Hill.

<table>
<thead>
<tr>
<th>PKH-MI</th>
<th>Plaza platform</th>
<th>Structure 1A</th>
<th>Structure 1B</th>
<th>Structure 1C</th>
<th>Structure 2A</th>
<th>Structure 2B</th>
<th>Structure 4A (Burials)</th>
<th>Structure 4A</th>
<th>Structure 4B</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oval</td>
<td>0.0</td>
<td>1.7</td>
<td>1.4</td>
<td>1.3</td>
<td>1.6</td>
<td>1.7</td>
<td>1.3</td>
<td>0.0</td>
<td>1.8</td>
<td>0.7</td>
</tr>
<tr>
<td>General-utility</td>
<td>0.0</td>
<td>0.8</td>
<td>1.9</td>
<td>1.7</td>
<td>0.8</td>
<td>1.7</td>
<td>1.3</td>
<td>0.0</td>
<td>1.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Lenticular</td>
<td>0.0</td>
<td>0.4</td>
<td>0.3</td>
<td>0.2</td>
<td>0.0</td>
<td>0.2</td>
<td>0.9</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Thick, narrow</td>
<td>0.0</td>
<td>0.4</td>
<td>0.6</td>
<td>0.6</td>
<td>0.0</td>
<td>0.2</td>
<td>0.9</td>
<td>0.0</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Adzes</td>
<td>0.0</td>
<td>0.4</td>
<td>0.6</td>
<td>0.4</td>
<td>0.4</td>
<td>0.0</td>
<td>16.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Thin (various)</td>
<td>0.0</td>
<td>3.0</td>
<td>0.8</td>
<td>1.7</td>
<td>2.5</td>
<td>1.9</td>
<td>1.7</td>
<td>0.0</td>
<td>0.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Thick (various)</td>
<td>0.0</td>
<td>0.8</td>
<td>2.0</td>
<td>0.4</td>
<td>0.4</td>
<td>1.9</td>
<td>0.9</td>
<td>3.0</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Preforms</td>
<td>0.0</td>
<td>1.7</td>
<td>0.3</td>
<td>0.2</td>
<td>0.4</td>
<td>0.2</td>
<td>0.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Table 6. Percentage of Striking Platform Types on Whole Flakes and Blades and Proximal Fragments from Pook’s Hill.

Table 7. Percentage of Termination Types on Whole Flakes and Distal Fragments from Pook’s Hill.

Table 8. Percentages of Large Bifaces and Fragments in Sub-assemblages by Structure/Location at Pook’s Hill.
4B than other locations; however, no locations reveal overwhelming evidence for substantial investment in chert blade manufacture (Table 9). Other tools, such as large bifaces, adzes, and thick narrow bifaces, likely associated with certain types of craft-production like wood- or stone-working, are relatively evenly distributed throughout the site in small numbers (Table 10). There are very few scrapers, notches, or gravers, suggesting that any tasks necessitating such tools were either not occurring or were being accomplished using biface forms, unmodified flakes, blocky fragments, or core fragments. The types of activities requiring stone tools at Pook’s Hill will be much better understood when the use-wear analysis has been completed.

**Summary**

The non-obsidian chipped stone tools excavated from Pook’s Hill represent a fairly generalized, easily produced and maintained assemblage primarily intended for domestic subsistence and extractive activities with small-scale craft-production (Aldenderfer 1991; see also Lewenstein 1987; Stemp 2004a). Tools are primarily
The Organization of Stone Tool and Use, Pooks Hills

made from easily obtained local stone (chert and chalcedony) of varying quality. All tool types, regardless of design, are typically made from these locally procured raw materials. Quite a wide range of tool types were recovered from the site, including formal tools (oval bifaces, general-utility bifaces, adzes, lenticular bifaces, thick and narrow bifaces [chisels], various thin and thick biface forms, blades, macroblades, and drills) and informal tools (flaking debitage, cores and core fragments, some tools-on-flakes, and heat spalls/potlids).

There is good evidence for tool production at Pook’s Hill, specifically large bifaces and smaller bifaces, with limited production of blades. Specialized tools on flakes/blades were also manufactured, including very small quantities of gravers, scrapers, and particularly drills. There was also a heavy reliance on expedient technology in the form of flakes produced through simple core reduction. The Classic period inhabitants of this site employed both formal tools and informal tools in the completion of everyday tasks. Loci identified as spatially segregated workshops for tool production are not present at the site; it appears most Maya households were capable of making the majority of tools that they required, although there are minor clusters of the remains of lithic production spread throughout the plazuela (i.e. more evidence for blades at Structure 4B).

Little evidence for curation of the lithic assemblage as a whole has been found. Although some tools, mostly large bifaces, demonstrate more prolonged, heavy use and repair and/or recycling than others, the typical use-life of a tool does not include substantial reworking or reshaping for the completion of other tasks. Once tools broke, they seem to have been discarded with minimal attempts to rejuvenate them or transform them into other functional implements, however temporarily.

The lack of substantial curation of the tools in the assemblage is most likely the result of unrestricted access to good quality stone. Raw material seems abundant, or at least, readily available, ranging in quality from poor (coarse-grained, blocky texture) to very fine-grained (of the same quality as stone described from the CBZ, although not coming from there). This is certainly not the pattern of acquisition, use and re-use/recycling observed at consumer sites, as defined by McAnany (1989), Dockall and Shafer (1993), Hult and Hester (1995), and Stemp (2001; Stemp and Graham 2006).

In addition to evidence for production of stone tools for local use, it appears that at least some craft-production for local consumption and exchange outside the Pook’s Hill community was also occurring. In this case, tools such as drills, chisels/gouges, adzes, and large bifaces with crushed edges have been suggested as associated with activities like bone or stone bead production, wood-working, stone-working, and possibly masonry. Although these activities have been generally inferred from tool types, it is acknowledged that similar tools have been demonstrated as multi-functional regardless of morphological design (see Aldenderfer 1990, 1991; Aoyama 1995, 1999; Lewenstein 1987, McAnany and Peterson 2004; Stemp 2001, 2004a, 2006). A more accurate sense of the specific functions of the stone tools recovered from Pook’s Hill and the frequencies of related activities can only occur following a program of use-wear analysis. For now, the non-obsidian chipped stone tools associated with different craft-specializations at Pook’s Hill are relatively few in number and are not obviously spatially concentrated or segregated. This suggests that craft-production at the site was not intensive and was likely organized as a part-time, independent specialization, at the individual household or possibly community...

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Plaza spaces in site centers have been a focus of recent research, especially in the realm of marketplace studies. Historic data indicate that large, easily accessible plazas located in the core of a site could have been used for multiple purposes such as economic transactions, political meetings, or religious ceremonies. Archaeological evidence for these different functions and their related activities can be distinct but they also can be very similar. Because of this, multiple, independent lines of evidence are needed to support interpretations of how a plaza was used in the past. In 2006 the West Plaza at the site of Chan was investigated through broad scale excavations to determine the types of activities that took place there and the function of the plaza within the site. Based on macro- and microartifact analysis and architectural data it appears that the West Plaza was used for ritual purposes. Evidence for rituals includes two stone mosaic circular pavements, a stela, an altar, and charred organic resin associated with these features. Analysis to establish whether other types of activities, such as marketplace exchange, were also taking place is unclear.

Interpreting what occurred in plaza spaces is not without its difficulties and trying to assign “the” or “a” function of a plaza is complicated by several factors. First, a variety of activities that could have taken place within plazas, such as political parades or recital of prayers, will not directly create an archaeological record. A second issue stems from the use of plaza spaces for multiple activities at the same time, or sequentially, which creates the problem of palimpsest. However, the archaeological signatures of some activities are unique and distinguishable from others (see Keller 2006: Figure 5.1 for a comparison of activities and their archaeological correlates). Finally, objects used in plazas tend to be displaced from their primary contexts through sweeping up of debris or items are removed for use elsewhere. The study of microartifacts (those less than 4mm in size) is important for helping to deal with this problem as they tend to move only short distances vertically and horizontally from where they were trampled into a surface (Gifford-Gonzalez et
Investigations at Chan’s West Plaza al. 1985). All archaeological projects confront these issues but methods have been developed, and are used in this project, to facilitate interpretations.

This paper addresses some of the issues related to interpreting activities that took place in plaza spaces by presenting results of work completed in the West Plaza, located in the core of the Chan site. Architectural features uncovered through broad scale excavations and artifact analysis suggests that ritual political and/or religious activities important for creating and maintaining a cohesive community were held in the West Plaza. Whether other types of activities, such as economic transactions, also took place remains unclear.

Plaza Activities

Examination of historic data on the Maya suggests that activities such as marketplaces (Landa [1566 in Tozzer (1941)]) and religious ceremonies (Barrara Vazquez 1965; Cuidad Real 1976; Landa [1566 in Tozzer (1941)]) took place in plazas. Currently there are no known examples of prehistoric Maya writing that explicitly discuss the types of activities that took place in plaza spaces. However, a few painted ceramic vessels do portray structures with associated plazas (Kerr 1994; Robicsek and Hales 1982). The decorative theme of these vessels tends to relate to religious activities and the role of the individuals portrayed in the performance of these rituals. Additionally, newly uncovered murals at the site of Calakmul may provide evidence of economic exchanges taking place in plazas (Carrasco Vargas and Gonzalez 2005). The work on creating and testing correlates of these types of activities in the archaeological record has already begun (e.g., Dahlin and Arden 2002; Inomata 2006; Keller 2006; Looper 2001; Wells 2003; Wurtzburg 1991) and is presented below.

Economic Transactions

One economic activity linked with plazas is exchange transactions that take place at marketplaces. Since people tend to use the goods obtained at marketplaces in other locales, the archaeological record of marketplaces consists of materials that reflect its spatial organization and other activities that take place in them. Archaeological correlates for the spatial organization of a marketplace include architectural evidence of vendor stalls (e.g., prepared surfaces, cobble ballasts, concentrations of daub) and the spatial segregation of artifacts by type (e.g., ceramics, lithics, shell) in association with architectural features. Based on these correlates, several scholars have suggested the presence of marketplaces at sites such as Tikal (Jones 1996), Chunchucmil (Dahlin and Arden 2002), Sayil (Wurtzburg 1991), and Xunantunich (Keller 2006). Other kinds of activities that could have taken place at ancient marketplaces include small scale production or finishing of goods that do not require a large amount of space or costs in transport (e.g., shaping a stone tool or weaving) and cooking of food to be consumed by market-goers. These activities each have a unique set of archaeological correlates and should be analyzed for in future studies.

Economic exchanges also could have taken place on a smaller scale than a formal marketplace but the material remains of these activities may be ephemeral and hard to identify in the archaeological record.

Religious activities

Several different religious activities that could have taken place in plazas include human bloodletting, feasting, recital of prayers, and singing. The archaeological remains of activities such as religious feasting and bloodletting include specific artifacts (e.g., bloodletters and highly
decorated serving vessels) and soil chemical signatures as well as architectural features (e.g., stelae, altars, and shrines). However some religious activities, such as singing and recital of prayers, will not leave a unique archaeological record.

**Political Activities**

Political activities associated with large, public plazas include ceremonies and gatherings held to legitimate the power and authority of rulers. Most of the activities that take place at these events, such as processions and orations, will not leave a direct archaeological record. However, Inomata (2006) suggests that site center plazas were political theaters due to their size and the stelae often found within them. Many site center plazas are constructed so that they could conceivably hold large numbers of people (relative to the population size) and the gatherings of community members to observe politically charged performances in these spaces would have helped to create and maintain integrating bonds (Lucero 2003). The stelae erected in plazas, which often depict rulers participating in activities important for the maintenance of the community at large and their position as ruler, serve as reminders of politically driven performances and were most likely a focus of the ceremonies that took place there (Inomata 2006; Looper 2001; Tate 1992).

An example of a politically focused event that would preserve in the archaeological record is feasting. At the site of El Coyote in the Naco Valley, Honduras Christian Wells (2003) suggests feasts were held in the main plaza to reward labor groups for their production of goods that were used by elites in interregional exchange transactions. Evidence for feasting consists of a central shrine structure in the site’s main plaza surrounded by a high concentration of plain ceramic serving vessels, a pattern often associated with feasting activities (LeCount 1996).

Given the description of political and religious activities discussed above, trying to discern whether an activity served one purpose versus another can be difficult because several of the material remains used to identify these types of activities is similar and a single activity can serve more than one purpose. Because of these complicating factors, for the analysis of the Chan Plaza I have chosen to categorize evidence that could represent religious and/or political activities as ritually based activities. Using the general category of ritual, defined by Rappaport (1979: 175) as “performance[s] of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers,” to describe political and/or religious activities recognizes that they can have multiple meanings and allows for a broader understanding of how plaza spaces were used.

The research from Chan’s West Plaza builds upon and adds to these other studies. A variety of activities took place in the West Plaza but the degree to which they each can be substantiated varies based on the available evidence. The most supportable interpretations draw upon multiple, independent lines of evidence.

**Chan Plaza Study**

Chan is a farming community with a long occupation history that begins in the Early Middle Preclassic (800 BC) and continues uninterrupted until the Terminal Classic/Early Postclassic (1200 AD), with ephemeral evidence of Early Preclassic and later Postclassic ceramics (Kosakowsky 2006). Chan is located in the upper Belize River valley 4 km west of the Late Classic polity capital of Xunantunich. The settlement area consists of 563 mounds grouped into 275 mound groups and over
1000 agricultural terraces with one central architectural group. Research at Chan since 2002 has exposed a representative sample of households and agricultural terraces as well as the Central Group and its adjacent West Plaza (Robin 2003; Robin et al. 2004, 2005).

The Central Group is composed of an E-group, a range structure, and a residential structure situated around the Central Plaza (Figure 1). Access into the Central Plaza is restricted to two small openings to the north and west. Excavations in the Central Plaza uncovered a stela, an altar, several artifact caches with cosmological significance, and burials near a small structure interpreted as a shrine (Blackmore 2003; Robin et al. 2005). This evidence suggested to the excavators that ritual activities took place in this space and that they likely related to cosmological ideologies and legitimization of authority (Blackmore 2003; Robin et al. 2005). A second plaza, the West Plaza, is located adjacent to the Central Group and is the focus of the research discussed here. Research was conducted in the West Plaza to determine its function and potential linkages to the activities that took place in the Central Plaza (Cap 2006; Latsch 2005).

Physical characteristics that demarcate the plaza include a low, L-shaped structure along its northern edge while a staircase leading down a steep slope marks its southern boundary. The plaza abuts a pyramidal structure on the east and the western edge is indicated by exposed bedrock. Excavations of the West Plaza took place in the 2005-06 field seasons and exposed a horizontal area of 183 m² which represents 18 percent of the total plaza area (Figure 2).

Based on ceramic analysis, conducted under the guidance of Laura Kosakowsky, the first construction phase in the plaza dates to the Cadle Complex, in the Late Preclassic (300 BC-AD 250). Limited excavations of this early phase revealed architectural features such as rock clusters of unknown function and at least two phases of plaster surfacing (Figure 2). After the Preclassic, ceramic data indicate the plaza was not used again until the Late Late Classic Pesoro Complex (AD 670-800/830) and the Vieras Complex, of the Terminal Classic (AD 800/830-900) when the southern edge was artificially extended to its final dimensions. Also constructed at this time was a low stone wall that traverses the east/west length of the plaza and two stone mosaic circular pavements located south of the wall. A two meter high stela and an altar were also erected in the southern portion and are associated with one of the stone mosaic circular pavements (Figure 2). The data presented here focuses on this phase of construction and use. However, ceramic and lithic artifacts from the humus layer indicate that the plaza was used into the Postclassic (AD 900-1150/1200), though no architectural features were constructed during this time.

Drawing from several lines of evidence, I suggest the major function of the
West Plaza was as a venue for holding political and/or religious rituals. I cannot completely rule out that other types of activities also took place but the archaeological evidence to support such an interpretation is sparse and problematic.

**Ritual Activities**

The data demonstrating that ritual activities took place in the West Plaza include specific architectural features, artifact patterns and the relationships between them. When viewed as a group, the stela, altar, and stone mosaic circular pavements represent architectural features used during rituals. The limestone stela is broken in fragments and if any decoration was applied to it by the Maya, these have been eroded away. Carved stelae found at other sites show they generally displayed information on religious ideologies and the activities of rulers. Analysis of stelae and their spatial relationship to other architectural features at sites such as Yaxchilan (Tate 1992) and Quirigua (Looper 2001) suggest that they were also centerpieces for ritual performances commissioned by rulers. Given the type of decoration and likely ceremonies focused around stelae, they could hold religious and/or political meaning within a community.

**Figure 2.** Details of Excavation in the West Plaza
The plain, limestone altar located just west of the stela is broken in several fragments but would have been rectangular in shape. Stela and altar combinations are found at many other Maya sites and it is assumed that they served as a pair in ritual ceremonies. The altar also appears to have been involved with ritual activities because directly below its center a cache of approximately 264 jute (Pachychilus) shells was placed. Caches such as these have been found in locations such as ballcourts at Lubantunun and Pacbitun (Hammond 1975; Healy et al. 1990).

Finally, the stone mosaic circular pavements were also likely involved in ritual activities. Each of the stone mosaic circular pavements is composed of one course of thin (on average 10 cm thick), flat lying limestone fragments resting on what would have been a plaza surface. They are found on opposite sides (east and west) of the plaza and each is approximately two meters in diameter (Figure 2). Artifacts associated with the stone mosaic circular pavements and their spatial relationship with other features in the plaza shows their linkages with ritual activities.

First, the western stone mosaic circular pavement is located between the stela and altar. This spatial relationship suggests the pavement was most likely involved in the ritual activities associated with the stela and altar.

Ritual activities centered on the western pavement can be further substantiated with artifactual data. Over half of the incensario fragments found in the West Plaza are associated with the trio of stela, altar, and western stone mosaic circular pavement. Found just above the western pavement was a fragment of a chert eccentric and ceramic figurine. Items such as these were recovered in several of the caches in the Central Plaza, which were also linked to ritual activities (Blackmore 2003).

Finally, data from microartifact analysis shows an interesting pattern suggestive of ritual activities. To obtain microartifacts, a 10 liter soil sample was collected from each level of each excavation unit and processed through a flotation system to collect the heavy and light fractions. The heavy fraction was then separated by microartifact material type (e.g., lithic flake, ceramic fragment, shell fragment, etc.) and each category was counted and weighed. From the West Plaza microartifact samples analyzed to date a burned resin has been found to be associated almost exclusively with the western stone mosaic circular pavement with a significantly smaller quantity found in the eastern pavement. Preliminary experiments burning modern resins and examination of the microartifact samples by ethnobotanist Andrew Wyatt indicate that this material is indeed a resin. The most commonly used resin in Maya culture, both today and in the past, is copal which is used in various types of ceremonies as incense (e.g., Landa’s description of the New Year’s ceremonies [Tozzer (1941)]). The Chan resin was most likely used in a similar manner during rituals.

An interesting pattern in these data is that most of the artifact patterns discussed here are associated with the western stone mosaic circular pavement. Although the eastern pavement has little direct data indicating it was used in rituals, the similarity in structural form to the western pavement suggests it was part of the same ritual program and may have been used for specific ritual activities that did not create a preserved material record.

Pavements such as these are unprecedented in the upper Belize River valley. Preclassic stone circular structures and raised platforms have been found in the upper Belize River valley and seem to be related to ritual activities (Aimers et al. 2000) but none date to the end of the Late...
Classic or take on this particular architectural form. A similar pavement dating to the Late Classic has been found in the Blue Creek area in northern Belize. This circular pavement is the foundation for a small structure within a plaza group interpreted as a location where people gathered to perform activities that created and maintained community ties (Giacometti 2002). No daub or remnants of a superstructure were found with Chan’s stone mosaic circular pavements.

The interpretation of the West Plaza as a venue for ritual activities is well supported given the macroartifact, microartifact, architectural, and spatial data. The artifacts and architectural features described were most likely used for religious purposes but since they occur at the site core they would also have had political meaning for those performing and watching the ceremonies. Because the West Plaza is the most easily accessible plaza space to large groups of people, it is possible that publicly oriented rituals that helped to create a sense of community to those watching the ceremonies took place there. I suggest these rituals were linked with more private, restricted ritual performances taking place in the Central Plaza that would create/reinforce authority.

**Alternative Functions**

The evidence used to demonstrate ritual activities, political and/or religious, are only a portion of the total West Plaza assemblage. In total there were 26,591 ceramic fragments, 2,193 chert lithics consisting of 20 formal tools, and 94 obsidian blade fragments. What do these artifacts represent? One question I am interested in addressing is if the West Plaza was used as a marketplace for the Chan community.

The West Plaza seems like an ideal location for a marketplace - it is easily accessible via the southern staircase and is the most unrestricted plaza space in the site center. While there is an absence of architectural features suggestive of marketplaces (i.e., stalls) in the plaza, examination of artifacts reveal several different types of stone and ceramic tools that could be linked with economic activities. These include several worked ceramic sherds that could be used as net sinkers and that could be interpreted as commodities to be exchanged. Also found were notched lithic flakes usable for scraping hard materials and several general utility bifaces scattered across the plaza. These artifacts might represent tools used in the production of goods being exchanged in a marketplace.

These artifacts are few in number and kind. Are they enough to suggest economic exchanges were taking place alongside or at times between ritual performances? At this time I hesitate to say that the presence of these items reflects economic exchange of physical objects for several reasons. First, the meaning of these artifacts could be reinterpreted. For example, the notched flakes and bifaces might not have been used to make objects to exchange in a marketplace but instead used to make items associated with the rituals taking place. While the general act of producing an item could be considered an economic activity, reinterpreting the use of the items produced creates a different understanding of what took place in the West Plaza. A second problem with this data is that there is not a clear understanding of the general “background noise” of artifacts expected in a plaza versus those that are the direct byproducts of specific types of activities that took place there. To overcome this problem, the Chan plaza assemblage should be compared to other plaza data sets as well as other contexts, such as household floors, workshops, and
Investigations at Chan’s West Plaza

middens. These comparisons are currently being conducted but are not complete enough to report conclusions here. Because the evidence for economic exchange activities in the West Plaza is so sparse and inconclusive at this time I can only affirmatively say that ritual activities took place there.

Conclusions

The data from Chan’s West Plaza indicates that plazas were not “empty spaces” in the past but rather were the focus of a range of activities involving a variety of artifact types and architectural features. Several lines of evidence have been used to demonstrate that the West Plaza was used for ritual activities probably related to religious and/or political ideologies. These rituals were also likely linked with those that occurred in the Central Plaza and played a role in establishing integrating bonds between Chan community members. Questions arise as to whether other activities took place in the West Plaza, but due to a lack of understanding the general “background noise” of artifacts expected in plaza spaces and the potential for multiple functional interpretations of the same item, it is unclear if other activities, such as economic exchange transactions, also took place there.

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The fact that the ancestral Maya peoples were present at the creation of the forests of Mesoamerica gives rise to the revelation that humans must have contributed to patterns of biological diversity, today considered a conservation priority. Despite this obvious data, scholars argue that the ancient Maya deforested their forest, leading to their downfall. With ecological and ethnographic research, we question the paleoecological and archaeological interpretations used to justify this assertion in light of new studies detailing climatic data from the Carioco Basin. We propose that agrarian Maya civilization was a creative response to climatic extremes in the Preclassic and that the development of the Classic period is founded on this innovation.

Introduction

The Maya forest is one of the most extensive, contiguous tropical forests of the Americas. Extending from the southeastern Mexico and the Yucatán Peninsula, into the Petén of northern Guatemala, and Belize (Fig 1), the Maya forest of Mesoamerica is among the biodiversity “hotspots”, outranked only by the Tropical Andes (Conservation International 2000).

During the greater part of the time since the European conquest of their homeland, Maya peoples have lived in small rural communities with an economy based on agriculture, forestry, and the provision of low-paid labor to the wider economy. Today, Maya societies are subject to influences that are transforming other regions of the world: urbanization, education, migration, and profound social, political and religious change. Nonetheless, like native peoples throughout the Americas and the world, many Maya still gain their livelihood from the forest. We call the legacy of this relationship the ‘Maya forest garden.’

Maya forest ecosystems are largely anthropogenic (Gomez Pompa and Kaus 1999). Even though historical and ethnographic evidence of complex farming and adaptive management strategies are recorded for the Maya, the perception that the Maya provoked their downfall through environmental destruction has become the official story of the Maya, growing in the popular imagination fueled by authors such as Jared Diamond (2002) and Mel Gibson.

There has been more than 5,000 years of continuous habitation of the Maya forest. What is the evidence used to assert that the Maya agricultural practices have destroyed the forest environment? While there were certainly changes in the past, it was not until the expansion of pasture and plow, distinctly European strategies that there has been evidence of deforestation. In fact it may well be that the greatest current threat to biological diversity in the Maya forest is the loss of the Amerindian farming traditions practiced by the Maya peoples.

The Maya Lowland Geography and Land Use

The geography of the Maya area is dominated by limestone bedrock that creates many lakes and wetland depressions dispersed within rolling hills and broken ridges of the uplands. Annual rainfall varies from ~4,000 mm in the south to less than 500 mm in the northwest Yucatan Peninsula (West 1964). These variations of karstic topography and water generate four basic

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ecosystems in the central Maya lowlands (Fedick and Ford 1990), that form a resource mosaic utilized by both the ancient and modern populations of the region:

1. Well-drained ridges and uplands (tall to low closed forest)
2. Poorly-drained lowlands (low forests and transitional wetlands)
3. Perennial riverine wetlands (riverine forests and aquatic and semi-aquatic vegetation)
4. Seasonal permanent closed wetlands (low forest tolerant of hydric extremes)

For most of the last 5,000 years, the El Niño/Southern Oscillation (ENSO) phenomenon has been linked with wide variations in regional climate (Chen et al. 2004). Drier or wetter periodicities at the scales of decades, centuries, and millennia have modified land cover and vegetation communities have waxed and waned across the landscape.

The well-drained zones most preferred by the Maya for farming are the gentle slopes of uplands. These are sites where today moist forests develop to their fullest. Such ideal land is unevenly distributed across the region, which has historically resulted in dispersed human settlement patterns (Ford 1991). These well-drained slopes comprise less than one-sixth of the area of Northern Belize, but nearly half of the interior areas around the major Classic site of El Pilar. There is a direct relationship between the presence of well-drained ridges, settlement density, and the location of elite cultural remains of the Classic Maya kingships (Fedick and Ford 1990; Ford et al. 2001).

**Paleoecology of the Maya Forest Landscape**

Advances in paleoecological research have brought new data on vegetation change and climate variability in the Maya area during the Holocene. The traces left by past physical and biological events may be preserved in samples taken from marine, lacustrine, and wetland sediments (Bradley 1999) and can reflect climatic conditions at the time the record was created. The Circum-Caribbean data have provided significant improvements in time resolution to link ecological conditions that prevailed during Maya prehistory (Brenner et al. 2002).

From these new data, the Maya lowlands are integrated into a regional climate regime where rainfall is related to the intensity of the annual displacement of the Atlantic Inter Tropical Convergence Zone, or ITCZ (Hillesheim et al. 2005). When the ITCZ migrates north of the Equator, it brings rains to northern South America and Central America, including the Maya area. Later, the ITCZ shifts far to the south, leaving these areas dry. The movements of the ITCZ vary on an interannual rhythm that provokes occasional, sometimes multi-year, climatic extremes of deluge and drought (Haug et al. 2001) with significant regional climatic variability throughout the Holocene (Mayewski et al. 2004).

The Carioco Basin cores, off the north coast of Venezuela, provide a rare and sensitive, long-term record of Pleistocene-Holocene climate variability (Peterson et al. 1991). The banded sediment cores measure Titanium to provide a direct measure of regional rainfall variation impacting the Maya area yielding, a 14,000 year proxy for precipitation (Haug et al. 2001). An application to Maya environmental history is focused on the Terminal Classic from the AD 900 to 1000, where it is concluded that the “expansion of Maya civilization from 550 to 750 A.D. during climatically favorable (relatively wet) times resulted in a population operating at the limits of the environment’s carrying capacity, leaving
Maya society especially vulnerable to multiyear droughts” (Haug et al. 2003). The conclusion corresponds to epigraphic dates of 810, 860 and 910 A.D. indicated by Gill for the Maya collapse. (2000).

As impressive as these relationships are, we are more impressed by what the Carioco record tells us of the longer view of Maya forest ecological history. The record for the past 5,000 years yields a new different view of Maya adaptation, one that emphasizes centuries of relative successes rather than just a few periods of partial failures (Table 1). The Holocene Thermal Maximum, a stable, warm, wet period between ~8000 and 5000 BC, was followed by a gradual yet consistent climatic drying trend that has continued to this day, reaching a trough of very dry extremes that correlate with the Little Ice Age that occurred at the same time of the Spanish conquest. Notably beginning 4,000 years ago, in the Preclassic period, there are a series of extreme precipitation events - severe drought alternating with torrential rains, indicating extremes from drought to deluge over multiple-year periods until well into the first millennium BC. These extremes make the changes reported for the Terminal Classic seem mild by comparison.

Sediment cores also have been taken from the lakes within the Maya area itself (Brenner et al. 2002; Curtis et al. 1998; Hillesheim et al. 2005; Hodell et al. 2001; Islebe et al. 1996; Rosenmeier et al. 2002). The conditions of their deposition, however, are not ideal ones compared to the Carioco Basin. Data shows the Preclassic environmental changes reflected in the Carioco Basin data that corresponds with desiccated open forest vegetation and erosion associated with excessive precipitation. This is the ‘Maya clay’ found in Petén lake basins and is sometimes accompanied by an increase in ‘disturbance taxa’ in the pollen record (Leyden 2002, interpreted as Maya deforestation (Rosenmeier et al. 2002).

These views are widely accepted among Maya archaeologists. But do the data
support the deforestation hypothesis? First, the Early Preclassic is at the initial expansion of settlement. Further, reevaluation of Maya clay deposition confirm that the initiation predates widespread archaeological evidence of human settlement (Mueller et al. 2006). We offer an alternative explanation. The marked drying trend after 2000 BC as evidence in the Carioco record could be a consequence of fluctuations of drought conditions, punctuated by periods of high precipitation.

Fossil Pollen and Forest History: A Problem of Scale

Recent conclusions that the Classic Maya widely deforested their landscape are based on pollen reconstructions that are problematic at best (Bradley 1999). Evidence for reduced forest cover starting at the beginning of the Preclassic around 2000 BC, along with the presence of grasses and maize pollen, is assumed to indicate ‘widespread forest clearance’ at a time when farmers were only lightly settled on the landscape. Then modern forests are assumed to have ‘recovered’ as result of depopulation and abandonment of agriculture after the Maya Collapse, even though maize pollen is recorded throughout the Postclassic (Brenner et al. 2002; Islebe et al. 1996). This view rests on a tacit assumption of incompatibility between Maya agriculture and plant/forest cover, an assumption that is shared by many conservation biologists today (Carr, Suter, and Barbieri 2005; Green et al. 2005).

There are questionable aspects beginning with the pollen evidence itself. Even if lake sediments accurately reflected the composition of the historical ‘pollen rain,’ to what degree would this reflect the actual composition of regional vegetation? Paleoenvironmental reconstructions are based predominantly on wind pollen (Bradley 1999:363-64). To infer that patterns of past pollen distribution are similar to patterns observed today, we need to understand the nature of pollen rain today (Leyden 2002). It is therefore critical to consider data from current ecological studies in interpreting fossil pollen spectra.

Plants in tropical forests in general (Turner 2001), and the Neotropics in specific (Chazdon et al. 2003), are dominated by biotic pollination: insects, birds, bats. These are the most effective pollination strategies in a world of trees. On an average, less that 2% of the forest is wind pollinated (Turner 2001: 130). Wind pollination is best for open terrain, ideal for pioneers of gaps in the tropics. In the Maya forest, only 5% of the top 20 forest species are wind pollinated (Ford in press), this is the *ramon* tree (*Brosimum alicastrum*) a member of the Moraceae family. Thus, the dominant woody species are severely underrepresented in the pollen rain and do not appear in lake sediment records at all (Morley 2000).

From the earliest studies of the Maya area, the presence of pollen from species of the Moraceae family has been taken as an indicator of the presence of mature forest. Moraceae is the only wind-pollinated species dominant in the forest canopy, yet the justification for this “forest” proxy has never been argued in the literature. Furthermore, pollen studies are based on simple percentages and have been assumed that the rise and fall of percentages of identifiable Moraceae, such as *Brosimum*, directly reflected variation in the area of matures forest cover in the region. Importantly, Moraceae species are resilient and can be elements of the forest canopy, but are pioneering species and long-range pollen dispersers (*by wind*), abundant in gaps of regenerating (Bush and Rivera 1998). Finally, pollen from important forest tree families, such as Lauraceae (e.g.,
avocado, *Persea Americana*) and Meliaceae (e.g., mahogany, *Swietenia macrophylla*) are not preserved at all in the fossil record yet are present in abundance in the past (Van Walkerberg 2003).

The percentage fluctuations of fossil Moraceae pollen is a process well worth investigation, but does not necessarily indicate expansion or contraction of forested landscape. Increasingly abundant Moraceae pollen may indicate availability of areas for aggressive colonization caused by hurricane blow-down and subsequent fires or could be a result of new habitats created by the abandonment of buildings and public monuments, allowing the expansion of *Brosimum* into a new habitat of broken limestone, to which it is well adapted (Lambert and Arnarson 1982).

Similarly, the presence of so-called ‘disturbance taxa’ are all part of the high performance milpa cycle (Wilken 1987; Colin Young personal communication). The also reflect the early stages of forest regeneration during an increasingly humid climate phase rather than deforestation. An increase over time of both disturbance and forest taxa could indicate the expansion of Maya milpas and home gardens and therefore Maya house sites. A reduction of *Brosimum*-type pollen may actual reflect consolidation of the anthropogenic forest garden, as preferred insect-pollinated species become more abundant (Campbell et al. 2006; Ford in press). This would signal an expansion of managed forest rather than deforestation or disturbance. Thus, the information supplied by variation in the abundance of Moraceae pollen ambiguously reports about the state of the forest.

In summary, the existing pollen record is an equivocal proxy of forest cover and a poor indicator of forest change and climate variability. In the studies interpreting these data, no arguments are advanced to justify the assumption that forest-cover is indicated by percentages of Moraceae pollen types. Importantly, there is no acknowledgement of the complexity of maize cultivation, successional and forest garden management that could readily account for the distribution of wind pollinated taxa (Wilken 1987). Finally, no attempt is made to address the fact that over 95% of the contemporary dominant forest woody species are underrepresented in the pollen rain. We acknowledge and embrace the evidence for disturbance as a result of the Maya occupation and recognize the Maya forest is anthropogenic. But rather than widespread deforestation, we see the disturbance patterns indicating a transformation into a forest garden.

**Maya Agriculture – 5,000 Years in the Forest**

**Pre-Maya Forest 10000-5000 BC**

The beginning of the Holocene was marked by a relatively sudden and long-term climatic shift from the cool/dry climate of the Pleistocene to the warm/moist climate of the Holocene. This coincides with humans entrance into the New World (Cooke 2005, MacNeish and Nelken-Terner 1983). From ~8000 to 6000 BC, tropical forest communities emerged in areas of former arid savannas and brush lands (Leyden 2002), a transition that endured for over 2,000 years (Leyden et al. 1993).

Exactly when the Maya occupation of the Maya lowlands began to transform the forest environment is uncertain. It is clear, however, that human occupation had expanded throughout the region by the end of the Paleoindian period 10,000 years ago (Coe 1999; Pope et al. 2001). Archaic evidence of early occupation from 8000 to 2000 BC is known in the inland forest; (MacNeish 1982; Rosenswig and Masson 2001). Early foragers gained familiarity with their habitat as an integral part of Maya forest ecology, adapting to the
environmental constraints and assets. Agrarian villages in Mesoamerica were accompanied by the development of pottery after 2000 BC (Clark and Gosser 1995). Population density at the time of this transition must have been low but the important fact is that the ancestors of the Maya civilization were present at the creation of the Maya forest.

The Long Transition: Making Maya Forest Garden 5000-2000 BC

During the millennia of intimate adaptation to the tropics, not only were people and cultures profoundly influenced by the forest, but also human practice began to shape the forest environment. This interplay is evoked in the description of kanaan k’ax, a Yucatec term meaning ‘owned or managed forest’ that, when used by contemporary Maya forest gardeners, implies both learning and stewardship (Barrera Vásquez 1980; McAnany 1995; Tzul 2001). Plant domestication and certainly some form of the milpa was practiced by the middle Holocene inhabitants of the lowland Mesoamerican forests long before the advent of sedentary agricultural villages (Smith 1998).

The traditional milpa system, associated with the Mesoamerican smallholder today, is a polyculture based on maize and intercropped with plants taken from a repertoire of over 70 native and domesticated species domesticated in Prehispanic times. The Maya milpa entails a rotation of annuals with a series of managed and enriched intermediate stages culminating in the reestablishment of the forest on the once-cultivated parcel (Bernsten and Herdt 1977; Hernández Xolocotzi, Bello Baltazar, and Levy Tacher 1995; Nations and Nigh 1980; Terán and Rasmussen 1994).

Early cultivators would have exploited and expanded small clearings in the forest from tree falls or hurricanes with their age old tools of stone and fire. Observation and intervention in the processes of forest succession would have been the strategy. This would be the time when the precursors of sophisticated forms of silvicultural and agroforestry now practiced by indigenous peoples throughout the American tropics (Peters 2000) would have been developed. These systems left their imprint on the forest long after the management activities have been abandoned (Campbell et al. 2006), Gómez Pompa et al. (1987), (Gomez Pompa, Flores-Guido, and Aliphat 1990). These forest alterations preceded established agriculture. The creation of the Maya forest garden is the result of an accumulated investment and intensification of milpa and other agroforestry systems; the result of plant selection and the skills of smallholder farmers (Bray 1994) engaged with a variable environment and the local landscape (Griffith 2000).

Living in the Forest Garden - 2000 BC - AD 1525

The adoption of settled village life by the Maya and dependence on agriculture for most of the food supply was obviously a major transformation of society and ecology. Once settled, populations expanded across the region. Human population estimates for the Late Classic period are often cited as supportive evidence for the ecological degradation hypothesis of the Maya collapse. Estimates have been uniformly high, and some scholars have questioned the figures (Whitmore and Turner 2002). To address these issues it is necessary to understand the development of settlement and the patterns of land use in the Late Classic..

There is agreement that Maya population experienced steady growth over time. Beginning around 2000-1000 BC, the
Maya became increasingly more dependent on agriculture. This innovation coincides with a long period of climatic instability and extreme conditions (see Table 1). By the Middle Preclassic direct material evidence of occupation in the inland areas of the Maya forest is recorded. Eventually, the Preclassic Maya spread out to occupy most areas with potential for agriculture and built major centers as impressive as anything found in the Classic Period. Based on a survey of the El Pilar region east of Tikal, by 800 BC, in the Middle Preclassic, Maya farmers occupied all agriculturally desirable areas (Fedick and Ford 1990; Ford et al. 2001). Preclassic occupations are found in the same areas that are densely occupied centuries later during the Late Classic period (Ford 1996; Ford and Clarke 2006).

The currently accepted environmental model of the Maya Collapse identifies the Preclassic as the initiation of a period of “escalating environmental disturbance” (Dunning and Beach 2000), a consequence of increasing human population density. Some scholars estimate that, by the Classic period between AD 250-900, human densities in the central Maya lowlands rose to exceed 200-300 persons/sq. km (Culbert and Rice 1990), comparable to modern day Pakistan or Sri Lanka. These scholars maintain, that large areas of the central lowlands were “essentially deforested, with most available land given over to agriculture” (Dunning and Beach 2000). Yet this view conflicts with evidence of a steady 20-century period of consistent growth and development in the Maya lowlands from the Preclassic through the Terminal Classic period. Stunning accomplishment is the very reason the Maya attracts attention; clearly their success in domesticating their landscape has eluded contemporary scholars.

It is important to note that other investigators find the high population densities seriously questionable (for example, Webster 2002). There is little doubt that the land use was intensified over the course of the Preclassic and Classic periods, as indicated by a steady increase in the number of residential sites and the growth and exuberance at public centers. The question is how to convert these data to numerical estimates of people on the landscape. The traditional academic strategy has been to envision a European landscape like Normandy where the agricultural fields “keep the forest at bay” (Adams 1986).

Examination of settlement from the Late Classic period reveals patterns that are likely shaped by these farming priorities. The densest settlements, located on well-drained slopes and ridges and have architectural characteristics that distinguish them from settlements in lower density areas (Fedick and Ford 1990; see also Levi 2003), with residential compounds of multiple structures arranged around courtyards in groups of two to six (Ford 1991; Willey 1980). These formal groups contrast with informal solitary structures isolated in low density zones (Ford 1991). Viewed from a farmer’s perspective, such patterns are best interpreted as permanent vs. temporary residences, following the well known in-field/out-field model postulated for the ancient Maya (Netting 1977; Sanders 1981) and vary according to potential productivity of and investment in the landscape (McAnany 1995). If all these locales were considered equivalent as proxies of permanent households and converted to people, the result would overestimate actual populations.

Recent spatial modeling of settlement patterns in the El Pilar area demonstrates that Maya settlements were located preferentially based on soil, drainage, and slope (Ford and Clarke 2006). Preferred geographic areas account for 75-80% of the settlement; all other areas
making up the majority of the landscape (80%) were lightly settled or not at all. Any population estimate for an overall area must consider these preferences where the Maya were known to reside.

In conclusion, the impression of severe depopulation of the lowland Maya region after the Classic is likely an artifact of the unrealistically high populations estimates generated by studies that may tend to exaggerate populations without consideration of the heterogeneous territories. Subsequent Postclassic land use would seem profoundly diminished only if inflated Late Classic estimates are accepted. Even during periods of drought or abandonment of particular cities, we find no compelling evidence for a dramatic demographic collapse in the Maya area until the 16th Century when, under the onslaught of European diseases and conquest, Amerindian peoples throughout the continent experienced an unprecedented mass mortality.

**Development of the Feral Forest Garden AD 1525-1900**

The forest we know in the Maya area today is the direct result of events that transpired during the period that followed colonial contact. With radical depopulation and forced relocation, the forest gardens of the Maya were finally abandoned and the careful *select-and-tend* system that had evolved over the previous millennia became increasingly difficult to practice under the impositions of the colonial and later regimes. Records of confrontation at the initial colonial encounter abound; an example is a 1552 town ordinance issued by Tomas Lopez Medel describing the misunderstanding of Maya land use and the transformation of forest landscape in the Yucatan under the Spanish administration:

> Therefore I order that all the natives … construct houses close to one another… And they should *not sow any milpas within the town*, but it shall be very clean. There shall not be groves, but they shall cut them all…so that shall be clean, *without sown land or groves; and if there were any, they should be burned.* (Roys, 1952 emphasis ours)

The groves and milpas that formed the complexity of forest garden were important components of the subsistence system. The time-honored traditional strategies evolved to hedge against environmental uncertainties of deluge and drought. At the time of contact the Maya area was undergoing the severe droughts (Farriss 1984) we now know are associated with the Little Age (see Table 1). As depopulation and relocation left the Maya forest gardens unattended, they transformed into what we call the feral forest. The high proportion of useful plants in contemporary mature forest in the Maya area is evidence for anthropogenic influence of the ancient gardens.

In western Belize, a study inventoried three Maya forest locales that have been abandoned for at least 1,000 years with no subsequent human colonization (Campbell et al. 2006). Analyzing these locales and focusing on the top 10 and top 20 tree species in terms of their relative dominances to test the hypothesis that the human signature is visible in the forest today, results showed that the three forests patches with ancient Maya settlement were highly oligarchic, with the top ten species accounting for 57% to 61% of the forests’ footprint in terms of basal area. More than 90% of these defined dominant and oligarchic species have economic values. This degree of homogeneity among these locales indicates that these Maya forest examples have been submitted to pervasive anthropogenic disturbances such as fire, selection, and enrichment with species of
economic value to humans. While the ecology of forest species clearly plays a key role in current patterns of abundance and distribution, the stress on utility that predominates strongly reflects ancient cultivation and management practices.

Another indication of anthropogenic influences in the Maya forest is the pattern of abundance and distribution of the mahogany tree (*Swietenia macrophylla*) that has generated wealth to the tropical lumber industry for more than a century and a half of continuous and unsustainable exploitation. Mahogany was discovered in the 19th Century to exist in dense stands throughout Mesoamerica and in an abundance pattern considered atypical for tropical forests. The thick stands of this valuable hardwood have been suggested to be the result of human disturbance and intervention, reflecting the influence of generations of Maya farmers who cultivated and eventually left the area in the 16th Century (Snook 1998; Steinberg 2005). Giant mahogany trees, the result of more than 300 years of unmanaged growth, fueled a lumber boom 150 years ago. Only now is this industry ending with the felling of the last stands in southern Chiapas, Petén, and particularly in Belize.

To summarize, research demonstrates that Maya adaptation to the forest included foraging, horticulture, and agriculture that has profoundly influenced the composition and dynamics of the contemporary forest ecosystem. The influence of the Maya is so extensive that the pattern of species richness that sparked the interest of conservation biologists (Mittermeier, Myers, and Mittermeier 2000) should be seen largely as a result of millennia of human selection. If human interventions have functioned to selectively transform patterns of species diversity of supposed ‘primary’ forest over 5,000 years to favor human needs, then flora and fauna now recognized by conservationists to be endangered and in need of protection must have evolved under intensive human management (Fedick 2003).

**Conclusion: Rethinking Assumptions**

New paleoecological data have given us clear evidence of a major climatic change at the end of the Pleistocene some 11,000 years ago. Further, analysis of regional sediment cores provides a strong signal for climatic variation throughout the Holocene. Together these compel a revision of tenaciously held views of Maya forest prehistory. Pollen analysis, while confirming the major climatic shift at the end of the last ice age, does not have sufficient resolution to bring into focus land-use and land-cover changes on the scale of human settlement and agricultural activity. While archaeological data assure us that Maya occupation of the forest gradually intensified over several millennia from the Early Preclassic, it is climatic activity that was significant in driving ecological change, soil erosion or local climate change during that time.

Current interpretations of ancient Maya agricultural practices express an occidental perspective that is blind to the cultural legacy of the ‘Maya forest garden.’ Our revision leads us to propose an alternative: the Maya forest ecosystems are largely anthropogenic based on millennia of selective management. The Maya developed smallholder skills and knowledge honed over more than 5,000 years of continuous habitation in intimate contact with the Neotropical forests. Far from destroying habitat of one of today’s most extensive continuous tropical forest in the Americas, these practices provide valuable strategies for the conservation of the region and the survival of the forest and its people. It is the fast disappearance of traditional forest gardeners - with their store of practical
ecological knowledge - that most threatens
the Maya forest as we have come to know it.

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<th>Event Description</th>
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<td>Before 2000 BC</td>
<td>Initial Foragers, horticulturalist, familiar with the Tropical Forest Ecology</td>
</tr>
<tr>
<td>2000 BC – 1000 BC</td>
<td>Pioneer Forest-Garden Settlements, Expansion Across Lowlands</td>
</tr>
<tr>
<td>1000 BC – 300 BC</td>
<td>N. Belize Centers reach Height, Power Shifts to the Interior Petén area</td>
</tr>
<tr>
<td>300 BC – AD 250</td>
<td>Height of complex Maya Civilization, Demise of Classic tradition Settlement continues</td>
</tr>
<tr>
<td>AD 250 – 600</td>
<td>Re-focus of Populations to Forest-gardens, Competition among emerging centers</td>
</tr>
<tr>
<td>AD 600 – 900</td>
<td>Disease, Depopulation, and demise of Maya traditions</td>
</tr>
<tr>
<td>AD 900 – 1000</td>
<td>Medieval Warm Period of climatic consistency</td>
</tr>
<tr>
<td>AD 1000 – 1230</td>
<td>Little Ice Age-extreme droughts</td>
</tr>
<tr>
<td>AD1250 – 1521</td>
<td>Continued drying &amp; instability</td>
</tr>
<tr>
<td>1521 -</td>
<td></td>
</tr>
</tbody>
</table>

**Warm Wet – Holocene Thermal Maximum**

- Increasing ENSO/TCZ-Drying Trend
- Extremes of deluge and drought
- Continued climatic instability
- Some climatic consistency brief extremes
- Continued Climatic Consistency
- Sequence of minor droughts
- Medieval Warm Period of climatic consistency
- Little Ice Age-extreme droughts
- Continued drying & instability

**Mesic Tropical forest Moraceae dominant**

- Tropical forest diversifies
- Moraceae suppressed
- Zea, Chn-Ams present
- Aster/Poaceae Bursera
- Continuity From the Preclassic
- Moraceae rise Zea present
- Moraceae dominant
- Continuity in flora

**Archaic**

- Early Preclassic
- Middle Preclassic
- Late Preclassic
- Early Classic
- Late Classic
- Terminal Classic
- Early Postclassic
- Late Postclassic
- Spanish Invasion

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**Graph**

- Thermal Max
- Increased ENSO Variability
- Same El Nino
- Age in 1000 Calendar Years BP (after Haug et al. 2001)
Recent excavations at Uxbenká confirm that it is the earliest known center in southern Belize and extending settlements as far back as 200 A.D. or earlier. These data also suggest that Uxbenká began as a small hilltop community and only after 400 A.D. were buildings constructed of stone. The main Group A stela plaza was likely the location of the original village that was reconstructed to form the public monument garden and seat of political authority.

Introduction

Since the beginning of the 20th century archaeologists have speculated on the age of ancient Maya settlements in southern Belize (Gruning 1930; Joyce 1929, Joyce et al. 1927, 1928). The region (Figure 1) has been considered both peripheral to and engaged with cultural and political developments that were occurring in the Maya heartland in 300-800 A.D. (Leventhal 1990). In previous archaeological and epigraphic studies, sites in southern Belize have been linked to Copan and Quirigüá (Braswell 2005; Grube et al. 1999; Marcus 1992), Tikal (Leventhal 1992; Prufer 2005; Wanyerka 2005), the western Petén region (Bill and Braswell 2005; Prufer et al. 2006), the southeastern Petén (Prufer 2005) and the Belize Valley (Braswell 2005; Prufer 2002). All of these accounts of economic and political interaction are placed within the period when the region was already at least partially developed, economically and politically, and essentially describe post-AD 400 interactions. What has been missing is an understanding of the origins and initial occupations in the region. Where were the first settlements in southern Belize, and when were they first settled?

Recent archaeological research at the Classic Period site Uxbenká has shed light on those early settlements, and they suggest humble beginnings for a region that rapidly grew to include over 12 monument bearing sites and almost 100 small communities. Since 2004 the Uxbenká Archaeological Project (UAP) has been investigating the political economy and settlement history and dynamics of this small, yet important regional center. Excavations conducted in 2006-2007 suggest that the site was initially settled during the 2nd or 3rd century A.D.,
making it the earliest known site in the region. Our data have important implications for understanding Pre-A.D. 500 settlement expansion in the southern Belize and the southeastern Petén and extend the age of the earliest known settlements in the region back by at least 200 years. In this paper we summarize previous theories advanced on the early settlement history of the region and present new data suggesting that there may have been small, possibly indigenous, populations living at Uxbenká prior to the 5th century spread of “Classic Maya” traditions from the central Petén.

Archaeological Research in Southern Belize

Previous studies suggested that southern Belize was occupied from 250 A.D. to 900 (or 1000). In the central Petén this is known as the Early, Late, and Terminal Classic periods, a terminological nomenclature that we will avoid in this article in favor of absolute date ranges, primarily because local developments do not correspond to those temporal phases as they are understood elsewhere. In general the prehistory of the region is relatively poorly understood. Archaeological work has been carried out in the area for over a century, but the majority of the work was conducted between 1925 and 1975 and was less than systematic and inadequately reported. The remoteness of the region and its peripheral location in relation to the central and western Petén “heartland” of the Classic Period Lowland Maya area has largely precluded it from significant archaeological examination until relatively recently.

The earliest periods of occupation are unknown. Prior to the work of the Uxbenká Archaeological Project, Leventhal (1992) and Dunham (Dunham and Prufer 1998) speculated that there may have been a small indigenous population living in the area prior to the Classic period. Subsequently, Prufer (2002, 2005) found clear evidence of human presence in the region utilizing cave sites in the Maya Mountains at least as early as 800 BC, while Kindon (2001) documented settlement dating to AD 200-500 at surface sites in the same area. Outside of this work in the Maya Mountains, no significant surface settlement predating AD 500 has been documented anywhere in southern Belize with the exception of Uxbenká. Despite the presence of retrospective dates on monuments indicating a dynastic history going back to AD 159, recent studies at Pusilha by Braswell (et al. 2005) suggest that the site was not occupied before AD 500. Along the coast of southern Belize two decades of work by McKillop (2004, 2006) indicate primarily post AD 500 mercantile seafaring and no significant earlier settlements, further underscoring the relatively late development of complexity in this region.

In adjacent areas Elizabeth Graham (1994) found substantial evidence of pre-AD 100 settlements along the coastal plain in the Stann Creek District to the north (Graham 1994). There is also evidence of pre-AD 500 settlements west of the study area at the sites of Sacul, Ixkun, Xutilha, Ixtonton, and others in the area of Dolores, Petén, Guatemala (Laporte 1994, 2001; Laporte and Ramos 1998).

Artifacts and monuments indicate ties between southern Belize and the central Petén between AD 370-500, probably via trade routes through the southern Petén and perhaps over the main divide of the mountains. However, during the subsequent AD 500-900 period there appears to have been a shift in interaction and affiliation in the region, with the suggestion of ties developing between southern Belize and sites located in the region currently known as the southeast periphery, especially Copan and Quirigua (Grube et al. 1999; Braswell et al. 2005; Marcus 1992). This shift is
extremely important in understanding local developments in the area during the Late Classic. Indeed after AD 500 the region consisted of several important monument-bearing polities that boasted of international ties (Wanyerka 2005), though archaeological evidence of these relationships is wanting. Materially, there is evidence of economic ties to the Belize Valley, located to the north (Prufer 2002) and the Western Petén (Braswell 2005). The southern Belize apogee was a time of significant expansion and population growth in the region, and those developments lie outside the scope of this paper. By the 9th century the area was in decline, and there is little evidence of “Postclassic” occupation.

**Uxbenká and the settling of southern Belize**

Uxbenká (Figure 2) is the oldest known political center in southern Belize, with roots in the latter part of what central Petén chronologies address as the Late Preclassic (ca. 400 B.C.–250 A.D.). While Uxbenká’s rise appears to have been followed by the development of a number of other regional political centers sometime after AD 500, current data suggest that it may have been the only significant site in the region for 250 years. Uxbenká is located in what is today an exceptionally rich agricultural region with easy access to coastal and inland trade routes. The ancient community was situated between several larger polities, including Tikal, Copán, and Caracol. At the time when it was settled, Uxbenká was in a then culturally marginal region. Research from nearby southeastern Petén, Guatemala suggests a geopolitical landscape of competing rural elites, ca 100 - 600 A.D. Southern Belize remained only sparsely settled until after 550-900 A.D., when the region rapidly grew to include at least 10 monument bearing sites and over 100 smaller communities, some of which claimed, in hieroglyphic texts, relationships with cosmopolitan centers including Quirigua and Copán. Figure 2

![Figure 2. Map of Uxbenká showing core areas and mapped settlements. Group A is the focus of this article](image)

Our 2006 and 2007 excavations focused on chronology building and the identification of the early components at the site. These excavations were conducted primarily in the main Stela Plaza group (Group A, Figure 3) of the site. Our rationale for focusing on this area was twofold: first, Group A is the location of several pre- 500 A.D. stela, the oldest known for southern Belize (Prufer 2005; Wanyerka 2005) and, second, the other groups with public architecture at the site appear to be post AD 500 constructions, based on architecture (ballcourt complexes) and preliminary observations of looter’s trenches that suggest single phase construction.

During our excavations we documented structural and off-structure contexts that date to prior to 220 A.D. and we feel confident that these represent actual settlements from early in the site’s history. Ceramics recovered from our excavations suggest an occupation sequence through 900 or 950 A.D.
In total, three of the six structures in Group A were excavated with test pits that proceeded to bedrock, illustrating the complete construction sequences of each (Figure 3). A fourth structure (A-5) had been so badly looted that there was no possibility of productive excavation. Figure 3. A profile was drawn of the looter’s pit, and carbon sampled from the profile. Additionally, six excavation units were placed in the plaza floor and excavated to bedrock. The goals of all these excavations were to date the earliest modifications to the hilltop that houses Group A and the earliest phases of construction of buildings.

![Image](imageurl)

**Figure 3.** Group A Stela Plaza showing locations of on- and off-structure excavations.

**Radiometric Dating of the Earliest Settlements at Uxbenká**

In the eastern and southern end of the plaza excavation units produced AMS radiocarbon assays with 95.4% probably (2σ) for dates earlier than 350 A.D. Further, excavations placed into structures produced radiocarbon dates as early as 73-211 A.D. (Table 1, KCCAMS # 42825). These dates and related interpretations of stratigraphy allow us to suggest that when initially settled Uxbenká may have been a small agricultural village with residential structures constructed of marl and dirt, possibly capped with thin (now highly degraded) plaster floors. These buildings would have been situated around the perimeter of the hilltop, and possibly inside what was later modified into the stelae plaza. Constructions using cut stone blocks began later, following 350 A.D. based on a date from the profile of the Str. A-5 looter’s pit that was bracketed between the earlier floor of a non-stone building and the later stone construction (Table 1 KCCAMS #33401, Figure XX). This single date is supported by two AMS dates from a test unit adjacent to Str. A-5. There, two carbon samples from stratigraphic layers between plaster floors produced 2σ dates that fall within 143-391 A.D. (Table 1, KCCAMS # 33403, 33404), suggesting either an earlier dirt platform or floor. It is interesting to note that in the upper levels of this unit diagnostic Protoclassic ceramics were recovered.

It is probable that during this time the Group A Plaza would have undergone significant modification. Excavations in the plaza reveal that what was once an uneven and likely conically shaped hilltop was significantly modified to create the flat open space used as the Stela Plaza. Excavations reveal part of this process. The central, southwestern, and northern portions of the plaza have very shallow fill, ranging from 15-50cm in depth. The soft underlying laminated mudstone bedrock would have been relatively easy to modify and, though quite hard, it tends to fracture easily along lamination planes. The high clay content of the mudstone would have rendered it relatively impermeable to water,
Table 1. AMS Radiocarbon dates from Uxbenká. All results have been corrected for isotopic fractionation according to the conventions of Stuiver and Polach (1977), with $\delta^{13}C$ values measured on prepared graphite using the AMS spectrometer. These can differ from $\delta^{13}C$ of the original material, if fractionation occurred during sample graphitization or the AMS measurement, and are not shown.

<table>
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<tr>
<th>Operation</th>
<th>Description</th>
<th>Lab # ¹</th>
<th>$\delta^{13}C$</th>
<th>± ²</th>
<th>²³⁰C age (BP)</th>
<th>± ²</th>
<th>δ5.4 (2σ)</th>
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<td>20</td>
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¹ UCIAMS Kerk Carbon Cycle AMS Facility UC Irvine
³ Relative area under probability distribution

Therefore we were not surprised that there was very little pooling of water during torrential rainy season deluges. One clue as to how this plaza drains has emerged from several test units and trenches excavated into the plaza that reveal possible drain channels cut along a N/S axis into the bedrock plaza floor. While these features cannot be directly dated, they likely coincide with the significant post-AD 350 modifications.

A separate indication that this was a time of significant site reorganization and
Investigations at Uxbenka

landscape modification comes from a 17m long trench excavated in front of (west) Str. A-6 in 2006. This excavation revealed a low, 1-2 course sandstone wall seemingly unassociated with any extant architecture. A single AMS date from the base of this wall suggests it may have been constructed sometime between 137-323 A.D. (2σ, Table 1, KCCAMS # 33400). This wall parallels but is located below the western edge of Str. A-6. In addition to the wall, several large flat sandstone pavers were found directly on leveled bedrock, suggesting modification of the plaza and an early floor placed directly on bedrock.

Excavations within structures in Group A also produced pre 250 A.D. dates and artifacts. These excavations suggest that (a) the earliest buildings at Uxbenká appear between 75-350 A.D., and most likely between 75-200 A.D. (Figure 4); (b) the earliest buildings lacked any significant stone or masonry in their construction, though they have thin plaster floors; (c) stone sub- and superstructures likely appear after 350 A.D. (d) these buildings show no evidence of any significant architectural remodeling (though they were frequently plastered); and (e) these early buildings were used into the ninth century.

Test units were placed into three buildings, A-1, A-4, and A-6 and excavated to bedrock. In all buildings there was evidence of burning in the very lowest levels suggesting preparation of the building surface or clearing activities prior to construction. In Str. A-1, a triadic E-Group style pyramid in the plaza, a series of 2x2 and 2x4 meter units were placed into the eastern flank. These revealed that much of the superstructure of the eastern side of the building was in fact shaped bedrock and that was modified through leveling and addition of a stone façade to give the appearance of a monumental construction. Below a large section of wall collapse that may have marked an interior room or chamber we found a well preserved inset stairway flanked by balustrades, characteristic of Preclassic architecture in the central Petén (Freidel 1979), albeit diminutive in size. The most numerous artifacts associated with the stairway were fragments of crude flanged and effigy JGU censers characteristic of Late Classic (500-850 A.D.) Belize Valley and central Petén elite contexts (Rice 1999:38–39; Taschek and Ball 1999: 220). At the base (landing) of the stairway, between two layers of plaster flooring a large deposit of carbonized wood fragments produced a date of 545-609 A.D. (2σ, Table 1, KCCAMS # 42809), consistent with the ceramic deposits and later monument dates (Wanyerka 2005). Excavation into the eastern flank of the platform between two structures revealed degraded plaster floors with no stone constructions underneath them; and mixed fill below this produced two dates from small areas of burnt soils between 200 and 230 cm from the final use surface. One of these samples dated to 73-211 A.D. (2σ, Table 1, KCCAMS # 42825) with a further .8903 likelihood of dating to between 73 and 143 A.D. making it the earliest known building in southern Belize. The second dates to 255-381 A.D. (2σ, Table 1, KCCAMS # 42808) with a .9016 probability under the distribution of dating ranging 255-360 A.D. These suggest that the practice of building with stone on Str. A-1 did not begin until after the middle of the 4th century AD, well into the central Petén Early Classic period.

The Str. A-1 dates are supported by and can be extrapolated to the rest of the plaza based on excavations into structures A-4 and A-6. In both structures excavation units were placed into the summits and excavated to bedrock. Both units revealed stratigraphy suggesting that single phase construction stone platforms were placed
over earlier plaster topped dirt and rubble platforms. Further, at the base of each of these excavations areas of burning were encountered indicating possible clearing activities preparing for the initial building events or possibly dedicatory activities.

Figure 4.  Bar plot of calibrated age-ranges from Group A stela Plaza in calendar years to show likelihood that early dates are contemporary.

Generally, few artifacts were found in either of these excavations. Eroded censer fragments as well as diagnostic Fine Orange wares were found in upper levels within the stone construction and rubble fill, suggesting use after 500 A.D. A rim-to-base fragment of an orange slipped basal flange bowl characteristic of the central Petén Tzakol phase gloss wares was found in situ below the stone construction layers but above the early platform floors, suggesting an AD 250-500, or later, date for the cut-stone construction.

In Str. A-4 a single AMS radiocarbon date was run from level 9, 260cm below the building summit and at the interface of degraded bedrock and the earliest construction. The sample came from a 1-2cm thick charcoal and ash layer that extended across the entire 1x2m unit (the excavation was larger when opened, but tapered below 150cmbd). The layer dates to 255-381 A.D. (2σ, Table 1, KCCAMS # 42806), an identical date to one of the early dates in Str. A-1 (Table 1, KCCAMS # 42808). In Str. A-6 two AMS samples date the interface between the earliest plaster floors and fill from later construction. Those dates suggest use of the earliest building at 259-402 A.D. (2σ, Table 1, KCCAMS # 42805) and 256-384 A.D.(2σ, Table 1, KCCAMS # 42807).

Discussion

The data presented here suggest that Uxbenká was established sometime after AD 70 and persisted for at least two centuries as a small hilltop village complex. While the exact size of the founding community remains under investigation, current data indicates it was centered at the existing Group A plaza. The Group A hilltop is an ideal location for initial settlements in the region. The hilltop is defensible (though we have no evidence of conflict) and commands a view over the Rio Blanco Valley, is located adjacent to lands that are the most fertile and desirable for both slash and burn and mulching agriculture by modern Mopan Maya residents of the region, and is proximate to year round water supplies. Today, local farmers vie for access to these lands immediately surrounding the site which are favored for both milpa (slash and burn) and matambre (mulching) agriculture, allowing for two or more corn crops each year. In the small valley below Groups A and F farmers typically grow two crops of corn per year, and have marked this area on a local mapping project as the location of most productive lands (TMCC 1997). The hilltop is located near to several freshwater springs and a year-round creek.
Investigations at Uxbenká

While settlement excavations at Uxbenká are just beginning, a small residential group on a nearby hilltop produced a crypt burial dated 179-185 A.D. (2σ, Table 1, KCCAMS # 42824) in a dirt mound that was likely later faced with stone. That residential group continued to be used through the 8th century based on dates from a burial in an adjacent residential structure (681-772 A.D., 2σ, Table 1 KCCAMS # 42811) and a midden (646-671 A.D., 2σ, Table 1 KCCAMS # 42810).

These same criteria that made this region favorable for early settlement would have continued to make this an ideal location for later developments at the site. Around 400 A.D. Group A underwent significant reorganization, including landscape modification, to its current configuration. Whether these later expansions represent an intrusive force entering the region or local adoption of regional developments is not yet known. This time period corresponds with the first dressed stone buildings (at least three of which were built atop earlier architecture), the first monumental architecture, and the first dated carved monuments (Stela 23 records an Initial Series date of 9.1.0.0.0 6 Ajaw 13 Yaxkin, 25, August 455, Prufer and Wanyerka 2005). It also likely represents a fundamental shift in the Group A plaza from a village settlement to a public ceremonial space.

Acknowledgements We are grateful to the Belize Institute of Archaeology, the people of Belize, and the residents and community governance of Santa Cruz Village for permission to work at Uxbenká. Funding for this project has come from the National Science Foundation, the Foundation for the Advancement of Mesoamerican Studies, Inc. and the University of New Mexico. Special thanks to Brendan Culleton, Amber Hardin, Richard Leventhal, Lillian Richards, Jack Sulak, and Phil Wanyerka.

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Three models of the organization of the ancient Maya salt industry are evaluated with respect to salt production on the coast of Belize, including the “household production model,” the “tribute model,” and the “alliance model.” Although the inland Maya at large urban cities clearly needed salt, did the salt come from salt works on the coast of Belize or was salt imported from the north coast of the Yucatan? The discussion is framed around the Paynes Creek salt works, where there is substantial evidence for infrastructure related to the production, storage, and distribution of salt. The Paynes Creek salt works have wooden structures used for indoor production of salt by boiling brine in pots over fires, and likely other wooden structures used to concentrate the salinity of the brine before boiling. The Paynes Creek salt works are described, including GIS analyses of the distribution of wooden posts at 100 underwater sites.

Introduction

During the height of the Late Classic Maya civilization (A.D. 600-900) there was a massive salt industry along the coast of Belize supplying inland cities, where salt was scarce. The workshops are marked by briquetage - broken pots and vessel supports from boiling brine over fires to produce salt. Preservation of wood in a peat bog below the sea floor in Paynes Creek National Park in southern Belize underscores the industrial scale of production and distribution, with wooden buildings and other equipment, as well as a full-sized canoe paddle (McKillop 2005a, 2006a, 2007a, b, 2008). Does the briquetage reported from other coastal Maya sites also represent industrial production, or was it household production or a cottage industry?

Was it only in southern Belize that a salt industry developed to supply inland areas where salt was scarce? In this paper, I examine the infrastructure of the Paynes Creek salt industry and its implications for understanding the ancient salt industry elsewhere along the coast of Belize.

A well-developed infrastructure was critical for a salt industry along the coast of Belize to supply any significant portion of this bulk resource to meet the inland communities salt needs. In any industry, there is an infrastructure related to the production, storage, and distribution of the product, with the extent of the infrastructure related to the scale of production and the nature of the product. Household production, even a cottage industry, is carried out using existing facilities within the household. By way of contrast, industrial production, especially of a bulk resource such as salt, requires additional infrastructure to facilitate production, storage, and distribution. If salt from the coast of Belize supplied any significant portion of inland Maya salt needs, the infrastructure of coastal salt production must have been on an industrial scale. The unusual preservation of wood at the Paynes Creek salt works indicates there was more to salt making than the briquetage found at many coastal sites elsewhere. What insights do the Paynes Creek wooden structures provide on the infrastructure of the ancient Maya salt industry?
Wooden Structures and Industrial Equipment

Lacking direct evidence of wooden architecture from antiquity before the Paynes Creek finds, Maya archaeologists find analogies with the pole and thatch buildings of modern and historic Maya communities (Wauchope 1938; Ochoa-Winemiller 2004). Are there continuities from the Late Classic to modern times, despite significant changes in Maya culture? Are there architectural forms or details not represented in Maya buildings of the modern or historic past?

A study of modern Maya architectures and salt making provides analogy for interpreting the Paynes Creek wooden structures and for understanding the infrastructure of ancient Maya salt production. Various lines of evidence indicate perishable structures of pole and thatches were common in ancient times in the Maya area (Lohse and Valdez 2004). At Tikal, where stone temples, palaces, and elite residences dominate the ancient city, Haviland (1985) reminds us that wooden buildings were common, which were likely kitchens, storage buildings, houses, and workshops.

The mounded remains of ancient Maya buildings constructed of pole and thatch are common throughout the Maya area. Stone foundations or post molds provide limited information on wooden structures (McKillop 2006b). Pole and thatch buildings constructed on the ground surface have left no visible traces in the modern landscape (Somers and McKillop 2005). Some Late Classic Maya pots with painted scenes of court life of the dynastic Maya show architectural details framing the scenes, but they are limited to elite architecture. Excavation of ancient Maya buildings at Ceren revealed adobe walls with remains of wooden posts (Sheets 2002).

Modern ethnoarchaeological studies indicate that brine boiling was often combined with techniques for concentrating the brine prior to boiling (Williams 2003). Concentrating the salinity of brine had the obvious advantage of reducing the amount of wood fuel for the boiling process. Although brine from underground salt deposits in China were boiled without further concentration of the salinity, (Li and Falkenhausen 2006), brine from inland springs or from the sea was normally further concentrated in salinity before boiling. Solar evaporation in pans and leaching of salt-saturated soil are two common methods worldwide, including the Maya area. At the inland salt springs at Sacapulas, Guatemala, brine was poured through salt-saturated soil in wooden containers elevated over other containers to increase the salinity (Reina and Monaghan 1981). Old canoes were used in some areas, but on the west coast of Mexico Williams (2003) reports elevated wooden platforms with wooden funnels to capture the processed brine, which was then evaporated in saltpans with clay sides. Lines of posts demarcate the edges of saltpans at the large salt works on the north coast of the Yucatan (see Andrews 1983: Fig. 2.3).

The Paynes Creek Saltworks

Three underwater salt works and one other salt work in the adjacent mangroves were discovered and excavated in 1991 and 1994 in a large salt water lagoon system, Punta Ycacos Lagoon, in Paynes Creek National Park, on the coast of southern Belize (McKillop 1995, 2002). The presence of briquetage at the sites clinched their identification as salt works, using ethnographic analogy of modern and historic salt production (Reina and Monaghan 1981). That salt production took place is thus without question. The challenge now consists in evaluating the relative importance to the inland Maya, during the
Late Classic period, of salt produced on the coasts of Belize and Yucatan. I examined the organization of salt production to see whether salt was produced in bulk for trade or merely as part of household activities for home or local use. As will be seen below, the former alternative is highly likely. But even mass production at just four sites would hardly begin to satisfy the biological requirements of salt for the inland Maya. I therefore initiated a comprehensive survey aiming to investigate the scale of salt production in southern Belize, and to see whether additional salt works existed that might have helped meet the inland demand for salt during the Late Classic period.

A five-day survey in 2003 revealed eight new salt works, indicating that further survey was warranted. Thirty-three underwater sites were discovered in a 2004 pilot study, making a total of 45 salt works. Continued survey during 2005 to 2007 revealed additional salt works sites totaling 100. The number and density of salt works indicate that salt production was far more extensive than evident from the previous research (McKillop 2005a, 2005b, 2006a, 2007a, 2007b, 2008; Sills 2007; Somers 2007). Moreover, remains of wooden structures discovered in the course of the later surveys indicated that the infrastructure of coastal Maya salt production and distribution was far more sophisticated than originally imagined.

The Architecture of the Salt Industry

Lines of wooden posts were unexpectedly discovered during 2004 survey (McKillop 2005a). The posts were preserved in pristine condition, albeit waterlogged, due to their location in a peat bog below the sea floor. The peat is mangrove peat resulting from detritus trapped in red mangrove (Rhizophora mangle) roots. Mangroves grow taller to keep pace with the ongoing rise in sea levels (McKillop 2002). Late Classic sites in Punta Ycacos Lagoon and the adjacent Port Honduras coastal region have been extensively inundated; radiocarbon dating indicates a sea level rise of at least one meter, and likely more, since the end of the Classic period (McKillop 2002).

The wooden posts were decayed and discolored black where they protruded above the peat into the silt that formed a loose film on the sea floor. One post at Site 15 was excavated in order to determine if it was a natural tree root or a post; it turned out to be a straight post with a sharpened base. Thereafter the underwater survey refocused on the search for the architecture defined by these posts. Three field seasons of survey and mapping have resulted in the discovery of 100 salt works. So far, we have identified wooden architecture at 72 of the sites. Wooden structures have been mapped at 46 sites, including some sites with more than one structure.

Patterns may be discerned in the distribution of sites and in the distribution of wooden posts within sites. Site boundaries were estimated by the spatial extent of artifacts on the seafloor, as well as the spatial extent of visible wooden posts. The distance between sites varied, but generally was marked by an absence of surface artifacts and wooden posts. Mangroves have obscured the spatial extent of some sites visible on the sea floor, such as Site 16, which abuts and clearly extends under mangroves. Part of Site 72 is hidden under a mangrove peat hummock, exposed above the water at extremely low tides (see Sills 2007). However, most of the sites are clearly demarcated and where mangroves have obscured parts of sites - either at the boundaries or within a site - it is usually evident (see Somers 2007). Excavations will further clarify exact boundaries. Furthermore, since we map and collect data at the level of the individual post and
artifact, we can vary the scale of analysis. For example, we can examine the distribution of all posts, to look at the entire salt industry in the lagoon system.

Rectangular structures are evident in the distribution of wooden posts at some of the salt works, notably sites 74, 75, and 77 (Figure 1). Some sites have more than one rectangular structure, either abutting each other or located nearby, for example sites 74 and 77 respectively. The distribution of posts shows interior walls for some buildings, such as at Site 75. The structures vary in size.

Were modern patterns of wooden architecture replicated in the past, or were there ancient building types not represented by modern correlates? To investigate this, wooden post dimensions were divided into size brackets in order to discover patterns. Based on the diameter of the posts, we could discern a pattern of larger, load-bearing posts at the corners of structures with smaller posts in between, as shown in the Site 75 structure (Figure 2; McKillop 2007b, 2008); this parallels the construction principles of modern Maya houses (Wauchope 1938).

Many sites also have linear arrangements of posts made from palmetto palm (*Acoelorraphe wrightii*). Some of the lines of posts are up to 10 m away from the wooden architecture. In other instances, the lines of palmetto-palm posts abut the solid wooden posts. The site of Chac Sak Ha Nal has a line of palmetto-palm posts forming a “U” shape around a structure formed by wooden posts. This “U”-shaped pattern is replicated at other sites. There are few artifacts inside these palmetto-palm post “walls.” We do not yet know whether such lines of palmetto-palm posts were land-
retaining walls or household/workshop boundary fences. Another possibility is that some of them formed saltpans.

An earthen mound at the Killer Bee salt works in Paynes Creek National Park is interpreted as a slag heap remaining after brine had been leached through salt-saturated soil (McKillop 2002: 49, Fig. 2.25). At the other Late Classic-period salt works in the same area, any similar heaps would have been submerged below the sea (McKillop 2002: 49). Presumably there are remnants of such salinity enhancing devices, including saltpans and/or wooden containers for saturating brine at the Paynes Creek salt works and elsewhere along the coast of Belize where briquetage has been reported (McKillop 2002).

**Ancient and Modern Maya Site Planning**

The Paynes Creek settlement pattern departs from the well-known plaza groups that are characteristic of Maya architectural site planning. From stone temples and palaces arranged to form open plazas at the center of cities, to the mounded remains of more modest domestic architecture, the plaza grouping is known as the building block of ancient Maya site planning. However, the Paynes Creek wooden structures are arranged in linear patterns, with individual structures aligned in a NW to SE direction and not evidently arranged to form plaza groups. The buildings may have been aligned along a former shoreline, which will be determined by the use of bathymetry. Clearly, if the Paynes Creek wooden buildings were not aligned in plaza groups, we need to look for other settlement patterns at other ancient sites as well.

Although now under water, the sites are located on firm mangrove sediment that we assume was dry land at the time when the salt works were in operation. Loose silt covers the mangrove peat, creating an initial appearance of a uniform sea floor. The silt masks the undulations of the surface of the mangrove peat below. In some non-site areas, the depth from the water surface to the top of the mangrove peat is quite deep, suggesting areas where there was salt water near the salt works that were located on land. Nearby salt water would have been necessary both for salt production and for transporting the salt and the salt workers.

**Infrastructure of Paynes Creek Salt Industry**

At Paynes Creek, salt was produced in rectangular wooden buildings, where brine was boiled in pots over fires to produce loose salt or salt cakes, leaving behind the broken bowls jars, cylindrical clay vessel supports, and water jars. Several activities took place at the salt works: Salt boiling vessels were made using local clays and quartzite sand temper that was
commonly available. Brine was boiled to produce salt. Salt production took place inside wooden structures, providing protection from rain, which is common even during the dry season. Mapping individual pottery sherds at the K’ak’ Naab’ salt works indicated waste was moved outdoors, presumably to keep the workshop clean of debris (McKillop 2007a). Buildings also were used to store equipment and supplies, such as firewood and water jars for storing brine and salt pots for boiling, as at Sacapulas. Some structures were likely warehouses where salt was stored before it was transported elsewhere. A full-size wooden canoe paddle found at the K’ak’ Naab’ salt works provides evidence for water transport (McKillop 2005a, 2007b). Some of the salt works hosted periodic salt rituals, as evidenced by pottery ocarinas and serving vessels (McKillop 2002). They were not locally produced, in contrast to the salt boiling vessels.

**Infrastructure of the Ancient Salt Industry along the Coast of Belize**

If we take the Paynes Creek salt industry and extend the model to other places on the coast of Belize where salt production has been reported, Belize may have been a major supplier of salt for the inland Maya during the height of the Late Classic civilization. Missing at the other Belize salt works are the wooden structures, including buildings for salt production as well as saltpans, brine concentration apparatuses, and docks. Without this infrastructure, the industry has the tendency to be regarded as a form of salt making, which was part of the household production, and marginal to the political economy of the Late Classic Maya. Moreover, there are no reports of mass-production of salt from studies of standardization of the briquetage for other sites on the coast.

The widespread occurrence of briquetage along the coast of Belize demonstrates that salt production involving brine boiling was a viable technique (Andrews and Mock 2002; Braud 1996; Graham 1994; MacKinnon and Kepecs 1989; McKillop 1995, 2002, 2007a, 2007b, 2008; Sills 2007; Somers 2007). That most salt works with briquetage date to the Late Classic indicates the salt works expanded or arose in response to the increased demand for salt to meet basic dietary requirements of the larger population at inland cities (McKillop 2002, 2005a). Salt works are documented in coastal lagoons at Placencia (MacKinnon and Kepecs 1989), at Watson’s Island and elsewhere at Colson Point in central Belize (Graham 1994), at Northern River, Lagoon Midwinter’s and Salt Creek Lagoon north of Belize City (Andrews and Mock 2002), on Ambergris Cay (Graham and Pendergast 1989), and at Moho Cay (McKillop 2004).

The Paynes Creek salt works differ from other briquetage-yielding sites along the coast of Belize. The other sites are described as settlements where salt production was one of many activities, perhaps carried out as a cottage industry. After the abandonment of the Paynes Creek salt works, salt was then locally produced as part of the household economy during the Postclassic at the trading port of Wild Cane Cay and at nearby Frenchman’s Cay (McKillop 2002:112). Comparison of the two kinds of sites shows variation in the organization of production. The Late Classic Paynes Creek salt works are clearly an industry, whereas elsewhere production was for household needs, as at Wild Cane Cay and Frenchman’s Cay in the Postclassic; even if the household-produced salt was traded elsewhere, that trade was organized at the household level.

Brine boiling styles differed along the coast of Belize, as indicated by the
existence of at least two types of briquetage. The use of open bowls, jars with restricted orifice, or straight-walled basins supported by solid clay cylinders, together with sockets, spacers and bases, is common to southern Belize, including Paynes Creek and Placencia. The rims of the vessels are thick (as are the necks of jars) for holding or carrying, but the vessel bodies are thin, suitable for conducting heat. Further north, along the Belize coast, solid clay cylinders have been reported from Moho Cay and from coastal lagoons to the north, but not from Colson Point or Ambergris Cay. Solid clay cylinders are common at Moho Cay, including one from a burial (McKillop 2002: Fig. 3.52). From Colson Point to Northern River Lagoon, including Ambergris Cay, the containers reported are thin-walled open platters and designated as Coconut Walk Unslipped.

Salt and the Political-Economy of the Late Classic Maya

There was a strong inland demand for salt from the coast to meet the basic daily biological needs of the inhabitants of the urban areas. There are several models that could explain how they were supplied with salt. In the “household production model,” coastal salt production was limited to household or cottage industry, with limited distribution, underscoring the need for long-distance import from the northern Yucatan salt flats (Andrews 1983), or implying that inland salt sources were adequate (eg. Dillon 1977). A second model, the “tribute model,” parallels the Aztec or Inca strategy of using military force or imposing on local rulers to incorporate the coastal Maya salt works into a regional state and then exact tribute. In a third model, the “alliance model,” the inland dynastic Maya may have created trading and other alliances, sanctified by rituals and feasts, in order to maintain a regular supply by trade in salt.

The Paynes Creek salt works were not part of the “household production model,” since they appear not to have been directly associated with residences or communities, and because the scale of production exceeded household demand. The salt workers presumably lived year-round at the contemporary coastal settlements nearby. There is no evidence of the “tribute model” at the Paynes Creek salt works. They were not part of the royal court workshops supplying goods for the dynastic Maya, because of the considerable distance. There is no evidence of dynastic Maya direct control of production (like the Inca used with Inca style warehouses throughout their empire, for example). The “alliance model” best fits the Paynes Creek salt works, with independent, local producers engaged in a negotiated trade relationship with the inland dynastic Maya. Because of the distance and the special skills needed for salt production and canoe navigation, the dynastic Maya at their inland urban centers may have found it more cost effective to negotiate trade and perhaps marriage alliances with the coastal salt producers than to manage the production and distribution of salt directly. Moreover, the Late Classic Maya polities of southern Belize, closest to the salt works, were decentralized, putting the coastal Maya in an advantageous position both economically and politically.

But why would the coastal elite have wanted to satisfy the inland salt demand by establishing trade alliances with the dynastic leaders of the inland cities? The main trading port of Wild Cane Cay was located some seven kilometers from the Paynes Creek salt works, at the mouth of the Deep River and the northern end of the relatively sheltered waters of Port Honduras (McKillop 1996, 2005c). This location was at the nexus of the riverine and coastal
trading routes. In the “alliance model,” as part of the political hierarchy of feasting, the coastal Maya, perhaps centered at the trading port of Wild Cane Cay, were incorporated into the ritual ideology and political structure of the Maya dynasties that drove their understanding of the Maya world, the gods, and people’s place in the world. The coastal Maya received goods such as ocarinas, serving vessels, and other trade pottery that were markers of status. The stylistic similarities between Paynes Creek ceramics, especially figurine whistles and “unit-stamped” pottery, tie the coast to inland cities in southern Belize and adjacent Guatemala, as far as Seibal, Altar de Sacrificios, and the Petexbatun region (McKillop 2002), further supporting the “alliance model.” Without preserved wood demonstrating a significant infrastructure of the salt industry at Paynes Creek or quantification of the briquetage to evaluate mass-production, other sites with briquetage elsewhere along the coast of Belize appear to be household production or cottage industry, without great impact on the inland salt needs. Is this interpretation really valid, or can we begin to see the entire coast of Belize supplying massive quantities of salt to meet inland needs?

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This paper presents the results of excavations at the San Estevan site that were carried out during the summer of 2005. San Estevan was targeted as a likely location to recover Pre-ceramic deposits below the first Formative village levels at the site core. Preceramic remains turned out to be more scant than we had hoped and only a few stone tools, including a single constricted uniface, were recovered from secondary contexts. Formative period deposits however were extensive. A large cobble surface dating to the Mamon horizon was documented with a stone wall alignment built atop it. In addition, an early Chicanel era cache was documented within the plaster floor associated with the first building episode of the large central mound at the site. Hints of a Late Archaic occupation and plentiful Middle and Late Formative deposits make the San Estevan an ideal location to study the development of sedentary village life and the origins of complex society in the region.

Introduction
This chapter reports on our 2005 work at the site of San Estevan (Figure 1). Located midway between Lamanai and Cerros, and containing substantial Late Formative ceremonial architecture, this site was a secondary center or a small independent polity that emerged on the east shore of the New River (Rosenswig and Kennett 2007). San Estevan is also located relatively close to Nohmul, Cuello, Kichpanha, Colha, and the sites found within Pulltrouser Swamp, including Kaxob. As a result of much previous work, the early occupation and Formative ceramic sequence have been extensively studied in the region (e.g., Hammond 1991; Hammond et al. 1988; Hester et al. 1996; Iceland 1997; Kosakowsky 1987; Levi 1993; Lopez 1996; McAnany 2004; Pendergast 1981; Pohl et al. 1996; Pring 1976; Pyburn 1990; Reese and Valdez 1987; Rosenswig and Masson 2001; Sydrys 1983; Turner and Harrison 1983; Valdez 1988; Zeitlin 1984).

Recent Excavations at San Estevan, Northern Belize

noted that the damage to the site was unfortunate but provided remarkable access to the earliest occupation at the site’s center including the tell-tale orange soils associated with Archaic occupations elsewhere in Northern Belize (Rosenswig and Masson 2001).

Taking advantage of the easy access of normally deeply buried deposits, in 2002 we scraped down and drew the most informative section of the profile (Rosenswig 2004). We noted what appeared to be a cobble surface above the orange soil stratum and a plaster surface above that. A test pit placed 1m behind the profile confirmed this stratigraphy and documented that the cobble surface extended west and dates to the Middle Formative and the plaster surface to the Late Formative. The remainder of this paper reports results from a six week University at Albany field school undertaken in 2005 in collaboration with the University of Oregon.

Results of the 2005 Excavations

Very few Archaic tools were recovered from our excavations at San Estevan, and none were found in the orange stratum. Four patinated, unifacial tools are all we encountered in 2005 and each was found in later period fill; including one example of a constricted uniface pictured on the left of Figure 2.

Bulldozing damage at San Estevan is extensive and the site is littered with Classic period sherds. We spent a number of days at the beginning of the 2005 season trying to figure out the extent of the damage of the mounds in the site core. After scratching our heads for many days, a bulldozer showed up and we realized that what appear to be mounds, when overgrown with chest-high vegetation, are actually recently bulldozed garbage piles (Figure 3). Therefore, during the 2005 season we documented that Mound XV is the only remaining mound of all those included on Bullard’s map of the site core (see Figure 1).

Figure 2. Archaic patinated unifacial tools recovered at San Estevan

Figure 3. Bulldozer pushing garbage and soil into linear piles that resemble long mounds when overgrown with vegetation.

Middle Formative Midden – Suboperation 6

The one advantage of this massive destruction to the site core is that remains of early domestic activity are now visible on the surface. To the south of Mound XV, approximately under where Mound VII
stood or in the adjacent portion of what used to be Plaza B (see Figure 1), domestic remains were exposed by the bulldozing. These domestic remains consisted of a plaster floor, dark midden-like soils and Middle Formative ceramics and excavated as the Suboperation 6 complex.

Late Middle Formative Mamon ceramics are documented at the top of this deposit. A partial Guitara Incised (Kosakowsky 1987: 44-50; Pring 1976: Fig. 2c, d; Valdez 1988: 43) dish was recovered on the current round surface from within a dark midden like soil (Figure 4a). Based on this freshly exposed evidence of domestic occupation, we opened six 2 x 2 m excavation units and documented this occupation surface and the dark brown midden below. We brought two of the units down to bedrock and thus recovered 8 sq m of Middle Formative midden from seven 10 cm thick levels. The top of this midden contained late Middle Formative Mamon deposit, including a mostly complete Muxanal Red-on-cream (Kosakowsky 1987: Fig. 5.9; Pring 1976: Fig. 2f, g; Valdez 1988: 44) dish recovered from approximately 25 cm below the level the bulldozer exposed (Figure 4b).

From the bottom of this midden we recovered early Middle Formative ceramics (see discussion in Hammond 1991: 7) such as the Copetilla Unslipped (Figure 5a). Note the characteristic square rim; short, vertical-necked jars with exterior thickened rims as well as the distinctive double cylinder strap handle (Kowsakowsky 1987: Fig. 3.1; Pring 1976: Fig. 1e, h; Valdez 1988: 42). In addition, this example of a Backlanding Incised, outflaring dish is distinctive also of the Swazey phase (Figure 5b). Such post-slip incision is one of the defining characteristics of early Middle Formative ceramic decoration across Mesoamerica (Rosenswig 2005). In addition to the physical proximity of the sites, we use Cuello ceramic type names for my description of the San Estevan ceramic assemblage as Pring (1976) originally used ceramics from San Estevan, Cuello, Nohmul, Colha and Santa Rita to establish his Formative ceramic types (see Kosakowsky 1987: 9).
Cobble Surface, Wall Alignment and Ballcourt Remains – Suboperation 3

Following up on the 2002 test unit that documented a cobble surface above the orange stratum, we opened up a larger horizontal exposure of the area from the edge of the backhoe cut east-northeast of Mound XV. The disturbed overburden was cleared off, which exposed the plaster surface we had documented in 2002 and dated to the Late Formative. Below this, we documented 13 sq m of the Middle Formative cobble surface (which extends even further to the south and west) as well as a stone wall alignment (Figure 6). From the dark soils below the cobble surface many more early Middle Formative ceramic sherds were recovered. Furthermore, we documented that part of one of the benches of the ballcourt was still intact. Levi (1993) reports that the earliest remains she encountered at San Estevan were from excavations in the alley of the ballcourt, which would have been nearby to these excavations. She (Levi 1993: 99) originally identified an early Middle Formative structure that, with larger excavations, we have determined to be a large cobble surface. Figure 6 thus shows the complex stratigraphy at Suboperation 3. Hints of an underlying Preceramic orange soil horizon was found below a Middle Formative midden and cobble surface. Above this, two Late Formative plaster surfaces and what remains of the western ballcourt bench were documented. Similarly, late Formative plaster plaza floors over Middle Formative cobble living surfaces and wall alignments were also documented at Cuello (see Hammond et al. 1991).

Late Formative Axial Cache East of Mound XV – Suboperation 8

A 2 x 6 m trench was excavated east of Mound XV (Figure 7). When bedrock was reached (2.3 m below current ground surface) we found the Middle Formative dark soil under two thin plaster floors and then a series of four Late Formative monumental construction episodes. Each construction level was full of large Formative period ceramic sherds. Deposited within the top of the earliest documented monumental construction episode we recovered an axial cache designated Cache 1.

Cache 1 consisted of five vessels and three ceramic sherds formed into round disks (Figure 8). The two bucket vessels were originally placed lip to lip. These vessels are identical to Society Hall Red dishes from Cuello in terms of size, form and finish (Kosakowsky 1987: Fig. 6.12 & 6.13). The three “amphorae” jars documented in Cache 1 at San Estevan are identical to one found in the early facet Chicanel Mass Burial 1 at Cuello in Platform 34 (Kosakowsky 1987: Fig. 29a). These Sierra Red vessels are a very peculiar form and, in her ceramic monograph, Kosakowsky (1987: 83) commented on the one from Cuello that: “I know of no other vessel of this shape from the Maya Lowlands.” Based on the early date of Mass
Burial 1 at Cuello that contained the distinctive amphora vessel, and the fact that this cache was recovered from the first monumental construction episode of Mound XV, we tentatively dated San Estevan Cache 1 to the beginning of the Late Formative period (and see Rosenswig and Kennett 2007).

Three disks were also recovered from the cache. Two were placed upside down within the lower bucket vessel and leaning against its east side. The third was placed outside the bucket vessel and 10 cm to the east. These disks measure 8, 9 and 9 cm repetitively in diameter and fall within the average range of the 123 such disks (from non-domestic contexts) reported from Cerros (Garber 1989: Fig. 26). Also consistent with the three disks from San Estevan, ninety percent of the sherd disks larger than 5 cm in diameter were recovered from Late Formative contexts at Cerros (Garber 1989: Table 17). The three disks from Cache 1 could have served as lids for narrow-mouthed vessels as some suggest (e.g., Willey et al. 1965; Garber 1984: 83). In fact, the three amphorae jars recovered from Cache 1 also have rim diameters of 8, 9 and 9 cm, and so, the disks would have provided perfect covers before they were used and then deposited as shown in Figure 7.

The three amphorae vessels were equally spaced around the bucket vessel and their openings faced west. The amphorae vessels might therefore be interpreted as the three hearth stones of creation. Further, the east direction indicated by the placement of the cache relative to Mound XV and the placement of the three disks as well as the west direction indicated by the openings of the amphorae vessels were not random. The people who interred these objects were purposefully indicating aspects of their ideology.

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2005 Results and Future Research Prospects

The hint of Preceramic deposits which originally drew me to San Estevan disappointing as no tools were recovered from the distinct orange soil horizon. While there were clearly Archaic peoples living in the region (Rosenswig 2006; Rosenswig and Masson 2001), they appear not to have been intensively occupying the area that was later to become the site core of San Estevan. The early horticultural inhabitants of the region likely more intensively occupied areas close
to water such as the New River 1.5 km to the west or Chan Lagoon 3 km to the east.

Damage to the San Estevan site center is massive and all of the Classic period architecture documented by Bullard has been obliterated. However, due to intervention by the IA, the Late Formative Mound XV has been preserved. Our excavations shows that part of the east bench of a ballcourt remains intact as does the platform on which Mound XV was built. This means there are substantial Late Formative deposits preserved from the very centre of the site.

Further, in 2005 we confirmed that while all of the large mounds in the site core, except Mound XV, have been destroyed, the nearby architecture is still intact, including three large elite group next to the ceremonial core. We have also documented that intact, and now easily accessible, Middle through Late Formative deposits still exists at the San Estevan site core. This makes the site an ideal location to research both the origins of settled life and the development of this polity on the New River.

Artifact analyses, currently in progress, establish a shell working industry at San Estevan where worked shell was produced with lithic perforators like those shown in Figure 9a. There also appears to have been a continued use of unifacial lithic tools (Figure 9b) through the Formative period that were presumably employed for the same agricultural activities as during the previous Archaic period (McAnany 1992; Potter 1991). Future work at the San Estevan site should shed light on these local economic and political developments and shows great potential to contribute to the understanding of how settled life and cultural complexity developed in northern Belize.

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Located 10 km inland from the larger site of Lamanai, Ka’Kabish poses an interesting enigma for researchers of ancient Maya socio-political organization. Lamanai is one of the longest continually occupied Maya centres and considerable attention has been directed at the site over the past 30 years. In contrast, little is known about Ka’Kabish beyond a rudimentary map and brief survey conducted in 1995 that revealed the site possessed disproportionately large architecture for the size of the two central plazas. Originally anticipated to be a small, and somewhat insignificant secondary site, recent work at Ka’Kabish now calls this assumption into question. Ceramic and architectural evidence indicate that the site may have had at least two monumental structures in the Late Formative period. Other architectural and tomb evidence suggests that the site had an important elite occupation. This paper, while arriving at no definite conclusions due to the early stages of research at the site, investigates several potential models that may help to explain Ka’Kabish.

Introduction

Research at ancient Maya sites in northern Belize has been an ongoing endeavour since the end of the 19th century when Thomas Gann first visited the site of Santa Rita Corozal (Gann 1900; Gann and Gann 1939). Despite over a century of, albeit sporadic, excavations in the region, large gaps still exist in our knowledge of this area. Archaeological research in this area has been conducted largely at primary or secondary sites (Lamanai, Cerros, Nohmul, and Cuello to name but a few), where investigations have been restricted almost exclusively to the area of primary occupation, with limited attention paid to sites in the periphery zone or inter-site relations at the polity level (Hammond 1973, 1991a; Pring 1976; Robertson and Freidel 1986).

In the past decade, considerable research has been undertaken in the Orange Walk District to expand our understanding of smaller settlements. Most of this work has focused on the Three Rivers Region above the escarpment (Driver et al. 1997, 1999; Driver and Wanyerka 2002; Guderjan and Driver 1995; Hageman and Hughbanks 2002; Lohse 2004; Scarborough et al. 2003; Sullivan 2002; among others), although some studies of smaller secondary or tertiary settlements also have been done on the Belizean Coastal Plain (Baker 1995; Guderjan 1996; Hammond 1973, 1991a; Masson 2000; Pring 1976; Rosenswig and Masson 2001, 2002; Smith and McField 1996). Work on small centres forms an important balance to research conducted at larger centres as it informs our understanding of Maya social organisation on a broader multi-scalar level. Yet, this type of research is most valuable when it can be integrated into the discussions of core-periphery relations for a unified polity (Chang 1968, 1983; Willey 1983). Willey’s argument that “a king and his subjects may both be understood only in their relationships to one another” (Willey 1983:46) is equally important for understanding relations between sites in a single polity as it is for elucidating the relationships between individuals within a single centre, and may hold particular
importance for understanding the function of Ka’Kabish.

Although research in north-central Belize, has contributed considerable new information regarding smaller settlements, it has focused primarily on the dynamics of a single site (Driver et al. 1997, 1999; Driver and Wanyerka 2002; Guderjan and Driver 1995; Hageman and Hughbanks 2002; Hammond 1973, 1991; Masson 2000; Pring 1976; Scarborough et al. 2003; Sullivan 2002), or exploring the relationships between members of differential social standing or particular social groups within these communities (Hageman and Hughbanks 2002; Hageman and Rich 2001; Lohse 2004). An exception to this being the seminal work by Scarborough and colleagues in 2003 to unite the research conducted in the Three Rivers Region to investigate the possibility that Maya communities in this area were heterarchically organised (Scarborough et al. 2003).

Ka’Kabish, a small site in north-central Belize, presents us with a new opportunity to expand our knowledge of Classic period Maya socio-political organisations at subsidiary, secondary centres, as well as the ability to explore these dynamics at the polity level. The aim of this paper is to provide information about the site of Ka’Kabish that will help eventually situate this site on the ancient
Maya political and social landscape of North-Central Belize.

**History of Research at Ka’Kabish**

Ka’Kabish is almost exactly 10 km from the larger centre of Lamanai (at roughly 311 degrees magnetic north) (Figure 1), and from the top of the High Temple at Lamanai, the site is clearly visible on the horizon. Survey work conducted along the road that joins the modern towns of San Felipe and Indian Church (and subsequently the two ancient centers), reveals an almost continuous pattern of ancient domestic house mounds linking Ka’Kabish to Lamanai (Baker 1995). This pattern lends credence to the idea that Ka’Kabish was a part of the larger Lamanai polity. Yet, in contrast to the extensive research conducted at Lamanai (cf. Graham 2004; Pendergast 1981, 1985, 1986), little is known about the site of Ka’Kabish (Guderjan 1996).

Situated on a limestone ridge, one of several that undulate across this part of north-central Belize (Hammond 1973; Romney et al. 1959), the site sustained damage during the construction of a modern road and at least one building reportedly was completely destroyed and two other structures along with a section of the south plaza were removed during the brief succeeding use of the site as a quarry for road fill (Guderjan 1996). Additional damage to the site was caused by extensive looting operations, although currently the greatest danger to the site may be from the encroaching farmland. This last situation is undoubtedly exacerbated by the sites proximity to four growing communities – one in every direction – Indian Church to the east, Shipyard to the north, San Felipe to the west, and Indian Creek to the south.

Dr. David Prendergast, made the first known archaeological inspection of the site, in the early 1980s while working at Lamanai. He reported finding Early PostClassic ceramics on low mounds in recently cleared milpa fields immediately outside of the site core (Pendergast 1997: personal communication). However, the difficult conditions in accessing the site made continued work there unfeasible (Belanger 2007: personal communications). In the mid-1990s, Ka’Kabish was visited by archaeologists from the Maya Research Program who produced a functional, although rudimentary, plan of the site core that contained 27 structures (Guderjan 1996) (Figure 2). Additional structures were reported to the north but were not included on the original map.

**Results of the 2007 Field Season**

Using the original 1995 Maya Research Program map as a guide, the 2007 archaeological research focused on clearing and mapping the site south of the modern San Felipe/Indian Church road. As work progressed it quickly became apparent that the southern portion of the site was significantly larger than initially anticipated.

The largest group of structures south of the road was part of the 27 structures originally identified by the Maya Research Program; now labeled as Group D, the 2007 season survey added several new structures to this group as well as delimited the plaza edges and reconfigured the shape and arrangement of some of the structures (Figure 3). During the survey of the forest to the south and west of this group two smaller house mound clusters were discovered (Groups B and C), each with two chultuns and separated by an aguada. We also discovered two plazuela groups (Groups A and E). Group E, is located to the east of the main core area and consists of 10 structures, four of which are placed on a raised platform. This plazuela group has been impinged upon by the surrounding farm land and subsequently one structure...
Investigations at Ka’Kabish, Northern Belize

Figure 2. Original map of Ka’Kabish showing structures on both sides of the modern road (adapted from Guderjan 1994)

has been destroyed and a second severely damaged.

Group A, the furthest south of the complexes is comprised of eight structures (one of which appears to be a small temple) arranged around a small plaza. The immediately adjacent areas on the east, south, and west sides have been cleared and developed for cane farming, creating uncertainty regarding the original location of the lower edge of the plaza. Large sections of these fields, as well as fields to the north and west of the site, were either cleared of cane during our field season or were under new cane, making them ideal for surveying. In these areas we found evidence of numerous domestic house mounds (Figure 4). As the purpose of this paper is to stimulate discussion as to the nature of this site, only those of particular note will be highlighted.

To date, the largest building at the site is Structure 4; rising roughly 21 m (70 feet) above the current plaza floor, it is the most impressive structure so far identified at Ka’Kabish in terms of sheer mass. Three looter’s trenches penetrate the building, exposing several construction episodes that seem associated with earlier (lower) plaza surfaces. Ceramics recovered in 1995 by the Maya Research Program indicated that the constructions spanned the Late Formative period through to the Late Classic period, dates that appear to correlate with the architectural styles seen in the trenches. The central trench originally exposed what appeared to be the opening to a chultun or cave under the structure (personal observation). Unfortunately, the loose-laid construction fill used in this section has collapsed over the years – burying the possible chultun or cave and creating a large dome-shaped hollow in the centre of the structure.

At least one other temple (Structure 9) has been identified in the Group D complex; this temple is located in the south-east quadrant of the site and, like its larger counterpart, appears to have been constructed in multiple episodes. Ceramics from the earliest exposed layer of this structure, also have been dated to the Late Formative period.

The current configuration of structures divides the plaza space into two discrete areas – a larger L-shaped area to the south and west and a smaller square to the north-east. The construction fill of the building forming the south side of the smaller plaza (Structure 5) appears to indicate that it was built in a single episode and tentatively dated (based on an unusual tomb form) to the later part of the Early Classic. As the two temples (Structures 4 and 9) in Group D clearly were initiated in
the Late Formative, it is likely that in its earliest incarnation this group was a single plaza that was later divided with the construction of Structure 5.

The purpose of Structure 5 is unclear. Configured as a long, wide range structure, at roughly 12 m tall it is far higher than any other structure of that type at the site. Ideas that the building may in fact be another temple are supported by the presence of an unusual tomb in the centre of the building. The tomb appears to have been constructed with a wooden hooped framework (now decayed) placed over the body (Figure 5). This framework was covered in fabric and layers of plaster creating a domed space around the body. Surrounding this inner tomb construction were layers of loose, fist-sized stone fill, and larger side stones; all of which was sealed with large capstones. This “cocoon-type” tomb was first identified in structure N9-56 (the Temple of the Masks) at Lamanai by Pendergast, where, based on the associated ceramics it was dated to AD 500 (Pendergast 1981:38).

A similar, but not identical tomb (S.D. P2B-2) was found at Santa Rita Corozal (D. Chase and A. Chase 1989, 2005). At Santa Rita Corozal Diane and Arlen Chase recovered the remains of a woman who had been wrapped in a large quantity of cloth and placed in a small east-west chamber (A. Chase, personal communication 2007). The walls of the burial chamber were stuccoed and curved over the body in a manner very similar to that at Lamanai and Ka’Kabish (A. Chase, personal communication 2007). Ceramics associated with this burial place the internment in the Early Classic period (D. Chase and A. Chase 2005: 112-114), contemporary with the Lamanai grave. Although no artefacts currently have been found in association with the tomb at
Ka’Kabish, based on the fact that the only two other examples of this tomb type both date to the Early Classic Period, we believe it is fair to assume that the Ka’Kabish tomb also dates to this period.

Although only the southern half of the site has currently been mapped we have discovered that there was a considerably larger investment in elite and ceremonial architecture than initially predicted. Our first indication of this investment came in the form of fallen ceiling stones visible in a looter’s trench in Structure E5. These building stones clearly indicated that at least one structure in this outlying plazuela group was constructed with a corbelled vaulted ceiling.

Originally, Guderjan reported finding evidence of two structures in the south-west quadrant of what is now Group D that may have had vaulted rooms. While we did not find the two structures reported we did find one structure with a pair of parallel north/south rooms, both painted red, in Structure D14. Based on the location of what is believed to be the edge of the central front door, this building is estimated to be roughly 20 meters in length. The two rooms appear to have been connected by a series of doors of varying sizes, and as only the front (east) chamber has been cleared to any degree it is currently unclear if the rear (west) room was also a long single chamber or sub-divided into a series of smaller chambers, each accessed from the main front room by way of its own door. The rooms appear to have been carefully packed with alternating layers of small stones and marl. Evidence from a second trench in the same structure that penetrated and cleared part of the rear chamber suggests that at least part of the rear room was exposed to a prolonged fire, either as part of the building’s function or possibly as part of a burning rite associated with the burial of the building (Belanger 2007: personal communication). The existence and treatment of this structure, combined with the presence of a ballcourt complete with marker, and numerous now-looted elite tombs (including one that was once painted
with glyphs) is forcing us to reconsider our idea that Ka’Kabish was simply a relatively minor administrative centre.

**Site Discussion**

In reconsidering the position of Ka’Kabish in the Lamanai polity four potential models present themselves; the first being that the site is the terminus of a causeway, in effect a plaza outlier for Lamanai. It is also possible that the site was what Bullard defined as a ‘minor centre’. Recently, Ball and Taschek have identified what were potentially long-term shifts in the location of dynastic power between Cahal Pech and Buenavista (Ball and Taschek 2001:167), and it is possible that the Lamanai-Ka’Kabish area might have undergone a similar shift with Ka’Kabish serving as a refuge for a cadre of elites if not the Lamanai royal court. The fourth model which has presented itself in recent years is the possibility that Maya polities were organized along heterarchical lines, with different sites within a polity serving different functions (Scarborough et al. 2003).

Although causeway termini are found at many sites in the Maya area, they are perhaps most clearly defined in relation to settlement patterns at Caracol, Belize. Here major causeways have been found connecting the epicenter to outlying complexes ranging from 2.5 to 7.3 kilometers away, with shorter intra-site causeways connecting elite groups between 400 m and 2 kilometers to the site core (Chase and Chase 2001:274). These more distant outlying complexes have been described as “special function termini” with plazas as big as those found in the epicenter although with different structural configurations, characteristics that fit with Ka’Kabish. However, the plazas in these termini are described as being surrounded by low structures, not pyramids, and occasionally one or two range structures on raised platforms (Chase and Chase 1990:807), a description that does not correlate with the architectural design of Ka’Kabish. Moreover, these causeway termini were found to lack many of the features of epicenters (i.e., monuments, palaces, temples, and ball courts), features that are present at Ka’Kabish. Consequently, unless we expand our definition of causeway termini to include complexes that appear to replicate structural and possibly ritual or administrative functions of epicenters we must conclude that Ka’Kabish is unlikely to have been a causeway terminus site. There is also the issue of the absence of a causeway connecting Lamanai and Ka’Kabish, although, this may be due to the currently incomplete survey of the site and surrounding region.

It is also possible that Ka’Kabish may have been a Minor Centre. Bullard describes these centers as commonly including “one or more pyramidal structures, which are assumed to have been small temples, arranged in company with lower building around one, two or three adjacent plazas” (1960:360). Although Bullard also notes that “none of the many Minor Centers explored during the survey contained stelae, altars or ball courts” this survey was conducted some 50 years ago and in the intervening time we have found many sites that while fitting with the former description also included ball courts. Therefore it is possible that Ka’Kabish was a type of ‘minor centre’. Yet, as this designation is more a definition of size rather than of function or socio-political power it doesn’t not help explain the role that Ka’Kabish played in the larger polity nor provide information about the nature of the polity socio-political organization.

The idea that Ka’Kabish may have served as a refuge for a cadre of elite from
Lamanai, possibly even the royal court has also been raised. An increase in inter-site warfare and acts of aggression has been documented at the end of the Early Classic and start of the Late Classic for many areas of the ancient Maya world. It is possible that Lamanai, spread along the western edge of the New River Lagoon, may have been deemed too insecure and indefensible if any aggressive activity was directed at the polity. The relatively short distance between the two sites would have afforded any elites residing at Ka’Kabish the ability to exert influence at Lamanai while providing a measure of security not found at the river site.

However, with the exception of the possibly deliberate burning and breaking of Stela 9 (likely a Post-Classic action [Pendergast 1988]), no evidence has been uncovered thus far at Lamanai to suggest that the site was under any threat during the Early Classic to Late Classic transition. Moreover, an early Late Classic date for the influx of elites to Ka’Kabish does little to explain the Late Formative period temples or the Early Classic ‘cocoon-style’ elite tomb and associated structure.

The final model that may possibly explain Ka’Kabish’s role in the Lamanai polity entails a revision of our ideas of Maya political structure. Currently, we are entertaining the notion that the Lamanai polity may have been organized along heterarchical lines – with Ka’Kabish serving as an ideological or ritual capital and Lamanai serving as the political or economic capital. The idea that Maya polities may have used heterarchically structures is not new. It has been proposed for polities in the Three River’s Region in North-western Belize (see Scarborough et al. 2003). Heterarchy, as defined by Crumley, is “the relation of elements to one another when they are unranked or when they possess the potential for being ranked in number ways” (Crumley 1995:3). Power, should it be separated into its most basic divisions (economic, political and ideological [sensu Earl 1994]) and dispersed between sites would result in the potential for these sites to be ranked in different ways – more specifically heterarchically.

Identifying the presence of a heterarchical system for the Lamanai polity is difficult, particularly when many key features indicative of power, both economic and ideological, are replicated at the two sites: Both sites have large temples, (although the High Temple at Lamanai is indisputably much larger than Temple D4 at Ka’Kabish); both sites have elite tombs (although one at Ka’Kabish was painted with glyphs, a feature yet not found at Lamanai); both sites show evidence of economic wealth as manifested by the lavish use of obsidian in tombs at both sites and some caches at Lamanai. While vaulted architecture was present at Lamanai no deliberately preserved structures similar to Structure D14 at Ka’Kabish were discovered. Lamanai, however, has several stelae, objects yet to be recovered at Ka’Kabish. In both cases this may simply be the result of recovery issues and additional work at both sites may redress this discrepancy. Clearly we are at too early a stage in our investigations to confirm or refute the possibility of this type of organizational system.

So what is Ka’Kabish? Is it a causeway terminus, a minor centre, an elite refuge, or a heterarchical ritual capital? As investigations at the site are still in their incipient stages there is still have much to do before the exact function of Ka’Kabish or the nature of the relationship between Lamanai and Ka’Kabish can be ascertained with any confidence. What is clear is that Ka’Kabish, with its surprisingly elaborate architectural assemblage, spatial extent, and proximity to the larger site of Lamanai, is an
intriguing new puzzle on the Maya landscape in Northern Belize.

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25 CURRENT RESEARCH DOMAINS AT BLUE CREEK

Thomas H. Guderjan

This paper documents the research strategies employed at the ancient Maya site of Blue Creek in northern Belize and outlines the theoretical foundations that provide the base for our discussions on ancient Maya society. The project has investigated a variety of residential components of the city, outlying agricultural fields and other settlements in the core-periphery. The data allows us to compare and contrast the nature of power and authority among them and how they were tied to the rulers in the central precinct.

Introduction: A Summary of Research at Blue Creek, Belize

The Maya site of Blue Creek in northwestern Belize (Figure 1) has been the focus of annual excavations and other investigations since 1992 (Guderjan 1991, 2007). This effort has produced a massive and important database for understanding the ancient Maya and for broader purposes in the field of archaeology. Most archaeological projects in Middle America (Mexico, Belize, Guatemala, Honduras, El Salvador) are either focused on monumental architecture in the central area of an ancient city or deal with relatively small investigations of the settlement zone surrounding the central precinct of the site. This is generally a function of the limitations on time and funds available for fieldwork and data collection. By contrast, Blue Creek is an exceptional situation as the site has been the focus of on-going, multi-institutional, multi-national and multi-disciplinary research which will continue into the future.

Blue Creek is a medium sized Maya center that was occupied from approximately 600 B.C. until approximately 1000 A.D. (Kosakowski and Lohse 2003; Guderjan 2004, 2007). Spatially, the “greater” Blue Creek area covers approximately 100-150 square kilometers (Guderjan 2007; Lichtenstein 2000). Nearly 500 ancient buildings have been documented and approximately 100 excavated in 20% of this area that has been intensively surveyed (Figure 2). Excavations have been undertaken throughout this area and across all contextual zones. The result is a rich database that is nearly unmatched in the Maya area.

At first appearance, Blue Creek is unexceptional: surrounding its main plaza are 15 meter tall public buildings which are not large by Maya standards. The two stelae that were erected in the main plaza have been stolen or reburied. There is a ballcourt, but it is a very small one. However, just under the surface of the Blue Creek site, there are surprises to be found.

By the end of the Late Preclassic period (150-250 A.D.) and through the Early Classic period (250-600 A.D.), Blue Creek became a wealthy city (Guderjan 1998, 2000, 2004b, 2005, 2007). Jade is the clearest archaeological proxy for wealth in the Maya area. Jade, or more properly, jadeite and nephrite, were the most precious stones in the Maya world. Jade was available from only a small and remote source area and was only owned by the wealthy and powerful. The largest collections of Maya jade come from one of
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Figure 1. Map of Northern Belize, showing location of Blue Creek

Figure 2. Blue Creek and its residential groups.
the largest cities (Calakmul), a city near the source (Copan) and a palace of one of the most powerful royal families (Cancuen) (Guderjan 2007; Kovacevich 2006). However, it is perplexing why the Maya world’s fourth largest collection of jade comes from the apparently mundane city of Blue Creek. Aside from jade, Blue Creek had access to many other sorts of exotic goods, from grinding stones made of metamorphic rocks, obsidian tools, and sponges from the Caribbean coast (i.e., Haines 2000). It is clear from the amount and kinds of exotic goods that Blue Creek was wealthy far beyond other cities of its size.

Deeper investigation shows that Blue Creek’s wealth derives from two equally important factors. The first is the presence of some of the richest and most extensive agricultural soils in Central America (Guderjan 2007; Guderjan, Baker and Lichtenstein 2003). The Blue Creek community covered approximately 150 square kilometers and more than half was used for agriculture. We have found several kinds of agricultural systems at Blue Creek, ranging in size and importance from small, household kitchen gardens to very large scale production system such as large scale upland non-irrigated farming and lowland drained field farming (Guderjan 2007). It is clear that Blue Creek could and did produce far more agricultural products than needed by its population.

The central precinct of Blue Creek straddles a 100-150 meter escarpment that divides the low coastal plain from the karstic hills of the uplands. Above and west of the escarpment, the terrain is a mixture of eroded limestone hills separated by large expanses of clayey soils that today are prized by modern large-scale farmers. These “bajos” and “bajitos” range in size from a square kilometer to 40 square kilometers. While we lack direct evidence for their use prehistorically, the fact that no Maya homes have been found in them and that the Maya went to extraordinary lengths to expand these fields by building terraces and check dams on adjacent hillsides indicate that the bajos were fully under cultivation (Guderjan 2007).

Moreover, below the escarpment are equally rich soils, but these were subject to seasonal inundation that could easily lead to complete crop losses. To prevent this, the Blue Creek Maya dug hundreds of kilometers of ditches to drain these fields (Baker 2001, 2003; Beach and Luzzader-Beach 2004, 2005; Beach et al 2006; Luzzader-Beach and Beach 2008; Guderjan 2007). Our ongoing studies of these fields indicate that they were dug in the Early Classic period and maintained until the abandonment of Blue Creek in about 850 A.D. They were even used by a remnant population for the next 150 years (Beach and Luzzader-Beach 2007). We also know that a wide variety of crops for food and other purposes were grown (Bozarth and Guderjan 2002; Luzzader-Beach and Beach 2007). Parts of these fields may have been covered by orchards of cacao.

Beyond Blue Creek’s ability to grow food and other agricultural products, the second factor for its economic success was its extraordinary access to other markets due to trade (Barrett and Guderjan 2006; Guderjan 2007). Archaeologists have known for many years that Maya coastal trade in elite reinforcing exotic goods was active throughout the Classic period. We now believe that Maya trade canoes filled with food and other commodities virtually circumnavigated the Yucatan Peninsula and penetrated into the interior via rivers (Andrews 1983, 1990; Andrews and Mock 2002; Guderjan 1995; Hammond 1972; McKillop 1996; McKillop and Healy 1989;
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Sabloff 1977; Sabloff and William Rathje 1975; Shatto 1998). Blue Creek is located at the terminus of the Rio Hondo, the northernmost river draining into the Caribbean Sea. Canoes filled with goods could reach the Caribbean in only three days. Then, goods could be loaded onto larger and deeper seagoing canoes bound for cities in the north that had lesser agricultural potential and higher risk of crop failure due to weather. Equally importantly, canoes coming from the Caribbean into the interior would have to stop at Blue Creek to off-load goods. From Blue Creek, these goods would be taken overland into the Petén sites such as Tikal and Uaxactún. So, Blue Creek’s economic success was also made possible because it was situated at a critical location on the trade network. Blue Creek’s gateway setting also facilitated the distribution of its own agricultural products. Confirming this thinking, we have found a dock (Barrett and Guderjan 2006) and related facilities at Blue Creek. Similar features have also been found downstream at the site of Nohmul (Pring and Hammond 1976).

However, power and authority are not merely functions of having resources and trade. Social scientists use the term “agency” to describe the importance of the actions of individual people in the creation of complex social systems. So, when Cortez conquered the Mexica, it was not just a function of his superior technology. Human agency, in this case, Cortez’s brazen boldness, made the conquest possible. In the case of the Maya, we can see human agency played out through the multi-generational interaction of their leaders (Guderjan 2007; Guderjan and Hanratty 2006, 2007). The central precinct of Maya cities included large open plazas, surrounded by graceful yet massive temples, carved stelae that proclaimed the accomplishments of kings, and the Maya origin myth was ritually re-enacted in ball courts. Blue Creek’s central precinct incorporates all of these elements and exhibits innovative architecture constructed during the Early Classic period. Structure 1 is the largest building at the Blue Creek, rising more than 15 meters tall on the north side of Plaza A. At approximately 350 A.D., Structure 1 had a columned superstructure that supported a perishable roof (Driver 2002; Guderjan 2004a). While columned superstructures are found several hundred miles north in the Maya area, this is the oldest in the southern lowlands and possibly the entire region. On the south side of Plaza A, a stone-lined shaft surrounded by caches was integrated into Structure 4 at the same time. This shaft marked Structure 4 as a symbolic axis mundi or center of the world and may have supported a banner on a pole in front of the superstructure (Guderjan 1998, 2005, 2007). No other feature like this is known from the Maya area. Near Plaza B., the façade of another temple, Structure 9, was decorated with the image of a ruler, king, or ahau (Grube, Guderjan, and Haines 1995; Guderjan 2004a, 2007). Also dating to the Early Classic period, this unusual stucco mask marked the power and authority of Blue Creek’s ruler. Finally, Blue Creek’s ball court is the only one in the region constructed during the Early Classic period (Guderjan 2004a).

Later, in the Late Classic period (600-850 A.D.), Blue Creek did not exhibit such innovations. Plaza A was expanded to incorporate a “pseudo-E-Group”, a non-functioning but symbolic solstice marker of the kind that is widely seen earlier at other sites (Guderjan 2006, 2007). The same building has a small, open stela shrine and a dedicatory cache with symbolic materials related to the sun god or God K (Driver and Wanyerka 2003; Guderjan 2004a, 2007). We recovered biosilicates from sponges in this cache that lead us to believe that dedicatory caches are, like ball courts and
plaza-pyramid complexes themselves, symbolic re-creations of the Maya cosmos and creation myths (Bozarth and Guderjan 2004; Guderjan 2003).

Aside from such public functions, the central precinct also included the private residences of the ruling elite. At Palenque and Tikal, these palaces were huge, multi-storied buildings constructed by successive generations of kings or ahau’s. At Blue Creek, the “palace” was a much more modest residential courtyard, initially constructed in the Early Classic period (250-600 A.D.) but occupied by generations of rulers through the Late Classic period (600-850 A.D.) (Guderjan 2004a, 2007). We found several generations of these people buried in a single grave within this building (Lichtenstein 1997). There were also residences of lesser nobles in the central precinct and probably residences of those who served the ruling elite (Guderjan 2007; Guderjan, Lichtenstein and Hanratty 2003).

However, to understand the nature of power and authority in Maya cities, we need to look beyond the central precinct into the surrounding settlement zone. At other Maya sites, the settlement zone appears to be a jumble of residences ranging from the most humble to the very elite, all tied economically and politically to the ruling elite. At Blue Creek, we have surveyed large areas outside of the central precinct and discovered important patterning in the settlement landscape (Guderjan 2007). Broad expanses of agricultural lands separate outlying residential neighborhoods or barrios, giving us the opportunity to study each of them as separate units and compare them with each other. Only a kilometer west of the central precinct is one of these, known as Kin Tan, which consists of a group of large masonry residences built through the Classic period. These were not the residences of the royal rulers, but of important families in the political fabric of Blue Creek for nearly a millennium. At sometime around 150-250 A.D., they buried their lineage founder under a shrine in the midst of their largest residences. Not long afterward, another important male, perhaps the founder’s son or grandson, was buried in front of the shrine which was expanded to incorporate his tomb, too. Judging from the evidence of continued expansion, construction and wealth, this was the home to a family of apparently ever-increasing political and economic strength at Blue Creek for another 600 years (Guderjan and Hanratty 2006; Guderjan, Lichtenstein and Hanratty 2003; Hanratty 2002).

Conversely, other barrios never attained the power and authority of Kin Tan. Examples include Sayap Ha and Chan Cahal, located east of the central precinct and are surrounded by ditched agricultural fields (Giacometti 2002; Guderjan 2007; Popson 2000). The residents of Sayap Ha never had Kin Tan’s wealth. Most of them lived in humble thatch-roofed, wooden pole homes and had little in the way of valuable and exotic possessions. There was one exception, though. At about the same time as the founder’s burial at Kin Tan, a male was buried under a house floor at Sayap Ha (Guderjan 2007). He was buried with “knock off” goods such as a royal head carved of bone rather than jade. But he also was buried with a pair of shell ornaments inlaid with exotic stones and coral inscribed with imagery from Teotihuacan, hundreds of miles away. Despite whatever he did to attain prestige, he did not originate a lineage that would inherit and build upon his power. For the next six centuries, his descendants would still be workers in the agricultural fields, but not their owners. So, I argue that power and authority in a Maya city were based upon the interaction between powerful lineages, such as the rulers in the central precinct and the residents of Kin Tan. Further, once a lineage
was excluded, such as the residents of Sayap Ha, they remained excluded.

The ancient Maya site of Blue Creek offers scholars an opportunity to understand how the Maya rulers acquired wealth, power and authority. It also helps us understand how trade and economics were the glue that held together disparate and distant Maya kingdoms. Finally, we are now learning how the ancient Maya structured their unique form of urban life and how they built a complex society through human agency and interaction, much as we do today.

As is the case with any complex field project, the Blue Creek Archaeological Project does not operate under a single research paradigm. Instead, several inter-related domains of research co-exist. Each helps guide individual efforts and individual efforts often apply to more than one domain. In the following section, I will outline six ongoing themes that are central to current research domains at Blue Creek.

Current Research Domains at Blue Creek


World Systems Theory is a framework for understanding human interaction and how that interaction leads to the creation and maintenance of power, legitimacy and authority. In this case, I view interaction among multi-generational lineages as the central cause for those lineages to have become and then to continue to hold power. In essence, this was the glue that integrated Maya cities. Further, I believe that this is an avenue to building a model of ancient Maya cities that is uniquely Maya and not one that has been developed for other societies. We must move beyond semantic barriers such as whether Maya polities were “cities” or “states” or whether “commoners” or “hinterlands” were heterogeneous. Instead, I argue that we can examine the nature of the Maya experience and build a model of how their society operated.

Much of the Blue Creek project’s efforts over the past decade has been organized around the concept of understanding the spatial arrangement of the city and how its components were integrated (Barrett and Guderjan 2006; Giacometti 2002; Guderjan 2005, 2007; Guderjan, Baker and Lichtenstein 2003; Guderjan, Diel, Giacometti and Andrews Ms.; Guderjan, Lichtenstein and Hanratty 2003; Guderjan and Hanratty 2006; Hanratty 2002; Lichtenstein 2000). Blue Creek consists of numerous residential components each with its own distinct nature. While not all of these components have been identified yet, we have identified 8-10 of them and intensively investigated several. These residential components exhibit vastly more diversity and complexity than would be expected of an undifferentiated mass of commoners. Most importantly, the internal stratification and differential access to exotic goods, etc. within each component indicate that each had its own internal mode of local leadership and that those modes were not identical in each component.

In some cases, such as Kin Tan, local leadership consisted of the authority of multi-generational lineages that appear to have controlled large holdings of agricultural lands (Guderjan 2007; Guderjan, Lichtenstein and Hanratty 2003; Guderjan and Hanratty 2006). Similar power structures probably existed in other components such as Nukuch Muul, Rosita, and others. However, such multigenerational lineages do not seem to have existed at Chan Cahal and Sayap Ha, where local central places such as Structure L-25 indicate that these were integrated communities with their own public places and leadership. Instead of multigenerational lineages leading these communities, leadership and authority...
seems to have been achieved by individuals in their lifetimes rather than ascribed to a lineage from its ancestors (Guderjan 2007; Guderjan, Diel, Giacometti and Andrews, ms.).

So, there were multiple modes of local leadership among the residential components of Blue Creek. Further, there was a group of elites who controlled the large, grand, public places of the core area and who also most likely controlled the large agricultural resources available below the Bravo Escarpment. How can the existence of both of these apparently conflicting structures of power, legitimacy and authority be reconciled?

I believe that Wallerstein has pointed us in the right direction (Chase-Dunn and Hall 1991; Pauketat 2000; Peregrine 1991; Peregrine and Feinman 1997; Wallerstein 1974). His initial evaluation of core-periphery relations argued for a permanency in the nature of the relationship between the core and the periphery due to their economic interaction. In our world this has proven to be somewhat less than true as the variables involved, such as markets for energy, have dramatically shifted. In the Maya world, relationships between groups of people were also dynamic; for example, the relationship between Kín Tan and the core area. But Wallerstein and World Systems Theory in general direct us to examine the relationships and interaction among people and institutions. Institutionalized structures of power, legitimacy and authority, such as the core area and Kín Tan, simply could not co-exist unless they were mutually supportive of each other.

The relationship among the components of Blue Creek can be seen as a larger, institutionalized version of the Big Man system of the South Pacific. Big Men and Trobriand Kula Ring trading partners legitimize each other’s authority by public acknowledgement of that authority. In the Trobriands, the public and ceremonial exchange of heirloom **moulavi** or **soulaka** by two trading partners creates prestige and power for both individuals (Malinowski 1920, 1922). The recognition by the outsider of the importance of his trading partner has the effect of increasing the prestige of the trading partner. Clever players of this prestige building exchange system can become very powerful (Crumley 1987, 2003; Dobres and Robb 2000; Frankenstein and Rowlands 1978; McCall 1999).

Theoretical frameworks as diverse as Durkheimian Structuralism, General Systems Theory, and evolutionary biology all tell us the same thing about the co-existence of multiple structures of authority at Blue Creek. If they in fact existed, then the larger system must have somehow worked. Wallerstein’s General Systems Theory leads us to understand that the larger system worked because of the interactions among these multiple structures of authority. For example, when Sayap Ha Burial 2 was alive, a member of the ruling elite likely gave him the goods that accompanied his grave. This, like the case of the Trobriand trading partner, increased his authority. It also certainly enhanced his loyalty. But, the enhanced status did not have multigenerational impact. At least there was no discernable multi-generational impact in any archaeologically visible manner. On the other hand, there were multi-generational impacts at Kín Tan which most likely consisted of numerous interactions between the lineages of Kín and the core area (Guderjan and Hanratty 2006).

So, it was not simply the authority of the rulers over the commoners that explain the integrity of Blue Creek or the power, legitimacy and authority of the ruling elite of the core area. Instead power and authority derived from the interaction among local leadership within each residential component and the ruling elites of the core area.
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area. The archaeological markers of these structures are easily seen. We find complex residences and public sacred spaces within residential components. Further, we see connectivity between residential components and the core area.

Causeways, or *sacbeob*, are incorporated into many Maya sites (Shaw 2001). At Blue Creek, two small *sacbeob* are located at the base of the escarpment immediately below the core area. They cross a low-lying area that is seasonally inundated to Sayap Ha (Giacometti Ms.). Causeways are relatively uncommon in the region. The only others of which I am aware are at Chan Chich where a major causeway connects settlement on the upper Rio Bravo (also known as Chan Chich Creek) to the core area, approximately 3 kilometers away, another connects an outlying elite residential group to the core, and a third connects Ekenha to Chan Chich (Guderjan 1991). In the case of the first causeway at Chan Chich, there is no known evidence of the causeway continuing beyond the Rio Bravo. However, this broad sacbe is running directly towards Chan Chich’s nearest large neighbor, Punta de Cacao.

In the northern Yucatan, causeways are much more common and connect important areas within polities and in some cases they connect sites that are clearly politically aligned but not part of the same polity. The most apparent example of this is the 100 kilometer long causeway between Chichen Itza and Yaxunah. Others include a recently discovered intersite causeway near the northeast coast of the peninsula (Matthews 1998).

Like contemporary roads, Maya causeways connected and facilitated interaction between groups of people who already had close interaction. They also symbolically reinforce existing political relationships. While the Chan Chich causeway may not have extended all of the way to Punta de Cacao, whenever someone from Punta de Cacao came to Chan Chich, they certainly walked that causeway and understood clearly that it had been built to publicly acknowledge the importance of their relationship and to reinforce continued interaction between the two polities.

If these complex residences, public sacred spaces and evidence, such as causeways, of connectivity are archaeological signatures of integration at Blue Creek, then they should be present at other sites as well. Unfortunately, field research at most other Maya sites have not been organized in a manner to easily test these propositions. Nevertheless, there are some locations where data exist that reinforce my arguments.

I argue that residential communities at Blue Creek were tethered to the ruling lineages of the core area through complexities of political economy and interaction among leaders (Guderjan 2007). If this is true, then they should also exhibit archaeological signatures of this sort of interaction. Despite the general lack of relevant data, several sites do in fact exhibit these similar patterns.

For example, outlying central places that are probably surrounded by unrecorded residential components are architecturally linked to the core area. At the Belize Valley site of Baking Pot, causeways extend approximately a kilometer east and west of the core area then terminate at ritual buildings (Audet and Awe 2004). Similarly, at other sites in the Belize valley such as Cahal Pech, causeways sometimes, but not always, connect such termini groups to the site core (Cheetham 2004). It is not clear whether these ritual buildings are central places for residential components as seen at Blue Creek, but they probably are.

Further, similar patterns exist at sites north of Blue Creek. The core area of the large Classic site of Dzibanche in southern
Quintana Roo, Mexico is situated on an erosional remnant “island” surrounded by a very large bajo and its high quality soils (Nalda 2005). A causeway leads north from Dzibanche approximately 2 kilometers to a small site, Kinich Na, which consists of a single very large temple complex surrounded by a group of relatively small elite residences. It is clear that Kinich Na was the home of an important lineage that was part of the Dzibanche polity. Kinich Na probably functioned to consolidate Dzibanche’s authority over the northern sector of the bajo.

A related pattern is seen at the Becan-Xpuhuil-Chicanna complex, another Classic period site in southern Quintana Roo, less than 100 kilometers north of Blue Creek. The core area of Becan is surrounded by a large moat with five crossings. Only a kilometer to the south is Chicanna, a small center with elite residential compounds and its own temples and ritual space, none of which is as large as those of Becan. Even more clearly connected to Becan is Xpuhuil, approximately 4 kilometers east. Xpuhuil also has compounds of elite residences and on its west side, a three-towered pyramid. Two towers face east, the direction of the Xpuhuil elite residences, defining the ritual space for Xpuhuil. However, the third tower faces west and has an ornate façade designed to mark the large terminus of the causeway from Becan. While incorporated into larger polities, Kinich Na, Chicanna, and Xpuhuil all have the political authority and economic bases to build large complex, masonry residences and large public, monumental architecture. These, like the causeway termini buildings at Baking Pot, represent central places for components of larger polities and the homes for the lineages that control them. Further, the ruling lineages of the core area are connected to the people of the outlying residential components through social and political ties to the local elite lineages.

Similar relationships appear to have existed in the Puuc region as well. A recent report on the site of Xuch in Campeche focuses on the series of outlying nodes of public architecture located 1-4 kilometers from the central precinct (Isendahl 2006). Similarly, the small site of Cehtzuc is located 4 kilometers from the major center of Uxmal (Sprajc 1990) and appears to have functioned as another home of a multigenerational lineage that was integrated into the large Uxmal community.

At Blue Creek, the same structure and functional inter-relationships are seen. With the exception of U Xulil Beh, each residential component has its own central place and often also includes a complex residence of a lineage that was more prestigious than all others (Guderjan 2007; Guderjan, Baker and Lichtenstein 2003; Lichtenstein 2000). In the cases of Kin Tan, Nukuch Mul, Rosita, Chan Cahal, and Sayap Ha, lineages in each component, or community, formed relationships through political economies with the ruling lineages of the core area (Barrett 2004, 2006). In the case of U Xulil Beh, it appears that the community was settled late in Blue Creek’s history, possibly to exploit additional agricultural resources. Further, it appears that the community even developed internal stratification or a central place or a lineage that regularly articulated with the lineages of the core area.

2. Collapse: The End of the World as They Knew It!

There has never been a lack of theory and speculation about the demise of the Maya complex society at the end of the Classic period in the southern lowlands (Culbert 1973; Demarest, Rice, and Rice 2005). However, powered by the very popular volumes Guns, Germs, and Steel
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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.

At the same time, it has become clear that Blue Creek offers a rich database describing the events and processes leading to its abandonment. For example, we can document processes in the Late Classic period such as population growth and residential expansion into locations with increasingly poor agricultural potential, such as U Xulil Beh (Guderjan 2007; Lichtenstein 2002). Coincidentally, we see construction of small scale agricultural terraces and other cross-drainage features on the margins of the large scale agricultural systems that were already in existence (Guderjan 2007). At the same time, we have evidence at Blue Creek and more broadly of soil erosion (Dunning, Beach, and Luzzader-Beach 2007) and declining productivity. Such evidence of increasing population coupled with increasing demands being placed upon the agricultural production systems clearly point to increasing stress during this time.

By the Terminal Classic, Blue Creek was being dramatically and negatively transformed. At the final moment of their occupation, Late/Terminal Classic, the residents of Blue Creek smashed large quantities of ceramic vessels and other materials on the front of buildings in the Plaza A, the Structure 13 Courtyard on Plaza B and two residential groups at Kin Tan (Guderjan 2004, 2007). At another building, Structure 49, a central shrine in the center of another Kin Tan residential group, another large scale termination deposit marked the abandonment of the group (Hanratty 2008). No activity seems to have occurred in these areas after this date.

Yet, Blue Creek was not completely abandoned. Two Terminal Classic (Daylight Orange) summit caches were placed on Structure R5 and a small enclosure on the summit of the building was constructed (Preston 2007). Atop another building, R21, a masonry residential structure was razed and replaced with a round Yucatecan style shrine (Preston 2007). Façade stones were probably removed from the adjacent Structure R7 for these constructions. In the nearby R9 Patio Group, another Terminal Classic cache with a Daylight Orange vessel and a jade bead was placed inside a newly bench (Preston 2008). So, while the size of the population was rapidly declining, it appears that central authority was diminishing and the remnant population was re-aligning itself with external sources of power, legitimacy and authority.

The Rempel Group or Akab Muclil was an outlying central place during the Early Classic period. However, it was the central place for the residual Early Postclassic population. Numerous burials were placed in and around the small monumental architecture (Padilla 2007). Importantly, Akab Muclil was located adjacent to the Río Bravo and was virtually surrounded by Classic period ditched agricultural fields.

We have yet to make a strong determination of what was being grown in these fields, but Postclassic Maya behavior gives us some indications. By the Early Postclassic, say, 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, Preston, Beach and Luzzadder-Beach 2007). This strongly
indicates that plants such as maize, that requires 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 Rio Hondo area through the city of Chetumal into larger trade networks during colonial times.

If so, we can see the settlement of Akab Muclil as being the residence of a remnant population who continued to exploit the cacao orchards of their ancestors and traded their products down the Rio Bravo and Rio Hondo to Chetumal. The data for much of this evolving narrative of life at the end of the Classic have come to us incidentally while focusing excavations on other purposes. However, we now have re-oriented future research to more completely address this topic.

3. Wetlands Agriculture

Since the discovery of the ditched agricultural systems at Blue Creek in 1996, we have invested considerable energy into better understanding their nature including their functions, dating, and what crops were grown (i.e., Baker 2002; Beach and Luzzader-Beach 2007; Beach, Luzzader-Beach, Lohse and Guderjan 2008; Guderjan 2007). Not only is this a successful and independent research domain at Blue Creek, but as seen in the above discussion, complement and impact all other research domains such as understanding the economic base and political economy of Blue Creek (Figure 3).

Figure 3. Aerial view of Wetlands in the Blue Creek area.

For many, geoarchaeological research by Sheryl Luzzadder-Beach, Timothy Beach and Steve Bozarth has focused on understanding the formation, diversity and use of wetland fields around Blue Creek. This has entailed studying soil stratigraphy, chronology, and chemistry through numerous excavations and radiocarbon dates, water chemistry in numerous samples, ecofacts from pollen, phytoliths, and macrobotanicals, and the surface expression of field systems (Beach et al. 2006; 2008a; 2008b; Luzzadder-Beach and Beach 2008 a and b). Many excavations required constant pumping because the present water table is near the soil surface.

Wetland soil stratigraphy across the field areas was striking and similar across these many excavations, with four units from the bottom upward and the ditches. Unit I was the soil surface that confronted the first Maya farmers. Its high degree of pedogenesis indicates that it required millennia to form, and it had much pollen, phytolith, and charcoal evidence for intensive human use. Based on soil morphology, it was seasonally wet environment, with a water table that had to be more than 1 m deeper. This soil was buried by Unit II, a large flood sometime
between 2300 and 2000 years ago. The thick sand deposit unit may represent a hurricane, and two other sites in the upland bajos also have hurricane evidence that date to this general time (Beach et al. 2008). Unit III represents the Preclassic through Classic period and a deeper burial of the landscape (though a slower one interrupted by one or more periods of stasis). Since Unit III’s sediments are dominantly gypsum and the near surface water table is nearly saturated in the calcium and sulfate ions that precipitate as gypsum, we think the gypsum layer (Unit III) formed as gypsum precipitated from the water table from the Late Preclassic through Classic period. The water table had to rise to the current levels for the gypsum aggradations to occur, and we think the likely mechanism were rising sea level, which lifted overlying freshwater aquifers above them. Unit IV is modern topsoil.

Unit V are ditches that lie around and are about 1 to 1.5 m deep and 2 to 3 m wide, which in most places are too disturbed by plowing, burning, and bull dozing to provide much chronological information. They are mostly excavated through Classic and earlier sediments and had mainly Classic artifacts, though the stratigraphy was too disturbed to provide much more chronology.

Hence, to understand the use of these fields and the chronology of the canals, Luzzadder-Beach and Beach started to excavate disturbed fields discovered from flyovers of the Programme for Belize by Jon Lohse and Sheryl Luzzadder-Beach in 2003. We named these the Birds of Paradise fields because of the thick Heliconia foliage that surrounds the region. Since these field systems lie within the Programme for Belize, we cautiously cleared transects for survey and excavation units, including two north to south and east to west transect brechas through the dense grasses, sedges, Heliconia, and Marantacaeae that cover the fields.

In 2006, we made the remarkable discovery of a uniquely well-preserved field house near the juncture of two of the agricultural ditches (Guderjan, Preston, Beach and Luzzadder-Beach 2007). We have recovered well preserved hewn wood, a digging stick and large quantities of sun-dried daub. This has been radiocarbon dated to approximately 1000 A.D. and is believed to contain a wealth of data regarding what was grown in the fields and behaviors that were occurring within and around the structure. We have now been successful in obtaining support from the National Geographic Society to conduct a highly controlled excavation of the field house and to analyze a wide range of samples and materials that we will collect.

4. Elite Behavior

A fundamental part of understanding how elites interact among each other to create and maintain power structures is to better understand elite behavior and the growth of their authority. We have focused this activity on excavations at the residential groups of Kin Tan, Chan Cahal, Sayap Ha and Rosita (Guderjan 2007; Guderjan, Lichtenstein and Hanratty 2003; Guderjan and Hanratty 2006; Preston 2007). In particular, we were able to locate a tomb that we believe to belong to an elite lineage founder at an important residence at Kin Tan’s Structure 37 Plazuela (Guderjan and Hanratty 2006). Overall, Kin Tan rose to importance within the larger Blue Creek community, we believe, because of the efforts of the founder and his direct descendent who was a shaman and because their lineage controlled critical agricultural resources. By contrast, residents of Chan Cahal and Sayap Ha did not have control over critical resources although they lived adjacent to large-scale ditched agricultural
fields controlled by others. Despite their occasional importance, residents could not transfer power and authority to their descendents (Guderjan 2007; Guderjan, Diel, Giacometti and Andrews, ms.).

A continuing research domain at Blue Creek will be to monitor elite behavior, especially at the beginning and end of the Classic period. By doing so, we seek to build a stronger basis for comparison among non-royal elites as well as between non-royal elites and royal elites and non-elites.

5. DNA Study: Testing Relationships among Ancient People with DNA Analysis

Mayanists and other archaeologists often make interpretations, especially regarding elite individuals, based upon context. For example, I recently argued for a complex model of heterarchial authority at Blue Creek based in part upon such contextual data (Guderjan 2007). DNA information will be used to test proposed relationships among a select sample of human remains and to support the model of interaction among elites. If successful, this approach will serve as a model for testing such relationships in other settings.

The Blue Creek data set is particularly appropriate for this analysis as it is large (approximately 80 individuals) and derived from a wide range of contexts. Further, James Tyler and David Glassman have completed initial analyses and Gabriel Wrobel is compiling a final product dealing with this collection. Consequently, “mining” this data base will not be a complex task. The following are some examples of specific relationships that we will test.

In the core area, relevant burials derive from three locations, Structure 1, Structure 19, and a chultun near Structure 24 (Guderjan 2004). Structure 1, the tallest building at Blue Creek, was an Early Classic pyramid with a colonnaded superstructure. The superstructure was razed at the end of the Early Classic to accommodate Tomb 3. The adult male interred in Tomb 3 may have been a ruler of Blue Creek. Structure 19 is the most central, elaborate and important residence of the core area and, arguably, is the residence of the rulers of Blue Creek. Seven individuals were recovered from a bench, dating from the mid-Classic. These individuals should be the most closely related each other and to the Tomb 3 burial. An adult male was recovered from a Terminal Late Preclassic burial in a chultun in front of Structure 24, which is linked to Structure 19. This individual should be very closely related to the Structure 19 burials, but less closely related to the Tomb 3 burial.

Northwest of the monumental core area is the residential component known as Kin Tan, composed of a series of large scale, masonry residences built on hilltops overlooking rich agricultural lands. Excavations at Kin Tan yielded numerous burials, but only a few are pertinent.

The largest residential group at Kin Tan is the Structure 37 Plazuela, constructed in the Early Classic period around a low central shrine, Structure 34. Under the shrine was an adult male dating to the Terminal Preclassic. We believe this individual was a lineage founder whose descendants lived around his burial for several centuries (Guderjan and Hanratty 2006). Perhaps only one or two generations later, another adult male was buried in Tomb 7 below the plazuela floor, just outside of the shrine. This individual was buried with a jade acrobat pendant and may be a direct descendant of the lineage founder. We anticipate that the DNA analysis will confirm that interpretation.

Chan Cahal and Sayap Ha are both located below the site core on low terraces in the coastal plain, surrounded by ditched agricultural fields. Also in the same vicinity is Deadman’s Hill, approximately 70 meters
tall, an erosional remnant near the Rio Hondo where Tomb 5 was found.

Both Sayap Ha and Chan Cahal are composed of several dozen housemounds and are two of the least wealthy and lowest status components of Blue Creek. Numerous burials derived from these areas, most commonly Terminal Late Preclassic or Early Classic adult males buried under housemounds. One of the most intriguing of these was Burial 2 at Sayap Ha. While this individual’s burial fit the general pattern, he was interred with a pair of jade and turquoise inlaid shell pendants, mimicking Teotihuacan style imagery and a carved bone, bib-style pendant. He may have attained authority during his lifetime, probably through service to the ruling elites (Guderjan 2007). However, unlike the Kin Tan burials, his authority did not initiate multigenerational power and will be the least related to the previously discussed individuals.

Finally, Tomb 5 was an important Terminal Late Preclassic adult male who was interred with two other individuals, one female and one of indeterminate sex, in a large chultun-style tomb on top of Deadman’s Hill. Other burial goods included 27 ceramic vessels laid out in a quadripartite arrangement and more than 200 jade artifacts. The bodies and grave goods were laid upon a thick layer of fish from the nearby Rio Hondo. Tomb 5 incorporates symbolic recreation of the Maya cosmos into death rituals and that this individual was an extremely important member of Blue Creek society. This individual should be more closely related to the individuals in the core area that the Sayap Ha burial, but will also not cluster with the Kin Tan burials.

Summary

While annual field research has been conducted at Blue Creek since 1992, we have by no means exhausted the potential to expand our understanding of the past. In fact, the opposite is true. By constructing our efforts around these five research domains, we can maximize the information gained from individual field operations and the efforts of individual scholars. Further, we can construct our work in a manner that maximizes its impact on major questions regarding the Maya past.

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The dissipation of indigenous languages in Belize is not recorded adequately and is the focus of my project in San Antonio, Cayo, the last Yucatec-Maya speaking village in Belize, where Spanish is becoming more prevalent among the younger generations. In 2005-2006, I conducted an ethnodemographic census of 296 households in order to document the languages spoken and carried out a communication network analysis. This research revealed that Spanish, not English, is responsible for the dissipation of Yucatec. The communication network analysis shows that village life was highly disturbed by the coming of the Pentecostal Church in the 1970’s, the most significant of which being a prohibition on communication among members of different churches. Any inter-denomination communication tends to occur in the more “official” Spanish, rather than in the familial Yucatec. Therefore, the rise of Pentecostalism itself is not directly responsible for the dissipation of Yucatec. Rather Pentecostalism, understood as part of globalization, affects intra-village communication, which then leads to a conscious and willingly accepted loss of local language among the villagers.

Introduction

Most studies investigating processes of globalization and its effect on local cultures stress the rising importance of localities (Appadurai 1996; Castells 2004) and the abilities of local agency and resistance against a global culture. These studies neglect, however, that a majority of the world population willingly exchanges their own culture for a global one. In this paper, I will show how Yucatec culture and language is profoundly influenced by changes in religion in a Yucatec community in the country of Belize. I will demonstrate how the evangelical denomination of the Pentecostal church had a profound impact upon the communication structure in a village and how culture and language are affected by this impact. The disruption in village life caused members of the community to be more receptive to external influences and to willingly exchange their own cultural traits for external ones.

Contrary to other scholars I see little evidence that something unique is created in the place of Yucatec culture and language. Rather a way of life is adapted according to the doctrines of the churches as set up in the United States and thus an equal and indistinguishable life from other communities is established. Contrary to world system theories, however, I do not see the villagers as victims of these developments, but they rather consciously choose to become Pentecostals and applaud the breakdown of their own culture and tradition. This, however, does not mean that in all cases Pentecostal denominations influence indigenous societies in the way described here. In many cases language and certain cultural traits are maintained in spite or even because of the Pentecostal denominations. I will try to outline, that the specific case of the Belize nation state positively influenced the rise of Pentecostalism and its politics are responsible for the dissipation of indigenous language and culture.

Belize as a Nation

Belize as a nation is a unique construction within Latin America (including the Caribbean), because of its composition of Creole and indigenous
groups under English rule in a generally Spanish speaking environment (Wilk and Chapin 1992: 177). After achieving independence in 1981, no group in the country has been dominant as the British were during colonial times. The Creoles, the Mestizos, or any other group, although some groups may well fear that the other group might soon do so, have not become the dominant ethnic group (Bolland 2003: 220). In fact, the political parties of Belize are not ethnically dominated. Participations in political parties often cross cuts rather than reinforce ethnic identities and this is one of the reasons why ethnicity never became a political issue (Bolland 2003: 213). The voting habits in Belize defy any simple explanation of racial or ethnic, even rural or urban affiliation to one party (Bolland 2003: 214f.). Instead of promoting ethnic boundaries, the political parties in Belize actively try to draw votes from all groups. Therefore the ethnicity of the various Maya groups is less politicized than in Mexico and cannot be instrumentalized easily for political purposes. However, certain political representations of ethnic minorities play an important role on the national level, such as the Toledo Maya Cultural Council (TMCC), the National Garífuna Council (NGC), and the United Black Association for Development (UBAD).

The Yucatec Maya has not established any organization like the TMCC, only an informal society called Kuxtal Masewal mainly concerned with smaller publications (Tzul 1993). Overall the Maya organisations seek no political claims, and certainly do not establish any common Maya identity in Belize. Especially the Yucatec Maya who are not highly visible on the national political and economic forefront (Stone 2000), as if they have been assimilated totally. This “low profile” on the national tableau reflects the general national politics that did not and do not politicize ethnicity and thus make it unnecessary for ethnic groups to defend their identities.

The Yucatec Maya in Belize

The Yucatec Maya in Belize are descendants from refugees of the Caste war in Yucatan, a peasant-indigenous movement against the Spanish rule (Dumond 1997). In this war a large group of Maya, called pacíficos chased by the fierce Chan Santa Cruz Maya warriors, fled into the British colony Honduras and settled in villages around San Pedro (Jones 1997: 141ff.). After quarrels with British officials (Bolland 1977) and a terrible journey through Guatemala most of the Maya settled in the northern regions and some founded the village of San Antonio in the Cayo district (Jones 1977: 168; Tzul 1993). Their expulsion from Mexico by their own peoples created a traumatic experience which led to the probable loss of much of a historical memory among the Yucatec Maya of Belize.

San Antonio, Cayo District

The field site for the study, San Antonio, was founded in 1876 by Yucatecan refugee groups at the foothill of the Pine Ridge and Maya Mountains (see Figure 1). Currently (October 2006) there are 1,760 people living within the defined boundaries of San Antonio Village, from the dwelling of Sak Tunich midway between Cristo Rey and San Antonio to the crossing at the Caracol Road.

Methods

This study combines several methods to investigate the use of an indigenous language in combination with Spanish and English in a modern indigenous village in Belize. I conducted an ethnodemographic census of 296 households (99.7% of all households). The questions I asked pertained to names, birth, kinship affiliations, work, and education. In addition I specifically
Pierre Robert Colas

Figure 1. Belize and Location of San Antonio (taken from Dumond 1997: 333)

asked questions about proficiency in language, parents languages, daily discourse languages, and religious affiliation. I also conducted an ego-oriented communication network analysis that devoted attention to questions about friendship relations. The questions regard matters of communication about personal issues, religion and politics, for example, from whom one would borrow money, and who would be worthy of trust to take care of one’s children and house. Through these two major methodological approaches the use of different languages among different people were investigated. I interviewed all people in Yucatec Maya unless they only spoke either Spanish or English. I provide here only the translations of the interview sections.

The Loss of Yucatec Maya

Discourse in the village is mainly conducted through Spanish and Yucatec Maya and to a certain degree through English and Creole, which is the main discourse language in the schools and colleges. 156 persons speak English or Creole as main languages, two languages that were not distinguished for the purpose of this study. The majority of people (975) speak Spanish as a main language, although this group mainly consists of children. Six hundred and two persons speak Yucatec Maya as their main language. Four people interviewed spoke Mopan Maya as their main language. For several others, the main language they spoke could not be determined.

This study tried to distinguish between a main language that was spoken and second languages. The competence in a language was divided into three rough categories. The first of them being speak, which referred to the overall ability to carry on conversations in the particular language. The second category was understood, referring to the ability to understand conversations in a particular language. The category nothing relates to people not being able to understand and follow a conversation. Figure 2 indicates the competence in Yucatec Maya by ages. This chart shows a clear tendency towards the loss of Yucatec Maya. While more than 90% of the people born before 1946 speak Maya, less than 10% of the children born after 1995 still speak Maya. Therefore, it can be said, that it is very likely that Yucatec Maya is in a process of dissipation. My general participant observation backs this observation and specific interviews conducted exhibit the same perception on the side of villagers. The interview conducted related to changes in life in San Antonio and was conducted with a male who had lived all his life in San Antonio and is a native speaker of Yucatec. Regarding what had changed one of his answers was:

N.K., male, * 1974

"Before [they spoke] only Maya, where ever you went, only Maya, even in
school, only Maya. Today, the children that go to school, only Spanish they speak, only a few still speak Maya that changed a lot, a lot”.

This section of the interview shows that the change in language competence is also an emic view of the villagers and not only the result of etic tabulations. In search for the reasons of the dissipation of Yucatec Maya the most common answer was that today people are ashamed to speak in Maya, as the following section of an interview shows.

* D.Z., female, * 1978
“Today the children that grow up do not learn anymore [Maya], they are ashamed to speak [Maya]”.

This however reflects the people’s own interpretations of the process observed and not any specific attitudes towards language. In fact, all persons that analysed the situation in that way added that such a feeling towards the language is absurd. Neither of the languages spoken in the village is definitely connected with a certain set of either positive or negative values, rather it is their spatial occurrence that is commented upon.

* Figure 2. Competence in Yucatec Maya by ages

Figure 2 illustrates the competence in Yucatec Maya of people (mostly children) whose first language is Spanish and English. As can be observed, less than 10% of the children raised predominantly in Spanish still speak Yucatec Maya and use it in discourse, while more than 25% of the children raised in English also use Maya for their daily discourse. This leads to the conclusion that Spanish rather than English is replacing Yucatec Maya as the daily discourse language.

The changing religious affiliation of many people provides another possible explanation for the dissipation of Yucatec Maya. San Antonio is characterized by the presence of a variety of churches in its village. One thousand and ninety nine villagers count themselves as belonging to six different Pentecostal denominations and 66 persons visit the Jehovah’s Witness Church, while 132 villagers do not attend any church. The history of the Pentecostal churches is a relatively recent one in the village of San Antonio. Lorenzo Tzib founded the first Pentecostal church in 1962 (Tzul 1993: 102ff.). Today about 70% of the people of San Antonio are members of a Pentecostal church. As Figure 3 shows, members of the Pentecostal and the Catholic churches exhibit hardly any differences regarding the competence in Yucatec Maya. In both types of churches more than 40% of the members still use Yucatec Maya in daily discourse but more than 50% do not understand it. In San Antonio Pentecostal Churches do not have a direct influence on language acquisition. Rather, as I will try to show, the structure of communication is responsible for the dissipation of Yucatec.

**Breakdown of Communication**

During the course of the interviews an especially deep divide between members of different denominations, mainly between Pentecostals and Catholics became apparent.
Each group accuses the other one of being responsible for the deep divisions within the village resulting in little communication between the different groups. Mostly members of the Pentecostal denominations accuse Catholics of disrupting village life with drinking and fiestas, as is shown in the following section of an interview.

C. O., * 1932, pentecostal
“I was catholic, but nothing, until people left [Catholicism] bad fiestas were here, imagine, they went make a Mass, stuff like that when you come back, you become drunk, you fight with your own people you are drunk, you see, things like that are not good, you don’t need it. He did it, but a Christian, when he found god, stuff like that ended. There is nothing of this. You forgot it.”

Catholics on the other hand often accuse Pentecostals of being outright bad peoples, as is demonstrated in this interview.

S. E., *1935, catholic “Many people today are religious, but when they leave [church], they are doing something else; they do more bad things than you, and that is true”.

These accusations go along with social stigmatization that further divides the different groups. In the following section of an interview a Pentecostal is describing what he thinks of the social practices of Catholics.

C. O., * 1932, Pentecostal
“Only bad things, one says ... this ... devil, you know what kisin is? That is him, they only do the work of the devil, that is what they do”.

All of this leads to very limited communication within the village, as is apparent from the next interview.

S. Z., * 1940, Testigos de Jehova
“Pentecostal no, he says this guy is worldly, he says, I do not talk with him, I do not converse with him, I do not deal with him because he is worldly, but I am not worldly, I have salvation, he says”.

The issue of having salvation or not having salvation cuts deep into the heart of the village. This results in many villagers not talking to each other. This profoundly affects the structure of communication, as is discussed below.

Structure of Communication
In the course of the project I prepared a large communication network analysis that has yet to be analyzed. Table 1 shows the methods of this ego-oriented communication network analysis. All names and connections are fictive and no real communication relations are shown. The questions asked during this ego-oriented communication network analysis pertain to the Fischer questionnaire of ego-oriented networks (Jansen 2003: 84). The Fischer questionnaire was designed to investigate ego-oriented friendship relations. The questions pertain to communication about personal matters, religion, politics, from whom one would borrow money, who would be worthy of trust to take care of one’s children and house, etc. These
questions were asked to all 296 households interviewed.

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Table 1: Example of ego-oriented communication network; names fictive

As shown in Table 1 the first row lists the number of households that were questioned. The second row lists the heads of the respective households. The first column lists the people indicated by the heads of the households as having communication with them. From table 1 it can immediately be seen that only Tzib has more than one contact. He is the major hub of communication. A preliminary analysis of the communication network analysis reveals that contacts are restricted to three contacts at the most. These contacts are restricted either to the core family or the church. Unfortunately a statistical analysis of these contacts is not available, but both family ties and the ties of the church seem to cross cut.

At this point I cannot determine, whether the family affiliation or the church affiliation is stronger, and it is a question to be investigated in the future. The five major hubs of communication in the village are five pastors of Pentecostal churches. A very preliminary result is that communication in the village is heavily influenced by the Pentecostal churches and there is little to no significant inter-parish communication in the village. Occasional inter-parish communication exhibits a few interesting results. In the following interview section a member of the church of Testigos de Jehova is describing his communication with one of the village’s high officials, who attends the Pentecostal church, again with fictive names.

PRC: “With Canul you speak in Spanish? Why, doesn’t he speak Maya?”
B.L.: “He does not speak with me in Maya”
PRC: “He cannot speak Maya? Yes he can!” B.L.: “No, no. When I speak in Maya he answers in Spanish”

This section of the interview shows that in some cases inter-parish communication of two native Yucatec speakers occurs in Spanish. I conclude from this that inter-parish communication moves from the more familial Yucatec Maya to the more official Spanish and English and Yucatec is banned from official discourse in the village. While this certainly might be the case in many instances, I have observed abundant inter-parish communication in Yucatec as well, however, mostly restricted to families. It can therefore be stated that official non-family-tied communication between native Yucatec speakers tends to be conducted more and more in Spanish rather than Maya, although this is not an exclusive pattern. However, this has an effect upon Yucatec as the official language spoken in the village. Outside of San Antonio in all official and unofficial conversations either English or Spanish is used. If even inside the village Yucatec Maya is banned from official discourse, it loses much of its former significance, especially within the village as discourse language. Tied with the notion of a general breakdown of communication within the village Yucatec Maya is used less and also cannot serve as a general feature of identification for the Yucatec either.

Conclusions

The results presented here are of a very preliminary nature, because the ethnographic field work has just ended (July 2007). Many data await even preliminary analysis. The purpose of this paper has been to document the indigenous language loss in
a Yucatec village in Belize and to propose a few preliminary ideas in the processes underlying this language dissipation.

In this paper I argue that no single phenomenon causes the loss of Yucatec Maya directly, not even the rise of the Pentecostal churches. Rather the churches influence the communication structure within the village in such a way, that Yucatec looses its significance as a daily discourse language and also in political matters. Villagers then use Yucatec less and less and finally abandon it. However, the phenomenon of Pentecostalism is not restricted to Belize as it can be observed in large parts of Mexico and Guatemala, to varying degrees. Thus the question arises, why the impact of Pentecostalism does not lead to language loss in many villages in Mexico, while its influence was so profound in San Antonio. In addition it may be added that neighbouring villages such as Succotz were purely Yucatec villages a century ago (see Thompson 1930), which also includes Cristo Rey, Bullet Tree, Santa Familia, and Benque Viejo del Carmen. In all these villages traditional Yucatec traits are gone, including the language which is extinct today in every one of those villages except for San Antonio itself. Therefore, the loss of Yucatec culture and language is a regional wide phenomenon in western Belize that has to be explained in opposition to the K’ekchi and Mopan Maya that maintain much of their traditional cultural traits and especially their language.

One of the answers can be sought in the cultural politics of the modern nation state of Belize. As Nigel Bolland has noted the labour system in the 19th century separated the different ethnic groups so that they did not compete with other groups over resources. Further, the modern political parties in Belize consciously do not enhance ethnic boundaries but rather draw votes from all ethnic groups, in order to succeed at the national level. All of this leads to a process of depoliticization of ethnicities within Belize. While discrimination of one group by another group leads often to strengthening of communities, the lack of discrimination in Belize leads to the weakening of the ethnic awareness of communities. Since ethnicity is never made public, its significance for local people decreases. This type of Belizean politics had, however, no profound impact upon K’ekchi and Mopan villages; at least not to the degree it influenced the Yucatecan culture. The answer to this question probably lies in the history of the Yucatec Maya of Belize. As has been shown above, the Yucatec Maya are the descendants of refugees from the Caste War that fled from their own people into the formerly British colony. This probably created a traumatic experience resulting in the loss of any historical memory of the Yucatec in Belize (Colas n.d.). Therefore, the Yucatec Maya, now disassociated with their homeland and culture are less cognizant of their historical roots and cannot use them to define themselves or strengthen an ethnic awareness.

Under these national and local circumstances of a weakened ethnicity Pentecostalism was able to rise faster and stronger than in other communities of Mexico where a strong ethnic awareness often hindered the entry of Pentecostalism into villages or severely restricted it. Global phenomena like Pentecostalism only achieve significance within a national and local context. Nations and localities are never only victims of global phenomena, but they actively reject, accept, or differently use global flows. The national context of Belize with its depoliticization of ethnicities and the local context of the Yucatec with the loss of historical memory facilitated the rise of Pentecostalism and as San Antonio villagers embrace new concepts, they willingly
accepted the loss of their Yucatecan culture and language.

Acknowledgements I want to thank all villagers of San Antonio for their warm welcome and their kind cooperation during my two year long stay. I want to thank the Institute of Archaeology for granting permission for this research, especially Jaime Awe. I am grateful for the Deutsche Forschungsgemeinschaft that generously funded my project for two years. Further I benefitted greatly from conversations with Ortwins Smailus, Fernando Tzib, Nikolai Grube, Alfonso Tzul, and especially Sergio Romero.

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THE (MACHI) PROJECT IN BELIZE: BRIDGING THE PAST AND THE PRESENT THROUGH A PUBLIC EDUCATION PROGRAM IN THE TOLEDO DISTRICT, BELIZE

Reiko Ishihara, Morvin Coc, Shoshaunna Parks & Patricia A. McAnany

The Maya Area Cultural Heritage Initiative (MACHI) was developed to investigate the issues and challenges confronting the conservation of Maya cultural heritage and to define potential long-term solutions. The first phase of the project revealed that a lack of rapport and information-sharing between archaeologists and descendant Maya communities represent one of the fundamental reasons that lead to the destruction of archaeological sites by urbanization, development, and looting. Based on interviews, MACHI contends that economic incentives through tourism development alone are not enough to deter further damage to the archaeological heritage. Rather the mission of MACHI is grounded in the belief that knowledge of the archaeological remains and affirmation of cultural connections to the past will promote the appreciation of ancestral heritage. Collaborating with the local NGO, the Julian Cho Society, MACHI-Belize was initiated in February 2007, and consists of a series of workshops led by a trained local Maya lecturer in the Q'eqchi’ and Mopan communities of Toledo District.

Introduction

The bittersweet relationship between the conservation of Maya cultural heritage and the developing world is something of which the archaeological community is astutely aware of. In both ancient and modern forms, including Pre-Hispanic monuments and sites, language, spirituality, and oral and material traditions, there has been a slow seepage of Maya cultural heritage through the proverbial cracks of the post-modern world. Modernization and development, globalization and the forging of national identities, and deep-rooted poverty and socio-cultural marginalization, have all played a part in contributing to extensive loss of historical and cultural heritage. Ignorance of the importance of Maya cultural heritage spans social and ethnic divisions. Even among Maya descendants, a rift has occurred such that the traditional mechanisms used in defining identity, such as spiritual affiliation with ancestral sites of Maya occupation, have been pushed aside and re-fashioned through the eyes of Western religious, educational, and political systems.

In 2006, the Maya Area Cultural Heritage Initiative (MACHI) was conceived as a means of addressing the causes affecting the survival of Maya cultural heritage throughout the region. Despite awareness within the anthropological community of the loss of tangible and intangible heritage in the Maya region, little comprehensive information exists regarding the form and extent of the damage. This is particularly true in terms of archaeological sites. Though a handful of studies have been published addressing the looting of archaeological sites in specific areas, few of these have included the data necessary to place the form of looting in one district or nation within that of the wider regional context (see Gilgan 2001; Luke and Henderson 2006; Paredes 1998; Pendergast 1991). Furthermore, while looting has become the scapegoat for much of the archaeological destruction that has taken place since the 1970s, there is rare mention or intensive investigation of other, often more devastating causes such as urbanization and development.

Conservation of Archaeological Heritage

Preliminary research and investigations undertaken by MACHI under the direction of Patricia McAnany were,
therefore, aimed at understanding the present dangers faced by archaeological heritage throughout the five countries of the Maya region: Belize, Guatemala, Honduras, El Salvador, and Mexico. Along with McAnany, Parks and Murata whom visited archaeological sites in each nation and conducted over 60 interviews with archaeologists, government officials, anthropologists, museum curators, Maya leaders, and non-governmental organizations. Through the course of these investigations, many potential short and long term forms of mitigation became apparent (Parks et al. 2006). Firstly, and perhaps above all, there is an economic force at work that regularly undermines archaeological conservation. As developing countries, many of the regions invested with archaeological remains are experiencing increased urbanization and tourism, the infrastructure for which many Pre-Hispanic Maya sites have been destroyed.

Similarly, as in developing countries with limited industry and employment opportunities, much of the looting that takes place in the area is not performed by large troupes of organized workers but by rural people opportunistically attempting to provide income for their families. Certainly increased economic opportunities, particularly in rural areas, could help to decrease these forms of looting by providing legal economic alternatives to the plundering of archaeological sites, but just as casual, opportunistic looting of archaeological sites continues to occur in first world contexts such as the American Southwest (Colwell-Chanthaphonh 2004), increased employment opportunities alone are unlikely to provide a sustainable solution to the problem.

Secondly, throughout the Maya region, there is a clear need for increased protection of material cultural heritage. While legislation protects archaeological remains in the five nations of the region, effective enforcement of those laws is rare. In many rural regions, security forces are minimal (if they exist at all), allowing a general climate of lawlessness to pervade. In the absence of law enforcers to prosecute those responsible for trafficking looted antiquities, few are aware that such laws exist at all. In western Belize, for instance, David Matsuda (1998) points out that the antiquities pulled from Maya sites are considered “seeds” from the earth to be used for the benefit of local people, in the same manner that wild plants and trees are used for food, building materials, and medicines. Without direct experience with the law in this aspect, there is no reason for many people to suspect the illegality of the removal of artifacts from Pre-Hispanic Maya sites. This holds true for the multitude of sites unrecorded by archaeologists. Ultimately, while increased law enforcement may serve to better protect more accessible sites, vigilance over all would be virtually impossible.

Finally, among the general population there is little knowledge as to the meaning of Pre-Hispanic Maya sites. Pre-Hispanic periods of national history are often given no more than a cursory evaluation in primary school education, if they are addressed at all. Even in those countries where primary school education provides information about the nation’s most treasured archaeological sites, people living in close proximity to unexcavated sites are rarely provided with the tools required to make the connection between a restored Pre-Hispanic temple and a large earthen mound. Similarly, cultural heritage conservation, unlike environmental conservation, is rarely an element of formal education. Civil society, too, has failed to take the same initiative in protecting archaeological remains as it has in
protecting endangered animals, oceans and rivers, and forest-land.

Despite best intentions, archaeologists have also done little to educate the public about the information they learn about the past or the importance of archaeological remains. The result is the exacerbation of the delicate relationship between local people and archaeological remains, imparting former workers with the knowledge of where they dig but not why. While all archaeologists are deeply vested in publishing their findings, the vast majority of these publications appear in academic venues with limited distribution outside of the field. Even those articles that appear in more accessible magazines such as National Geographic are rarely made available to the rural communities that have hosted archaeological projects and others in the area. Archaeologists, just like the economy, law enforcement, and educational systems of the Maya region, have contributed to loss of Maya cultural heritage by failing to demonstrate the value of archaeological remains to local populations.

The threats facing the conservation of archaeological remains in the Maya region and the primary solutions we have enumerated each indicate that local populations have become disconnected from the meaning and importance of the Pre-Hispanic past. Thus, communicating the multiplicity of value attached to Maya cultural heritage is central to the objective of MACHI. Trained as educators in the field of archaeology, it only follows that education is the most effective means by which MACHI can contribute to the sustained survival of Maya cultural heritage by strengthening the relationship between local people and the Pre-Hispanic past.

To this end, in January 2007, MACHI initiated collaboration with non-governmental organizations (NGOs) in four regions of the Maya area: the Toledo District, Belize; the department of Peten, Guatemala; the Copan region of Honduras; and the state of Yucatan, Mexico. Together, MACHI and its local partners have worked to develop grassroots educational programs that provide information about Pre-Hispanic Maya civilization, enforce cultural connections between modern and ancient peoples, and encourage archaeological conservation through informal conduits. As initial attempts at identifying the types of education most appropriate for discussing Maya cultural heritage, we have taken different pathways in each region including community workshops, radio soap operas, puppet shows, and primary school programs. In addition, MACHI is working to develop booklets and children’s coloring books about Maya cultural heritage and archaeological conservation for distribution within and outside the context of its core educational programs. While each of the educational projects developed by MACHI and its local collaborators are primarily concerned with fomenting archaeological conservation, they also seek to promote forms of modern Maya cultural heritage by engaging directly with Maya communities through the use of maternal languages in written and broadcast materials and the discussion of Mayan spirituality and cultural traditions. Finally, sustainability of the educational objectives of MACHI remains a long-term goal of the project with the hope of expansion or institutionalization of those programs initiated in the first year as a means of investing local populations, particularly children, with an interest in protecting Pre-Hispanic Maya cultural heritage.

The MACHI-Belize Program

Collaborating with the Julian Cho Society (JCS), an NGO based out of Punta Gorda which focuses on indigenous land rights, the pilot program of MACHI-Belize
consists of public workshops discussing aspects of ancestral Maya culture and conveying the importance of archaeological conservation in the Maya communities of the Toledo District. In keeping with both MACHI and JCS objectives, we hope that increased access to information about prehispanic cultural heritage will help contribute to conceptions of indigenous identity through an interest in stewardship over ancestral sites. Additionally, taking Dr. John Morris’s words to heart that what you say “is just as important as what you leave behind,” MACHI and JCS have produced a booklet on the same theme in English, Q’eqchi’, and Mopan that is distributed within each community. The booklet can be accessed online at: www.machiproject.org.

With long-term sustainability in mind, the workshops are led by a local Maya lecturer, Morvin Coc, who is a staff member with JCS. He was selected to be the trained lecturer, in part, because of his background as a schoolteacher. Reiko Ishihara was hired to design the workshops and conduct the training sessions.

The training phase of MACHI-Belize took place in February 2007 at Orchid Gardens, located outside of Belize City, where McAnany’s Boston University field school was based. To assist in the training process and workshop preparation, MACHI purchased books, educational films on DVD, a multimedia projector, and a laptop. JCS purchased a generator to be used primarily for the workshops in rural communities without electricity. Additional books and DVDs were donated by Dr. Jaime Awe, as were other relevant archaeological literature by Ishihara; the books and films are now housed in the JCS Resource Center.

The training sessions for Coc were comprised primarily of individual lectures supplemented by films, evening group lectures, field and lab work experience at the archaeological site of Witz Cah Ahkal, and field trips to Altun Ha, Lamanai, Nim Li Punit, Lubaantun, and Uxbenka.

The lectures and discussions cover basic topics in archaeology, Maya prehispanic history, and cultural heritage conservation. The structure of the lectures followed six themes which would later be organized into PowerPoint presentations for the workshops: 1) Ancestors and their Cities; 2) Food and Economy of the Ancestors; 3) Crafts of the Ancestors; 4) Religion of the Ancestors; 5) Writing and Calendars of the Ancestors; and 6) Women in Society. An additional presentation was created for school children. The workshops are held in the local Maya languages: Q’eqchi’, by Coc for the Q’eqchi’ speaking communities and a Mopan translation is provided by active JCS volunteers and staff such as Mr. Jimmy Boucher and Ms. Ana Cal Garcia for the Mopan speaking communities.

Each workshop follows the same basic template. It begins with an introduction of who the ancestors were, and continues with the assertion that the sites and mounds in Toledo and across Belize are the old homes, cities, and burial grounds of the ancestors. Then some reasons why artifacts should not be removed out of the ground are discussed. Next, the process of archaeological research is briefly outlined to inform people of what archaeologists seek and why they conduct their work. This is important because there is a common misconception that archaeologists themselves loot Pre-Hispanic materials and carry them out of the country for sale. Slides within the workshop are designed to emphasize both the intensity and the deliberateness of the excavation process, as well as the concept of archaeological context. Above all, this section emphasizes that the information and artifacts collected by archaeologists are for the benefit of all Belizeans; although many artifacts are
removed from the communities in which they originate, they remain safely inside the country. Maps of the Maya area are presented to show the wide geographical extent of the Maya ancestors followed by a timeline of Maya Pre-Hispanic history to show that the Maya continue to live and prosper after 3000 years of civilization.

The presentation ends with a discussion of why archaeological sites should be conserved. Here several reasons are provided including the information that can be obtained from the remains of the past, the uniqueness of each site, and the connection between ancestral sites and modern descendants. The possible economic benefits of the protection of sites are also emphasized, particularly in terms of cottage industries associated with archaeological tourism.

The first JCS-MACHI workshops were launched on March 11, 2007, in the communities of Santa Cruz and Santa Elena. At the onset of the project, there were plans to visit 29 communities at least twice this year. Ten of these villages are adjacent to archaeological sites that have already been developed or have ongoing archaeological investigation.

Workshops in Progress, Challenges, and Future Directions

In July 2007, following completion of workshops in 23 communities in the Toledo District, MACHI and JCS conducted an evaluation of the program’s strengths and weaknesses. During its first phase, the program encountered a number of challenges, primarily in the organization of the workshops and in communicating its content and objectives. Direct communication with village leaders, that is, the traditional means of approaching communities, proved difficult, as letters sent with local buses or community members never reached their destination and direct organization with community leaders was met with resistance. In many communities, workshops that were organized did not generate much interest among residents, in some cases ending up in the arrival of not a single participant. For many, daily responsibilities conflicted with the attendance of a workshop. Others had no interest in the subject matter, failed to see the benefits of attending the workshop, or simply did not have the information needed to make an informed decision about participating. In terms of content, with little formal education, many Maya people in Toledo were somewhat overwhelmed by the way in which the information was presented. The PowerPoint model has proved to be too rigid and complex to get people interested in, or even to fully understand, the subject. In general, the sentiment among those who have attended the workshops is that the subject and presentation would be more effective for children.

Due to the disappointing initial response we received in many communities, Parks and Coc worked together to completely revise the presentations, themes, and interactive activities to make them more appropriate for children, according to the advice of participants. Coc approached the principals of local schools to request permission to conduct the workshop twice in each community during the final months of 2007. Each 45-minute workshop would be conducted in Standards 5 and 6 (and occasionally Standard 4) and would address different themes using games, images, and film.

The immediate response of teachers in communities throughout the district has been positive. They understand the workshops as a means of enhancing educational lessons about the modern and ancient Maya – a theme that they are still grappling to learn after its recent introduction into nationwide primary school
curricula. Many principals at schools outside those identified for workshops by JCS have approached Coc to request their own workshops on the subject. Nevertheless, the JCS-MACHI collaboration still faces a number of challenges to its effectiveness.

While it is a primary goal of the program to provide Maya people with greater access to the knowledge unearthed by archaeologists, information from which, historically, they have been largely disenfranchised, the program is limited by the time it is able to spend within its target communities. Schools are visited for 45 minutes each, once every two to three months. While this is a positive first step in improving the visibility of information about the Pre-Hispanic Maya and archaeological conservation, the workshops at each school are not frequent nor consistent enough to have an impact on children who see the occasional workshop as just another regular lesson in their school day. The presentation of the material, despite completely reworking the information, remains static and common. Children’s participation has somehow become secondary to the obligation of presenting the information. Furthermore, the images and film shown to the children suffers from a lack of explanation. The students who participate in the program appear to be interested only in those parts of the workshop that demand their interaction or provide facts in an interesting and dynamic way.

Finally, JCS and MACHI still must negotiate the way in which information is disseminated. By approaching children through the school environment, rather than in places outside the walls of the state-sanctioned institution, the workshop becomes just another arm of national education. In order to break down barriers to education about Pre-Hispanic peoples and cultural identity, so too must the presentation occur in new spaces that are not necessarily associated with colonial and postcolonial educational systems. The community itself is instrumental in this process. Rather than approach children through school programs, the collaborators might reach their goal more effectively by working with community leaders and parents to incite dialogue about what their children should learn about their past and how this learning should take place.

Summary

As educators we know that the awareness of the importance of cultural heritage conservation is not something that can be achieved overnight. MACHI, in collaboration with the Julian Cho Society, is only at the start of this endeavor. Nevertheless, as development and tourism increase in the Toledo District, it becomes more and more important to provide Maya descendants with the tools needed to evaluate and present their ancestral cultural heritage. MACHI and JCS will continue to adapt their methodologies with the ultimate goal of constructing an educational program which will bolster the cultural identity of Maya peoples by inciting them to take an interest in the stewardship of their cultural patrimony.

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This paper discusses the ritual activities that took place in Plaza 1 and their possible significance at the medium-size center of Yalbac, central Belize. When we began test excavations in Plaza 1, our goal was to collect chronological data. However, instead of the expected sequence of floor-ballast, floor-ballast, we came upon a complicated stratigraphy. We exposed a stepped platform, as well as intriguing artifact assemblages; for example, several contexts yielded a ‘recipe’ consisting of ashy soil, jar and bowl rims, handles, lithics, faunal remains, and shells (Pomocea, jute, and Nephronaias). By the end of the 2007 season, and without reaching sterile soil, we had identified at least 17 architectural features; and the ceramics from a lower stratum indicate a predominance of Barton Creek ceramics (300-100 B.C.). Plaza 1 is the most restricted plaza at Yalbac and the only plaza without temples and is surrounded by the acropolis and three range structures. The Maya clearly considered the plaza center to be of some significance and frequently conducted specialized activities, most likely royal over a long time period.

Introduction

Yalbac, a medium-sized center in central Belize (Figure 1), had rulers with some degree of power based on the presence of a 20 m tall acropolis with status linked attributes, including red painted walls, vaulted ceilings, a roof comb, a molded and plastered throne bench, thick, smooth and hard plaster floors (5 cm+), thick walls (0.7-1 m), and painted stucco decoration (Hooper 2004a, 2004b). Plaza 1 is the only plaza of the three at Yalbac without temples; it is surrounded by an acropolis and range structures (Figure 2). It is also the most restricted plaza, and is raised as well. It would have been difficult, if not impossible, for people to witness Plaza 1 events from its entrance, which one reached by a staircase. In contrast, Plaza 2, the most accessible plaza, where the Maya likely participated in public ceremonies, has the only ballcourt, the largest temples, and the largest Plaza area. While Plaza 3 is slightly more restricted than Plaza 2, it has three large temples and a large plaza, and also likely served a public function.

Our original goal was to collect comparable chronological data from Plaza 1 to those we have collected from the center test pits in Plazas 2 and 3 excavated in 2001 (Graebner 2002a, 2002b). However, instead of the expected sequence of floor-ballast, floor-ballast at the excavations in Plaza 1 test pit (2 x 2 m), we came upon a complicated stratigraphy - the Maya clearly

Figure 1. Location of Yalbac
Royal Rituals at Yalbac

had conducted specific activities frequently and over a long time period. They also maintained and built over earlier phases, and clearly dug into earlier phases to place things and/or to make way for newer building programs. And there can be little doubt that they performed termination rites throughout the centuries, indicated by lots of evidence for burning. We also recovered ceramics dating from the Late Preclassic (or earlier) through Late Classic periods. While we have not completed excavating this test pit, we have exposed enough to begin to piece together the story of Plaza 1 activities.

The test pit datum is located 25.42 m from \( \Delta \)YC at 15°29'50" (75.24 m asl) (taken in the 2005 season). The topsoil (101) yielded a high density of sherds, shell, a speleothem fragment, obsidian, mano fragments, and chert items. We also came upon a cross-shaped wall or feature consisting of two-courses of cut and un-cut boulders. From near the wall on top of the upper most plaster floor (103, 4-6 cm thick with a pebble and cobble ballast), we recovered Belize Red McRae Impressed sherds (c. A.D. 700-900) from wall fill (102) representing at least five different, incomplete vessels. There are several thick plaster floors and ballasts. One floor ballast (104) consists of large flat limestone blocks with a sandy loam fill (with c. 15% cobbles). We recovered six speleothem fragments, freshwater shell and sherds, some of which appear to date to Floral Park (c. A.D. 200-300), as do other sherds (Monkey Falls, and Uaxactun Unslipped Ware). The undulating plaster and cobble floor underneath floor/ballast 104 (105) yielded Sapote Striated sherds dating to Barton Creek, or 300-100 B.C. Once we removed this floor we came upon two different strata; 107 in the west part and 106 in the remainder. Stratum 107 is a possible uncut boulder wall or a boulder fill. Many of the construction events took place on top of the plaza surface and were concentrated in a relatively small area in the plaza center.

We had originally identified the Preclassic bowls and jars as Jenny Creek or Middle Preclassic. However, based on discussions with several people at the 2007 ceramic workshop, everyone agreed that 109 and 118 strata ceramics were mostly Society Hall variety followed by Sierra Red bowls (see Gifford et al. 1976:85-87, 90). Further, Laura Kosakowsky noted that we should not expect to find ‘plates’ in the Late Preclassic since they are rare and the typical Late Preclassic assemblage includes jars, bowls,

Figure 2. Yalbac with Plaza 1 TP noted

Plaza 1 Excavations

I will briefly summarize the 2004 results (see Lucero 2005). We began with a 2 x 2 m unit oriented 15° over what we thought to be a 2 x 2 m platform (.16 m high) in the center of Plaza 1. Once we started excavations, however, we soon realized that our unit had missed the ‘platform.’ We moved the unit south and west to incorporate the architecture we had exposed in the southwestern corner. We also changed the unit orientation to 300°.
In 2005 (see Lucero 2006), we removed the backdirt and continued excavating stratum 106, a thick marl/plaster fill deposit with soft marl cut stones in the eastern third of the unit. We used the original 2004 datum located 31 cm from the southwest corner at 240, 14 cm above the surface. Stratum 106 was quite thick with lots of artifacts including ceramics and shells. This stratum covered stratum 108, within which (i.e., the Maya likely dug through parts of 108) were several layers of concentrated artifacts within grayish ashy sandy clay loam including a high proportion of jar rims followed by bowls and handles, a few lithics, and unmodified *Pomocea* shells, jute shells, and *Nephronaias* shells (Figures 3 and 4). A similar proportion of artifact types were recovered from strata 112 and 115, as well as cache 108 (changed to 108A, to which we added cache 108B&C, and 108D), suggesting that they actually represent the same event or similar events conducted several times. The different cache 108 designations reflect different concentrations of artifacts. The artifact assemblage was so consistent throughout these strata that there almost appeared to be a set assemblage, a recipe if you will, of whole and broken items. Other artifacts added to the ‘mix’ include a quartzite biface tip, chert blades and flakes, faunal remains (e.g., bird bone, rodent teeth, a carved tooth, etc.), filed human incisors, a notched obsidian blade, and a few other items. We removed most of the stratum 108, revealing 109, which is represented by a small portion on the extreme south side. We did not have time to excavate fill 109, a small boulder dry core fill.

Due to the similarity of these strata, we inadvertently dug through several strata, which were only recognized when profiling the West Wall. Stratum 110 (cobble and sandy clay fill), was dug through while excavating 107; and was noted in the northwest corner of the unit. Once we realized this, we began excavating 107 and 110 separately, though not much was recovered from 110. Also missed were plaster floor 111, fill 112 (underneath 111), and fill 113 (loose cobble and sand fill). Fill 113 is found beneath 107 and did not yield any obvious artifacts. At first, it appeared that stratum 112 cut through floor 114 (over 115); however, once we removed floor 114, strata 112 and 115 appear to represent the same event/deposit. Artifacts from 112 were largely concentrated in the north side.
In the northeast corner underneath 112 we exposed stratum 117, a white marl or plaster fill with medium boulders, which we did not excavate. Stratum 116 may have been a wall.

Floor 114, which did not extend much beyond the northwest corner of the unit, appeared to have been cut into by strata 112 and 115. Further, in the center north area underneath three boulders is a small bit of plaster floor that is on top of 115. Alternatively to the idea that cache 108, 112, and 115 are the same, they could also reflect the fact that the Maya conducted the same activities again and again. Ceramics from the three strata, however, indicate a predominance of Barton Creek ceramics (300-100 B.C.).

In 2007 due to wall collapse, we needed to replace the southwest corner datum stake in the northeast corner, at 10 cm above surface. Mr. Scott removed the remnants of stratum 108 in the northeastern corner and came upon a concentration of rocks (cobbles and small boulders), which I labeled stratum 118 (c. 80 x 40 cm in size); the rocks seem to surround a small pocket with the ‘usual’ recipe of artifacts described above for stratum 109. By this point due to the surrounding complicated stratigraphy, we concentrated our efforts in the northeast area (c. 1.2 x .78 m) of the original 2 x 2 m unit in stratum 109, which we had started excavating in 2005. Several jaw bones (e.g., a rodent of some type) were also recovered from stratum 109, as well as burnt plaster. Mr. Scott also noted that several of the sherds were found flat against rocks; either they were placed purposely like that, or the fell off a possible ‘altar’ to the west. We also recovered round, flat bases; it appears that the Maya had purposely broken off the remainder of the vessels, and several sherds had burned debris on one side. Strata 118 and 109 look like they both terminate at the same level. Once we cleaned the surfaces for the final photographs, it was clear that the artifacts concentrate in the northern portion of the unit - that is surrounding stratum 118.

While drawing the profile in the north and south walls, it was realized that we had gone through a thin plaster floor; it does not appear to extend across the entire unit. The floor appears in the entire wall of the north wall and c. 24 cm in the south profile (the west side).

Early in the season, we closed down Plaza 1 TP because it was realized that we needed proper funding and time to do it right. My plan is to finish this test pit next time we have funding for a long season. The entire unit is lined with construction plastic lining; before lining the unit, we placed non-diagnostic artifacts from the 2004 and 2005 seasons at the bottom of the unit. The plastic overhangs the edge, which will make it easy for us to locate the unit in the future.

What is notably absent, if this were a domestic context, is manos, metates, and chert flakes and tools. Even if we find in the future evidence for early domestic activities, the Maya clearly considered this spot to be of some significance. The profiles show at least seven noticeable building episodes (Figures 5 and 6). The earliest exposed feature (1st) consists of a plaster floor, likely dating to before 300 B.C. Unfortunately, since we removed the floor and ballast as part of stratum 109, the contexts were mixed. But this might also explain why we recovered, in addition to Society Hall and Sierra Red bowls (Barton Creek, 300-100 B.C.), handles and jars, a potential Joventud/transition bowl rim sherd. It was after this floor that the Maya of Yalbac began building non-floor features (2nd episode), in this case, a possible altar built of boulders (stratum 109), and was also at this time period that we began finding the ‘recipe’ of artifacts.
Figure 5. Plaza 1 TP north and east walls

Figure 6. Plaza 1 TP south and west walls
The 3rd episode appears to have been a platform or altar (117, wall 116). The Maya then added (4th episode) a floor and ballast (111, 112), after which they built another platform/altar (5th episode) (113, 110, 107, and likely 106) after they had performed a major termination event (112, 115, 108A, B, C, and D), which they sealed with plaster (114, not visible in profiles). Less substantial building phases followed: the 6th re-building consists of a plaster floor and ballast (105). All of these episodes date to the Preclassic; while we found sherds dating to c. 900-600 B.C. (Baldizon Impressed) with the earliest exposed platform/altar (112), the earliest exposed features likely date to c. 300-100 B.C. (floor 105). After these construction phases, we noted several re-plasterings (not necessarily obvious in the profiles) that appear to have been done in the Preclassic as well.

The Maya continued to maintain and use the platform/altar until the next noticeable episode (7th), consisting of a thick ballast and plaster floor (104, 103A) sometime between A.D. 200 and 300. Also at this time, the Maya added to floor 103A (8th), but only a small section is seen in the west wall profile (103). We also noted several pits the Maya had dug through several of the floors and strata, as the west, south, and north walls illustrate (e.g., through 103A and 105). We did not recover anything significant from the pits, which may indicate that the Maya deposited organic materials. They covered and re-plastered some of the pits. The 9th and most recent event (dating to c. A.D. 700-900), as mentioned above in the 2004 summary, consisted of a cross-shaped wall with two-courses of cut and un-cut stones; we found Belize Red McRae Impressed sherds from wall fill (102) representing at least five different vessels.

Discussion and Conclusions

The Maya of Yalbac clearly considered the center area of Plaza 1 to be of some significance. If the Maya performed rituals, we need to find out why they conducted them in the plaza center versus conducting them in the temples. Perhaps the Maya at Yalbac, at least at Plaza 1, utilized temporary, semi-permanent, or permanent altars. The lack of the typical plaza construction history of floor upon floor upon floor signifies a unique purpose for Plaza 1. And the fact that the Maya built the acropolis next to it and surrounded it with range structures to limit visibility and access further supports this claim. What purpose did it serve? Evidence from the Colonial period may provide clues, especially regarding temporary altars as places for ceremonies.

In Colonial period Yucatán, Bishop de Landa mentioned specific temples such as the Temple of Kukulcan at Chichén Itzá, Mani, and Mayapan - p. 158, n. 804 or the Temple of Cit Chac Coh. He mostly noted that ceremonies took place at a temple or in the temple plaza at a temporary altar, often a pile of stones - for example, those in honor of Kukulcan and Itzamna (Tozzer 1941:152, n. 756, 163, n. 854). For sacrificial rites, the Maya placed in the plaza “several great beams [perhaps as wooden stelae; p. 115, n. 530] standing erect and ornamented with sculptures” (p. 115). Further, Bishop de Landa writes that platforms near the Castillo at Chichén Itzá were used for “farces” and “comedies for the pleasure of the public,” as well as for stories, histories, dances, and other events (Tozzer 1941:179, n. 944). They sang, played musical instruments, and performed comedies (p. 93); they used conch shells “to call the gods to descend and partake of the offerings” (p. 93, n. 407). This indicated to Tozzer “…that few if any of the rituals, witnessed and described by
Lisa J. Lucero

Landa took place in any of the stone buildings known to archaeology” (p. 163, n. 854).

At the temple of Kukulcan at Mani in the month of Xul, “in recognition of what they owed to Kukulcan, presented four, sometimes five magnificent banners of feather(s)” (pp. 157-158); also, after adorning the temple, “and making their prayers, they placed the banners on the top of the temple, and they all spread out their idols below in the courtyard, each for himself, on leaves of trees, which he had fixed for this purpose, and having kindled new fire, they began to burn their incense in many places and to make offerings of food cooked without salt of pepper and of drinks made of their beans and the seeds of squashes” (p. 158).

Clearly, the Maya during the Colonial period relied on several ceremonial venues. Perhaps the Maya at Yalbac also utilized similar ones in Plaza 1. We found no comparable complex stratigraphy in the test pits in Plazas 2 and 3 - just the ‘usual’ floor-ballast-floor-ballast architectural sequence (Graebner 2002a, 2002b). While Tozzer, as mentioned above, noted that the Maya of this time period did not seem to conduct ceremonies in ‘stone’ structures, perhaps this was the case during the Classic period as well—at least for some royal rites. I am positive that kings of Yalbac also performed large-scale public ceremonies in Plazas 2 and 3 for the general populace, and reserved Plaza 1 for royal rites - perhaps relating to royal ancestral rituals, heir designation ceremonies, and other private rites. Future excavations and analyses should provide additional clues as to what types of ceremonies were performed.

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