AT THE END OF THE ROAD: INVESTIGATION OF A TERMINI COMPLEX AT PACBITUN, CAYO DISTRICT, BELIZE

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Over the past few field seasons, the Pacbitun Regional Archaeological Project (PRAP) has begun to intensively examine a number of features in the periphery, including settlement, caves, rockshelters, aguadas, terraces, and an extensive causeway system. The causeway system, containing four separate roadways, has been of particular interest not only because of their combined lengths, totaling more than three kilometers, but also for the locations where they originate and terminate. During the 2012 field season we targeted a large termini complex lying at the end, or beginning, of the Mai Causeway located in the site core. Our primary objectives were: (1) to identify the different construction episodes, and how they relate to the Mai Causeway itself; and (2) to determine the function of the complex, and how it relates either politically, socially, economically, and/or religiously to other structures located in the site core, and to other structures located in the periphery. This paper presents preliminary results of our findings to date.

Introduction

Pacbitun is an ancient Maya site located in the foothills of the Maya Mountains in the Cayo District of Belize (Figure 1). Since the mid-1980s, archaeologists have conducted research in and around the core of the site. Since 2010 this has included studying Pacbitun’s extensive causeway system. While we have focused on the construction histories and functions of the causeways in the periphery over the past two seasons, in the summer of 2012 we targeted a large temple-pyramid structure in the site core. This structure, identified as the only termini complex at the site, lies at the end, or beginning, of the Mai Causeway. Excavations here were set out to identify construction periods and relations of the structure to the Mai Causeway, as well as determining the socio-political function of the complex and its role in the site core and periphery.

Pacbitun Background

Pacbitun is situated at the juncture of two eco-zones: the lowland tropical rainforest and the Mountain Pine Ridge. The surrounding terrain is hilly with naturally fertile soils trapped in low-lying catchment basins and valley-like depressions. First inhabited about 800 BC (Healy et al. 2007), the site reached its peak of cultural development during the Late Classic Period (AD 600-900). At this time the site likely controlled an area of nine square kilometers. Ceramic analysis indicates that the site was possibly abandoned by the beginning of the tenth century (Healy et al. 2007).

The core zone of Pacbitun consists of five primary plazas (A-E), surrounded by a variety of masonry structures. Plaza A is situated about six meters above the other plazas, marking the highest level ground and thus, the ritual and ceremonial center of the site (Healy et. al 2004:209). To the west of Plaza A lies Plaza B. Plaza B presents three enclosed courtyard groups on its south side, each of which is surrounded on four sides by multi-chambered range structures, and a large range building on its north side (Healy et. al 2004:208). Excavations have unveiled evidence for a Middle Preclassic village below Plazas B-D (Powis et al. 2009). Plaza E is marked by a ballcourt, situated to the north of it. Excavations have revealed several caches and burials in the core zone (Healy et. al 2004:214-216). To the very east of the site core lies structure 10, the large termini complex.
associated with Mai Causeway, an intrasite road (Figure 2).

**Pacbitun Causeway System / Mai Causeway**

In general, typologies between causeways, or sacbeob, concentrate on form and length. Based on the collected information on 190 causeways in the Maya Lowlands, Shaw (2008:84) constructed a classification system on road length, designating three sacbe types: (1) the local intrasite sacbe, less than one kilometer in length; (2) the core-outlier intrasite sacbe, one to five kilometers in length; and (3) the intersite sacbe, five or more kilometers in length (Shaw 2008:84). Identifying causeways based on form proofs to be more difficult since construction materials and methods might differ according to the terrain and materials available in the environment (Shaw 2008:83). For longer causeways that would mean that throughout their course, they could change form and display different building materials, making a typology rather difficult.

A peripheral survey at Pacbitun, conducted in 2010, located several cultural features, including the extended causeway system. This road system here consists of three named causeways, Mai Causeway, Tzul Causeway, and Tzib Causeway. Mai Causeway is a local intrasite sacbe, about 273 meters in length. In the Pacbitun site core, the Mai Causeway starts adjacent to Structure 11 running east at an approximately 120 degree angle before terminating in front of Structure 10. It is about 13 meters wide, though after clearing the feature during the 2012 field season, it was revealed that about half of that width might be part of a platform extension of some sort and not actual part of the proper causeway. Tzul Causeway also starts in the site core (Figure 3) and runs into the periphery, intersecting after approximately 900 meters with another ancient Maya road, which was named Tzib Causeway. It then continues into the foothills, running for about 1.2 km until it terminates in front of Tzul’s Cave. Tzib Causeway is about 600 m in length, and connects a plazuela group to a minor center (Figure 4) (Weber 2011). Preliminary results of the 2011 field season excavations into the peripheral causeway intersection displayed the well-defined boulders of Tzib Causeway connecting to Tzul Causeway, revealing a complex construction pattern that differs in style and methodology even at such a compact location, where these ancient roads come together.

As mentioned, one of the research foci of the 2012 field season lied with the Mai Causeway in the site core and its connection to Structure 10. The construction methods of this
intrasite road differed greatly from the construction observed at the causeway intersection in the periphery during the 2011 field season. While the excavation units at the causeway intersection successfully identified the architectural assemblages of Tzib Causeway, consistent associations between construction styles and visible features between Tzul and Tzib Causeways were sometimes lacking. The absence of a visible directional boulder alignment for Tzul Causeway in most units contrasted with the clear rock alignment found for Tzib Causeway. In the absence of such well developed architectural deposits, several unit extensions were intended to define sensitive archaeological areas in the intersection. However, in terms of simply locating the boulder layouts of the different causeways, the intersection provided a bit of a test of the effectiveness of the systematic excavation approach.

Research has shown that the construction methods of causeways were similar to those of house foundations (Normark 2006:27; Shaw 2001:26). Predominantly, large stones lined the edges to be then filled with construction fill in form of cobbles which gradually changed to fine gravel near the surface of the road (Normark 2006:27; Shaw 2001:26). In general, large uncut boulders were placed at the bottom, in order to level the road bed, with gradually decreasing sized rocks placed on top (Normark 2006:27). The rock foundation found in Unit 1 and Extension 1 is an example of such a construction method, though no gradual decreasing rock deposit could be observed. The boulder alignment stops where Tzib Causeway, running from or to a plazuela group located southeast of the intersection, meets Tzul Causeway (Figure 5). One boulder points into the direction of Tzul Causeway running towards Pacbitun. From there, a directional alignment can be observed but not in the form of large boulders.

The construction of Mai Causeway seems to follow a more systematic approach, similar to the Martinez Sache that is associated with the Zopilote Group at Cahal Pech (Cheetham et al. 1993). Throughout the 2012 field season we placed three test units into this road in order to record the construction methods. As with Martinez Sache, the humus level consists of a
depth of approximately 10 to 15 cm, followed by a layer of small- to medium-sized gravel fill and isolated patches of limestone plaster. Below that follows a larger layer of soil that ends with the presence of foundation boulders about 80 to 90 cm below topsoil (Figure 6). Bedrock was encountered about 5 to 10 cm below the large rocks, at approximately 90 to 100 cm depth. Ceramics collected immediately above bedrock were dated to the late Middle Preclassic Period (600-300 BC). Detailed ceramic analysis for the causeway is still underway.

**Structure 10 / Termini Complex**

As noted, Structure 10 is the pyramidal structure associated with a termini complex that lies to the east of the site core and is connected to the center through a sacbe (Mai Causeway). Structure 10 is approximately eight meters high and 13 meters wide. It was decided to conduct excavations here in order to investigate the relationship of the structure to the site core as well as clarify chronology and construction methods. The 2 by 2.5 meter unit was placed along the primary axis on the western side of the structure, extending into a platform by about 1.25 meters (Figure 7). Excavations yielded three construction levels for the plastered plaza floor in front of the structure. Ceramics found in each level were dated to the Late Classic Period (AD 600-900).

Excavations revealed an intrusive cache at the base of the structure. The cache consisted of two vessels that are 53 cm in diameter (Figure 8). The lip to lip cache vessels were embedded
into the plaster floor at about 90 cm in depth and were dated to the Late Classic. Associated with the cache was a speleothem fragment, a spondylus shell, and several fragments of an infant’s cranium.

Discussion

All in all, the different construction styles between the intrasite and peripheral causeways suggest a different construction intent and care for the quality of the road, hinting towards a more everyday usage of the peripheral Tzul Causeway versus the connection of the ritually charged Structure 10 at the end of Mai Causeway in the site core. However, sometimes hints towards construction periods can be derived from the causeway alignment itself as well, since ancient Maya causeways were often constructed to connect monumental architecture and most of them follow straight lines, sometimes showing angle changes (Shaw 2008:65). Shaw (2008) argues that the roads themselves may follow basic geometric principles, as they seek to connect two points in the shortest distance, consequently using the least effort and cost by maintaining a true course (Shaw 2008:67). This would suggest a one-term building phase for all causeways, meaning that each causeway production was pre-determined, planned, and executed without ever changing or adjusting the construction plan. However, Shaw (2008) also acknowledges human error and technical adjustments in regards to the environment causing angle shifts, influencing road construction. Trombold (2001:235) calls these adjustments “sharp angle jogs”, stating that they appear in many causeways and may in some instances be compensations for the inaccurate determination of an intended direct line between two points. At Paabitun, these angle jogs can be observed at the Mai causeway (Figure 9). Here, they might be either the consequence of following the natural topography or modifications through time.

A preliminary least cost path analysis from Structure 10 to Structure 11, conducted through ArcGIS and based solely on slope increase and decline, presented the most direct route for a causeway construction running north before heading west towards Structure 11. Excavations along the causeway however have shown that the ancient Maya at Paabitun manipulated the landscape to the west of Structure 10 by leveling the slope with core, creating an extended platform. This would have influenced the causeway construction, displaying a connection between both structures, aside from the visible link. While speculative, this might also suggest that there used to be an earlier structure in place of the Late Classic temple we see today. The Mai Causeway then might have been constructed as Structure 10 was modified and gained religious and ceremonial importance. However, further excavations into Structure 10 would be needed to investigate this hypothesis.

It has been suggested that the Zopilote Group in the periphery of Cahal Pech similarly functioned as a formal ceremonial/sacbe grouping (Cheetham et al. 1993:167). Here, the modified structures display an increased social-political and religious significance from the Late Preclassic through the Late Classic period, with the sacbe connection serving as a political link to
the site center. While the Zopilote Group lies about one km south of the site core of Cahal Pech, the Pacbitun termini complex is located only 300 to 400 meters east of Plaza A, which is considered to be part of the site core. Therefore, a solely integrative function of the sacbe might be considered redundant. Rather, the Structure 10/Mai Causeway group might have been constructed under the pressure of increased ideology towards the Late Classic, portraying a shift from a political to a growing religious ideology and serving as a platform for ceremonial, as well as socio-political interpretations.

The speleothem fragment found in the cache could be interpreted as a link to Tzul’s Cave, in the periphery of Pacbitun (Figure 10). As mentioned, the causeway system extends from the site core to the cave. This link would again raise the question as to why we have a causeway running to and from a ritual focus on Tzul’s Cave and not to any of the other caves utilized in the periphery of Pacbitun. This connection needs to be more fully investigated.

**Conclusion**

Since the Mai and Tzul Causeways start and terminate around Structures 10 and 11, respectively, excavations in these locations will aid in dating the structures as well as investigating the possible construction date of the terminating causeways. Pacbitun displays a unique connection between the site center, various structures in the periphery, and caves being partly displayed in form of the peripheral causeway system. Aside from their function as transport and communication routes, causeways also reflect different levels of political- and social activity and meaning in the past. By conducting a thorough analysis of the function(s) and date(s) of the causeways, caves, and associated structures, like Structure 10, we might be able to identify increased ideological motivation, displayed in the archaeological remains in the site center and the periphery, towards the decline of Pacbitun as an elite site center.

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