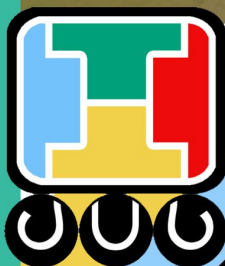
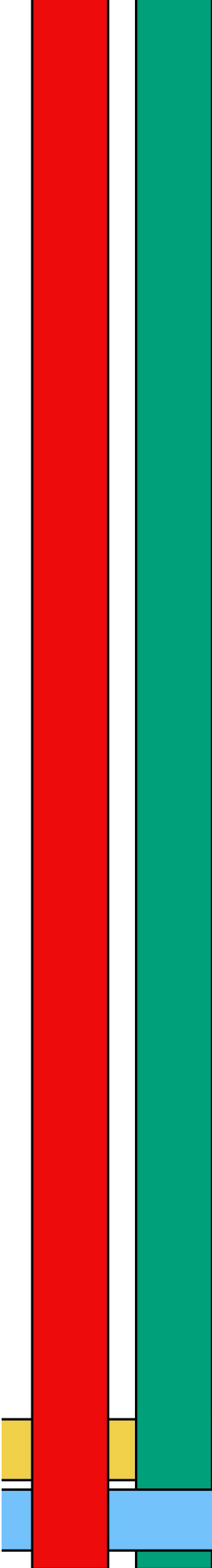


June 2021 Vol. I



**CANADIAN LATIN AMERICAN
ARCHAEOLOGY SOCIETY • CLAAS NOTES**



LETTER FROM BOARD OF DIRECTORS

The Canadian Latin American Archaeology Society (CLAAS) was originally established in 1992 as the Canadian Society for Mesoamerican Studies (CSMS). The society has experienced many changes and iterations. In 2017, the society was revived and rebranded, under one of the society's founders – Dr. Stan Lotun – and its first Executive Director, Ms. Kathryn Florence. Under new leadership, the society continues to grow and inspire new members.

The symbol for the society – the Mayan glyph of “etznab” – represents flint, or obsidian. It is aptly chosen and represents the character of the society, as when struck against a hard rock, flint produces a spark. There have been many sparks over the history of the society and each one produces a larger flame. With this metaphor in mind, we are happy to introduce “a first” in the society's history – the inaugural edition of *CLAAS Notes*, an online publication for the dissemination of research in Latin American studies.

Our goal for *CLAAS Notes* is three-fold: (1) to process and review abstracts, articles, and field notes, (2) to publish the results of new and upcoming archaeological field work, and (3) to encourage and inspire scholarly work. We welcome articles from young scholars and are expanding to reach new international audiences. We accept abstracts, field notes, and research paper submissions on a rolling basis.

Besides research papers and field notes, we have introduced the abstract section of *CLAAS Notes*, which provides an effective and quick overview of new research. These brief summaries allow readers to easily access recent and future studies. We aim for excellence in academia and present work from established professionals, but we want to be clear: our journal is not peer-reviewed. Perhaps, in coming editions, which we intend to publish annually, we will move to a more academic model.

In our first edition of *CLAAS Notes*, we have assembled an array of topics, covering a large part of Latin America: from Oaxaca, Mexico, the Cayes of Belize, and Ometepe Island, Nicaragua, to the Northern Coast of Peru. Our publication covers many time periods and brings together many peoples. We would like to thank and acknowledge the people that made this online publication possible: the members of our society and the gracious authors who provided insightful and well-researched papers.

Best wishes,
The CLAAS Board of Directors

Diana Moreiras Reynaga, PhD, Executive Director
Cara Tremain, PhD, Events Director
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TABLE OF CONTENTS

LETTER FROM BOARD OF DIRECTORS - *Page 1*

ABSTRACTS

1. Mario Millones - *Page 4*
2. Diana K. Moreiras Reynaga - *Page 5*
3. Elizabeth H. Paris - *Page 7*
Roberto López Bravo
Gabriel Lalo Jacinto
4. Amedeo Sghinolfi - *Page 8*
5. Cara G. Tremain - *Page 11*

FIELDNOTES

6. Lauren September Poeta - *Page 13*

ARTICLES

7. Kathryn Florence - *Page 16*
8. Geoff McCafferty - *Page 27*
9. Heather McKillop - *Page 35*
10. Kelly Melrose - *Page 45*



ABSTRACTS

MARIO MILLONES

UNIVERSIDAD CATÓLICA SANTO TORIBIO
DE MOGROVEJO

Underground Emotions: Facial Expression in the Andean Past through Archaeological Materials - A Heterodox Approach to the Emotions of the Moche Culture (Peru)

Phases III and IV of the Moche culture in the Northern coast of Peru developed ceramic vessels with realistic portrait heads that were quite distinct among all other head representations in the Andean world. Despite the generic denomination of "portrait," these vessels offer a great variety of anthropomorphic motives. Using Procrustes analysis, I propose an organization of facial diversity of non-expressive faces articulated with the expansion of the southern Moche society. At the same time, I attempt to incorporate those faces with facial expressions by using the Facial Action Coding System and exploring the relationship between emotions and power in time and spatial contexts during the period of Moche expansion. A heterodox approach to face representation for the ancient Andes is discussed through the recent development of emotion studies in social sciences.

Keywords: Emotions, Moche, Portrait vessels, Andes, Peru, Morphometrics, FACS

DIANA KARINA MOREIRAS REYNAGA

THE UNIVERSITY OF BRITISH COLUMBIA

New Insights into Aztec Sacrifice: Human Diets and Geographic Residency Revealed through Biogeochemistry

While there are countless mentions of human sacrifice in written and pictographic accounts (Fig. 1), little is known about those who were chosen as sacrifices for the many Aztec (Mexico) ritual ceremonies. Who were sacrificed by the Aztecs at their sacred temples? Were these individuals Aztec residents or foreigners from other regions of Mesoamerica? My recently completed doctoral research examined these questions within a bioarchaeological perspective by analyzing the stable carbon, nitrogen, and oxygen isotope compositions of skeletal remains of adult and subadult sacrifices (Fig. 2) from the Templo R of Mexico-Tlatelolco and the Templo Mayor of Mexico-Tenochtitlan (Fig. 3) during the Late Postclassic period (1200–1521 CE) (Moreiras Reynaga 2019). Dietary and residential patterns were revealed through the stable isotope data and interpreted alongside the bioarchaeological and archaeological evidence, and the historic sources. The results from this research suggest that a wide range of individuals, with different physical, social, and residential characteristics, were selected as sacrifices by the Aztecs including slaves, war captives, tribute prisoners, commoners and in some cases, children from commoner and noble households (Moreiras Reynaga 2019; Moreiras Reynaga et al. 2021).

Keywords: Aztecs, Mexico, Life Histories, Stable Isotope Analysis, Paleodiet, Geographic Residences, Templo R of Tlatelolco, Templo Mayor of Tenochtitlan, Aztec Sacrifice, Bioarchaeology, Mesoamerica.

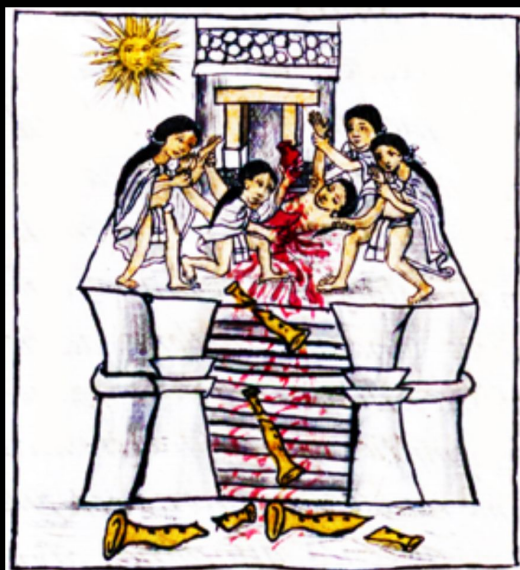


Figure 1: Aztec Human Sacrifice Depicted in Sahagún's Florentine Codex from the 16th Century. Source: Public Domain via Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Florentine-12_aztec.jpg)



Figure 2: D. K. Moreiras Reynaga Sampling a Femoral Fragment for Stable Isotope Analysis at the Templo Mayor Museum in Mexico City. Source: D. K. Moreiras Reynaga, Personal Archive

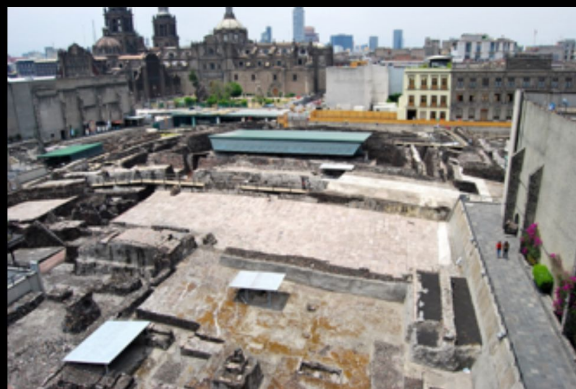


Figure 3: Roof top view of the Templo Mayor of Tenochtitlan's Ruins in Downtown Mexico City. Source: D. K. Moreiras Reynaga, Personal Archive

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Moreiras Reynaga, D. K., J. Millaire, X. Chávez Balderas, J. A. Román Berrelleza, L. López Luján, F. J. Longstaffe.

2021 Residential Patterns of Mexica Human Sacrifices at Mexico-Tenochtitlan and Mexico-Tlatelolco: Evidence from Phosphate Oxygen Isotopes. *Journal of Anthropological Archaeology* 62: 101296.

ELIZABETH H. PARIS

ROBERTO LÓPEZ BRAVO

GABRIEL LALO JACINTO

UNIVERSITY OF CALGARY

UNIVERSIDAD DE CIENCIAS Y ARTES DE CHIAPAS

CENTRO INAH-CHIAPAS

The Making of a Marketplace at Tenam Puente, Chiapas, México

Plazas are fundamental features of ancient Mesoamerican cities that were important sites for civic activities such as mass spectacles, ceremonies, private rituals, feasting. Our research investigates the history of plaza construction and use at the Maya site of Tenam Puente, located on the eastern edge of highland Chiapas, and one of the most important political capitals on the western Maya frontier. The site sits strategically along several important transportation corridors connecting the Central highlands to important lowland areas, and its occupation spanned the Classic and Early Postclassic periods (ca. AD 500-1100), an era of transition and political instability for much of the Maya culture area. Tenam Puente's expansive Main Plaza sits in an intermountain saddle at the base of the site's Acropolis, and its eastern edge is defined by the site's principal ballcourt. The Acropolis itself is built into the side of a large hilltop on the southeast edge of the Comitán Plateau, and contains the palace, important temples, and other elite architecture. Our recent excavations at the site suggest that the Main Plaza was a highly iterative space that was subject to many modifications over time. New radiocarbon dates associated with our stratigraphic test excavations provide evidence for several important transformations in the Main Plaza's built landscape, including renovations to the site's principal ballcourt, a large filling and resurfacing event, and a significant addition to the plaza's volume for the purpose of building a semi-enclosed marketplace plaza. The construction of the marketplace likely represents a sudden and massive investment in urban commerce by Tenam Puente's rulers and community members, as its construction represents a major renovation of the Main Plaza and a significant labor-intensive activity that occurred relatively late in the site's occupation. Our results provide insight into the evolving nature of public space at the site, from a focus on private rituals and dynastic rule, to an emphasis on mass spectacle, commercial activity, and civic engagement.

Keywords: Chiapas, Maya, Chronology, Plaza, Marketplace

Paris, E., R. Bravo, and G. Jacinto.

2021 The Making of a Plaza: Public Spaces and Marketplaces at Tenam Puente.

Estudios de Cultura Maya 58. Accepted, 15 December 2020.

AMEDEO SGHINOLFI

THE UNIVERSITY OF WESTERN ONTARIO

Reconstructing the Occupation of a Prehispanic Borderland: The Case of the Carabamba Valley, Northern Peru

Borderlands are generally perceived as peripheral zones that passively accept stimuli coming from the social, political, and economic core of complex societies. In the Central Andean region, such areas have been neglected for a long time by anthropologists, who have focused their gaze on large monumental centers located either along the Pacific coast or in the highlands. The Carabamba Valley (ca. 150-3,500 m.a.s.l.) in Northern Peru connects the coastal Virú Valley to the Northern Peruvian highlands (Fig. 1). Other than being a natural corridor that links two of the main ecological zones of the Central Andes, the valley includes the resource-rich chaupiyunga zone (ca. 500-2,300 m.a.s.l.) (Fig. 2). The latter features a hot climate that is ideal to grow fruits, ají peppers, and coca. Chewing coca leaves reduces hunger and suppresses fatigue and pain. Coca leaves are still widely used while performing physically demanding tasks and during public and private events. Before the Spanish conquest, coca played a key role in ceremonial contexts and it was considered a highly valuable good. People living in the valley also have privileged access to water. Colonial documents report heated disputes between coastal and chaupiyunga peoples around access to water and this resource was probably a bone of contention also during Prehispanic times. The Carabamba Valley has been subjected to cursory archaeological investigations over the last few decades and an overall understanding of its Prehispanic occupation was missing. In 2019, I conducted a survey to identify and map archaeological sites, reconstruct the Prehispanic settlement patterns of this area and discern interactions among local, coastal and highland peoples. A drone was used to map Prehispanic settlements (Fig. 3). Architectural features and pottery allowed me to define the chronology and cultural affiliation of archaeological sites. Rock art (geoglyphs and petroglyphs) characterized the early (1,600-400 B.C.) occupation of the valley (Fig. 4). After the decline of the pan-Andean Chavín phenomenon, the Carabamba Valley featured a Salinar occupation. The Salinar period (400 B.C.–0) was characterized by conflicts among small communities. People living in the Carabamba Valley started settling on hilltops and this pattern will endure through time (Fig. 5). During the apogee of the coastal Virú state (0-650 A.D.) and the emergence of polities in the Carabamba Plateau, inhabitants of the valley

were culturally closer to highland groups. During the Late Moche phase (650-900 A.D.), such coastal phenomenon left its footprints in the valley and the coastal influence became even stronger when the Chimú empire (900-1,470 A.D.) controlled the Peruvian North Coast. The Inka domination (1,470-1,532 A.D.) did not leave a profound mark on the valley. The information collected during this investigation shows that this intermediate zone was occupied over a long span of time and that chaupiyunga, coastal and highland people constantly came into contact in this narrow natural corridor. Thus, the Carabamba Valley was not a backwater, but instead, it was a hotbed of interaction where people with different material cultures, beliefs, and sociopolitical organizations confronted, influenced, and shaped each other for millennia.

Keywords: borderlands, Central Andes, Northern Peru, archaeological survey, settlement patterns

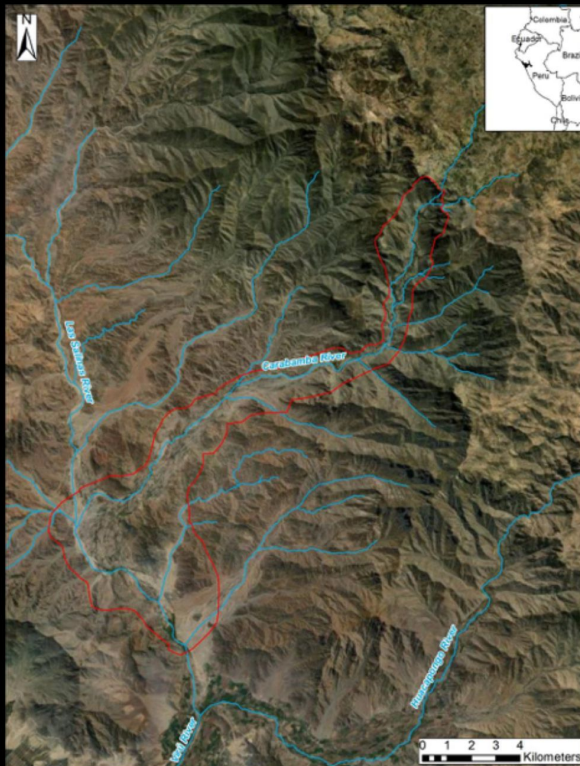


Figure 1: Map showing the research area (highlighted in red). The inset map shows the Department of La Libertad in Northern Peru

Source: Map produced with ESRI ArcMap by the author



Figure 2: Overview of the Carabamba Valley

Source: Photo taken by the author



Figure 3: Orthomosaic produced using drone pictures that shows architectural features in the middle Carabamba Valley

Source: Map produced with ESRI ArcMap by the author



Figure 4: Petroglyph depicting an Andean deer (*Odocoileus peruvianus*)

Source: Photo taken by the author

CARA GRACE TREMAIN

LANGARA COLLEGE

The Lives Behind the Mesoamerican Archaeology Collection at the Museum of Vancouver

The origin of the Museum of Vancouver in British Columbia, Canada, dates to the late nineteenth century—only a few years after the city was formally incorporated. Initially intended to showcase curios and items of interest, among the early donations were objects from various Mesoamerican cultures. Over the years the Mesoamerican archaeology collection grew not from a deliberate collecting strategy, but from chance donations by residents of the city. Not long after the re-focus to a civic museum the collection ceased to grow, and today the collection is consigned to the museum's storage area. Despite not being of immediate relevance to the museum's mission, the history of the collection reveals a fascinating insight into the lives of past Vancouver residents and demonstrates the utility of investigating the provenance of previously little-known collections.

Keywords: provenance, case study, collections, Canada, Mesoamerica, history, museum, type

Tremain, C.

2021 The Lives Behind the Mesoamerican Archaeology Collection at the Museum of Vancouver. *Collections*:1550190620987839.

FIELDNOTES

LAUREN SEPTEMBER POETA

THE UNIVERSITY OF WESTERN ONTARIO

Lima, Peru 2019

In June of 2019, I had the privilege of spending a month living and working in Peru for Dr. Andrew Nelson's SSHRC-funded project "Mummies as Microcosms" (MaM). A single adjective does not adequately describe my time in Lima. It provided me with the ability to learn field skills and have meaningful interactions with people from various backgrounds. It is impossible to describe every aspect of knowledge this trip granted me in only 1,000 words. However, this reflection will highlight some meaningful collaborative moments and why my student experience in the field was more than just getting my hands dirty.

Collaboration Moments in the Field

The project's goal is to undertake the non-destructive, paleoradiological analysis of collections of Ychsma Period (ca. 1100-1532AD) funerary bundles (fardos) from 3 sites in or around Lima, Peru: Pachacamac, Huaca Huallamarca and Huaycan de Pariachi. A research project that spans countries requires collaborative work to ensure each team member can effectively contribute their specialized knowledge and experience. The MaM team grew while in Peru, incorporating people from various backgrounds, and is still growing today. This diverse team ensures a well-rounded perspective and allows mobilizing mass amounts of knowledge and skills between all individuals. As knowledge mobilization was a vital aspect of the project, this was front of mind. However, knowledge was not only transferring from team to museum staff, but from museum staff to the team. Communicating in the local language shows you respect their opinion and experience by actively wanting to exchange knowledge. During my last day working at Huaca Huallamarca, we noticed a bundle of short bamboo pieces with plugged ends in Fardo 6. Huallamarca's conservator, Diego Hurtado, shared that these clogged tubes were used to store different textiles' pigments. Applying this to bundles we had previously examined, we remembered E82N from Pachacamac with a similar bamboo bundle behind their ear. When this bamboo bundle was encountered initially, we had no explanation for it, but hypothesized it was the remnants of a pan flute. This experience demonstrated the importance of working with local collaborators rather than relying solely on literature that may not include local or Indigenous knowledge.

Another collaboration I experienced was working with Camila, a student at the Pontificia Universidad Católica del Perú (PUCP). After two successful days of work, Suellen, a senior member of MaM, paired Camila and I together to process a box of remains from Huaycan de Pariachi. While working together came with quite a few challenges, it was extremely enjoyable. We both struggled with our verbal communication in each other's native languages, but we had functional reading skills. So, we devised a strategy of me reading the English forms aloud while she read and I wrote words down when they were not on the sheets for her to read. My favourite aspect of working with Camila was that I got to practice my osteology and teach while learning to navigate language barriers. Camila had brief knowledge of major bones in Spanish, but she wanted to learn osteological terms in English.

Learning to teach a subject to someone primarily speaking another language was an experience I did not know to prepare for. As I had to critically identify the essential information to communicate, I developed my own skills and refreshed what I had previously learned. Even though I only taught once, I believe it drastically benefitted my communication, confidence, and leadership skills in a teaching context.

Finally, I do not believe that collaboration can be mentioned without Elizabeth. Just like me, in the third year of her undergraduate degree, she subsequently proved herself invaluable to the team. Whether it was just being another friendly person, happy to discuss and contrast Peru to Canada, or helping in any way possible to ensure the most productive workflow, she could not have been better. I believe this was her first field experience, but this was not obvious as she worked so naturally and confidently in our team setting. Being able to share our fascination and excitement over everything, whether it be an intricate falsa cabeza or merely helping to tape a box holding a mummy, she was a fantastic teammate. Although I hid the fact I was leaving to avoid another goodbye, she immediately messaged me saying I had to come back to eat at her parent's restaurant, which I plan to do after our travel restrictions are lifted. Knowing I could not return in the summer of 2020; I wish we had a proper goodbye - a sentiment I am sure resonates with many archaeologists after global field disruptions. Although I had the privilege of working in numerous team settings through high school and university, this fieldwork was just as rewarding, if not more, in only a month.

Final Thoughts

I struggled immensely when writing this piece while reflecting on every thought, memory, lesson, and interaction I had in Peru. The truth is, every single moment, whether small or large, was significant and contributed to such a positive experience and falling further in love with Peru and archaeology. Many people say travelling for long periods, studying, and working in different countries helps you find your true self. I believe my time in Peru was a crucial moment in learning who I am as a young archaeologist and whom I want to be. Fieldwork immensely increased my confidence in who I am and what I want to pursue in my future, which is collaborative heritage work. I will endlessly encourage every student to find field experience and encourage every supervisor to give young undergrads a chance to find themselves in the field.

Acknowledgements

Of course, the leaders of MaM, Dr. Andrew Nelson, Dr. Lucia Watson, and Dr. Jocelyn Williams. Many thanks to all those I spent hours working with, Dr. Suellen Gauld, Joanna Motley, David Seston, and Elizabeth Gomez. All the welcoming and insightful members of the site museums that granted us access to their collections. Finally, the SSHRC funding agency for funding MaM.

ARTICLES

Embedding Violence in a Disembedded Capital: Monte Alban's Danzantes and Representing Violence Between Interconnected Polities

Abstract: *Studies of war in Mesoamerica often overlook the manifestations of violence that existed in the Oaxaca department in the Formative/Preclassic period. In this article, I show how Monte Alban used visual representations of violent death in the Danzantes reliefs as a tool for demonstrating their control over far-flung populations that were now subservient to a disembedded capital. I conclude that by showing them so openly at a site where there would be representatives of the defeated and possible political allies, Monte Alban was enacting a violence in itself; the threat of domination and the promise of subjugation to their regime.*

Keywords: Monte Alban, Oaxaca, Capital, Danzantes, Art, Violence, War, Polity and State

Introduction

When someone mentions violence in Mesoamerica, the first images that usually jump to mind are a screaming victim being held down by priests as his chest is broken open and his still-beating heart removed to satiate the appetite of a gruesome god. We think of war between Mayan kingdoms and Aztecs against invading conquistadors. The empires that grew in the basins and plateaus of ancient Mexico were watered by blood. But one must also question why and in what ways violence was actually employed.

To do so, this article proposes an examination of violence enacted at the Oaxacan site of Monte Alban, one of the first inter-regional cosmopolitan centers in Mesoamerica that rose to prominence between 100 BC – AD 200. The site refined influence over the Western highlands, but in doing so came into conflict with polities beyond their boundaries which ultimately ended in war. This article illustrates how Monte Alban used visual representations of violence and death in the Danzantes reliefs as a tool for demonstrating their control over far-flung populations that were now subservient to a disembedded capital as well as that by showing violence so openly at a site where there would be representatives of the defeated and possible political allies, Monte Alban was enacting a violence in itself; the threat of domination and the promise of subjugation to their regime.

Mesoamerica at large in the Formative/Preclassic

In the most basic classification, Mesoamerica accounts for the civilizations that thrived in the contemporary countries of Mexico, Guatemala, Belize, Honduras, and the western coasts of El Salvador and Nicaragua (fig. 1) between 1500 BC until conquest in AD 1521. In that time there were more ethnic groups than Mayas and Aztecs living on the land; and even those groups were widely varied ethnically, culturally, and politically (Math 2017). These polities usually take the form of city-states with the more pervasive extending influence on other centers.

As such, Mesoamerican history is defined by interactions between peoples (Nagao 2014). Whenever two groups meet there is the possibility of collaboration or confrontation. Richard Blanton, the foremost researcher of Oaxacan archaeology, noted, “While political struggle has the potential of bringing with it social and cultural change, it is played out against a background of shared culture, acquired through socialization, that constrains what political actors may do. Culture is not, however, completely determinative, because political actors' knowledge of society's structure and its culture is potentially not just a constraint but a resource that they can use as they pursue their goals.



Figure 1: Map of Mesoamerica
Source: Florence 2019

Thus, political actors may, variously, reproduce society and culture, reject it, or modify it as a way of achieving desired outcome” (Blanton et al. 1996:2). These struggles were constant in Mesoamerica just as they are today.

That being said, a great amount of interaction was happening between polities during the Late to Terminal Preclassic (250 BC – AD 250). Goods exchange was one the primary factor leading to interregional interaction (Turner 2016). Going into the Classic Period, control over luxury goods was how power hierarchies were constructed and displayed. Exotic items like quetzal feathers, fine jade, or luxurious pigments, were a marker of status and prestige. Controlling access to these products meant you essentially controlled the world (Borowicz 2002). Trade was also how ideas were shared between disparate sites, often through the very goods they traded (Flannery 1968). Resources needed to be protected, requiring a military presence. Warfare was just a part of everyday life. The gods had to be assuaged with blood. While self-sacrifice was considered a noble death, centers generally wanted to keep their population stock high. War was a means to cull people to sacrifice. In these clashes, ideas were passed between centers.

Clearly, the Mesoamerican world was a dynamic system of opposing forces and inevitable clashes between them. The pervasiveness of this ideology is evident in how they rendered this world onto their walls.

Monte Alban

The site this paper examines is located in the western state of Oaxaca (highlighted in Figure 1). This area is the home of the Zapotec (Be'ena'a) people, historically and today. Most settlements were scattered about the valley floor in loose villages. In some sites, larger civic-ceremonial centers sprung up, which “Within Mesoamerica, the earliest case of state formation, according to current evidence, was the Zapotec state of Oaxaca” (Spencer 2003:11185). San Jose Mogote was one such center which stands as the former ‘capital’ of the Zapotec civilization in the Early to Middle Formative (BC 1500 – 500).

Formation

Monte Alban stands apart from its predecessor for four reasons. 1). It had a rather abrupt appearance around 500 B.C. on an unlikely hilltop location that defied typical settlement patterns. Instead, “The great city was founded atop the steep-sided mountain” (Orr 2002:4), when most centers were located on the valley floor. 2). The site had no conceivable way of producing food for that population because of its location so it had to rely on trade to survive (Blanton et al. 1999:50). The Valley itself offers some viable agricultural areas, but the immediate hinterlands are “high, rocky, eroded outcrops” (Blanton et al. 1999:49). Because of this, the center would have to rely almost entirely on trade to survive. 3). The population exploded in comparison to contemporary sites. “During the period known as Early Monte Albán I (2450–2250 B.P.) the population of the Valley of Oaxaca grew to an estimated 8,000–10,000 persons, distributed through 261 communities. Nearly a third of the valley’s population lived on the defended mountaintop at Monte Albán” (Flannery and Marcus 2003:11804). By rough estimates, its population was nearly twice that of the next largest competing center (Licón 2008:90). There is some reason to believe that Monte Alban was founded by elites from San Jose Mogote and other centers in an act of urban relocation (Winter 2011:396; Redmond and Spencer 2008:239; Joyce 2014:80). This alone does not explain why such a large chunk of the population would relocate to a site that was not self-sustaining.

War, on the other hand, can be a major incentive (Blanton et al. 1999:64; Winter 2011:397; Joyce 1997:153). The archaeological record attests to violence within the valley, as evidenced through burned structures and buffer-zones between settlements (Joyce 2014:77). The presence of a 3 km long defensive wall supports this conclusion (Marcus 2009:95).

However, Arthur A. Joyce warns that, “viewing the founding of Monte Alban as solely a society-wide response to an external threat under plays the complex changes in intrasocietal social practices that constituted this major transformation” (Joyce 2014:71). Which is underlined by Blanton’s observation that; 4). “No other site in the valley had a ceremonial concourse and public architecture as large as Monte Alban’s, and only Monte Albán had a Danzantes Gallery. We infer that it functioned as a regional center where important ceremonial activities were carried out on a scale larger than at any other site and where the military successes of a regional-scale polity were publicly displayed” (Blanton et al. 1999:62–63). The last of these is what this article examines within the context of a capital founded in the midst of inter-polity clash that will be expanded upon next.

A Disembedded Capital

Taken together, these four traits illustrate a radical new political formation in Mesoamerica that rested upon an urban revolution (Blanton et al. 1999:48, 57; Winter 2011:393; Hassig 1992:39). Richard Blanton called Monte Alban a “disembedded capital” (Blanton 2003:84). This posited Monte Alban as the ruling city-state within a network of subjugated centers (Spencer 2003:11185), more specifically four-tiers and estimated 155 settlements within the valley hinterlands (Licón 2008:89).

Which is odd given, to be frank, there is little appeal to the hilltop site aside from the fact that it is defensively strategic for overlooking the three arms of the valley (Joyce 1997:153). Water had to be carried 400 meters up from the nearest river shed, the slopes were steep and too rocky for farming. It was no-man’s land. And yet, that was exactly what made it so important. What sets Monte Alban apart from the other city-states that would rise in the Classic Period, is how “the locus of regional decision making is seemingly divorced from the center of manufacturing and commercial activity” (Santley 1980:132). Monte Alban was intended to be a neutral ground in the middle of a tumultuous political environment (Santley 1980:133, 136).

Expanding Influence

Make no mistake, while the capital was intended to be neutral ground, the polity itself was far from it. As early as the Late Monte Albán I phase (300 – 100 BC) the city-state began processes of “long-term expansion” its net beyond the ridges of the Valley of Oaxaca through trade and war, and often motivations combining the two (Sherman et al. 2010:278; Spencer 2003:11186; Licón 2008:90). Sherman et al. proposed that, “In doing so, the Zapotecs from Monte Albán may have deliberately spread into sparsely populated regions, or targeted smaller and/or less complexly organized populations that could be conquered with relative ease, while bypassing areas and groups that were more difficult to subdue” (Sherman et al. 2010:282). One could call this a “predatory expansion model,” as the conquering state acts as a zoological predator, picking off the smaller ‘prey’ settlements that can be hundreds of miles from the capital of the state (Carter 2017:433). To put it simply and into Western conceptions of civilization, Monte Alban was an empire (Hassig 1992:3).

This fits well with Monte Alban also being a hub of long-distance trade (Blanton et al. 1999:67). Foodstuffs necessary for the general population were likely gathered in the form of taxation of subjugated sites within the Valley.

However, recent models have suggested that this range could still be as far as 275 km (179 miles) (Drennan 1984:28). And yet, there is even evidence of Zapotec presence in terms of prestige goods—which could be transported farther distances without consequence—as far as Teotihuacan, though the latter site would not be established for another few centuries (Blanton 2003; Blanton et al. 1999:67; Math 2017).

That kind of presence did not come without resistance. Monte Alban would need an impressive military to bring such far flung centers under its control and the site was proud to show its prowess (Redmond and Spencer 2008:239). Nonetheless, Joyce argues that such a military force “would have been beyond the capacity of Rosario phase or Period Ia polities in the Valley of Oaxaca. In addition, there is no evidence for a forced resettlement of people or for widespread conflict before the formation of Monte Alban”, instead arguing for an ideological means of coercion (Joyce 1997:150). However, such assumptions about how states operate neglect that there are many means of conquering, of dominance, of violence.

Danzante Wall

The rest of this article will focus on one feature of the site, the famous Danzante Wall of Building L (fig.3) located in the main plaza of Monte Alban.

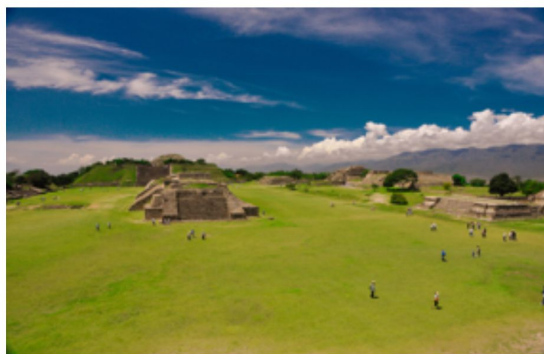


Figure 3: Monte Alban (26)
Source: Eduardo Robles, 2010

Location

The Plaza is the civic-ceremonial heart of the city, a flattened concourse 250 meters by 100 meters in the shadow of pyramidal platforms (Blanton et al. 1999:61). The feature served as the principal political sphere and marketplace (Winter 2011:406). While several features of Monte Alban have been recycled in later developments or reconstructed in the name of archaeological preservation, the Danzante Wall is “perhaps the sole structure at this site with its sculptural program in primary context” (Orr 2002:2). The structure is estimated to have been built in the Danibaan Phase (450 – 300 BC) placing it firmly in the first stage of Monte Albán’s occupation (Orr 2002; Winter 2011).

Description

The wall consists of large slabs carved with images of naked, castrated men (fig. 4). Their bodies are splayed, arms and knees bent, across the plane. The awkward positioning has led to them being called ‘danzantes’ or dancers. Interspersed between the vertical danzantes are the horizontal ‘nadadores’ or swimmers (Winter 406; Orr 2002 13). These figures are not dancing or swimming like their name implies, but are in fact dead individuals splayed upon the ground. Over 300 danzantes have been found and catalogued around Monte Alban (Blanton et al. 1999, 62; Winter 406; Orr 2002 6; Joyce 2000 81). In terms of the visual corpus, this means Danzantes make up 80% of their sum visual culture; and all of them can be linked to the initial phase of occupation (Marcus 2009 95-6). And that figure is not skewed due to a lack of excavation of Preclassic sites. That is a deliberate choice that needs to be pursued.



Figure 3: Monte Alban. Edifice des danseurs.3
Source: Antoine 49, 2013

The Danzante Wall is a massive visual statement in the open main plaza as it was visible to the majority of the residing population as well as to those who are only passing through (Joyce and Winter 38). Hutson affirms that “Monumental architecture is especially potent as a message of domination because, due to its size, it is visible over broad spaces, making it ideal for propaganda and ideology” (Hutson 2002:60). However, the effectiveness of the message is dependent on its ability to be understood, to move people (Blanton et al. 1996:3).

The Art of Violence

“We cannot assume that art fulfilled the same function in the ancient pre-industrial state as it does today” (Pasztory 1984:19). Art is an underused and often-dismissed source of archaeological and anthropological information. As I have argued extensively, art is not, nor has it ever been a passive reflection of society; it is an active agent in creating and contesting ideology and the institutions that it represents (Math 2017; Florence 2019a, 2019b). And I am not alone in addressing “the need to move away from a focus solely on humans and, alternatively, to acknowledge the possibility that sculpture, or material things, were active participants in the conceptualization and materialization of social forces” (Guernsey 2012:11). I would like to demonstrate this through the analysis of danzantes as a form of violence in the interconnected world of Preclassic Mesoamerica.

Ritual purposes

Archaeologists love the term, ‘for ritual purposes.’ Usually it is a catchall term for ‘we do not actually know what it was for, but it was important.’ Luckily, we do have some inclination to how these sculptures fit into the ritual landscape of the site. On this tertiary level, these images could be involved in the sacrificial complex that seems to have been ubiquitous across Mesoamerica. In this worldview, humans were created by the gods, out of the gods, to serve the gods. They were born to toil, bleed, and die. Humans pray to the gods and sacrifice to them, because there is a blood debt to repay. It was up to humanity to keep the gods satisfied and the cosmos turning through ritual, not the other way around. The attention paid to depicting the wounds on the *danzantes* invokes this interpretation. “Many of the sacrificial victims are depicted bleeding profusely from mutilated genitalia. Others are shown with an elliptical shape on their upper chests that may represent the dagger used to remove the heart or the open incision after the removal of the heart”(Redmond and Spencer 2008:243). These monuments, therefore, could represent a figurative sacrifice to the gods, while simultaneously providing a dramatic backdrop for ritual performances. The violence enacted through sacrificial rituals, even ones that do not take the life of the sacrifice, are not without reason and purpose. It is a controlled and highly performative violence meant to send a message to those who are watching. Survival has a cost. The wall of stone victims establishes this pace as dedicated to death, but also to renewal. From these deaths—from those who suffered, new life is possible. And this would have been understood across the Valley and other ethnic groups.

As a disembedded capital, Monte Alban could have been host to outsiders, but this feature would have been readily comprehensible to those visitors (Blanton et al. 1996:6). By extension, the space provided them with a plane of commonality.

Internal organization

Yet, it is also important to note that this type of monument is not practiced outside of Monte Alban’s sphere of influence. In fact, Monument 3 of San Jose Mogote (Fig. 5), which predates Monte Alban is the only example (Orr 2002:12; Flannery and Marcus 2003:11802; Cahn and Winter 1993:39; Blanton et al. 1999:62). This indicates that there is something site-specific about the *danzantes*.



Figure 5: Monument 3, San Jose Mogote
Source: Wikimedia 2006

Winter has suggested that these slabs could be reminders of the ancestors that died in the process of founding of the urban center; as “The foundation of Monte Alban had repercussions in a restructuring of household and community organization manifested in mortuary practices with emphasis on adult family members” (Winter 2011:407). The violence inflicted upon the represented men is cast into a positive light, much like it is in the previous interpretation. These stones were a physical reminder of the foundation of the city one was now in. The reverence, or at least value of the monuments is reiterated when some of the stones were reused in Monte Alban III phase (AD 250 – 750), though Scott and Hewitt note that in a few instances it could have been that it was their regular and large size that singled them out for reuse (Scott and Hewitt 1978:37).

On the other hand, I have to question why a society would render figures meant to be honored in such a vulnerable way. This is not the way that the powerful elites of Monte Alban would want to be imagined. And it would be the elites who commissioned the creation of the Danzante Wall (Hassig 1992:7). The main plaza was more than a market place, it was a stage for propagating societal ideology, keeping order within the center that would radiate outwards through the networks of trade and conquest. From this position, the Danzante Wall proclaimed not only the elites' power to take lives—as will be discussed in the next section—but also channel that violence into the betterment of their polity through ritual knowledge (Joyce and Winter 1996:33, 35; Blanton et al. 1996:3). These images created an external enemy, against which citizens of Monte Alban could rally against.

Recording war

Nonetheless, it is clear that Monte Alban was concerned with military defense, and their capability of waging war (Joyce and Winter 1996:38). By far, the most popular interpretation of the Danzante Wall is a record of subjugated colonies through representation of slain war trophies (Winter 2011:407). “Taken literally, these danzantes may represent processions of enemies whose penises and testicles were cut off, reminiscent, of Egyptian battle scenes in which a pile of severed penises attest to defeated enemies (an effective way of limiting their reproduction)” (Winter 2011:406). The depiction of defeated enemies was not uncommon in the visual repertoire of Mesoamerican art (Math 2017). Several scholars point to Structure J, which dates to the following Monte Alban II phase (100 BC – AD 200) as a listing of the subjugated regions/cities/groups depicted through the Danzantes (Marcus 2009:95–96; Redmond and Spencer 2008:243; Spencer 2003:11186; Finegold 2012:109; Joyce 1997:154).

Though some dismiss the toponymic possibility of these glyphs because of inconsistencies with established Zapotec grammars (Carter 2017:444). To which I have to counter with; when has that ever-stopped humans from cherry-picking words from other languages?

These could be amalgamations that further represent the subjugation of these far-flung polities by listing them in a way that would be all the more readable to them.

Moreover, “The efficiency and effectiveness of stelae for public propaganda in part lies in the fact that they could be linked to specific personages. They glorified the individual, and not just the position of ruler, by displaying his name, his image and even his lineage” (Borowicz 2002:3). These glyphs might not be discernible place names to us, centuries in the future, but they meant something to the people at Monte Alban. Nor does the absence of a place-name indicate a lack of violence (Sherman et al. 2010:294). The landscape of western Mesoamerica was far from peaceful and as the Danzante Wall suggests, Monte Alban was readily involved in that hostility (Carter 2017:441; Joyce and Winter 1996:38; Marcus 2009:89; Joyce 1997:139). The depiction of hundreds of slain, mutilated captives stands as a record for visitors and inhabitants alike to the ability of Monte Alban to conquer.

As Violence

This last notion, as a depiction of violence is what this paper ultimately concerns itself with. If art is an active agent within this network of relationships between commoners, elites, foreign persons, citizens of the Monte Alban empire—and recognizing that such relationships are a reality in and of themselves (Wilson 2008:80)—then we are led to the conclusion that the depiction of violence is itself an act of violence that art inflicts upon the subject and the audience. I build this idea off of an understanding of how art is used to convey power (Math 2017) only in this case, also giving special attention to the converse depiction of subjugation.

It is beneficial to frame this notion with Sarah Kurnik's explanation of processes of violence; "Acts of symbolic violence also serve to create subjects but in a way that is perceived as more humane and that occurs when overt violence must be concealed and the real basis of authoritative relationships masked. Symbolic violence is thus a way of establishing and preserving unequal relationships in a more socially acceptable manner" (Kurnick 2016:9). The role of displaying these images is to memorialize the actions that legitimize elite power at the same time to deter uprisings within the same society. If this is how enemies are treated; then rebellion would surely be met with just as little mercy.

Although this violence is labeled symbolic, in that it is conveyed through visual cues rather than through physical attack, the power created and projected by the stones is quite real. This is categorized as coercive power which "involves the use of threats and force by elites to compel nonelites to cooperate and provide resources. The threat can include potential physical harm or the withholding of critical resources" (Joyce and Winter 1996:35). The *danzantes* promise not only death, but utter defeat of the city you fight for as carried through the depiction of the mutilated corpse and the lists on Structure J. Anyone who sees these stones would recognize the threat inherent in the display. An act of violence must have a victim, just as visual culture must be recognized by another actor in order to exist. In this manner, the viewer becomes the victims of the violence inflicted by the monument.

In both of these cases, neither violence or power are simple actions or dichotomies (Hutson 2002:58). It is a dynamic matrix of relationships that require the participation of several actors, some of which who might have never even set foot in the Valley of Oaxaca. The violence carried out by the *Danzantes* is projected onto the people they represent, even if they are not viewed by said subjects, because they are still being viewed by someone. It is replicated with each encounter, each viewing as the audience comes to connect the structure with the mutilation of the population represented.

Conclusion

Monte Alban is but one site engaged in a rich network of interaction and exchange within greater Mesoamerica. Conflict is inevitable in such varied and numerous encounters. This paper has shown that Monte Alban founded itself upon these often-bloody confrontations. However, the site also reveals a different way in which violence can be inflicted upon enemies. Here, art was used to not only display the results of combat, but also as a form of violence in and of itself. These images are meant to disgust, meant to horrify. It would be simple to call the overt display of violence at Monte Albán savage or excessive. That is not overkill, that is a warning. That is a promise. The *Danzante* Wall of Monte Alban says, 'Look at all of the groups that tried before you. Look at what we did to them. Look at how we obliterated them, humiliated them, cut them down and diced them up. Look at them and do the smart thing...don't try it.' And it does so without uttering a single word.

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Recent Investigations on Ometepe Island, Nicaragua: In Search of the Late Postclassic

Abstract: An archaeological survey sampled five sites on Ometepe Island, Nicaragua, in search of Late Postclassic occupation. The Late Postclassic has never been adequately reported from Pacific Nicaragua, despite ethnohistorical descriptions by early Spanish chroniclers. The project collaborated with the local El Ceibo Museum to sample sites with likely Late Postclassic deposits. Shovel testing followed by limited stratigraphic excavations discovered cultural deposits from the Bagaces period (300-800 CE), Sapodá period (800-1300 CE), and Ometepe period (1300-1525 CE). Unfortunately, a land dispute at the Sacramento 1 site forced our team to abandon the most likely Late Postclassic occupation.

Keywords: Nicaragua, Shovel test survey, Late Postclassic period

Introduction

The archaeology of Nicaragua remains under-developed, despite significant advances made by the University of Calgary team over the past 20+ years (McCafferty, in press). Spurred on by ethnohistoric accounts of migration and colonization of Pacific Nicaragua in the centuries prior to European contact, major projects have investigated multiple sites that were presumably occupied during the Late Postclassic period (known locally as the Ometepe period, 1300-1525 CE). Yet despite encountering rich material contexts at Santa Isabel, Tepetate, Sonzapote, and El Rayo (Figure 1) – all sites identified by surface remains as dating to the Late Postclassic – radiocarbon dates indicate that all of these were abandoned just prior to the Ometepe period and therefore do not correspond to the final pre-Columbian occupation (McCafferty and Steinbrenner 2005). In fact, the only secure Ometepe period date comes from Ometepe Island itself, and was associated with a pre-Columbian style burial urn that contained early Colonial artifacts. So to further explore cultural transformations associated with the Late Postclassic, in 2019 we conducted a pilot project in the Moyogalpa district of Ometepe Island. This was done in collaboration with the El Ceibo Museum in Moyogalpa, where we were greatly facilitated by Moises Ghitis, director of the museum and an avocational archaeologist.

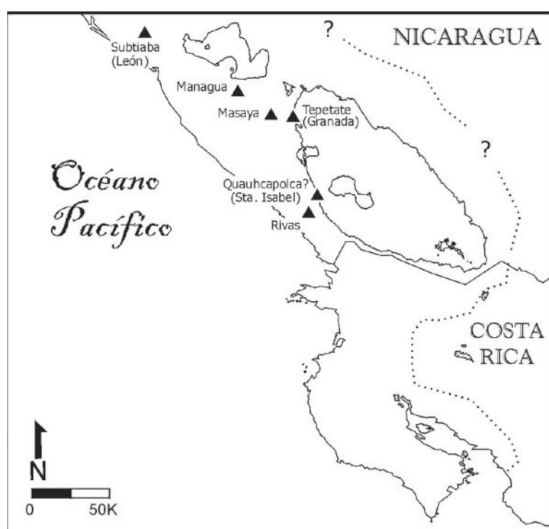


Figure 1: Map of Pacific Nicaragua, showing Archaeological Sites Investigated by the University of Calgary Program (Steinbrenner 2010)

Cultural Context

The Late Postclassic period in Pacific Nicaragua is relatively well-documented in Colonial accounts (Motolinia 1951 [1540]; Oviedo y Valdez 1976 [1520s]; Torquemada 1975-1983 [1615]). These chroniclers described the migration out of Mexico by at least two separate groups, with the Oto-Mangue-speaking Chorotega arriving in about 800 CE and the Nahuatl-speaking Nicaraos arriving in about 1300 CE. These dates are problematic from a historical perspective, but do correspond to archaeologically-documented changes in settlement patterns and material culture that suggests cultural changes. The most detailed descriptions of the Late Postclassic/Ometepe period are found in the extensive writings of Francisco Oviedo y Valdez (1976 [1520s]), who lived in Pacific Nicaragua in the 1520s, and who also relied on other Spanish accounts, especially that of Bobadilla (a Catholic priest who collected interview data from indigenous elders). Among the data recorded were descriptions of indigenous groups leaving central Mexico to flee the tyranny of the historic Olmeca-Xicallanca,

settling along the Pacific coast from the Soconusco region of Mexico all the way south and east into northwestern Costa Rica (Abel-Vidor 1981; Chapman 1960; Fowler 1989). Oviedo y Valdez also described cultural practices, linguistics, and religion, with his main emphasis being on the Nahuat-speaking Nicaraos (Nahuat was the language of the Mexica/Aztecs, but was also used as a lingua franca of the long distance merchants known as the pochteca).

This ethnic diaspora of central Mexican groups into Central America appeared to be an excellent opportunity for me to explore my long-standing interest in ethnogenesis (McCafferty and Dennett 2013), as cultural groups originating in the Mexican highlands adapted to the tropical environment in a multi-cultural mosaic of Chibchan- and Oto-Manguean-speaking neighbors. And the archaeological contexts that we discovered along the shore of Lake Cocibolca delivered an abundance of varied cultural remains: beautiful polychrome pottery, mortuary contexts, well-preserved faunal and botanical remains, etc. As a result of 20+ years of intensive investigation we have uncovered extensive results dating from the Tempisque period (500 BCE - 300 CE), Bagaces period (300 CE - 800 CE) and Sapoa period (800 CE - 1300 CE). But we never found the Ometepe period, the target of our ethnohistorically-informed research design. Consequently, in 2019 we went back to the drawing board, obtaining a small pilot-grant from the University of Calgary to sample a cluster of sites in the Moyogalpa district, including the Los Angeles site where the single Ometepe period C14 date had been recovered.

Ometepe Island is one of the most thoroughly explored regions of Nicaragua. It first came to international attention through the explorations and subsequent publications of Ephraim Squier (1990 [1853]), an American archaeologist sent to Nicaragua to help investigate the potential of a canal to connect the Atlantic coast with the Pacific, passing through Lake Cocibolca. Squier's publications included descriptions of monumental stone sculptures as well as brightly colored pottery. In 1881 an American Navy doctor, John Bransford, excavated hundreds of burial urns from Ometepe Island and published a monograph on Nicaraguan archaeology. Other avocational 'archaeologists' visited Ometepe Island at the end of the nineteenth-century, collecting artifacts for foreign museums while speculating about the origins of the indigenous inhabitants. More recently, Ometepe Island has been the focus of excavations by Wolfgang Haberland (1992) to sample sites from throughout the occupational sequence, and also a widespread survey of petroglyphs by Suzanne Baker. Based on these investigations we now know that Ometepe was home to some of the earliest occupants of Pacific Nicaragua (from the Orosi period, 2000 BCE - 500 BCE) and was also an important region for mortuary ritual as well as a rich tableau for rock art. And it remains the only area with confirmed Late Postclassic remains.

Since 2000 the University of Calgary Nicaragua program has investigated numerous sites in collaboration with archaeologists from the National University of Nicaragua, the University of Costa Rica, and Mi Museo (a private museum in Granada, Nicaragua), and over 200 international students have also participated on these projects. In November of 2019, with seed funding from the University of Calgary, a small team of Nicaraguan archaeologists under the direct supervision of Oscar Pavon Sanchez of Mi Museo (Granada, Nicaragua) set up a field camp at the El Ceibo Museum. We obtained permissions from the local municipal authorities as well as the Archaeology Directorate of the Ministry of Culture. After consulting with Mr. Ghitis of the El Ceibo museum access was acquired to five different properties where archaeological materials had been found (Figure 2). The goal was to identify sites with Late Postclassic/Ometepe period contexts for the purpose of a large-scale investigation.

Survey Results

Locus 1 - Sacramento 1 site

This area was tested using 187 shovel tests to identify 'hot spots' of artifact concentration. Materials from each shovel test were collected in two levels: 0-30 cm considered as the plow zone; and 30-bottom (typically between 100-120 cm). The artifact densities were plotted, with three concentrations selected for more intensive excavation. This was usually done in 10 cm arbitrary levels unless a change in soil color or consistency was recognized.

Operation 1 (N0/W60) investigated a concentration of sherds identified as Sacasa Striated, a common type associated with Postclassic burial urns. The excavation unit encountered a poorly preserved Sacasa Striated urn, damaged by root activity. Associated human skeletal remains included bone fragments and teeth.



Figure 2: Map of Moyogalpa Region of Ometepe Island, showing Five Excavation Locales (Zambrana 2020)

Operation 2 (N30/W50) was a 2 x 2 m unit located where the shovel test had encountered a concentration of large sherds from a probable burial urn. The stratigraphic excavation exposed the top of an urn at a depth of 10 cm below the surface. Further excavation revealed two Sacasa Striated burial urns as well as another skeleton as a primary direct interment (Figure 3). Two adult individuals were identified. Finished lithic tools were associated within and outside of the urns as grave offerings (Figure 4). Also found was a ceramic ocarina (Figure 5) and a jadeite bead.

Operation 3 (N65/W0) was a 1 x 2 m trench in the vicinity of a low mound, where a high density of material culture had been recovered. In addition to lithics and ceramics, fragments of bajareque were found to indicate pre-Columbian architecture. Diagnostic ceramics indicate that the Sacramento site was occupied during the Late Postclassic/Ometepe period (1300-1525 CE), and was used both for residential and mortuary purposes. Unfortunately, the interest generated by the archaeological excavation led to a land dispute and the archaeological team was forced to leave the property. The site guard looted the burial urns and later tried to sell some of the artifacts in town. So, although the Sacramento 1 site showed good promise to address the research goals, ultimately the team had to abandon it.



Figure 3: Locus 1, Operation 2, with two burial urns and primary interment (Moroney 2019)

Locus 2 – Sacramento 2 site

This site was explored with 58 shovel test pits, followed by two excavation operations to investigate ‘hot spots.’ Operation 1 (S0/E30) was exposed because the shovel test encountered a vertical *laja* (flat stone), typical of indigenous burial crypts. Although a biface point was discovered, the conclusion was that this was a ‘false tomb,’ lacking skeletal remains.



Figure 4: a) Groundstone Axe; b) Lithic Biface from Locus 1, Operation 2 (Moroney 2019)

Locus 2 – Sacramento 2 site

This site was explored with 58 shovel test pits, followed by two excavation operations to investigate ‘hot spots.’ Operation 1 (S0/E30) was exposed because the shovel test encountered a vertical *laja* (flat stone), typical of indigenous burial crypts. Although a biface point was discovered, the conclusion was that this was a ‘false tomb,’ lacking skeletal remains.

Operation 2 was opened because the shovel test encountered a human skull (Figure 5). Expanding around the cranium exposed two complete ceramic vessels (Figure 6a,b): a Murillo Brown bottle; and a Papagayo Polychrome superhemispherical bowl. The bowl was decorated with a depiction of a mammal, probably an anteater.

Based on the diagnostic ceramics, the Sacramento 2 site dates to the Sapoá period (800-1300 CE). The primary interment of the individual is unusual for the period. However, isolated crania associated with offerings are known from the El Rayo site, where they were interpreted as possible evidence of trophy heads.



Figure 5: Human skull from Locus 2, Operation 2 (Moroney 2019)



Figure 6 a) Murillo Brown bottle; b) Papagayo Polychrome superhemispherical bowl

Locus 3 – Los Angeles site

The Los Angeles site has had a long history of archaeological exploration, and therefore the extensive occupation history is well-known (Haberland 1992). One of our project members, Juan Bosco Moroney, directed a rescue excavation at the Los Angeles site in 2010, where he discovered several burials in the dirt roads, but also reported extensive looting as local residents excavate throughout the community in search of valuable pre-Columbian artifacts.

In 2019, we excavated 36 shovel tests. In one a badly preserved Sacasa Striated burial urn was unearthed, but root disturbance had shattered the vessel and destroyed any skeletal remains. A mix of material remains in the shovel tests demonstrated the long occupational sequence at Los Angeles, but did not present archaeological contexts with enough integrity to justify further testing.

Locus 4 – Punta Jesus Maria

This site is a spit of land, essentially a sand bar, that extends into Lake Cocibolca. It is a popular recreation area, and visitors have reported pre-Columbian artifacts in the sand. At the request of the Moyogalpa municipal authorities, 55 shovel test pits were dug. A low density of Postclassic artifacts was found but never in a concentration that justified a more extensive excavation operation.

Locus 5 – Sacramento 3

This site is located in the courtyard of an existing house, where pre-Columbian artifacts had been reported on the surface. Thirty-seven shovel test pits identified three areas of interest based on artifact concentrations. One of these operations exposed a concentration of cobbles, interpreted as the foundation of a pre-Columbian structure (Figure 7). Diagnostic ceramics of the Granada Redware group (including Leon Punctate) and Charco Black on Red indicate that this feature dates to the Bagaces period (300-800 CE). Other operations, however, recovered mixed debris suggesting contamination of ancient deposits in more recent trash pits.

Discussion

The goal of the Ometepe project was to identify sites dating to the Late Postclassic/Ometepe period (1300-1525 CE), with the ultimate objective of obtaining funding for a large scale investigation. Five sites were tested. The first site, Sacramento 1, revealed the best candidate for a Late Postclassic site based on several burial urns, but unfortunately a land dispute forced us off that property. Of the other sites tested, Sacramento 2 featured burial urns associated with Sapoá period grave offerings, and Sacramento 3 had an architectural feature dating to



Figure 7: Cobble concentration as possible architectural foundation at Sacramento 3 site

None of the sites featured artifact densities comparable to some of the other sites that the University of Calgary program has investigated, such as Santa Isabel or El Rayo. Disappointing as these results were, this pilot project did add new data to the developing archaeological map of Pacific Nicaragua. It also contributed to a positive working relationship with the El Ceibo Museum in Moyogalpa. Members of the archaeological team presented results at a town hall meeting for the municipality, furthering the goal of public outreach. One consequence of the meeting was open communication with other community members with information about potential sites for future investigation.

Cultural materials recovered from the five sites span over 1000 years of occupation, consistent with previous investigations in the Moyogalpa district. Bagaces period ceramics were found at the Los Angeles, Punta Jesus Maria, and Sacramento 3 sites (Figure 8). Sapoá period ceramics were found at the Sacramento 2, Punta Jesus Maria, and Sacramento 3 sites (Figure 9). Ometepe period ceramic were found at the Sacramento 1 site (Figure 10).

In addition to cultural materials, the project also recovered skeletal remains of five individuals. Preliminary inspection of these remains made it impossible for detailed bioarchaeological interpretations. The use of Sacasa Striated burial urns was consistent with mortuary practices observed along the western shore of Lake Cocibolca, and from previous excavations of Postclassic contexts on Ometepe Island, as well. We are in contact with a group interested in conducting aDNA analysis of human samples from Pacific Nicaragua, so there is a likelihood that these individuals may become part of a larger regional analysis of ancient population genetics.

The archaeology of Pacific Nicaragua continues to develop, with multiple international teams conducting research and the Nicaraguan Directorate of Archaeology, within the Institute of Culture, coordinating for a more comprehensive study initiatives. This small pilot project contributes to the broader plan for Nicaraguan archaeology, so even if the results were less than we had hoped, it did produce useful information and advanced goals for community engagement. Ometepe Island remains an important region for archaeological research, as well as friendly environment to conduct that research. We look forward to new opportunities to expand our survey.



Figure 8: Bagaces Period Diagnostic Ceramics



Figure 9: Sapoá Period Diagnostic Ceramics



Figure 10: Ometepe Period Diagnostic

Acknowledgement

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Surface Collections and Excavations: Case Studies from Moho Cay, Wild Cane Cay, and the Paynes Creek Salt Works, Belize

Abstract: *Surface collections can help date sites, provide information for excavations, or be used to address various questions about the site. Establishing a grid for surface collection, using mapped architecture as a basis for collecting material, or individually mapping surface finds, refines the context and enhances chances of evaluating spatial patterns of artifacts that define culture. Three different surface collection strategies are discussed for places on the coast of Belize, including Moho Cay, Wild Cane Cay, and the Paynes Creek Salt Works.*

Keywords: Surface Collection, Coastal Maya, Chert, Underwater, Sea-level Rise, Trade, Belize

Introduction

Surface collections carried out during survey, donated by landowners or others, or collected during excavations, can provide information on the age of a site and the nature of the archaeological material below the surface. Controlled surface collection is a standard method in arid parts of central Mexico and the Valley of Oaxaca, where artifacts are visible on the ground surface (Blanton et al. 1979; Sanders et al. 1979). This builds on Lewis Binford's fieldwork at Hatchery West where a gridded surface collection method was used as a subsurface indicator to guide excavations (Binford et al. 1970). René Millon (1970) directed the Teotihuacan Mapping Project, in which over 5000 structures were mapped. Surface collections in most of the structures were carried out. This method allowed the study of spatial patterning of artifacts such as obsidian (Spence 1981), the identification of ethnic neighborhoods, and other studies. Forest cover and lack of ground visibility in much of the Maya area has limited systematic, controlled surface collections to areas in the northern Yucatan such as Sayil where there is little vegetation, or unusual conditions such as sea-floor survey at the Paynes Creek Salt Works (McKillop 2019; Sills and McKillop 2010). At Sayil, controlled surface collection focused on houses and other structures mapped in a 1.5 km² area to address kitchen gardens in the city, the political organization, and access to water, among other themes (Carman and Sabloff 1996; Killion et al. 1989; Smyth and Dore 1992). The ground surface and stone architecture, even the stone alignments marking the outlines of pole and thatch houses, were also visible, making surface collection units possible in structures and open spaces.

Other surface collections, such as those carried out when cleaning looters' trenches in mounds in the Maya area or collections donated by landowners or others, can provide clues to age and use of a looted structure or the site, respectively. Significant contextual information is lost from general surface collections, although temporally diagnostic pottery can provide clues to the age of the site and the presence of obsidian can indicate trade at some point. In this paper, surface collection methods and results are compared for Moho Cay, Wild Cane Cay, and the Paynes Creek Salt Works, on the coast of Belize (Figure 1).

Moho Cay

At Moho Cay, a Classic period trading port located in the mouth of the Belize River, a surface collection by others was evaluated after the excavations. The site was located on the northern point of the island which was dry land, in contrast to the larger southern area which was mangrove swamp. Following excavations at the site, a large surface collection was made available for study. Knowing the location where the artifacts were collected made it a useful addition, especially when the site was destroyed by dredging a harbor for tourism development before the next field season. Comparison of the presence and abundance of different chert and ground stone artifact types in the excavated and surface collected material, enhanced interpretation of the site.

The excavated material includes fewer artifact types that are mainly broken, whereas the surface collection comprises a wider variety of types as well as complete artifacts. The site was located on the northern point of Moho Cay. Sea-level rise and erosion of the cut banks along the shore had exposed an area extending about 30 meters from the northern point where intact burials with pottery vessels had been observed and collected by priests at nearby St. John's College (Figure 2). Erosion of the cut bank was evident during the field season, with burials exposed in the cut bank and immediately off-shore.



Figure 1: Map of the Maya area showing the locations of Moho Cay, Wild Cane Cay, and the Paynes Creek Salt Works. Map by Mary Lee Eggart, LSU. Source: Heather McKillop



Figure 2: Photo of excavations on the northern point of Moho Cay, with the offshore area of sea floor collection behind. Photo by Heather McKillop. Source: Heather McKillop

In order to sample different parts of the site, the northern point was divided into 10 X 10 m grids, with an excavation unit selected in each grid (McKillop 2004: Figure 16.1). The units along the shore were placed to include burials that were eroding from the cut bank. In other grids, units were placed in areas that were not disturbed by burrowing land crabs. Excavations were carried out by arbitrary 20 cm levels until a burial or other feature was encountered. Burials were exposed and excavated as a single level. Trowels were used to excavate, with all soil screened through ¼ "mesh in rocker screens. The water table was reached by about 40 cm depth, associated with the burials, which made exposing the burials, excavating them, and screening deposits difficult. One burial was discovered on the sea floor at low tide. With the aid of tide charts from the Belize meteorological services, excavation of the burial was timed to low tide. Sand bags kept the sea from encroaching on the burial during excavation (Figure 3). Excavations yielded burials associated at the same depth as burials reported eroding from the sea floor in the offshore area. Excavations were placed along the cut bank where human skeletal material was visible. A burial exposed eroding from the sea floor at low tide was excavated. Study of the offshore pottery and stone tools evidently associated with burials might have suggested an island necropolis, an interpretation falsely made for other Maya island sites such as Jaina. However, the excavated burials were clearly associated with the practice of burial of deceased family members under house floors: The excavated burials were in a matrix of household middens, with fragments of house floors recovered (McKillop 2004).

Some burials were associated with pottery vessels, including a bichrome, black on red dish with chevrons below the rim on the interior in burial 8, similar to vessels found lip to lip offshore (McKillop 2004: 266, Figure 16.6). A salt making vessel, along with a solid clay cylinder vessel support, accompanied burial 5, which was eroding into the sea. A femur and hip were visible in the cut bank (McKillop 2004: Figure 16.5). A partially articulated skeleton in unit 2b was mapped and excavated offshore during low tide (McKillop 2004: Figure 16.5). Together, the excavated burials and offshore artifacts indicate a sizable community once lived on the island.



Figure 3: Offshore burial excavation at low tide, with Trent University undergraduate students Winnel Branche (left) and Julie Carmack (centre). Photo by Heather McKillop. Source: Heather McKillop

The importance of the collection for insights into the ancient Maya past on Moho Cay was underscored when the site was destroyed just before the second field season of excavations. The entire site was dredged for tourism development to create a harbor on the northern end of the island, exactly where the ancient site was located. Without the contextual information provided by excavations, the social and economic foundations of daily life and the role of the Moho Cay Maya in trade would be poorly known. Excavation of a large Classic period midden dominated by manatee bone and large marine shells, including *Strombus gigas*, *Strombus pugilis*, and *Melongena melongena* (McKillop 1984, 1985) provided insights into the subsistence economy of the inhabitants of the cay. Excavated obsidian from burials and midden deposits dated to the Classic period formed the basis of a long-distance trade model of El Chayal obsidian transported along the coast of Belize (Healy et al. 1984). The transport of El Chayal obsidian by coastal transportation routes fits with a model of El Chayal as the dominant outcrop used by the Classic Maya of the southern lowlands, whereas Ixtepeque obsidian became popular in the Terminal Classic and dominated during the Postclassic period (McKillop 2005).

Stone Tools: Take Some and Pass Some on

High-quality northern Belize chert objects were traded to Moho Cay, as well as large chert blades from which a variety of stone tools could be made (Figure 4). Banded chert typical of Colha was common, although discolored (Figures 4a, c). Most of the chert was discolored black or grey from the salty matrix of the archaeological deposits. The presence of chert flakes and other debitage throughout the excavations indicates chert stone objects were made or reworked at the island community. Large blade blanks were brought to the island where they were formed into unifacial or bifacial stone points. Some chert blades had cortex, indicating they were removed from a core during initial use. Standard bifaces, chopper-pounders, and adzes may have been transported as finished tools. However, the presence of 2 “orange-peel” flakes produced from making adzes, indicates some biface production on Moho Cay as well. The excavated chert objects are not representative of the variety of stone objects recovered by others in a large surface collection made in the shallow, off-shore area off the northern point of the island where the site had eroded. Erosion had eroded the site from the ground surface to a depth of about 50-75cm, exposing burials on the seafloor.

exposing burials on the seafloor. The excavated chert objects include fragmentary tools, flakes and other debitage, and only 29% of the diversity of artifact types represented by complete artifacts (Figure 5). Ten chert tool types were from surface only (unifacial stemmed point with round blade; bifacial stemmed point; notched stem point; unifacial stemmed point; laurel leaf biface; chopper-scraper; orange-peel adze; plano-convex adze; diamond-shaped biface; standard biface). Three of the chert types from the surface were only represented by fragments from excavations (bifacial stemmed points, unifacial stemmed points, and standard bifaces). Only four chert tool types were from both surface and excavations (small blade; scraper, gouge, chopper-pounder). More debitage, including flakes and chunks, was recovered from excavations, which is important for making a case that stone tools were made at the island, which would not have been evident from the surface-collected material. That broken stone tools were recovered from middens, household garbage, and burials indicates use of tools and discard by the islanders. A stemmed chert uniface was found in burial 3 (Figure 4a; McKillop 2004: Figure 16.4). Some complete stone tools from the surface collection were likely associated with burials, as reported to me. However, chert and obsidian artifacts were also found in the manatee bone midden (McKillop 2004: Figure 16.7).

Obsidian, Jadeite and other Ground Stone Trade Goods

Similar to chert, ground stone objects were more commonly recovered from the surface than from excavations (Figure 6). Some types were only found in surface collections (pierced pumice stone disk, mano, grooved stone, greenstone celts, and a bark beater). Every type of ground stone object from excavations was more common in surface collections. In fact, excavated ground stone only included mano and metate fragments, side-notched stones, and jadeite. Most of the ground stone, except the side-notched stones, were likely transported from the Motagua River drainage. Pumice is distributed by northerly coastal currents from the Motagua River north along the coast and offshore cays of Belize, so that is the likely origin for the Moho Cay pumice.

Compared to the abundance of chert objects and debitage at Moho Cay, there was relatively little obsidian, which was evidently transported to Moho Cay as finished blades. A total of 93 obsidian items was recovered from excavations, which is low compared to Wild Cane Cay, another trading port, located much closer to the Maya highland obsidian outcrops (McKillop 2005). Two fragmentary and exhausted obsidian polyhedral cores were found in the excavations, as well as a complete obsidian core from the surface collections, indicating blades were struck at the community from prepared cores.



Figure 4. Selected chert artifacts from excavations at Moho Cay. A) stemmed uniface from burial 3, catalog 37/193-1-176; b) stemmed uniface, 37/193-1-157; c) stemmed uniface mid-section. 37/193-1-154; d) stemmed uniface distal end, 37/193-1-102; e) blade with cortex on dorsal surface, 37/193-1-91. Photo by Heather McKillop. Source: Heather McKillop

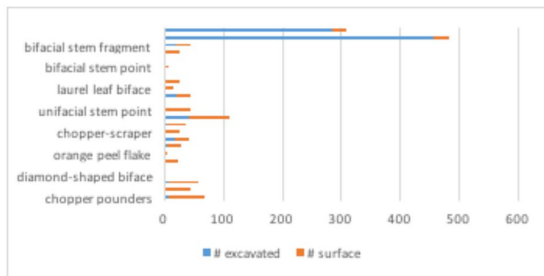


Figure 5: Chart showing differences in the number of chert artifact types in excavations and surface collection at Moho Cay. Figure by Heather McKillop. Source: Heather McKillop

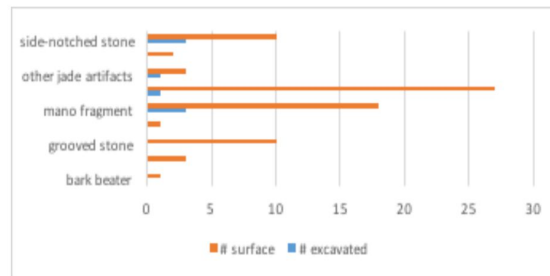


Figure 6: Chart showing differences in the number of ground stone artifacts in excavations and surface collection at Moho Cay. Figure by Heather McKillop. Source: Heather McKillop

Wild Cane Cay

Wild Cane Cay is a mangrove island located in the mouth of the Deep River in a coastal bight, the Port Honduras, in southern Belize. The island is covered in coconut and other fruit trees. There are six mounds that contain pole and thatch buildings on coral rock foundations, with burials dated by radiocarbon and stylistically identifiable pottery vessels to the Early through Late Postclassic (McKillop 2005). Pottery, obsidian, chert, and other artifacts were widely distributed on the island's surface, suggesting a systematic surface collection plan for identifying spatial patterning was warranted. A grid of 10 X 10 m surface collection areas was mapped on the entire island, resulting in 191 collection areas. Density maps of surface material provided information on spatial patterning of activities for the Postclassic component of the site. Obsidian was scarce on the coral rock mound but was distributed across the rest of the site, being especially abundant in several areas of household midden deposits (Figure 7; McKillop 2005: Figure 5.5). Deeply-buried Classic deposits were not represented in the surface material. The surface collection grid was useful to identifying and studying spatial patterning of activities for the Postclassic.

A stratified random sampling plan was used to select locations to excavate in the non-mound areas of the site. Stratigraphic excavations yielded middens dating from the Late Classic through the Postclassic. Together with the stratified offshore deposits, the depths of the offshore and island deposits identified by excavations matched, indicating the island was much larger in antiquity. The modern 3 ½ acre site was once a densely occupied 10-acre village and trading port, radiocarbon dated from the Early Classic through the Late Postclassic (McKillop 2002: Figures 5.4-5.6; McKillop 2007). In addition to the island, artifacts were visible in a shallow area to about 30 m offshore around the island in the water and in the mangroves. A grid was set up with shovel test locations every 10 m offshore. Stratigraphic excavations using shovels and screening the material indicated the artifacts on the sea floor were just the surface of deeply-buried archaeological deposits that extended at least 1 m below the sea floor.

Paynes Creek Salt Works

Artifacts were collected during sea-floor survey and excavations at the Paynes Creek Salt Works, with differences in the presence and abundance of different kinds of material. The Paynes Creek Salt Works consist of 110 sites that were submerged by sea-level rise and are underwater in a salt-water lagoon on the southern coast of Belize (McKillop 2002, 2005b, 2016, 2019; McKillop et al. 2010). A total of 4042 wooden posts were mapped at 70 sites, with posts known but not mapped due to remote or deep water locations at 30 more sites. The wooden posts mark the walls of pole and thatch salt kitchens where brine was evaporated in pots over fires to make salt, a dietary necessity that was traded inland where salt was scarce.

Initial fieldwork focused on briquetage--pottery vessels used in brine evaporation, with general surface collection made by pedestrian survey in the water and collecting pottery rim sherds with measureable rims to evaluate standardization (McKillop 2002). After wooden posts (and a canoe paddle) were found in 2004, a new survey system was devised to avoid walking on the sites and damaging them. The team used Research Flotation Devices (RFDs) to systematically survey on the water surface, shoulder to shoulder, traversing back and forth looking for wooden posts and diagnostic or other interesting artifacts embedded in the sea floor. Survey flags were placed to mark the locations. In deeper water, fish floats attached to fishing line and skewered into the sea floor with a piece of metal wire were used.

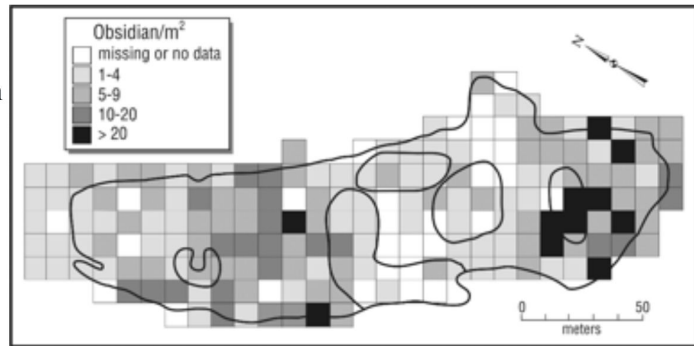


Figure 7: Map of the surface collection grids on Wild Cane Cay, showing the density of obsidian. Map by Heather McKillop. Source: Heather McKillop

The wood posts and artifacts were individually mapped with a total station, with the data were uploaded to a laptop and entered into the project GIS. The plan of the buildings and the associations of artifacts to the buildings were unknown until the map was created (McKillop 2019: Figure site 7). A jadeite gouge with a rosewood handle was discovered beside a post for Building J at Ek Way Nal (McKillop et al. 2019). The sea floor artifacts were not representative of the material at the sites, because they were collected to provide temporal data and to enhance our understanding of activities. However, large areas were surveyed, resulting in a wide diversity of artifacts of various materials, such as at T'aab Nuk Na (Figure 8; McKillop 2019, 2021; McKillop et al. 2019).

In contrast, the excavations yielded abundant briquetage, but they lacked the diversity of other items found in the sea floor survey (McKillop 2019). Ten underwater sites and two earthen mound sites in the mangrove flats have been excavated. Transects were placed through buildings and extending outside to look for variability in salt production and other activities. The underwater Site 74 had 98% briquetage in the excavations (McKillop and Sills 2016), which was typical of other sites. At Site 74 the transect through Building A was 14m in length and 1 m wide, and was divided into 1x1 m units for excavations. Stratigraphic excavations in 10 cm levels used 18" stainless steel knives to cut the peat, which was placed in large sacks in floats and ferried offsite using a rope pulley system for water screening. All material was saved, sorted, weighed, measured, and further studied at a lagoon lab by the shoreline and at our base camp.

Discussion

Three case studies from the coast of Belize have contrasting methods for surface collection that also provide different results. At all three sites, surface collected artifacts included more diversity of types as well as complete artifacts, in contrast to the often-broken artifacts from the excavations. The surface artifacts provide examples of complete examples, including diagnostic material, useful for fragmentary excavated material. Excavated material includes production waste, such as the chert debitage from Moho Cay, largely absent in surface collections.

in relation to the wooden architecture. GIS display of specific traits of artifacts, such as the distribution of unit-stamped motifs on Warrie Red jars, showed patterns within buildings and among sites (Figure 9). Context was lacking for the Moho cay surface material, except for statements from the collectors about the general area from which finds were collected and that pottery vessels were found with human skeletal remains, so that interpretations were limited.

Conclusions

Surface collection of artifacts can provide detailed information about ancient activities, especially when the artifact locations are mapped, collected in gridded areas or with associated architecture. Both the Teotihuacan mapping project and the Sayil Mapping project provided a basis for surface collections in buildings and open areas (Carmean and Sabloff 1996; Killion et al. 1989; Smyth and Dore 1992). In these cases, surface collection was possible due to arid conditions where artifacts were visible on the ground surface. Surface presence of artifacts on Wild Cane Cay also made systematic surface collection possible.



Figure 8: Map of Ta'ab Nuk Na underwater site, Paynes Creek Salt Works, showing artifacts and posts mapped on the sea floor. Map by Heather McKillop. Source: Heather McKillop

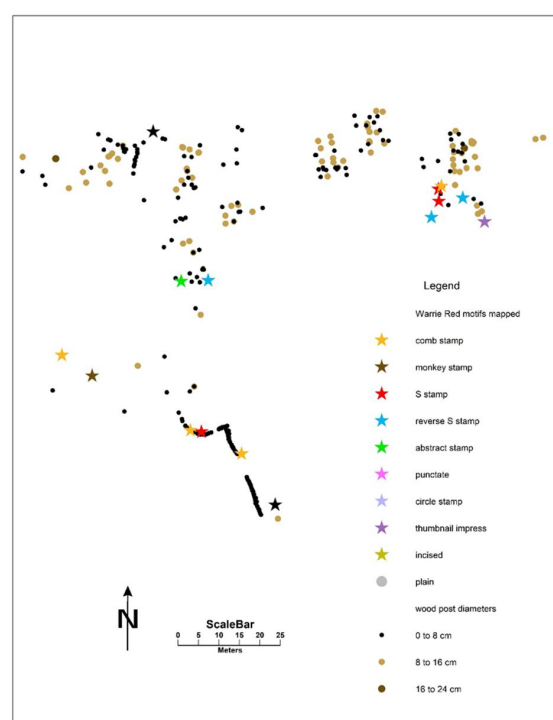


Figure 9: Map showing the distribution of unit-stamped motifs on Warrie Red jars at the Paynes Creek Salt Works. Map by Heather McKillop. Source: Heather McKillop

The 10 x 10 m areas provided 191 locations for recording variability of artifacts in the non-mound areas of the site. Mapping individual artifacts on the sea floor at the Paynes Creek Salt Works meant they were later associated with mapped wooden architecture in a GIS (McKillop 2019). Attention to context in surface collection strategies can provide detailed information about the spatial patterning of artifacts, culture.

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The Bat: Mythology and Iconography in Mesoamerica

Abstract: *Cultures around the world and across time periods have bats as a part of their mythology. These myths depict bats as everything from heroes to villains and Mesoamerica is no exception. This paper explores the known material culture and writings related to bats from several cultures and regions in Mesoamerica. These portrayals are typically positive, or at least significant. For example, the Popol Vuh has the twins confront bats. Modern attitudes towards bats however, have shifted to view them as pests at best, evil at worst.*

Keywords: Bats, Aztec, Maya, Zapotec, Costa Rica, Popol Vuh, Material Culture, Mythology

Introduction

Only three of the more than 1300 species of bats worldwide are vampire bats, and they all live in Central America. Still, when I arrived in a second-grade classroom to deliver a talk on Alberta bats, nearly every child asked what they should do when (not if) they ran into a vampire bat. It was then that I realized how unknown and often feared bats are, even in modern day Calgary. Bats have long captured the imagination of humankind. They sleep hanging upside down, they are awake at night, and they use echolocation to both navigate their surroundings and hunt. According to fables, bats claim to be neither beast nor bird, and so are left to their own devices, belonging to neither. All of this, particularly their nocturnal status, has contributed to the mystery surrounding bats. Perhaps as a result of this, many cultures around the world have myths and superstitions relating to bats. Cultural reactions to bats are varied and extreme. For example, in China, the word for bat is the same as the word for 'joy' (Sax 2001). Confucius described them as exemplifying cleanliness because they eat insects and therefore helping to mitigate the spread of malaria and other diseases. Because of this, bats were elevated to the status of beloved animal helper in ancient China. In Zimbabwe, many bat species are seen as the spirits of deceased relatives who come to visit at night. In contrast, flying fox bats in Zimbabwe are equated to demons. Similarly, the witch craze of the Middle Ages and the Victorian gothic literature period in Europe resulted in bats being viewed as demons, witch's companions, and bringers of ill luck and health. In Apache mythology, bats are useful. The Apache use wings for a traditional type of medicine (Boyer 1972). Bats confront our human minds with a puzzle. They are opposite us in so many ways, and so humankind is quick to tell stories and hold superstitions surrounding the mysterious animal. Mesoamerican bat species are no stranger to this storytelling either. While the global reaction to bats is varied, the Mesoamerican reactions are generally more cohesive. In this paper, I will explore several Mesoamerican culture groups in their mythology and iconography of bats to further understand the Mesoamerican feeling towards them.

Aztec and Nahua

In the centre of the Aztec capital of Tenochtitlan lies Templo Mayor. It was in this temple that a nearly life-sized ceramic bat-man was discovered. This bat-man has a human body with the hands, feet, and head of a bat, complete with mouse ears and fangs (Read and Gonzalez 2002). The Nahua, ancestors of the Aztecs, have a myth wherein a bat bites the goddess Xochiquetzal, creating flowers. This myth in particular is seen to illustrate the Aztec belief in a connection between celestial and earthly beings. Presumably, bats are seen as a sort of in-between creature who connects the two worlds. Beyond this solitary ceramic artifact and the flower myth, records of bats' roles in Aztec and Nahua society are scarce. Thus, the remainder of this paper focuses on groups for which more material culture and stories are known.

Zapotec and the Oaxaca Valley

The Zapoteca of the Oaxaca Valley also have material culture portraying bats, though it is mainly restricted to ceramics. Piquete Ziña is the name given to the Zapotec bat-god (Read and Gonzalez 2002). Two urns found at Monte Alban appear to represent him. Interestingly, these are funerary urns. This perhaps indicates a belief that bats are connected to the underworld, mirroring the Maya mythology discussed later in this paper. Another Zapotec mask known as the Trident also seems to represent Piquete Ziña. As Stross noted in his 2019 paper, the mandible of this mask is the same shape as the Monte Alban bat-god mask. Both masks are considered to be the inverted Maya glyph, lu (Stross 1996). In Brady and Coltman's paper reviewing the identity of Camazotz, they discuss the presence of bat-like figures in several Puebloan codices. In the Borgia codex, a bat deity can be seen drinking blood from a presumably sacrificed human chest, and later is seen wearing a human head on its own chest. In the Vaticanus B, Fejérváry-Mayer, and Porfirio codices from Late Postclassic Central Mexico, an anthropomorphized bat can also be seen engaging in human sacrifice. In each of these codices, the bat deity is seen holding a severed head in one hand, and often times a human heart in the other.

Maya

The Maya have a complex and full history with the bat, both in iconography and in myth. The Chol Maya phrase *suts'atax i wut* means 'face of the bat' and generally means someone looks very tired. It is associated with an upside-down bat head glyph (Schele 1987). Bat glyphs signify two separate syllables in Maya, *lu* and *ku*. (Boot 2009). The K'iche Maya word *zotz* means 'bat' (Kaufman, 2003). There is a month named *Tzotz*, and there is even a group of Maya people in the Chiapas region of Mexico named *Tzotzil* or 'people of the bat' (Karslake 1987). Karslake explains that bats are incorporated into motifs throughout the Chiapas region, though nowhere is it as prominent as in the community of *Zinacantanantecos*. This community was home to a stone bat, destroyed by conquistadors, and was patronized by a bat-god. In another *Tzotzil* community, *Magdalenas*, bats are a symbol of the earth lords who live in the surrounding mountains. These bats assist the peoples' animal spirit companions and are therefore viewed positively (Karslake 1987). In addition, many Classic era ceramic artifacts from the Maya region include depictions of bats. Most interpretations of these bats conclude that they are representations of *Camazotz* or the Lord Bat from the *Popol Vuh* (Read and Gonzalez 2002). A 2016 paper by James Brady and Jeremy Coltman challenge these interpretations, however. They note that no ceramics from the Maya depict the Hero Twins in the presence of the *Camazotz*. Brady and Coltman went on to argue that because of this, the assumption that all depictions of bats in Maya archaeology are representations of *Camazotz* is deeply flawed. While Central Mexican codices portrayed bats as violent and heavily involved in human sacrifice, the ethnohistorical and social connotations of bats in Maya groups is quite positive during the Classic period (Brady and Coltman 2017). As previously discussed, the Maya Highlands were home to a linguistic group known as the *Tzotzil*. The Lowlands also had a town named *Zotz'il*. The Ki'che Maya had a royal lineage known as the House of the Bat, *zotzilá-ha*. The Classic period Maya also saw bats as messengers between the human world and the underworld, *Xibalba*, and as symbols of Earth and fertility. In the Late Classic period, Maya depictions of bats explore a more malevolent side to the animals (Brady and Coltman 2017). The *Chama Vessel*, previously identified as *Camazotz* and reinterpreted by Brady and Coltman, breathes fire. Several other Late Classic ceramics depict bats holding trays of severed extremities, though this is not a role reserved for bats. Monkeys, jaguars, toads, and other animals can all be found depicted as holding severed human body parts.

In order to expand on the importance of bats in Maya mythology, we must look into the Popol Vuh. The Popol Vuh is an epic tale which tells of the creation of humans and the trials that the primordial family went through to bring about the cosmological hierarchies that now exist. Within the Popol Vuh, there is a story of the Hero Twins who enter Xibalba to face trials set forth by the Death Lords. The fourth trial which they are put through is to spend a night in the Bat House. The bats living in this house were death bats who used their leaf-noses as blades. One death bat (Camazotz) beheads one of the Hero Twins before the night is through. The beheaded Hero Twin, Hunahpú, is brought back to life by his brother, Xbalanqué. This story lays out an important theme in Mesoamerican culture, and Maya culture in particular. Life and death are not separate, but instead are intertwined and interact with each other. As previously stated, bats serve as messengers between the human world and the underworld. Therefore, bats are extremely important in Maya society and ritual.



Figure 1: Photograph of the Chama Vessel's Bat-Like Figure. This Figure is Often Identified as Camazotz, Though Brady and Coltman Challenge This in Their 2017 Paper. Source: Boot, 2009

Costa Rica

In the Bribri earth myth, a bat was commanded by God to suck the blood of a young tapir. After drinking her blood, the bat spits it onto a rock where plants promptly begin to grow (Nygren 1998). In another telling of this Bribri creation myth, a vampire bat flies to the centre of the earth to feed on the blood of a baby jaguar. Once the bat returns to the earth's surface, it defecates. This guano is what the Bribri god, Sibú uses to create the first tree.

As with the Aztec and Nahua, there is little recorded mythology or folklore relating to bats that was available to see. There are, however, large numbers of material remains depicting bats. The Denver Art Museum has several stone metates which have been elaborately carved with animal heads, presumably as a display of social class. Among these are metates carved into the shape of a bat's head. In addition, there are huge numbers of Costa Rican typical bar pendants depicting bats. Often, the bat is shown as having alligator heads in place of wings. Seen below is an example of one of the typical bat-alligator jade pendants.



Imaged by Heritage Auctions, HA.com

Figure 2: Costa Rican Bar Necklace Showing a Central Bat with Two Alligators Projecting Off Each Side in Place of Normal Bat Wings. Source: Heritage Auctions

Modern Attitudes Towards Bats

Even today, the general consensus among the public seems to be that bats are ‘creepy’ or are harbingers of evil. Whether this stemmed from colonial beliefs of vampires and witches, or the Maya ‘death bat’ myth became diluted and repurposed over time is up for debate. Trying to get rid of bats or killing them has been a fairly common practice around the world and in Mesoamerica in the modern era. In particular, bats have been seen by farmers as omens of poor crops and so they are often feared and loathed. However, this dismal attitude towards bats may be changing as education and outreach becomes more readily available.

Bats provide more ecological services than many people think. In Alberta, we have exclusively insectivorous species. Aside from the obvious of keeping insect populations in check, insectivorous bats have an important role in the economics of agriculture. By eating pests, crops are saved, and the amount of money needed for pest control and pesticides is minimized. Bats surrounding the tropics are much more diverse in their ecologies. Along with the insect eaters, and the previously mentioned vampires, there are fruit eaters and nectar feeders. The fruit eaters serve to spread seeds and help re-plant crops and forests alike. Nectar feeders provide a much less obvious service which is both economically and culturally important for Mexico. The Lesser long-nosed bat feeds on the nectar of blue agave plants. While they are drinking the flower’s nectar, pollen is deposited onto the fur of their heads which is then used to pollinate the next flower. Lesser long-nosed bats are integral to the renewal of blue agave crops, the plant from which tequila is produced.

Mexican bat researcher, Rodrigo Medellín, or “the Bat Man of Mexico” as he is known, is all about changing public attitudes towards bats through education. In Mexico, the prevalent method of blue agave horticulture was to cut the plants before they were allowed to flower so as to raise the sugar content of the plant. However, this led to a monoculture which was susceptible, and ultimately fell victim to, fungus and disease. Medellín saw that this was a problem not only for the bats he loved, but also for the agriculture industry. His job was to convince farmers to set aside their preconceived views of bats as ill-omens. He did this by going to bars and showing strangers pictures of bats up close and explaining that tequila would not exist if the blue agave plant hadn’t originally been pollinated by the bats. Over the decade in which he did this grass roots advocacy, the Lesser long-nosed bat has slowly recovered from the brink of extinction. Little by little, modern attitudes towards bats in Mexico, and the rest of Mesoamerica, is changing for the better.

Conclusion

Bats have a long and winding history in Mesoamerican society. For the Aztec and the Nahua, bats played a central role in creating the earth (flowers), and therefore in connecting the world of the deities with the world in which we live. The Zapotec appear to have worshipped a bat-god named Piquete Ziña, and bats played a role in human sacrifice in several Central Mexican/ Oaxaca Valley codices, including the famed Borgia Codex. Of all of the groups explored in this paper, the Maya have the most well documented and extensive mythology and material culture relating to bats. Much of it stems from the Popol Vuh, explaining the creation of humans and the primordial family. In the Maya stories of bats, they again play a role in human sacrifice, killing one of the Hero Twins. While these depictions of bats may seem to elicit negative reactions at face value, they hold a deeper significance. In many Mesoamerican cultures, life and death coexist and are equally important.

Bats are a creature of the underworld and perform human sacrifice, but they also are responsible for the creation of flowers. Behind the gruesome portrayals, bats serve the much larger purpose of connecting the physical and cosmological worlds, and therefore the common interpretation among most Mesoamerican groups is that bats are good and should be held in high esteem.

Modern attitudes towards bats have generally been more negative. They are often feared or seen as symbols of illness and poor crops. This has slowly been changing due to dedicated bat conservationists like Rodrigo Medellín.

There is ample opportunity for research into the changing significance and roles of bats in Mesoamerican culture and society. In particular, I would like to see an investigation into how public attitudes have evolved over time and how they continue to change. In terms of archaeological research, more needs to be understood about the role of the bat in Costa Rica to explain the abundant material culture depicting bats. In addition, studies into how each of these myths relate to each other would be fascinating.

In conclusion, I would like to share one more story. In the spring of 2018, I was lucky enough to go to Lamanai, Belize to participate in bat research. One evening, we went to the nearby site of Ka'Kabish, a (then) mostly unexcavated Maya site. Although we were there for bat research, our supervisor made sure to get us to the site in the daylight so that we could explore the centuries old looter's tunnels and get to know the surrounding jungle. I wandered into the first tunnel we came to, and lo and behold, in the heart of a Maya temple, I ran into a vampire bat.

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