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Predicting and Reconstructing the Formation and Nature of Maroon Settlements in Suriname

by

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Abstract

Predictive models are described and used as a background for testing archaeological speculations about the formation and nature of the Maroon settlements in Suriname and their strategic roles in their successes as they fought colonial forces to retain and maintain their freedom. The specific examples of the escape routes (now referred to as “freedom routes”) of Saramaka and Matawai Maroons of Suriname are used to describe and explain how available historical and geographical evidence and results of recent archaeological investigations could help throw more light on the development process of their early settlements and help us understand the formation of Maroon groups, family and group relationships before, during and after the major peace treaties between them and the relevant colonial administrations. The paper ends with the proposition that it is along the “freedom routes” that the movements, settlements and the formation of Maroon societies can be reconstructed and meaningfully explained. Archaeology takes the history and development of Maroon heritage beyond interpretations provided by historical, oral history and translations of colonial records.
INTRODUCTION

The establishment of plantations in Suriname by the English Governor of Barbados in the mid-17th century set off the enslavement of the indigenous Surinamese some of whom resisted slavery by running away. This was followed by the formation of communities of runaways, better known in Suriname as “Bush Negroes”, after the Dutch took over Suriname in 1667 and continued the plantation system. The Dutch found substitutes for the indigenous people by importing and enslaving Africans, who also escaped from the plantations into the inaccessible regions, forcing peace treaties in the 1760's that won freedom for them. Much research has been conducted on their military encounters with colonial forces, and also about their survival from historical records, prehistory, oral traditions and translations of Dutch archival records, (Hoogbergen 1990, Boomert 1980, De Beet and Price 1982, Geijskes 1959, 1991, Price and Price 1980, Price 1983, 1996, Versteeg and Bubberman 1992, Versteeg 1998), yet we do not know about the material culture and their formative stages. Archaeological research on the evolution of Maroon heritage in Suriname was never an issue in Caribbean Studies until the Maroon Heritage Research Project (MHRP) was launched in Suriname in the early 1990s with two major objectives: to study and reconstruct the evolution of Maroon material culture and the formation and transformation process of that aspect of their culture. These objectives would assist us to explain not only the Maroon interface with the indigenous people of Suriname but also the cultural process of their adaptation and survival as they pioneered the fight for freedom from colonial slave culture (Agorsah 2001, Ngwenyama 2007).

Patterns of the freedom routes:
A previous discussion of the Maroon escape routes (Agorsah 2001) speculated that as the Maroons escaped from enslavement into unknown and inaccessible environments, they relied on their mental maps developed through sequential exploration of those environments to establish and defend their settlements. Initially they would take advantage of the knowledge of the areas surrounding the plantations from which they escaped, explore them thoroughly and then, at the appropriate time, link their escape routes and locations to those mental maps that they had acquired. That knowledge would have helped them to develop networks of familiar pathways and landmarks along, and around which, they arranged their settlements. Such pathways and strategic locations, it was suggested, enabled the Maroons to effectively harness the resources of the rough terrain and harsh environmental conditions to claim their freedom firstly as a forest people developing a forest-based Maroon culture, which they later transformed into a river-based culture as they moved to settle along the major waterways, following the peace treaties.

Archaeologists unfamiliar with Maroon archaeology see these speculations as simplistic and wishful thinking. But common sense archaeology, based on the available background research on Maroon heritage suggests that Maroon response to the geographical factors, can be observed through models based on such speculated sequential explorations and a comparative analysis of the colonial and post-colonial experience, which are crucial to our understanding of the development of Maroon settlement behavior patterns and spatial arrangements and the formation of their heritage. A brief discussion of the individual freedom trails of selected Saramaka Maroons of Suriname illustrates the ignorance of
critics of the mental map model. Suriname’s thick tropical forest is cut through by complex networks of rivers, ravines and creeks making it almost impossible to penetrate. The rivers, flow through a number of gorges and rapids through the thick gallery forests of the riverbanks. It is possibly in these areas and on the ridges of the mountain ranges, and in the rock shelters and caves, that the Maroons established the foundations of their heritage. It is important to note a few facts about the freedom routes: settlements of the escapees may be named after the plantation from which the founders originated; they would follow the mental geography prevalent among the escapees; they would be chosen for security and for their strategic defense location. Colonial records mention that:

“For most of their villages lie upstream, safely entrenched behind the rapids and falls, on a rocky island or hidden part way in the jungle, with hardly visible path to the river bank” (Bruijning & Litchtveld 1957:46).

But such a description probably refers to the more permanent locations although the temporary, stop-gap locations might have required similar locational characteristics. Determining the locational and spatial transformations would clearly constitute a major challenge. Identifying spatial relationships, regularities and artifact patterns at their modern and archaeological sites, heightens the challenge. Ultimately, it should be possible to reconstruct transformational relationships between the observed patterns and the functional adaptation and related cultural responses of the Maroons of Suriname through time. The freedom routes would have followed different directions and strategies depending on the mental knowledge circulating among the enslaved on a particular
plantation and information communicated from or shared with those on other plantations through short term escapes prior to the final escape.

THE MAROON TRAILS

The Geographical Context

Maps obtained from geographical and historical references (de Lavaux 1737, Koeman 1973) as well as local information about sites have also helped to reach many sites (Agorsah and Childs 2005) but have not yet provided the needed data for reconstructing the formation process. Some of the historical and ethnographic documents provide some important historical sites of significance to archaeologist (Hoogbergen 1990, Kloos 1981, Sutlive, Zamora, Kerns and Hamada 1991). Documentation of Suriname Maroon place names, following previous studies (Wekker 1976) and also started with previous MHRP expeditions, have also helped, to some extent, to locate and identify their relationships with certain clan groups while some suggest possible African connections. Landscape transformation have been recognized to have played a very significant role with lasting effect on social change among small scale societies (Armstrong 1990, 2000, 2003, Armstrong and Kelley 2000, Perry 1999,) but it requires accurate maps that show locational and strategic relationships. It is observed that as the maps of the pathways of the escape movements of the Maroons unfold, they look more and more complex, showing paths or trails of the movements of the various family groups and groupings crisscrossing and sometimes indicating that certain territories were visited many times over. Archaeological sites along some of these trails have been investigated
for surface features, artifacts, drainage patterns and other geographical conditions such as site modification, vegetation or plant resources. Previous work by Khudabux (1991) and Klausner (1971) also suggest that the native people would have played a significant role in the formation of Maroon culture, suggesting that we pay attention to the environmental and health factors during the formation of Maroon settlements.

The mental map proposition

The suggestion in this paper is that the Maroons initially may have relied on the geographical knowledge as “mental maps”, which they developed on the plantation as they were moving or being moved from plantation to plantation or farm to farm. Consequently they would gain knowledge and understanding of the resources of the forest as they went through the sequential exploration of their settled ecological zones and surrounding environment, eventually developing an unconscious master plan of escape. The ecological knowledge they would acquire, in addition to the lessons they would learn from the natives, would help them realize the actual environmental conditions and develop networks of familiar pathways and knowledge of the natural properties of the vegetation and landmarks along, and around which, they would plan their escape. Knowledge of such pathways and strategic locations may also have enabled the Maroons to effectively harness the resources of the rough terrain and harsh environmental conditions, in a step-by-step process, to claim their freedom and establish the foundations of their heritage. It would be expected that they would migrate with resources such as specially protected and valued trees and herbs and features along the
trails and at the temporary sites, to the new sites or the later permanent settlements. In the transition, they would continue to create more secure locations, especially for other runaways, who would later venture out to join. Further, it is also expected that the African runaways would encounter groups of natives here and there. Alliances between them would then logically become a major factor in Maroon adaptation and expansion of the experience and survival. Such alliances have been documented in the cases of the Black warriors of the Seminole of Florida (Landers 1992, Weisman 1989), those of Palmares, Brazil (Orser and Funaris (1992) and the Jamaican Maroons (Agorsah 1994, 1999). This speculation, however, remains to be demonstrated in Suriname through comparative study of site locations and related artifacts.

Reconstructing the trail is based on the assumption that certain families or groups kept returning to the same site. This would make it difficult to identify continuities and the movement from site to site. Oral traditions and historical records appear to identify the trails of some of the leaders and prominent personalities, some with seemingly African names that eventually have also been used to identify the groups and their newly formed clan affiliation(s) – affiliations that in no way have any connection with those in Africa from which they came (Hoogbergen 1990). As the sites along these trails are archaeologically identified, located and studied, it should be possible to establish more clearly defined directions of movements among the Maroon groups. Maps of the trails followed clan movements referred to as “Freedom routes”. Analysis of the migration traditions and the complexity of the directions revealed in the traditions clearly points the fact that not all communication takes place along clear cur paths as there are many
environmental and circumstantial connection which are not constrained to routes and thus hard to identify.

The need to conceal routes and information about them worsens the situation making it even more difficult to create working models that take such invisible but ubiquitous routing and connections into account. Another issue is that with no interest in the archaeology of Maroon sites by previous researchers, no reconnaissance attempts were made to either ascertain the existence of the sites nor their location, further leading to many maps that seem to be accurate but inaccurate in reality. Some of the maps are interpreted to support the geographical sense to the oral traditions, although they may totally inaccurate. Interpretations related to these traditions is the reason why some researchers are disturbed about archaeological research on Maroon heritage, which is certainly the only hope for understanding the formation of Maroon heritage. The first move toward identification and location of Maroon sites in Suriname, therefore, has been an examination of what is now referred to as “freedom routes” which consist of the paths taken by variously identified Maroon groups as they escaped to form closely knit social groupings now transformed into what are known today as “clans” (lo) among the Saramaka of Suriname. The freedom routes were not only the first geographical area in Maroon encounter outside bondage on the plantation but also the context which swathe formation of their social groups and settlements although many of them only on a stop-gap or temporary basis.

The Freedom route of the Saramaka Awana (lo) Clan:
The Awana clan Freedom route: (Fig. 1) originated from the Vredenburg Plantation – eastward, then south to skirt the Para River – to the open area toward Mindindeti Creek then southward and then west toward Ebatop range to the west of the Suriname river–crossing many tributaries of the main waterways and settling in the Akongaandi creek area.

**The Freedom route of the Saramaka Dombi Clan**

The Dombi clan freedom route (Fig. 2) – originated mostly from the Waterland Plantation - southward to confluence of Sara Creek and Suriname River going up northward to the Saramacca River and then south through the gap east of Mindindeti and south to Tutu Creek and Ebatop settling around that area. Sites so far archaeologically identified and located in the area include Sabana and Debabunu both of which are yet to be more fully surveyed, mapped and excavated.

**The Freedom route of the Saramaka Nassi Clan**

The Nassi clan escape routes (Fig. 3) like the Awana clan originated from the Waterland Plantation with the Matjau clan, crossed the Suriname river directly to the Matjau Creek to the south and then going westward toward Saramacca River and down southward following Awana clan escape route to the Mindindeti creek area and along Suriname River to the Tutu Creek area westward to the Ebatop area.

Common locations included gaps, ridges, and closed confluences of major tributaries or creeks. The freedom route maps provide some recurring but tricky pattern. (Fig. 4). Satellite photos of vegetation and physical landscape have also helped identify
landmarks such as the feature referred to in colonial reports as the “Bald Mountain” and “Timba settlements”. The resulting trail maps, if constructed or all the known clans could represent the trails of the journey of the Maroon groups as they escaped from the plantations. But do we see a pattern in the movements? Were special locations selected or favored more than others? While they may represent the actual routes taken, it is possible that others or branches of known pathways may not be recognizable or remain to be identified. It should not be assumed that the trails necessarily indicate that the settlements were directly or necessarily located along them. Concealed areas along them were the places to look for the settlements even if they were temporary. The trails could represent different known families or clan groupings as known in post-treaty oral traditions. The trails overlap in various places and it appears also as if the Maroons often returned to the same temporary sites several times, making the trail very complex. Obviously, extending such trail definitions from the Saramaka to other Maroon groups would not be an easy task but that is one of the main ways of archaeologically re-defining the early stages of the formation of Maroon heritage in Suriname. Mapping the escape pathways of each group (Saramaka, Njuka, Matawai etc) and possibly clans or family group areas of each of these major groups would take this strategy to higher levels although it would create a more complex picture.

The Freedom routes and the plantations

Names and descriptions of the Maroon settlements also appear to suggest the process of their formation. Plantations in Suriname were situated mainly in the coastal areas on
rivers and backed into swamps and forests and were more inaccessible during the seasons of heavy rain. The harsh slavery life and farm and garden cultivation in forests near the plantation prepared the slaves for the difficult life after escape. Short periods of repeated escape (*petit marronage*) would have introduced the escapee to the first step in the process with hiding in locations close to the plantations. Documents repeatedly mention that the Suriname escapees preferred “desertion in small groups” or individually (Hoogbergen 1990:71), perhaps to avoid immediate detection. It is expected that after a number of trial escapes, the areas in the vicinity of the plantation would offer alternative existence, at least, for short periods of time. In northeastern Suriname, several such hiding places or sites include Kosay, Nomerimi, Kromotibo, Pinnenburg, Kofi-hay, Buku and Holimi (Fig. 5). Any of these early settlements could have served as a temporary refuge for the runaways. It was also from these early locations that many of the raids would have been conducted against the plantations. Thereafter, small groups would escape further inland, sharing their knowledge that they had individually gained over time as a result of the short periods of escape. They would form hamlets of small hideout villages. These locations or settlements were referred to as “*kibrikondres*” meaning “hidden villages”. Owing to the temporary nature that these locations might have, the Maroons would not have made too much permanent investment in structural constructions and long term subsistence activities although they would invest in such essential items as small boats or canoes to move up and down the creeks and rivers, when safe to do so. These *kibrikondres* might have been the equivalent of the “*mocambos*” as described identified among the Brazilian Maroons by Orser and Funari (Orser 1992, 1994; Orser & Funari 1992). Learning survival strategies from the natives of the forest
would also be crucial for the survival of the African escapees. Although still transitional and not too far from the plantations, *kibrikondres* offered more secure locations especially for other runaways, who would later venture out to join.

Populations at such sites would be composed of escapees from different plantations. For example, in 1730 colonial military expeditions, which captured the Maroon settlement of Claes (Kassi’s village) identified the Maroons as coming from more than eight plantations, including Providence, Wayapinicca, Inveija, Watervliet, Vier Kinderen, Nahamoe, Guerahr d’Otan and Quamabo (See Price 1983:84). This speaks against any consideration that assumes Maroons of one village having a common place of origin from Africa, although this could occur in some isolated cases. The Saramaka site of Ponamakreek founded on the Kleine Saramacca in 1690 is considered as an example of the heterogeneous nature of the Maroons at that site. It would appear, however, that leaders who founded the more permanent settlements of the third stage would begin to be identified alongside the social or familial relationships among them at this stage of the trail. It is suspected that, at that point, groups would begin to redefine their previous relationships and cultural origins, even if vaguely. Ethnographic, historical, survey and excavation data are required for the interpretations of the evidence for the sites. For example, it is known that names of plantations served as means of identification of escaped groups. It has been noted that “Runaway slaves from the plantation, La Paix, for example, called themselves La Paix ‘row’, which was later changed to ‘lape lo’ in their language. The word ‘lo’, then has been used to identify corporate groups and the name of a matriclan (Hoogbergen 1990). Such social relationships appear to dictate the residential arrangements and related behavior patterns, as observed at the Maroon settlements of
Accompong in Jamaica (Agorsah 1994, 1999). The resulting distribution can be recognized within and around Maroon settlements.

**Nature of Saramaka Maroon settlements**

The next consideration is determining the true structure of the Maroon settlements in their fully-fledged forms. It is expected that at their fully-developed stages they should have more permanent houses and stockades, and unlike the earlier initial settlements, should be farther inland or in very inaccessible areas and possibly in rock shelters or caves. Such sites as Claes (Kaasipumbu) and Pedro founded in 1700s on the Suriname River and described as having 300 and 100 houses respectively, and Negro Will on the Commewijne River (Schiltkamp & De Schmidt 1973:312) would be examples. The Saramakan settlement of Papa, which is said to have been established in 1731, was described as having 120 houses. In 1749 an expedition led by a Captain Creutz to Ponamakreek in the Saramacca River area reported 415 houses, which were probably destroyed (de Beet and Price 1982). Between 1760 and 1775 Maroon settlements of the group referred to as the Kwinti were located on the sand ridges of the swampy islands between the estuary of the Saramacca River, in an area that was of difficult accessibility, and the Atlantic Ocean. Their main village was Makakondre, described to consist of 25 houses and two shrines. They are mentioned as having constructed rings of palisades around their villages in the same way that Maroons built palisades on the Serra da Bariga ridge in Brazil. Such means of protection of Maroon sites have been observed in other Maroon areas. For example, according to Landers (1992), when runaways from the Carolinas of USA arrived in northern Florida and built a settlement at Fort Augustine, it
was a stone-walled fort and shelters with thatched huts described as “four square …
banked with earth, having a ditch without on all sides, lined round with prickly royal and
has a well and house within and a look-out” (Landers 1992:15) It has also been noted that
the more permanent Maroon settlement in Brazil in the 1640’s were “half a mile long
(0.84 km) surrounded by a double stake fence with two entrances” (Orser 1992:14).
Colonial records mention that among the Saramaka and the Matawai favorite location of
sites included caves/rock shelters. (such sites Debabunu and Sabana located near Eba top
would fall in this category), true forest or swampy areas obstructed by rocks, rapids and
mangrove swamps such as the site of Buku; on top or sides of major mountains/hill and
far away from navigable creeks such as the sites of Tuido, and on ridges surrounded by
ravines such the site of Kumako. Colonial records note that:

“For most of their villages lie upstream, safely entrenched behind the rapids and
falls, on a rocky island or hidden part way in the jungle, with hardly visible path
to the river bank” (Bruijning & Litchtveld 1957:46).

A period of consolidation of groups in strongholds at more distant locations from
plantations would be expected on ridges and ridge areas such as the site of Kumako or in
the upper reaches and source of streams, rivers or at confluences such as the sites of
Tuido and Djomasanga on the Saramacca River or at locations with a single access
entrance such as the sites of Sabana (Savanna) and Debabunu in the Ebatop area to the
west between the Suriname and Saramaka rivers. Locations close to marshlands and
along safe river channels such as along the Kleine Saramaka River were also common
choices of location. It is from these sites that the Saramaka and Matawai Maroons of Suriname may have begun the formation of their Maroon culture. As regards the distribution of house structures in the villages it is mentioned that:

“The huts of the Bush Negro villages stand next to each other in disorder…The ground is swept clean, cleared of weeds and here and there under a high shade tree, a small square is left open…The best huts are adorned with graceful woodcarving; occasionally the shape of an animal or human is distinguishable” (Bruijning & Litchtveld 1957:44).

Post-Treaty Developments
The distribution of Maroon sites indicating that the sites were in areas away from the main water ways and in forest areas to post-treaty (post 1760s) sites (See Fig. 4) cluster of settlements in the lower reaches of the Suriname River), which shows the Maroons were in the process of relocating and clustering around the major water ways following the peace treaties of the 1760’s. Modern settlement locations along the Suriname and Saramaka rivers, which constitute later stages of Suriname Maroon settlements provided the context for the development of Maroon culture now centered on the major and more navigable rivers. It is at these new sites along the major waterways that the transformation of Maroon culture from what I have characterized as “forest to river culture” took place. Archaeology should provide evidence of changes in material culture and social relationships between these two eras and also into modern times. The formation and the observed distribution clans and family groups would have followed
what might be explained as following the local rule (LR) model of spatial behavior (Agorsah 1983, 1985).

Modern occupational practices of the Maroons relate more to forest farming lifestyle despite the fact that they lived along the major waterways where river occupation such as fishing would be considered as a major one – which is the reason why they are today called “the river people”; also, the percentage of time devoted to farming exceeds that of fishing. Among the modern Saramaka, for example, bush meat diet is more prominent than fish and there is also a greater intensity of procurement strategies toward farming and bush meat hunting. Maroon oral traditions among the Saramaka still refer to personalities linked to the novelty of fishing, meaning that it was a newer and much later developed as a major occupation next to farming. This may sound simplistic, but any anthropologist should know and understand how such a change could create changes in adaptive and other behavior patterns and consequently the material culture and the consequent interpretations. But this is only a hypothesis that needs to be tested with archaeological and appropriate ethnographic data. Dated artifact assemblages and variability within them should provide evidence for reconstructing the transformations. Logically, migration from one ecological zone to another would require behavior adjustment and possible change in material culture or purposeful adaptation to new and changing environmental and other conditions.

Analysis of the migration routes, and the complexity of the directions revealed, clearly point to the fact that the escape routes did not all go along clear cut paths. The need to conceal routes and information about them worsens the picture, making it even more difficult to create working models that take many invisible but ubiquitous routing
and connections into account. Another issue is that with no interest in the archaeology of Maroon sites by early researchers, no attempts have been made to either ascertain the existence of the sites or their location, further leading to many inaccurate maps and descriptions. Some of the maps are interpreted to support the geographical sense to the oral traditions. The first move toward identification and location of Maroon sites in Suriname, therefore, is to examine these escape routes as the first geographical features in Maroon encounter outside bondage on the plantation and the context and framework which the formation of their social groups and settlements took place. Many of them may have been only on stop-gap or temporary sites. Identification of patterns of movements and selection of locations could go a long way in speculations about the formation of the early freedom groups. A question that would follow is: how far can any recognized patterns of movement and group formation of the Saramaka and Matawai Maroons be applied to other Maroon groups in Suriname and ultimately other Maroon groups elsewhere? How and what would be the basic assumptions and arguments of relevance for meaningful reconstruction of the process of the formation of Maroon societies and their material culture? These propositions provide the framework for the new trends in the archaeological search for evidence of the formation of Maroon heritage in Suriname. They are by no means conclusions or proven interpretations. They need to be tested with relevant data and proven one way or the other. Each one of these has its own test implications and analytical procedures as well as relevant arguments regarding the relevance of the specific selected data. Research strategies derived from these will then form the basis for the collection of data for analysis and interpretation and reconstruction of the formation of Maroon heritage.
Early colonial maps of Suriname (de Lavaux 1737, Koeman 1973) provide us with some details about possible early Maroon zones as they relate to the plantations. Historical maps also provide information about the location of early sites that were in proximity of the plantations (Hoogbergen 1990) that could have been the sites which witnessed the earliest stages of Maroon flight to freedom. For more security the Maroons had to escape farther into the interior areas where they could not be readily detected or attacked, eventually establishing long-term settlements or strongholds. Explaining patterns of the settlements should help to give a clearer meaning to Maroon behavior in the early stages of their formative process and along the trails of movements.

CONCLUSIONS AND EXPECTATIONS

The "mental map" concept is a theoretical component of the Maroon studies project and it aims at the unexplored areas of Maroon survival strategies as it demonstrates staging grounds and incremental settlements that are amenable to identification and analysis. Dated archaeological material evidence from the project will help fill in the gaps in knowledge about the impact of the exchange between the indigenous people of Suriname and the African Maroons that previous studies have failed to obtain. The multidisciplinary approach and the willing participation of local and international community partners underline the already established foundation and tradition in which the researched and the researchers collaborate toward a common goal. As a meeting point for Archaeology, Geography, History, Ethnohistory and other social studies, the project brings migration pathways and the interface between the Maroons and their host native Surinamese, archaeological sites and artifacts into one focus to
show Maroon heritage as an important element that weaves the past of Suriname together and redefine its place in the history of the Americas and West Africa (DeCorse 1987, 1991). With its international and intercultural dimensions the project will continue to bring together students and faculty from different cultures and disciplines in mutually beneficial exchanges. This is an inspiration from my direct experience with the teachings and field research with Merick Posnansky (1973, 1976) and many of my colleagues in which local participation and student training programs will continue to provide opportunities for educational and cultural exchanges.

Analysis of the migration traditions and the complexity of the directions revealed in the traditions clearly points the fact that not all communication takes place along clear cur paths as there are many environmental and circumstantial connection which are not constrained to routes and thus hard to identify. The need to conceal routes and information about them worsens the situation making it even more difficult to create working models that take such invisible but ubiquitous routing and connections into account. Another issue is that with no interest in the archaeology of Maroon sites, no reconnaissance attempts were made to either ascertain the existence of the sites nor their location, further leading to many maps that seem to be accurate but inaccurate in reality. Some of the maps are interpreted to support the geographical sense to the oral traditions, although they may totally inaccurate. Interpretations related to these traditions is the reason why some researchers are disturbed about archaeological research on Maroon heritage, which is certainly the only hope for understanding the formation of Maroon heritage. The first move toward identification and location of Maroon sites in Suriname, therefore, has been an examination of what is now referred to as “freedom routes” which
consist of the paths taken by variously identified Maroon groups as they escaped to form closely knit social groupings now transformed into what are known today as “clans” (lo) among the Saramaka of Suriname. The freedom routes were not only the first geographical area in Maroon encounter outside bondage on the plantation but also the context which swathe formation of their social groups and settlements although many of them only on a stop-gap or temporary basis.

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Abstract
The hideouts, lookout points, temporary camps, and concealed communities of runaway slaves may be difficult to locate using traditional methods of archaeological survey. These locations were intentionally made inconspicuous, were likely kept clean of surface refuse, and may have been placed in atypical landscape settings. As well, these sites may be small in size and have a limited assemblage of material culture. A typical archaeological survey that combines screened shovel tests on a 20 m interval with surface survey for structural features is not well suited to the discovery of maroon refuge sites. If these important resources are to be discovered, typical methods should be augmented with a GIS-based consideration of locational factors and controlled metal-detector survey.

Résumé
Les cachettes, points d’observation, campements provisoires et communautés dissimulées des esclaves en fuite peuvent être difficiles à localiser en utilisant les méthodes traditionnelles de l’étude archéologique. Ces endroits étaient intentionnellement discrets, probablement nettoyés de déchets et peuvent avoir été situés dans des sites paysagers atypiques. De même que ces emplacements sont peut-être de petite taille et contiennent peu de biens durables. Une étude archéologique typique qui combine des tests de passage au crible à la pelle à 20 mètres d’intervalle avec une étude de surface pour les caractères structurels n’est pas appropriée à la découverte des sites de refuge des Maroon. Si d’importantes ressources étaient découvertes, les méthodes typiques devraient être couplées avec une considération des facteurs de location basée sur le GIS et une étude au détecteur de métal.

Resumen
Los escondites, puntos de observación, campamentos temporales, y las comunidades ocultas de los esclavos fugitivos pueden ser difíciles de localizar utilizando los métodos tradicionales de estudio arqueológico. Estos lugares se hizo intencionalmente discreto, probablemente mantendrán limpios de superficie basura, y pueden haber sido colocados en la configuración del paisaje atípico. Además, estos sitios pueden ser pequeños en tamaño y probablemente contienen sólo unos pocos productos duraderos. Un típico estudio arqueológico que combina investigaciones de selección pala en un intervalo de 20 m con la encuesta superficie de características estructurales no se adapta bien al descubrimiento de los sitios de refugio de cimarrones. Si se han descubierto estos recursos importantes, los métodos típicos deben ser aumentada con una consideración basado en GIS de los factores de ubicación y encuestas controladas de metal-detector.
INTRODUCTION

The Maroon, or runaway slave, plays a large role in defining the cultural identity of many African Caribbean inhabitants of the former Danish West Indies. The modern inhabitants of St. Croix, St. John, and St. Thomas proudly point to their unique history of resistance to slavery, including marronage.

Paradoxically, there is little good evidence for the exact nature of Maroon activities in many areas of the islands. For northwestern St. Croix, the geographical focus of this paper, there are two general schools of thought. The first holds that the area – known broadly as Maroon Ridge or Maroon Mountain – served simply as a path or conduit for runaways hoping to catch a boat to Puerto Rico. The alternative position is that there was a significant Maroon population living permanently in the area from circa 1650, when the island was occupied by the French, until the 1760s, by which time the extensive development of the Danish sugar economy on St. Croix probably rendered hiding in the bush nearly impossible.

How were the Maroons using the landscape of northwestern St. Croix? This seems like a pretty basic question to remain unanswered at this late date, yet it is an important question in understanding slave resistance. The archival record has little to say to resolve this question, and it is time for historical archaeology to step to the forefront. Is archaeology prepared for this task?

The present paper is the result of an evolving proposal to archaeologically study sites of Maroon refuge activity in the Maroon Ridge area of northwestern St. Croix. In reviewing the archaeological literature, it became clear that little work has been done on Maroon camp sites, where the Maroons were under persistent threat of recapture and
punishment (i.e., Maroon refuge sites), in contrast with Maroon communities that were condoned by the Euro-Caribbeans. Furthermore, in considering the nature of Maroon refuges, it is evident that typical archaeological survey methods may fail to properly find, recognize, and interpret such sites.

HISTORIC CONTEXT

Marronage existed, in various forms, in every slave-holding society in the Western Hemisphere. Although Marronage is classically associated with runaway African slaves, Indians were often the earliest Maroons in the Caribbean (e.g., Yaremko 2007). Generally the acts of these self-liberating individuals, Maroons, is categorized in one of two ways; petite marronage, also referred to as truancy or absenteeism, where an individual left their plantation or other place of enslavement for a short period of time, tending to return on their own, or grand marronage, an act of permanent escape (Price 1979). Most Maroon communities were ephemeral and short lived, under constant pressure from the militarily dominant European societies in which they existed.

Marronage within the Danish West Indies was similarly varied. Although the historic documentary evidence hints at these semi-permanent internal settlements on St. Croix and St. Thomas, most of the activity centered around escape from the islands, along what Hall has identified as the “marine underground” to Puerto Rico, Vieques and Tortola, islands held by European powers that were often hostile to Danish policy (Hall 1985: 482). The Maroons that were able to eke out an existence on the small Danish holdings did so at a place identified as “Maroon Mountain” or “Maroon Ridge” on St. Croix.
Maroons of northwest St. Croix were discussed by Oldendorp, a Moravian Missionary and visitor to the Danish West Indies in 1767-68. “Maroon Hill” is described as “almost impassable” (Highfield and Barac 1987:51). Oldedorp further notes that the Maroons on St. Croix were forced to rely on rainwater caught in rock crevices or basins for their drinking water, and reports that the fruit of the susack tree was a major subsistence item of the Maroons, who “often live exclusively on them” (Highfield and Barac 1987:53, 106). Oldendorp provides details on the Maroon Hill people:

For a long time now, a large number of these Negroes have established themselves on lofty Maroon Hill in the mountains toward the west end of the island. In addition to the lay of the land, they are there protected by impenetrable bush and by their own wariness. They keep every approach safe by attempting carefully to conceal small, pointed stakes of poisoned wood so that the unwary pursuer might wound his foot on them and therefore be prevented from continuing the chase as a result of the unbearable pain. . . . For those foods that they cannot obtain in the wild, they must search at sea at night, exposing themselves to life-threatening dangers in the process; or they can steal them from plantations. On St. Croix, they are so bold that they often venture down from their hills during the day and go into the Negro markets in order to procure the necessities. It is not at all easy to identify them among the great numbers of Negroes in the market [Highfield and Barac 1987:233].

Oldendorp notes that the Maroon problem was often addressed through organized hunts for the runaways, yet states “hunts such as these, however, are not organized to track down those who remain in the high Maroon Hills of St. Croix” (Highfield and Barac 1987:234). Noting “a large number of these Negroes” on Maroon Ridge, Oldendorp provides the best evidence to support the argument for permanent settlement on St. Croix.

Dookhan (1994) supports Hall’s “marine underground” hypothesis of marronage on St. Croix:
Runaways never comprised a permanent body in the Virgin Islands such as the maroons in Jamaica, for when the slave-hunt became too successful, the slaves escaped to Puerto Rico. That island had not yet developed a plantation economy and the treatment of slaves there was relatively mild. Besides, runaways were usually employed on works of fortification on the island for one year, after which they were pronounced free and given a plot of land to cultivate. Slaves escaping to Puerto Rico became lost to the Virgin Islands slave-owners, a loss which was more strongly felt since only the most robust slaves were prepared to hazard the dangers of the 40-odd miles of ocean separating the Danish islands from the much larger Spanish island. The numbers of runaways were apparently large since for 1745 alone it was estimated that about 300 slaves from St. Thomas and St. Croix had escaped to Puerto Rico. The traffic became highly organized by the runaways themselves, and in St. Croix there was a mountain-hideout called ‘Maroons’ Hole’ just east of Hamm’s Bluff, where hideaways were safely hidden in a cave whose entrance was protected by poles of poisonous wood, until they could be transferred to Puerto Rico [Dookhan 1994:164].

Maroon Ridge remains a historically significant location to St. Cruzans. It has generally remained a rugged, remote place from the seventeenth century through today. It is mentioned on heritage tours of the island, retains key place names, and is a source of local pride (e.g., Voight 2006).

PREVIOUS ARCHAEOLOGICAL RESEARCH ON MAROON SITES

Although there has been much progress in the historical, anthropological and archaeological study of Maroon culture over the past decade (Agorsah 2003; Agorsah 1993; Allen 2001; Bilby 1997; Camp 2002; Forbes 1992; Hall 1985; Kopytoff 1978, 1979; La Rosa Corzo 2006; Lokken 2004; Orser and Funari 2001; Price 1979) Weik 1997, 2004) the literature is generally devoid of archaeologically examined Maroon refuge camps (c.f., Vega 1979; Garcia Arevalo 1986; Maris-Wolf 2002, La Rosa Corzo 2003, 2005, 2006). Instead, archaeologists have generally investigated stable communities that were established by Maroon groups, and that were tolerated by the
dominant Euro-Caribbean culture (Agorsah 1993; Allen 2001; Orser and Funari 2001). Such Maroon villages can be discovered and examined by typical methods of historical archaeology because the villages are typical residential sites. These villages often had a rich material culture including permanent structures, refuse middens, and cleared horticultural plots.

In contrast, refuge camps occupied by small numbers of Maroons living under threat of recapture and punishment are expected to have different characteristics (see La Rosa Corzo 2005 and 2006 for examples of this type of site in western Cuba). It is reported that the Maroon Ridge area of northwest St. Croix harbored Maroons from 1670 through at least 1767. The limited archival record suggests that these Maroons would have been recaptured and severely punished if their recapture was easy. To make their capture difficult to impossible, the Maroon Ridge groups used the rugged, minimally accessible landscape of Maroon Ridge for their refuge.

It is anticipated that refuge camps in areas such as Maroon Ridge on St. Croix will have the following traits:

1. Site locations will have been selected with concealment in mind.
2. Site locations would have been chosen with defensibility in mind.
3. Due to these initial criteria, Maroon refuge sites would not have been located on the landforms targeted by normal archaeological survey.
4. Related to 1 and 2, Maroons would have made a concerted effort to reduce their signatures on the landscape.
5. Depending on the amount of interaction between the refuge Maroons, enslaved African Caribbeans, freedmen, and others (e.g., pirates), the Maroons may have had limited material possessions.
6. Due to lack of building materials and risk of loss to slave hunters, the Maroons likely utilized indestructible, ready-made rock shelters or caves for many of their sites.

IMPLICATIONS FOR ARCHAEOLOGICAL SURVEY
The anticipated traits of Maroon refuge sites have implications for the selection of archaeological survey methods. A typical compliance survey (within the U.S. Section 106 process) utilizes shovel testing on a 20-meter interval. The method of shovel testing on 20-meter intervals is premised on the targeted sites being greater than 20 meters in diameter, and such sites having sufficient artifact density to be revealed in shovel tests. Five Maroon sites documented in western Cuba by La Rosa Corzo (2005:166) measured 3 x 4 meters, 14 x 5 meters, 1 x 1 meter, 13 x 5 meters, and 4 x 3 meters, respectively. Maroon refuge sites probably did not have sheet middens and may not have had sufficient artifact density. Furthermore, the vast majority of artifacts at such sites will be concentrated either in caches or refuse pits; shovel testing is especially ineffective in discovering relatively small features such as these.

AN IMPROVED APPROACH

In addressing Civil War and other military sites, Espenshade et al. (2002) noted that traditional survey methods were poorly suited for finding camps, picket posts, and skirmish locations, for many of the same reasons delineated above. Espenshade et al. (2002) argued that survey methodology should be changed in areas likely to contain military resources, and that controlled metal detector survey should be an important element of such research. Controlled metal-detector survey is especially effective for military sites because a large portion of the surviving material culture is metallic, and because artifacts are likely to be sparsely distributed, except for a few refuse features.

Clearly, the same applies to Maroon refuge sites. Survey in areas of known or suspected Maroon refuge sites should include intensive metal-detector survey.
forests and shoreline depended heavily on metal objects. La Rosa Corzo (2005) found machetes, a hoe, a shackle, and buttons in his test excavations in Cuba.

In their call for better approaches to finding military sites, Espenshade et al. (2002) also called for archaeologists to apply the concept of Inherent Military Probability (as defined by Hans Delbrück and Alfred Burne. See Keegan 1976). This basically requires the archaeologist to think like a soldier. Similarly, the archaeologist searching for ephemeral Maroon sites must put themselves in the mindset of the Maroon, to the degree possible. The archaeologist must let go of the typical parameters of site location – level ground, access to a good water source, exposure to cooling breezes, proximity to transportation corridors, nice view -- and think like a Maroon. The archaeologist must keep in mind concealment, defensibility, and escape routes. The archaeologist must abandon their concept of what a house will look like, and which support features (an oven, a cistern) ‘must’ be present at a residence. The archaeologist must abandon the typical expectation for midden.

THE OTHER HALF OF THE EQUATION

Although it would be great to intensively metal detect every square meter of Maroon Mountain, this would be costly and time prohibitive. Luckily, the techniques of Geographic Information System (GIS) provides a means of defining those areas with the highest probability of containing Maroon sites, while also defining areas that will not require survey. The challenge is to translate expected parameters of Maroon site selection into variables that can be derived from available geographic data sets.

There are consistencies in descriptions of Maroon refuge camps. Price (1996:5-6) notes “to be viable, Maroon communities had to be almost inaccessible, and villages were
typically located in inhospitable, out-of-the-way areas. . . . Successful maroon communities learned quickly to turn the harshness of their immediate surroundings to their advantage for purposes of concealment and defense.” La Rosa Corzo (2003:225) offers this in agreement with Price:

As already stated, the places in which runaway slaves chose to settle had to meet the most basic requirements for living under attack: distance (as far as possible from colonial population centers and from means of communication), inaccessibility (that is, they had to be in locations that were difficult to reach by passersby, farmers, and cowhands and that had few probabilities of being stumbled upon), and natural concealment (a place whose topography and vegetation offered its protection). These three conditions, which often overlapped, corresponded to three different—though related—spatial levels [La Rosa Corzo 2003:225, emphasis in original].

GIS offers the ability to model inaccessibility according to a number of environmental and cultural variables. The tools of cumulative viewshed analysis, similar to viewshed applications in cell tower studies, can be used to map which locations are visible from key points. In this case, cumulative viewshed analysis could prioritize locales where a Maroon could stay concealed while simultaneously surveying the area for potential hazards. Previous archaeological surveys have shown that not only did Maroons tend to choose inaccessible places such as ridge tops and swamps, but also chose rock outcrops and caves as shelters, both of which would be an important starting place for such a study. Historic documents also indicate that many maroons maintained ties with friends and family who remained on plantations, or even participated in trade at local markets for food stuffs and other goods; if so pathways and travel distances between potentially significant points would have to be included in the mapped features.

The benefits of incorporating a GIS component into an archaeological survey of Maroon Ridge would be two-fold. First, GIS can be used to create a predictive model,
allowing the researcher to narrow the focus of intensive metal-detector and other remote-sensing survey.

One of the greatest advantages of GIS to constructing predictive models for Maroon refuge sites would be in the ability to constantly assess and modify the model throughout the duration of field work as GIS software “…enables the visualization of data patterns at or soon after their collection…facilitating a ‘reflexive’ approach to data collection…” (Conolly and Lake 2006: 37). Because we are unsure of the exact nature of Maroon use of Maroon Ridge, it will be especially important to adjust and refine the GIS model as initial survey data become available. By creating a GIS model, the scope of the metal detector survey can be reduced to a feasible level, and the key locations can be examined intensively.

The second benefit to a GIS based approach would come after the field data is in, when we can begin analyzing and explaining the relationships of Maroon sites across the physical and social landscape of St. Croix. For instance, was there a change through time, say between when the French held the island versus when the Danish occupied, in the character of maroon sites? Did multiple sites exist simultaneously? The creation and testing of the model provides an interpretive tool for better understanding Maroon strategies. Once a GIS model has been developed and tested, the key variables can be used to assess the potential for Maroon refuge sites on St. John and St. Thomas, as well as questions concerning the spatial relationships between Maroon sites and plantation or other institutional sites across the island, and the spatial and temporal relationship between Maroon sites themselves.
CONCLUSION

Little is known about the lifeways of Maroons in refuge areas such as Maroon Ridge in St. Croix. At least in the former Danish Virgin Islands, there is not a good archival record to guide reconstructions, and archaeology is the most promising avenue to interpreting the Maroon refuge existence. However, archaeology may fail to properly locate, evaluate, and interpret Maroon refuge sites if only traditional survey methods are used. It is argued here that we should apply a two-step approach that begins with GIS modeling of desirable (in a Maroon mindset) locations and ends with the intensive metal detector and landscape survey of those locations. By using this different approach, archaeology can find key sites that ultimately will provide valuable information on Maroon lifeways in the former Danish Virgin Islands.

* A more detailed version of this paper was published in The Journal of Caribbean Archaeology, September 2007, an online journal, and can be found at http://www.flmnh.ufl.edu/jca/nortonandespenshade.pdf
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The Identification of an Enslaved African Village at the Emilio Wilson Estate, St. Maarten, Netherlands Antilles

by

Jay B. Havisier, Mathias Voges and Andre Patrick

Abstract
The Emilio Wilson Estate is the modern name of the combined areas of the 18-19th century Industry and Golden Rock Estates, situated in the Great Cul-de-Sac area of St. Maarten, Netherlands Antilles. The Great Cul-de-Sac region was the original primary settlement area for the colonial era on St. Maarten, with a shift to the current city of Philipsburg in the 18th century. After extensive archaeological investigations and historical documents research, the specific area of a village for the enslaved Africans, who worked at these sugar plantations, has now been identified. This paper will present information about the results from the archaeological and historical research of this site, with additional attention to the unique contexts for African residents on the island, considering their emancipation on the French side in 1848 and the delayed emancipation on the Dutch side until 1863.
INTRODUCTION

From October 24, 2005 to January 13, 2006, a series of archaeological surveys of the Emilio Wilson Estate were conducted in specific areas for proposed development which had a potential for cultural-historic resources. This work was requested by the Urban-Planning department of St. Maarten, and was conducted under the direction of Netherlands Antilles government archaeologist Dr. Jay B. Haviser and the St. Maarten Archaeological Center (SIMARC). An historical documents research for the study area was conducted by Andre Patrick, with additional documents research by Mathias Voges.

The objective of this investigation was to identify any evidence of cultural-historic archaeological remains within the surveyed areas of the Emilio Wilson Estate development plan. This research included a background historical documents review, previous archaeological study reference data, and results of the 2005-2006 field investigation. Based on these data, this general overview of the archaeological features noted at the surveyed areas of the Emilio Wilson Estate, are presented.

Over the survey area there are basically two environmental zones, a higher elevation dense forest-scrub area and a lower elevation scrub-grass area, both of which are the result of secondary-growth after earlier episodes of land clearing for agriculture and pastureland.

PREVIOUS RESEARCH
In 1989-1992, an Historical Archaeological survey and site mapping was conducted on St. Maarten, including at the Industry plantation complex, by Dr. Norman Barka and students from the College of William and Mary, Williamsburg, Virginia, USA (Barka 1993). Within his report, Barka recorded the Industry plantation complex ruins in detail, however with little survey of the surrounding areas, including an area to the north he called “Rockland” which he did not survey. The term Rockland has since come to refer more to the Industry Estate, adjacent Golden Rock plantation complex, where the present Emilio Wilson Historical Park is located. The only feature which Barka noted for the Golden Rock plantation complex was a dry-stone pile wall to the south boundary of the property. Neither the Industry plantation complex, nor the Golden Rock plantation complex themselves are included in the proposed development plan and thus the ruins complexes at each were not surveyed within this investigation. However, it should be reminded that this 2005-2006 survey does include areas which would have had direct relationships to the above-mentioned plantation complexes, with particular reference to the Golden Rock plantation complex.

In May of 2005, an historical documentation search and site location map of the area proposed for development was compiled by Andre Patrick of the St. Maarten Kadastral office (Patrick 2005). Within Patrick’s report were noted four primary site areas within the property, including: 1. the Industry Plantation complex of ruins; the 2. the Lime Piece area with a natural cave; 3. the “Doctor Millard’s” Golden Rock sugar complex-yard and Kenepa Gardens area (Emilio Wilson Park historical ruins and property just west of the park); and 4. a “slave path” and natural cave in the area uphill to the northwest of the
Industry complex. As noted earlier, the areas of the Industry complex and the Emilio Wilson Park (Golden Rock ruins complex) are not part of the proposed development plan, and thus were not part of this survey. However, from historical documents noted in Patrick’s report we can see that activities related to the sugar industry complexes at Industry and Golden Rock extended beyond their currently recognized boundaries. Of particular note in Patrick’s report are the area just west of Emilio Wilson Park, where oral history reports by Emilio Wilson among others, indicate a slave residence and burial ground in this general area. It is the adjacent areas to the Golden Rock plantation complex which are the primary focus for this archaeological survey.

**HISTORICAL DOCUMENTS RESEARCH**

From historical sources such as Hartog (1981), Voges (2006) and others, we know that the Great Cul de Sac valley was the first major colonial period settlement area on the Dutch side of St. Maarten. It was through this valley that a main roadway passed to Marigot on the French side, as noted on a map of 1775. Also indicated on this 1775 map, is a small stream which flows through the valley, and has a distinctive right-angle turn half way up the valley. It is precisely at that turn in the stream, where the Golden Rock plantation is situated. The Great Cul de Sac valley was an ideal location for several large sugar plantations in the 18-19th centuries, which required large tracts of good agricultural soils for planting sugarcane, and together with a ready water supply. One of the best illustrations of a typical St. Maarten sugar plantation is a drawing of the Retreat Plantation in Cul de Sac, by Samuel Fahlberg in 1816. In this drawing we see the full lay-
out of a sugar plantation complex, with the main house and sugar factory works in foreground of the property, and the slave quarters immediately interior from the complex and adjacent to the factory works. Typical 19th century sugar factory boiling houses, had an animal-tread type of sugarcane crushing method common to the region. In proximity to this is also the animal-tread platform at Golden Rock plantation, located near the boiling house ruins to the far west of the Park area, adjacent to the west boundary wall. This 1816 drawing also displays a gardens in the upper left corner, which is actually the very edge of the Golden Rock property at the area called Kenepa Gardens, which was adjacent to the Golden Rock “neger grounds” or slave planting area. Based on the Retreat Plantation model, as depicted by Fahlberg, it would be expected that the Golden Rock plantation slave village would be in a similar position relative to the factory complex, thus to the immediate area outside the complex boundary next to the factory buildings.

Thanks to an extensive historical documents research by Andre Patrick, in addition to research by Mathias Voges, several important references to the Golden Rock plantation and its enslaved African residents have been identified. These historic references are all found in the “Inventaris der Scabina’le Akten” of 1831-1839 and 1839-1860, which are the original documents, currently housed at the St. Maarten Kadasteral office.

Since these documents are primarily property inventories for the plantations, we are mostly only able to gain a perspective of the numbers of slaves and their houses, as well as the names and purchase prices, of the enslaved Africans at the Golden Rock plantation. However, the more subtle details of social life and functioning activities around the
plantation complex are not well described in these documents, and thus those aspects are potentially retrievable via Archaeology. Nonetheless, these documents are very valuable tools for the identification of the African population size for the survey area, which can greatly assist in the interpretation of the archaeological remains recovered.

A general overview of these historical document contents indicates that on April 21, 1832, at the Golden Rock plantation of Cul de Sac, there were registered 51 enslaved Africans and 24 slave huts “neger hutten”. The specific names of 30 of the enslaved Africans at Golden Rock plantation were given as: Robin, Edinburgh, Billy, Bungy, Johny, Sammy, Nick, Joseph, Valentine, Peter Legie, Peter Babrico, Hope, Jackey, Pero, Pompey, Sampy (mulatto), Collier, George, Bristol, John, Charles, John, Ambrice, Jacob, Wilhelmina, Juliana, Jilla’s Yanes, Nancy, Ginny, and Lydia.

From this 1832 document we are able to glean several important aspects of the African population at Golden Rock, first, that there were 51 total slaves resident at the plantation at that time. A second bit of data, and more important from an archaeological view, from this document is the reference to 24 slave huts. It is very important to note here the distinction in the Dutch language between “hutten” and “huisjes”, such that hutten implies a perishable material used for construction, while huis or huisje (a smaller version) would imply a more substantial material for construction. Unfortunately no reference is made as to the location of these hutten within the plantation complex. Typical thatched, wattle-only houses were common to African descendants in the Caribbean, and also thatched, wattle-daub and brick houses for enslaved Africans in the
19th century Caribbean. Notable is the regular spacing of the structures in the slave community plan (discussed by Carneigie 1987, Singleton 1985), which correlates to the slave houses in the 1816 Fahlberg drawing at the Retreat Plantation. This patterning aspect will become more significant as the excavated artifact data is presented, and is identified by Haviser (1999b) as a European imposed pattern concept not representative of African traditions. The list of names for the Africans that lived at Golden Rock does give us a more personal insight into them as people, and not only property, and indeed several of the more unusual names, such as Bungy and Pompey, were still used on the island into the 20th century.

In a document of January 16, 1836, we are informed that the specific work of the Golden Rock plantation was for the processing of sugarcane. However we also find that the enslaved African population at the site had reduced to 49 persons, with again a name listing that includes several names not mentioned in 1832, which are all adult female and male-female children, such as: Chloe, Minelle, Yanneky, Sophy, Jilla, Betty, Elvira, Betsy, Sues Nanny, Susanna, Charlotte, Madlane, Louisa, Minerva, Madlenes Nanny, Greeta; children: France, John Lewis, Mingo, James, Henrietta, Abary, Greeta, Adelle, Amacina, and Pamilla.

In a document of September 30, 1845, we see that the enslaved African population at Golden Rock increased again to a total of 52 persons, some additional names noted, such as: Mushel, Tom Cook, Romeo, Troubles, Abraham, Pollidore, Anthony, Emanuel, James Barry, James Webster, John Carty, Big Mingos, Mingo Webster, Monday, Toney,
Talemachus, Timothy, David, Isaac Rogers, Fortune, Nelson, Little Tom, Jack Rink, Celia, Delia, Cottos, Desdimona, Betrice, Mira, Amelia, Monemia, Dorcas, Catharine; children: Abram, Bob, Nick, Billy, London, Sancho, Peter, William, Kate, and Jerfys. In this account, it is again of interest to note the symbolism and representation by names for enslaved African, such as Troubles and Fortune, as well as the reference to the Mingo ethnic group of Africa, or also the clear African Akan tradition of naming by the week day born, as with Monday.

If we take these names and compare the counts of individuals (actual count change of 3, yet with an addition of many new names, particularly among the children), we can suggest that there was a regular change of persons (or names) happening at the plantation in the nine year period between 1836 and 1845. This could be interpreted as an example that there was a core population of Africans resident at the site, yet also a constant change ongoing for part of the African population, thus new members of the community being introduced and others leaving periodically. A partial interpretation of this may also relate to the natural population increase by birth (thus more children). As well, the property owners had enslaved Africans residing at different of their properties, and probably shifted them among the properties periodically.

In a document of February 14, 1849, we see an important reference to the “negro grounds and gardens ravines” price valued at 1100 guilders for the Golden Rock plantation. However, other than the mention of the ravine no other location information is given. Further in this same document are the price values of nine enslaved Africans for the
Golden Rock plantation, with various men noted as between 300-475 guilders, a girl “Lukey” at 240 guilders, and two invalids (one missing a leg) for 000 guilder, no value. From the document it seems that the full inventory of the enslaved Africans present at Golden Rock in 1849, was only nine, a significant decrease which is unexplained. If correct, then the African population at the Golden Rock plantation would have dropped from 52 in 1845 to only 9 in 1849. It could be suggested that the abolition of slavery on the French side in 1848 (and thus defacto on Dutch side) may have been an important stimulus for the major disappearance (escape) of the enslaved African population from Golden Rock plantation, which was situated on the main road to Marigot at French side.

On March 6, 1849, some three weeks after the earlier document, we are confirmed that only nine enslaved Africans remain at the Golden Rock plantation, there names being: Johnny, Abraham, Joe, Little Abraham, Sue, Cendrilla, Mary Anne, Molly, and Lukey. The next important historical documentation of the Emilio Wilson Estate site area is the Werbata topographic maps of 1916, in which topographic features, ruins structures, and all of the dry-stone pile walls in the survey area are indicated. The Golden Rock boiling house ruins are indicated north of the Rockland Estate, while extensive dry-stone walls are noted throughout the survey property area. This map was the basis of field inspection for the location and confirmation of which dry-stone walls are still evident at the site.

In this photograph, can be seen a view of the survey area in 1949, as well, photographs were taken of the survey area in the early 1960’s. It is evident from these photographs that the entire survey area was completely cleared for pasture land during the mid 20th
century. It is ironic that this area which has now become one of the few green areas of the Cul de Sac valley, was clearly prominent as one of most deforested areas in the mid-20th century.

![Figure 1. Emilio Wilson Estate, St. Maarten, in 1949.](image)

Furthermore, oral history accounts of Emilio Wilson himself, and also in interviews by this author with Mr. Elias Jones of ROB, indicate that many of the loose stones in the survey area fields were sold and transported away from the site in the 1960-70’s. Mr. Jones informed me that as his work tasks he personally removed many of the stones and transported them for construction by the fire department at Philipsburg. Mr. Jones further noted that areas of the pastureland (particularly adjacent west of the Rockland Estate) were still present up until the death of Mr. Wilson in 2001. It is important to remember, that at slave village sites often the simple wood-thatch houses had a pile of stones arranged into a square pattern to support floor beams (Haviser 1996), as well, that slave
graves are most often identified by a small linear pile of stones (Handler 1987). With the removal of the majority of the stones from the area immediately to the west of the park in the 1960-70’s, some above-ground indications of the slave houses and/or graves may have been lost. However, close inspection of the photographs from 1949-60, do not show obvious house-form stone piles present in the survey area.

FIELD RESEARCH METHODOLOGY

The field methods used for this 2005-2006 archaeological survey at the Emilio Wilson Estate initially included 14 linear, roughly-parallel, east-west transects of approximately 100-300 meters length and 2-3 meters width, across the survey area, survey transects along the west, south, and north dry-stone walls surrounding the survey area, and at specific areas in the northwest corner of the property, for a total of 20 transect survey lines (see Figure 2).
ARCHAEOLOGICAL SURVEY RESULTS

The results of this field investigation were separated into two primary categories for analysis, first, above-ground archaeological features and surface artifact collections, and secondly, excavated soil features and sub-surface artifact collections.

Above-Ground Archaeological Features

During the 2005-2006 archaeological survey the two most common large archaeological features noted on the surface were dry-stone pile wall structures, and fragments of tin roof sheeting which had been deposited by hurricane winds. The tin roof sheeting was
randomly scattered over the site area, with 18 specimen identified along the various transect lines (no tin roof sheeting was collected). These are considered modern artifacts and of minimal significance for this survey analysis.

The most common above-ground archaeological features identified during this survey were the dry-stone pile boundary walls, often locally referred to as “slave walls”. All of the dry-stone walls indicated on the 1916 Werbata map were identified, and confirmed to be in a very good state of preservation. The authors have some disagreement with the term “slave walls” in that it is evident these walls have been made for a considerable time after emancipation and thus by persons other than slaves, including persons of non-African descent. The primary purpose of these walls was as boundary markers, animal corrals, and as a method to pile the stones cleared from the agricultural fields. These wall features consist of linear piles of, primarily dioritic, stones laid together in such a way that they support themselves and do not require a binding mortar/cement, thus the term “dry-stone” pile walls. These walls are on average about 1.2-1.4 meters in height and 1.0-1.2 meters in width. The side forms of these walls range from a slightly inward arched angle tapering to the top, to a vertical side. The tops of these walls tend to be flat, exposing the interior fill of smaller stones with an exterior supporting placement of the larger stones. Stone sizes used in these walls range from 20-30cm diameter for the smaller interior stones, to 30-50cm diameter for the larger exterior stones, often with very large natural position boulders incorporated into the wall structure.

**Surface Artifact Collections**
As for the surface artifact collections during the survey, each transect was walked and any materials (including modern) were collected and bagged with provenience given. An overview of the surface artifact collections during this survey is presented in Table 1. In this Table 1 can be seen that 154 artifacts were analyzed from the surface collections, with Ceramics representing almost half at 48% of the total analyzed, and Glass also prominently represented with 25.8% of the total. It should be noted here that plastics, which were of considerable quantity in the transect surveys, were not included in this surface collection analysis.

<table>
<thead>
<tr>
<th>Artifact Category</th>
<th>count</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics</td>
<td>74</td>
<td>48.0</td>
</tr>
<tr>
<td>Glass</td>
<td>40</td>
<td>25.8</td>
</tr>
<tr>
<td>Metal</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>Kaolin pipe</td>
<td>1</td>
<td>.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>----</td>
</tr>
<tr>
<td>Brick</td>
<td>5</td>
<td>3.2</td>
</tr>
<tr>
<td>Shell</td>
<td>15</td>
<td>9.6</td>
</tr>
<tr>
<td>Bone</td>
<td>7</td>
<td>4.5</td>
</tr>
<tr>
<td>Wood</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>Totals</td>
<td>154</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The two most significant surface collected artifacts from this site, among the most important artifacts from this entire survey, were the two wood objects noted in Table 1. The first is a heavy wooden, pounding mortar, which was first identified by Andre Patrick by directions from Emilio Wilson, and was found beneath a tamarind tree at 5 meters south of transect 20, at 285 meters from the park wall baseline. This pounding mortar has dimensions of 77 cm height, 48 cm width at the top, 30 cm width at the bottom, and an interior bore depth of 58 cm. This type of pounding mortar (used together with a long heavy pestle to crush grains or other materials) is typical of African grain-crushing traditions carried over to the Caribbean since the 17th century, and they were used on St. Maarten into the mid-20th century. The general form of this wooden pounding mortar is suggestive of the 19th century, however the presence of a metal patch, which is attached by four wire nails, would indicate continued use into the 20th century (also suggested by the relative youth of the tamarind tree). The location of this mortar beneath a tamarind tree is also a typical setting for this type of work, and represents not only a
working space, but also a gathering place for African descendant peoples to socialize while working.

The second important surface collected artifact from this site is a large wooden gatepost, perforated with two hand-wrought iron pintles. This wooden gatepost measures 232 cm. length, with a diameter of the rounded base of 19 cm., and the sides of the squared top being 15 cm. each. The two hand-wrought iron pintles are located at 63 cm. and 146 cm. from the top. These pintles perforate through the middle of the post and having six-sided nuts on the screw end, and a diamond shape base where the pintle lift meets the shaft. There are various small round and square cuts in the post. This gatepost was found at an intentional stonework opening in the west wall of the Park (at transect 19), which would have been the opening from the sugar factory works to the slave village area. The hand-wrought iron pintles are clearly indicative of 19th century iron work (Noel Hume 1978), which was most often conducted by persons of African descent, as iron smelting is a tradition that began in Africa and is close to many African cultural expressions.

Excavated Artifact Collections

Combining the above-mentioned 154 total analyzed surface artifact collections, with the total of 487 artifacts analyzed from the 143 excavation units conducted over the site area, resulted in a total of 641 artifacts studied in this research (see Tables 1 and 2). For this section of the analysis we will be observing the excavated materials only (Table 2), which have been separated into eight categories for presentation; those categories being;
Ceramics, Glass, Metal, Kaolin pipes, Brick/Mortar, Shell/Coral/Bone, Stone, and Plastic. In Table 2, we can see that the three most noted categories of artifacts from the excavations were Stone (43.5%), Ceramics (22.8%) and Brick (11.7%).

<table>
<thead>
<tr>
<th>Artifact Category</th>
<th>count</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramics</td>
<td>111</td>
<td>22.8</td>
</tr>
<tr>
<td>Glass</td>
<td>16</td>
<td>3.3</td>
</tr>
<tr>
<td>Metal</td>
<td>18</td>
<td>3.7</td>
</tr>
<tr>
<td>Kaolin pipes</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>Brick</td>
<td>57</td>
<td>11.7</td>
</tr>
<tr>
<td>Mortar</td>
<td>16</td>
<td>3.3</td>
</tr>
<tr>
<td>Shell</td>
<td>17</td>
<td>3.5</td>
</tr>
<tr>
<td>Bone</td>
<td>7</td>
<td>1.4</td>
</tr>
<tr>
<td>Coral</td>
<td>14</td>
<td>2.9</td>
</tr>
<tr>
<td>Stone</td>
<td>212</td>
<td>43.5</td>
</tr>
<tr>
<td>Plastic (all level 1)</td>
<td>14</td>
<td>2.9</td>
</tr>
<tr>
<td>Totals</td>
<td>487</td>
<td>100.0</td>
</tr>
</tbody>
</table>
In Table 3 are presented the overall total of excavated ceramics in this study, in which it is clear that the Pearlware and Creamware ceramics are predominate with 56.7% and 14.4% respectively. This evidence places a general suggested date range for the collections context from the middle 18th century to the middle 19th century. However the presence of earlier ceramics such as the Slipwares, Stonewares and Delftwares, could indicate an occupation at the site, earlier into the 18th century. It is of some interest to note that the typically African-made Coarse Earthenware ceramics are but 4.5% of the ceramic total in this sample location which is derived mostly from a slave village area.

Although it may seem odd, it is actually quite common in the Caribbean to have slave quarter ceramics assemblages consisting primarily of European made ceramics (Adams and Boling 1991). This situation is due to the fact that the European ceramics would have been hand-downs from the Plantation owner family, and perhaps more importantly, were of greater durable quality. Indeed an additional factor is that these ceramics were also more hygienic, with glazed surfaces that could be cleaned thoroughly to prevent contamination and potentially disease, an aspect of some importance in the 17-19th century world. As well, from an African cognitive view the brighter and more variety of colors in the European ceramics would have been of aesthetic value compared to the plain Coarse Earthenware ceramics which tended to be for more utilitarian use.

<table>
<thead>
<tr>
<th>Ceramic type</th>
<th>count</th>
<th>% total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearlware</td>
<td>63</td>
<td>56.7</td>
</tr>
</tbody>
</table>

**TABLE 3. Ceramic Types from Excavated Collections**
<table>
<thead>
<tr>
<th>Material</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creamware</td>
<td>16</td>
<td>14.4</td>
</tr>
<tr>
<td>Stoneware</td>
<td>8</td>
<td>7.2</td>
</tr>
<tr>
<td>Porcelain</td>
<td>8</td>
<td>7.2</td>
</tr>
<tr>
<td>Whiteware</td>
<td>7</td>
<td>6.3</td>
</tr>
<tr>
<td>Coarse Earthenware</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>Slipware</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Delftware</td>
<td>1</td>
<td>.9</td>
</tr>
</tbody>
</table>

Totals 111 100.0

**ARTIFACT DISTRIBUTION PATTERNS**

With the type identification and temporal contexts of the various artifact categories associated with the site, it is important to look at the distribution of those materials over the site area. This is done to delineate any specific patterns of artifact distribution that would indicate the presence of the enslaved African village and/or other activities within the survey area. To facilitate specific pattern identifications at the site, the various artifact categories have been separated into two group categories that represent specific activities. The category **Household Goods** includes all artifacts of ceramics, glass, and kaolin pipes. The category **Building Materials** includes all artifacts of brick, mortar and iron nails. The specific localized distribution of these two artifact groups should be a clear indication of the presence of the enslaved African village area.
In Figure 3, is presented the site distribution pattern of the total excavated Household Goods artifacts, which includes all excavation levels from the surface to base soils. In Figure 4, is presented the site distribution pattern of the total excavated Building Materials artifacts, again including all excavation levels. The patterns exhibited in these two maps, clearly show a specific distribution area to the immediate west of the Golden Rock plantation, just outside the boundary wall from the sugar factory complex. Furthermore there are a few areas in the hillslope area which indicate artifact presence but not building materials, with particular note of the tamarind tree where the wooden mortar was found (transect 20, unit 19a), and an area adjacent a major ravine with the extremely large dioritic boulder and numerous large kenepa trees, on transect 27.

However, due to the potential that the upper level 1 (0-10 cm) soils may have contaminated and/or altered the position of the artifact samples, Figure 5 was compiled to illustrate the presence of both Household Goods and Building Materials from only levels 2-3 of the excavation units (10-30cm. depth) as ‘in situ’ soils. This map again clearly indicates that the Household Goods and Building Materials are situated in the area immediately adjacent to the Golden Rock plantation, just outside from the sugar factory area. It is of significance that this pattern is in full alignment with the concentrated artifact-producing soil layer noted at 10-30 cm. depth in the test excavations.
Figure 3. Distribution of Household Goods group, total artifact collections.
Figure 4. Distribution of Building Materials group, total artifact collections.
Figure 5. Distribution of combined Household Goods and Building Materials groups
for the excavation levels 2-3 (depth of 10-30cm).

Of some interest are the more discreet patterns of various open spaces within the artifact concentrations at the site, showing evident distinctions between building materials and household goods (re. the lack of household goods on transect 19, units 2-4 and on transect 21, units 2-3; and the lack of building materials in the SW corner of the concentration and at transect 20, units 1-2.). This pattern could be explained if we refer back to the regular spacing of the houses within the slave village. If there were 24 houses at the heyday of the Golden Rock slave occupation, as per colonial tradition (including the Retreat model) one would expect a similar spacing of the houses within the Golden Rock slave village. Archaeologically, such a regular spaced house pattern would then produce the several discreet areas of household and building materials over the village area, as seen in Figure 5.

**INTERPRETATIONS**

Based on all of the previously outlined historical documents review and archaeological investigations at specific areas of the Emilio Wilson Estate, the following interpretations are given for this study.

It is presented here, that based on the documentary and artifact evidence found, that there was an enslaved African village on the Emilio Wilson Estate survey area, situated to the immediate west of the Golden Rock plantation complex (current Emilio Wilson Historical Park), extending for approximately 100 meters west of the present boundary
wall of the park, and for the full length of that wall, with activity areas continuing around
towards the northwest below the 60 meter elevation contour. That the gateway from the
plantation complex into these slave quarters, was located at the intersection of transect 19
and the park boundary wall. That these were probably thatched-wattle construction
structures with perhaps some brickwork trim and/or an additional structure such as a
brick oven present, and that these house structures were regularly spaced over the village
area.

It is presented here, that there were also evident a variety of distinctive activity areas over
the entire surveyed property which related directly to the enslaved African village daily
life of the Golden Rock plantation, as confirmed by artifact evidence and historical
reference. These areas include the slave’s provisions grounds along the ravine extending
from the park boundary wall west into the Kenepa Garden area, with particular mention
of the large kenepa trees associated with a very large boulder on transect 27; an
artificially notched boulder on transect 21, unit 14; the overhang shelter on transect 16,
unit 12-13; and also the presence of a 19th century wooden mortar at a grain-crushing
area under a tamarind tree on transect 20, at unit 19a (all of which are below the 60 meter
elevation contour).

It is presented here, that based on the documentary and artifact evidence there was an
occupation at this Golden Rock slave village area from the early-middle 18th century until
the middle 19th century. That the Africans who resided in this village are personally
named, and that there were periodic changes of some of the resident members within this
slave community, while others stayed at the village throughout the occupation period. This exemplifies the social complexities of the Africans context in the setting of plantation life. Further, that for some reason the enslaved African population at this village dramatically decreased from 52 residents to 9 residents, in the period from 1845 to 1849. A plausible suggestion would relate this decease to the abolition of slavery on the French side in 1848, and the close proximity of the Golden Rock plantation for easy access to the French side at Marigot. The decrease of the African population at the slave village area is also indicated by the ‘in situ’ scarcity of artifact types dating after the 1840’s and before Dutch slavery abolition in 1863.

It is presented here, that the exceptionally good quality of preservation of the dry-stone pile walls over and surrounding the entire survey area, with particular mention of those walls south and southwest of the identified enslaved African village area (along transects 17-18, until the area of units 13-14, then south to the Rockland wall near the cave), are an important tribute to the skills of those who constructed them, which in this case was most likely the resident enslaved Africans of the Golden Rock and Rockland plantations.

**CLOSING COMMENTS**

This archaeological and historical documents investigation of the Emilio Wilson Estate exemplifies a very new trend for the island of St. Maarten, whereby sites of important heritage value are now gaining serious attention from the general public and the local decision-makers, with an intention for preservation and protection. On an island where
massive physical development has been the standard for the last 40 years, it is refreshing to know that it is never too late for we the people of the islands to give respect for our heritage sites, and indeed take steps for protecting them.

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A Spatial Analysis of Slavery: The Martin Plantations of Antigua

by

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Syracuse University

Abstract
The Martin family, a wealthy Antiguan planting family, enjoyed particular prominence in the British Empire, owning property on Antigua and Long Island, New York, and holding various positions in the colonial government. In 1750 Colonel Samuel Martin wrote his Essay Upon Plantership that argued sound plantation management would increase sugar production through a careful control of labor and plantation organization. Coupling the ideas of Martin’s essay with an intensive landscape study of the Martin properties in Antigua provides a strong case study for examining the ways in which the spatial organization of labor within plantations shaped the lives of the enslaved labor force. A study of the Martin family’s properties in both regions can also contribute to a comparative approach to studying colonies within the British Atlantic World in the eighteenth century, creating a broader understanding of the nature of slavery, trade, and interaction between regions during this time period.

Résumé

Resumen
La familia Martin, una familia adinerada plantadores en Antigua disfrutaban prestigio en el Imperio Británico, teniendo propiedades en Antigua y Long Island, Nueva York y con varias posiciones en el gobierno colonial. En 1750 Colonel Samuel Martin escribió Essay on Plantership (Ensayo de la Plantación) que discutía que el manejo sensato de la plantación podía aumentar la producción de la azúcar por medio de un control cuidadoso de el labor y la organización de la plantación. Juntando las ideas en el ensayo de Martin con un intenso
estudio de las propiedades en Antigua provee un fuerte caso de estudios para examinar
maneras que la organización espacial de el labor en las plantaciones formo las vidas de la
fuerza de el labor esclavizado. Un estudio de las propiedades de la familia Martin en ambas
regiones tambien contribuyen a un enfoque comparativo a estudios de las colonias en el
Mundo Atlantico Britanico de el siglo 18, creando entendimiento mas amplio sobre el tipo de
esclavitud, comercio, y interaccion entre regiones durante este periodo de tiempo.
On Christmas morning, 1701, Major Samuel Martin, owner of Green Castle, a sugar plantation in St. Mary’s Parish, Antigua, was murdered by his enslaved laborers. His son, Colonel Samuel Martin inherited Green Castle Estate and continued to manage the property. Throughout the first half of the eighteenth century, Colonel Martin made several trips to England on business, leaving Green Castle under the management of his brother, Josiah. Upon his return to Antigua in 1750, though, Colonel Martin found Green Castle in disarray: fields were in squalor, the number and health of his enslaved labor force was diminished, and his sugar works were in disrepair (Sheridan 1960:128). In seeking to restore Green Castle, Colonel Samuel Martin penned his “Essay Upon Plantership,” a volume meant to increase the productivity of his own plantation through reorganization and labor management. In addition to being used at Green Castle, Martin’s “Essay” would receive a wide readership throughout the British Leeward Islands and undergo seven editions and at least two reprints following the final edition in 1785 (Sheridan 1960:138).

Throughout the “Essay Upon Plantership,” Colonel Martin does not just provide recommendations for plantation landscaping, agricultural processes, and techniques in fertilizing, but also contributes a rather large portion of the text to the proper treatment of the enslaved laborers including their living conditions, appropriate workloads and task assignments, proper medical care, and adequate provisioning gardens. Martin definitively links treatment of the enslaved laborers with levels of production output. Thus, proper plantation management and good treatment towards laborers would result in increased sugar production leading to reduced costs and overall greater profit. An intensive landscape survey
of Colonel Martin’s Green Castle plantation provides an interesting case study for examining
the spatial organization of labor on sugar plantations in light of the suggestions outlined in his
“Essay.” Additionally, it provides an opportunity to examine the extent of changes to overall
plantation landscape and labor organization upon the implementation of Colonel Martin’s
reorganization. Finally, Josiah Martin, Colonel Martin’s seemingly irresponsible brother,
moves to Long Island, New York upon his brother’s return to Antigua where he builds a farm.
A comparative approach to the Martin properties in Antigua and New York can provide
interesting insights into the differences between slave societies as well as the extent of trade,
interaction, and compliance to Colonel Martin’s model in the two regions.

Green Castle Estate

Green Castle Estate is located in St. Mary’s Parish, Antigua. The property was
acquired by Major Samuel Martin after 1667 when the family moved to the island following
the Dutch invasion of Surinam (Sheridan 1960:128). During the eighteenth century, the
plantation consisted of 600 acres of land, at least 400 of which were dedicated to sugar
planting (Sheridan 1960:132). Despite the frequent droughts that plagued Antigua during this
time period, Green Castle is in one of the most suitable areas of land for the cultivation of
sugar. The area received considerable rainfall in comparison with other parts of the country,
and Martin describes the land as “not mountainous,” making it ideal for sugar cultivation
(Sheridan 1960:133). Martin, though, is particularly concerned about the nature of the soil on
his estate, describing it as “mold upon clay” and contributes particular attention to fertilizing
soil, crop rotation, and soil drainage to maintain the fertility of his estate (Martin 1785; Sheridan 1960:133).

The built environment of Green Castle Estate reflects a desire to consolidate plantation works for efficiency in labor organization and sugar production. All buildings resided in the center of the plantation. The manor house sat upon a hill with slave quarters on the hillside between the manor house and sugar works. Martin’s two windmills sat to the east of the manor house and various sugar works extended out from the windmills. Although Martin’s “Essay” focuses on plantation organization as a means of organizing labor production, I argue that it also served to increase observation and control of labor on the plantation as well as create interest and investment on the part of the enslaved laborers in the plantation workings. Such an interest would increase overall plantation efficiency and maintain greater control over slave populations in an effort to increase compliance within colonial Antiguan society.

The Essay on Plantership-An Agricultural Treatise & A Model for Social Reform

At first glance, Colonel Martin’s “Essay” is simply an agricultural treatise offering advice on how to maximize plantation production. Indeed, Martin’s “Essay” does focus on these issues, offering advice on the acreage of land that should be allocated for sugar versus provisions, adequate workloads for enslaved laborers and cattle, and methods of rum production (Martin 1785). By the seventh edition of the “Essay,” Martin’s advice comes after years of experimentation on his plantation and reflects actual results specific to Antigua’s climate and soils. In the face of these changes, Colonel Martin did increase the productivity and sugar output of Green Castle through his reforms and management (Sheridan 1960;
1974). He argues that he never could bring production to the level it was prior to his absenteeism, however, his accounts demonstrate an increase in production that are seemingly due to the techniques he espouses in his essay (Sheridan 1960:137-139).

More deeply, though, Martin’s writing can be read for its social implications as the organization of labor on plantations and the control of the large enslaved labor force were pertinent to maintaining the success of the sugar industry on Antigua. Martin had witnessed considerable opposition and resistance to the colonial sugar society throughout his lifetime. In addition to the murder of his own father, the unveiling of the 1736 Slave Conspiracy plot on Antigua in which enslaved laborers planned to kill the Anglo-elite of Antigua at a ball celebrating the coronation of King George II, led to the execution, exile, and imprisonment of large numbers of the island’s enslaved laborers (Gaspar 1985). Colonel Martin served on the judicial board overseeing the trials of many of the accused in the year following the unveiling of the plot (Gaspar 1985). Thus, Martin witnessed direct threats to British economic, political, and social interests in Antigua and these experiences influence his “Essay Upon Plantership” in various ways.

First, Martin devotes considerable attention to the treatment of the enslaved laborers in his “Essay” with reference to the amount of labor they should undertake. Martin notes that labor should be contingent on the laborer’s sex, age, and health, and that hard labor should be coupled with light labor so not as to exhaust the enslaved laborers. Martin also makes recommendations for work that should be done by cattle, such as hauling sugar canes, that specifically should not be done by enslaved laborers. While his primary argument is that carts
drawn by cattle and oxen allow for a more efficient transportation of greater quantities of sugar cane, he also notes the benefits for the health and wellbeing of his laborers. Though Martin seems to be arguing solely for increased efficiency on his plantation, he strongly takes into account the work conditions of his labor force speaking to social issues rather than just purely economic issues.

Colonel Martin also addresses the living conditions of his enslaved laborers. He suggests laborers live in cabins spaced adequately apart to prevent the spread of fire between cabins, but also to allow a sufficient supply of air to flow through each cabin to ensure health. He promotes cleanliness in cabins and new clothing to be given to workers routinely. He also suggests allotting enslaved laborers sufficient land for provision gardens for their own recreation and because of the poor quality of imported provisions. Martin hires a doctor to oversee the health and wellness of his workers, too. These aspects of his “Essay” take into account the welfare of the enslaved laborers, but the suggestions Colonel Martin offers for health and wellness also play largely into issues of social control on the plantation and maintenance of slave interest in the plantation workings.

Colonel Martin recommends keeping slave cabins at “due distance” and to inspect cabins frequently to be sure they are clean, in good condition, and watertight. Though Martin suggests these practices to maintain the health of the enslaved laborers and prevent diseases these same practices—separation of slave quarters and continual inspection—are also means of monitoring the labor force and maintaining control of this population on the plantation. Additionally, Colonel Martin recommends allotting some of the planter’s best land for
provision gardens for the enslaved labor force. Provisioning land should be allotted to each male laborer and the amount of land should be in proportion to the size of his family. These recommendations speak to several aspects of the social milieu Martin wishes to create on his plantation, and within broader colonial sugar society. First, Martin encourages health and wellness among his enslaved laborers not just so they can be productive field hands, but also to encourage the successful repopulation of his laborers through pregnancy. A 1774 travel account states that at least 52 of Martin’s female laborers were pregnant (Schaw 2005). While this might be an exaggeration, it still suggests Martin is actively encouraging propagation and maintenance of family units within his enslaved population on his plantation. Additionally, in allotting provisioning land on his plantation according to family size, Martin creates incentives that not only encourage his workers to have large families, but also continually tie them to his land, ensuring they will remain his workers. In doing so, he seeks to create slave interest in the physical landscape of the plantation, and in the overall plantation production and welfare (Hirschman 1997).

Thus, while Colonel Martin’s “Essay Upon Plantership” presents sound advice for plantation management and agricultural efficiency, it also presents interesting insights into the type of slave society Martin advocated. Additionally, it demonstrates the ways Martin sought to create slave interest and investment in the plantation system, an enterprise from which enslaved laborers did not profit. Still, in allotting provision land to his laborers, encouraging large families within his work force, and seemingly providing means to support these large
families, Colonel Martin seeks to create a means through which his laborers would be actively invested and interested in maintaining plantation order, efficiency, and production.

**Archaeological Investigations of the Martin Properties**

Archaeological investigation provides a unique opportunity to examine the impact of Martin’s “Essay Upon Plantership” through landscape analysis. Labor organization on plantations was highly dependent on the physical landscape and built environment of the plantation and Martin’s “Essay” alludes to structuring of buildings and use of space at Green Castle. A spatial analysis of Green Castle and Josiah Martin’s plantation on Antigua can give strong insights into the organization of labor, extent of sugar production, and social relations within these contexts.

Recent archaeological research seeks to understand the ways in which landscapes and the built environment are as much indicators of past lives and social relations as artifacts. Archaeological studies of landscapes on plantations reveal the ways in which the plantation was very much a built environment in which surveillance, efficiency, and ultimately profitability were priorities.

Surveillance and control within plantations becomes strongly reinforced within built landscapes. Drawing from Foucauldian (1995) ideas of discipline and surveillance, archaeologists have highlighted how plantations manipulate lines of vision to simultaneously oversee and hide enslaved laborers (Epperson 2000), reinforce social and racial inequalities (Epperson 1999), and proliferate dominant colonial ideologies (Leone 1984; 2005). Additionally, archaeological research provides a unique opportunity to link landscape changes
with broader economic trends. Thus, in the case of coffee plantations in Jamaica, James Delle (1998) presents compelling research that links landscape changes to the shift from a mercantile economy to a competitive capitalist mode of production. Within this framework of archaeological research, the Martin plantations present an interesting case study for examining the ideal model of an Antiguan sugar plantation—as outlined in Martin’s (1785) “Essay Upon Plantership”—and the actual ways in which these ideas become manifest within the landscape.

One of the biggest critiques of such studies of landscape seeks to call into question the ways in which other individuals, aside from those who planned such landscapes, viewed the space and whether the ideals and ideologies put into building the landscape are imposed on everyone within the space (Beaudry, et al. 1991). This is a valid critique and studies of landscape need to more carefully approach this topic and take into account multiple views of the construction of space when possible. Still, such studies into landscape, particularly in the case of plantations, truly demonstrate an increased separation between master and enslaved laborer through distinctions made in the landscape. Such distinctions were manifest by increasingly differentiating workspace and leisure space and by defining who had access to each space (Epperson 1999).

Intensive landscape analysis of the Martin Plantations in Antigua will seek to identify the location of sugar works and slave quarters in relation to the estate houses in each context. Coupling the ideas set forth in Martin’s “Essay” with specific site topography provides a means to examine how the built environment was manipulated in specific contexts to reflect
the goals of the Martins in maximizing production. Additionally, archaeological investigations provide an opportunity to examine the ways in which these landscapes were imposed on, yet negotiated, by enslaved laborers on the Martin plantations. Though Martin seemingly provided good working conditions and quality of life for his enslaved laborers, archaeological evidence allows for a less biased interpretation of the lives of Martin’s enslaved population.

In addition to understanding the organization of labor and past lives of enslaved laborers on the Martin plantations in Antigua, the widespread use of Martin’s “Essay” in the British Leeward Islands in the eighteenth century (Sheridan 1960) and the acquisition of farmland in New York by his brother Josiah provides an interesting venue for comparative research within and across regions of the British Empire.

Conclusions

Ultimately, Colonel Samuel Martin’s “Essay Upon Plantership” presents interesting insights into the ways in which an Antiguan sugar planter envisioned the ideal plantation. While Martin’s “Essay” seemingly outlines a model for plantation management based solely on maximizing economic production, it also provides interesting insights into the social environment of Martin’s plantation. Recent approaches to interpreting past landscapes within archaeology provide unique approaches to studying social relations and past lives. Such an approach on the Martin plantations would juxtapose the ideal with lived experiences, contribute to the historiography of slavery in Antigua, and provide an interesting means for comparative research with other Martin properties throughout the British Atlantic World.
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Bahamian Shipping in Black

by

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Abstract
The first Caribbean inhabitants only gained access to these islands as their vessels and navigational skills allowed them to move away from the mainland. With the arrival of Europeans their larger, ocean-going ships allowed them to draw the Caribbean into a global network. Within this broad scheme, the Bahama Islands, at the northwestern edge of the Caribbean Sea, appeared to be simply a peripheral colony. For over 300 years, however, inhabitants of these islands made use of the archipelago’s location on major shipping routes to their advantage. Understanding shipping in the Caribbean as the earliest means of inter-continental transportation gives new insight into the Bahamas’ regional role during the creation and maintenance of European empires. The maritime-focused Bahamian economy strongly affected the conditions of enslavement for those Afro-Bahamians involved. This paper explores the unique role of enslaved Bahamian mariners in this industry characterized by independence and free movement.

Resumen
Los primeros habitantes caribes sólo ganaron el acceso a estas islas como sus barcas y las habilidades de navegación permitieron que ellos alejaran del continente. Con la llegada de europeos sus buques de alta mar permitieron que ellos hicieran entrar al Caribe en una red global. Dentro de este amplio esquema, las Islas Bahamas, en el borde noroeste del Mar Caribe, parecieron ser simplemente una colonia periférica. Durante más de 300 años, sin embargo, los habitantes de estas islas hicieron el uso de la posición del archipiélago en rutas de mar a su ventaja. Entendiendo navegación en el Caribe como el medio más temprano del transporte intercontinental da una nueva perspicacia en el papel regional de las Bahamas durante la creación y el mantenimiento de imperios europeos. La economía marítima de las Bahamas fuertemente afectó las condiciones de esclavitud para marineros negros. Este ensayo explora el papel único de marineros bahamianos esclavizados en una industria que estaba caracterizada por independencia y movimiento libre.

Résumé
Les premiers habitants Antillais ont seulement gagné l'approche à ces îles comme leurs vaisseaux et les adresses de navigation leur ont permis de partir du territoire continental. Avec l'arrivée d'euroéens leurs navires plus grands leur ont permis de tirer la Mer des Antilles dans un réseau global. Dans ce large projet, les Bahamas, au bord du nord-ouest de la Mer des Caraïbes, ont eu l'air d'être simplement une colonie périphérique. Depuis plus de 300 ans, pourtant, les habitants de ces îles ont profité de l'endroit de l'archipel sur les trajets
maritimes importants à leur avantage. En comprenant navigation dans la Mer des Antilles comme le premier moyen de transport intercontinental donne une nouvelle perspective sur le rôle régional des Bahamas pendant la création et la maintenance d'empires européens. L'économie maritime de les Bahamas a fortement affecté les conditions d'asservissement pour ces Bahamiens africains impliqués. Ce papier explore le rôle unique de marins de Bahamien asservis dans cette industrie caractérisée par l'indépendance et le mouvement libre.
In the Caribbean shipping was always critically important. The first inhabitants only gained access to these islands as their vessels and navigational skills allowed them to move away from the mainland. With the arrival of Europeans their larger, ocean-going ships allowed them to draw the Caribbean into a global network. Within this broad scheme, the Bahama Islands, near the northwestern edge of the Caribbean Sea, seemed simply a peripheral colony. For over 300 years, however, inhabitants of these islands made use of the archipelago’s location on major shipping routes to their advantage. Understanding the Caribbean within the context of shipping as the earliest means of inter-continental transportation, gives new insight into the Bahamas' role within the region during the creation and maintenance of European empires.

A plantation economy never flourished in the Bahamas as it did in most Caribbean islands. The seemingly haphazard character of the Bahamian economy provided ample room for the inclusion of Blacks; both free and enslaved. The Bahamas was not unique in this regard as both Bermuda and the Cayman Islands had similar socio-economic profiles. Yet the specific nature of the Bahamian economy did create unique characteristics within the region. Barry Higman listed The Bahamas, Cayman Islands, British Honduras, Anguilla, and Barbuda as “marginal colonies” because none had long-term plantation-based economies (1984:43). He also noted the important roles of geography and colonial history in contributing to the nature of the slave-holding society developed in each colony (Higman 1984:3-4).
This paper considers British colonial motivation for establishing and maintaining marginal colonies, such as the Bahamas, and the repercussions this had on the role of slaves and free Blacks in such an economy. The marginality of the Bahamian archipelago was specifically related to shipping and seafaring. References to the Bahamas include the Turks & Caicos Islands as both countries comprise the archipelago and have similar profiles for shipping and seafaring activity. The Turks & Caicos Islands were administered as part of the Bahamas from 1768 to 1848 (Williams 1989:12-15) which covers the Bahamas’ brief plantation period. This is significant because much of the archaeological evidence for this research is from plantation sites throughout the archipelago.

Understanding the creation and development of New World colonies by European states through navigation adds a new dimension to rationales for how, when, and where different European states established colonies. Placing this filter over the framework of Caribbean colonial history emphasizes the struggle to gain access, and maintain control of that access. Shipping was the medium through which this access was gained.

I aim to show how this struggle to build and maintain empire was reflected in the unique economies of marginal colonies such as the Bahamas. In the Americas, while Spain controlled the lion’s share, Britain and France quickly challenged Spain’s monopoly of and access to the region’s resources. Spain focused control on the larger Caribbean islands where the largest, most centralized indigenous populations lived. Even after larger and wealthier kingdoms were discovered on the mainland Spain’s island colonies served as supply and maintenance points for sailing fleets. So the major significance of Spain’s island colonies was
their strategic locations for maintaining access to the wealthier mainland colonies. The British and the French scrambled for the even smaller islands. Their primary goal in the Caribbean was to disrupt and challenge Spain’s monopoly over the region. A secondary goal was to retain some access into the area.

Economically marginal colonies like the Bahamas at least initially served some imperial purpose. This status as a marginal colony had a distinct imprint on the lifeways developed by White and Black Bahamians alike. The significance of the Bahamas as a colony was its strategic location near major shipping lanes. This allowed opportunity to disrupt Spanish, and any other shipping. Thomas Coke noted, “Between these several Islands there are five passages for first-rate ships.” (199). Governor Thomas Shirley stated in a 1775 report, explaining that the islands “command the Gulph of Florida, through which all Spanish vessels with their Treasure return to Europe, as do the Windward passage, where all ships Bound to the West Indies must pass.” (CO23/23:28).

From the earliest period of European settlement the Bahamas developed a highly mobile seafaring economy. Licenses were granted to cut cedar and braziletto (a dye wood), collect ambergris (a by-product from sperm whales), for whaling, and salvaging wrecks. This latter activity was the most controversial for the Spanish at Cuba. They labeled Bahamians as pirates for salvaging Spanish wrecks in Bahamian waters and invaded the colony several times to punish such actions.

The independent and casual nature of this transitory seafaring economy was reflected in the lifeways of all the participants. Governor Shirley’s assessment of Bahamians in a 1768
report was that “great Numbers of the inhabitants being Blacks, Mulattoes and Persons, who live by Wrecking and Plunder and are People of a very bold and daring Spirit, which makes it highly necessary to have a proper force to enable the Civil power to put their laws in execution.” (CO23/8:3-5). As the governor implied, Blacks were a significant part of this seafaring work force. The Bahamas had between 10 and 16 percent enslaved maritime workers; the highest among the British islands (Higman 1984:48, Bolster 1997:18).

Those employed in shipping were recorded as working “At Sea” on vessels “fishing, turtling, droghing, and wrecking” (Slave Registers 1821-1834). Maritime workers were one category of enslaved laborers allowed to work for hire. This ‘self hire’ arrangement granted enslaved workers considerable independence and owners usually had few objections. The system of hired-out enslaved labor was well established in the Bahamas by the time large-scale plantations were introduced in the late 18th century. In the 1780s, Johann Schoepf, a German traveler, observed about Black Bahamians that, “Many of them are free, or if they are slaves, by paying a small weekly sum they are left undisturbed in the enjoyment of what they gain by other work.” (1788:301).

Loyalists emigrating to the Bahamas after the American Revolution established a plantation economy. There was some social tension between the newcomers and the old inhabitants. William Wylly, an outspoken Loyalist, described the old inhabitants as being “poor, and by no means numerous; their only property consisted of a few small vessels, and some negroes”; and their occupations were confined to “fishing, wrecking, and woodcutting.” (1789:5). By 1800, however, this smug confidence had faded as cotton plantations continued
to fail. Ironically, much of the archaeological evidence of the Bahamian wrecking industry was preserved on the walls of loyalist plantations as mute evidence that they too came to depend on the only Bahamian industry which had consistently remained viable.

Allowing slaves to work on wrecking vessels was a strategy to diversify and supplement the economy of failing plantations. At Harbour Island, for example, there were no plantations and slave holders generally owned fewer than 10 slaves. Over 80 percent of these slave owners had at least one slave working mainly “At Sea” (Slave Returns 1821-1834). In some cases the owners were several minors who owned the slave or slaves in common. In the Bahamas the value of slave labor was tied to the investment potential in whatever ventures provided steady returns for investors/slave owners.

A profile of enslaved Bahamian mariners was developed from a data set of 296 males registered in the 1834 Slave Returns as employed in maritime-related jobs. This sample is about half the total data set of enslaved Bahamian maritime workers in 1834 (Saunders 2002:138). Several patterns were noted. First, maritime employment was a gendered activity as only males are listed for this work. Maritime work was lifetime employment as workers ranged in age from 8 to 72 years old. Some 35 percent were legal minors under age 21 suggesting that job training began before age 10, though apprentice training as craftsmen, such as ship carpenters, began about age 15. Since training started so early those in management level posts had decades of experience. The harbor pilots were all over 30, and the two masters of vessels were in their 40s. Of those who were older, 15 were in their 50s, 2
were in their 60s, and Harry was 72, implying that employment as a mariner continued as long as the person was willing, and able to continue.

The differing legal status of these workers was another important category. Eighty six percent were still legally enslaved. Of the remaining 14 percent, eight percent were exchanged in some way between 1831 and 1834. For the others, four percent were freed by some legal action, and two percent had simply run away. It is significant that most of the status changes were those who were sold, bought, or deeded.

Archaeological evidence related to this activity comes from the documentation of ship graffiti. The Bahamas is the only British West Indian territory that has examples of 19th and 20th century ship graffiti. Examples of ship graffiti are known from the Dominican Republic, Puerto Rico, and the northeastern US but the time period and/or medium of recording all differ from those in the Bahamian archipelago. Of 56 ship graffiti documented, just one was created using a different technique and medium. This graffito was interpreted as Lucayan (indigenous Bahamians). The remaining 55 were all incised into plaster or stone surfaces. It is likely that ship graffiti were also made on wooden surfaces, but the bias of the archaeological record has meant that only those on stone surfaces have survived.

Of 14 ship graffiti sites investigated, only 4 sites (29 percent) could not be definitively associated with Bahamians of African heritage. The implication is that Bahamian ship graffiti were mainly created by Blacks. This is further testament to the strong role Blacks played in Bahamian shipping. These examples of ship graffiti are interpreted as archaeological evidence of some aspect of Bahamian shipping most likely some record related to wrecking.
They comprise part of “the maritime cultural landscape” demonstrating the connections between the human use of both the land and the sea (Westerdahl 1992:5).

Ship graffiti were documented from two sites in the Abacos in the northern Bahamas. On Green Turtle Cay a slate fragment was excavated in rubble from the foundation of a plantation-era building (Lance & Carr 2003:17). Each face has the starboard and port side views of a sloop. The archaeological context for this graffito was sufficient only to associate it with a 19th century plantation site but not with any specific group at that plantation.

The other recorded ship graffiti site in the Abacos is a cave at the southern end of Great Abaco Island. This is the only known site that contains two distinct types of ship graffiti. The historic period graffiti depict a variety of vessel types such as schooners, sloops, and a ketch. These were all vessel types designed for coastal, or island sailing so these kinds of vessels could have been built locally. This site could also not be definitively associated with Black Bahamians. Bat guano was collected from this cave and was exported for use as a fertilizer (Bahamas Blue Books 1834-1886).

Of the four ship graffiti sites on New Providence, only one was not conclusively associated with free or enslaved Blacks. Images of two warships are on walls within Fort Charlotte overlooking the main entrance to the harbor. Nassau’s forts were manned by free Black troops since 1801 (CO23/39:132). The larger of the two graffiti has a terminus ante quem of 1827 from a later tourist’s graffito. The other ship graffito is in a section built about 1813. The ship graffiti in this fort are indicative of the general use of this recording method by Blacks with some knowledge of ships.
One of the most prolific ship graffiti sites documented is the basement cell of Nassau’s old jail. The octagonal building, completed in 1799, was designed on Jeremy Bentham’s principle of the observatory panopticon intended mainly for prisons and hospitals. The building functioned as a prison until 1873 (Historic Buildings 1975:10). While cells on the first two levels and the third storey verandah exhibit the panoptic principle of a 360° visual field, the basement cell was carved into the bedrock with the only light coming through a small window in the cell door. Yet the only ship graffiti at this site are in this room. Historic graffiti of all kinds are on wall spaces getting light from the opening in the doorway. From the location and design of this cell its intended occupants presumably were the lowest ranked and mostly heavily controlled social group. In the racially stratified Bahamian society this group would consist mainly of free Blacks, slaves, and their descendants.

This site also has the greatest variety of vessel types. Ship types not only include the ubiquitous sloops and schooners, which could have been built locally, but there are also two examples of brigantines which were large, ocean-going vessels that frequented Nassau Harbour. Masts on some schooners were raked aft (angled backward). This feature is most associated with late 18th and early 19th century vessels, especially Bermuda-built vessels (Baker 1966:120-121). One graffito exhibited features of the shallop; an 18th century vessel type (Baker 1966:70-81). Another graffito depicted a vessel that appears to have the mast and smoke stack of a duel-powered steam and sailing ship design experimented with in the 1840s and 1850s (Tunis 2002:41-58). Ship graffiti in this cell would be representative of types of ships docked in Nassau Harbour, just a few hundred meters away. Occupants of this cell
could not see the harbor so the details of these vessels were drawn from memory and reflect
the artists’ level of knowledge about these type ships.

The two other New Providence ship graffiti sites are both plantations owned by
Loyalist, William Wylly. At Clifton, the largest of Wylly’s plantations, a sloop was incised
into the window jamb of one of the six slave houses. At Tusculum, two ship graffiti were
documented from interior walls of the main house. These graffiti on the interior walls mean
that whoever created them presumably lived in the house, or at least had access to it. Wylly
lived at Tusculum until about 1810 when he moved to Clifton and an overseer would have
managed Tusculum. No documentation has been found about an overseer at Tusculum. In
the Bahamas there were cases of slaves being plantation overseers; however the overseer
could also have been a lower status White, or free Black.

Three ship graffiti sites were documented on San Salvador Island. Two are 19th
century plantations and the third is another jail and the only 20th century ship graffiti site
investigated. At the plantation sites, Sandy Point, and Prospect Hill, ship graffiti are in
similar locations. A few examples are on exterior walls of both main houses but most are on
walls of work buildings. The graffiti on the main house walls are in “discreet” locations that
would not readily be noticed. At Sandy Point most examples are in the window jambs and on
the interior north wall of a storage/work building. At Prospect Hill graffiti are on interior and
exterior walls of the kitchen building nearest the main house.

All of these buildings are atop hills with panoramic ocean views, but the amount of
detail on these drawings would not have been visible from such a distance. So these vessels
were not simply recorded by sight but involved the artists’ knowledge of these ship types. It could not be determined that the owners of Prospect Hill or Sandy Point registered any slaves as working primarily “At Sea”. But Charles Farquharson, owner of Prospect Hill, recorded two occasions in his plantation journal when his slaves worked on distressed vessels (1831-1832:56-57; 69). This record suggests that because slaves did not primarily work at sea did not mean they lacked knowledge of ships or shipping.

The San Salvador jail building was completed circa 1910. By this date all the island’s population would have been Black. The building is in the main settlement on that island and is across the street from the public dock. This group of ship graffiti, depicting sloops and schooners, are drawn with such stark detail they seem crude in comparison to earlier examples. Nevertheless these 20th century graffiti demonstrate that the tradition of creating these ship images continued into the early 1900s.

In the Turks & Caicos Islands ship graffiti were documented at three sites. The two plantation sites are Cheshire Hall, on Providenciales, and Wade’s Green, on North Caicos. At Cheshire Hall the only examples of ship graffiti were incised into exterior walls at the southern corner of the main house. All the graffiti at Wade’s Green were in the kitchen building. As at most sites, these graffiti depicted sloops and schooners. The third Turks & Caicos Islands ship graffiti site is Sapodilla Hill. The hillside rises above the dock, which is still in use today. This site has an array of historic graffiti that documents the historic use of the docking area below. Such evidence of public access to the hillside meant that the ship graffiti at this site could not be attributed to any particular social group.
One pattern evident for schooner graffiti from the Turks & Caicos Islands is that they were all drawn with raked masts. This feature was developed in Bermuda. It was intended to help the vessels sail faster (Baker 1966:120-121). Bermudians historically visited the Turks & Caicos Islands to rake salt. So it is possible that some ship graffiti from these islands depict Bermuda-built vessels.

Two plantations on Crooked Island are ship graffiti sites but examples were only documented from one of these. The owner of Great Hope plantation, Henry Moss, was the wealthiest and largest slave owner in the Bahamas. Ship graffiti at this site are concentrated in two areas of the two storey main house. There are ships on the walls of a ground floor room at the back of the house. These images all depict sloops and schooners. On the second floor, the ship graffiti appear to have been produced by someone sitting or kneeling on the verandah floor. Along with the usual sloops and schooners are also barques and brigs. These were non-locally built, ocean-going vessels which frequently passed through Bahamian waters. It is no coincidence that this property overlooks the Crooked Island Passage, a major sailing route through the archipelago until the early 20th century.

It was also no coincidence that Henry Moss, like a number of Bahamian slave owners, only bought slaves with specialized sailing skills in 1834 shortly before emancipation (Bahamas Compensation Returns 1834). Former slaves were to remain apprentices for several more years. Henry Moss was evidently among those Bahamian slave owners speculating on a new variety of investment in unpaid labor. This would help to explain the relatively privileged positions of ship graffiti at this site compared to other plantation sites.
Ship graffiti artists at Great Hope may have been privileged workers but they were still relegated to a status lower than the owner and his family. Although these workers were allowed access inside the main house to record their work this workspace was in less conspicuous areas such as a back room of the house, and the floor of the verandah.

Wrecking in the Bahamas was not seriously curtailed until after the construction of 11 lighthouses throughout the archipelago between 1836 and 1876 (Almanack 1882). Even so, the practice continued into the first half of the 20th century. Bahamian wrecking included legal, as well as illegal practices and the local government seems to have perpetuated all of these conditions simply by their inaction. Until the late 1800s taxes on the sale of salvaged goods remained the second highest source of government revenue behind taxes on salt (Bahamas Blue Books 1834-1886). Moreover all officials in the Vice Admiralty Court were paid fees based on the financial settlement salvors were awarded for each vessel salvaged (Vice Admiralty Court Minutes 1832-1858).

After full emancipation in 1838 there was considerable internal migration as Black Bahamians, with their boating skills, relocated to participate in the colony’s expanding sponging industry. By the early 20th century the Bahamas produced some 25 percent of natural sponges on the world market. Most small-scale sponge boat owners were Blacks. But the majority of Blacks working in the sponging industry were common laborers on sponge boats owned by merchants who held onto their labor by holding them in overwhelming debt.

Shipping was a major part of the Bahamian economy for almost 300 years. Within that time Blacks played a significant role as a skilled work force in an industry that was so
vital to the colony’s economy. During the period of enslavement Black Bahamians were heavily relied upon as a large, cheap labor source. This population of enslaved sailors might have enjoyed a level of mobility unavailable to slaves limited to agricultural labor, but this mobility did not generally bring greater legal and economic freedoms. After emancipation, knowledge of sailing, and access to boats enabled former Bahamian slaves to have choices that were not as readily available elsewhere.

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The Pre Ceramic Age

Late Archaic cooking pits in coastal French Guiana
Martijn van den Bel, 2008, Inrap

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Late Archaic cooking pits in coastal French Guiana

by

Martijn van den Bel, 2008
Inrap

Abstract

The site of Eva 2 was discovered in 2004 by members of the French National Institute of Preventive Archaeology (Inrap) during a survey of the sand quarry Eva (Jérémie, 2005). The site is situated on a hilltop at the frontier of the Precambrian shield and the high coastal Pleistocene plains, juxtaposed between the tropical forest and the coastal savannas. Two superimposed occupation layers have been detected and excavated covering 0.51 ha. The first anthropogenic layer, found at a depth of 20cm, yielded Amerindian ceramics and some colonial material. This occupation level has been interpreted as an Amerindian habitation site from the colonial period and is attributed to the first half of the XIX century (1775 - 1875 AD) based on the technological aspects of the glass beads found in several burial pits.

The second level, found at an average depth of 80cm, is characterised by an archaeological refuse layer (10-15cm) and is characterized by the debitage of quartz flaking, polished stone tools, and some dispersed weathered ceramics. Just below this refuse layer, over 200 clusters of quartz rocks were found. These rock features are the subject of this paper and have been interpreted as rock filled cooking pits. Charcoal samples were taken from these features and were AMS dated and yielded calibrated dates around 4.200 BC but also around 2.100 BC, suggesting a large occupation span for this site. The site has been attributed to the Late (ceramic / formative) Archaic Period of northern South America (6.000 - 3.000 BP). The Eva 2 ceramics show similarities with the oldest known ceramics in the latter region showing similarities with the Alaka (Guyana) and Mina (Para, Brasil) ceramic complexes.

Résumé

Le site d’Eva 2 a été découvert en 2004 par des agents d’Inrap lors d’une prospection de la carrière Eva (Jérémie, 2005). Le site se trouve sur une colline à la limite de la haute plaine côtière pléistocène et le socle précambrien, juxtaposé entre la forêt tropicale et les savanes. Deux niveaux archéologiques ont été fouillés sur une surface de 0, 51 hectares. La première couche anthropogène, enfoui à 20cm de profondeur, a livrée de la céramique amérindienne et du matériel colonial. Cette occupation a été interprétée comme site d’habitat amérindienne datant de l’époque coloniale et a été attribuée au début du XIX° siècle (1775 -1875) grâce à les aspects technologiques des perles en verre, trouvés dans plusieurs sépultures.

Le deuxième niveau a été mis au jour à 80cm de profondeur moyenne et il est caractérisé par un paléosol (10-15cm d’épaisseur) rempli avec des éclats de quartz, percuteurs, broyeurs et de la céramique. En dessous la couche archéologique plus de 200 amas de blocs de quartz ont été trouvé. Ce genre de structure est le sujet de cet article et ils ont été interprétés comme fours à pierre (modèle polynésien). Plusieurs échantillons de charbon ont été prélevés de ces structures et ont été daté environ vers 4.200 avant JC ainsi vers 2.100 avant JC, évoquant une occupation longue. Le site a été attribué à l’époque Archaïque Tardive (céramique/ formative) du Nord de l’Amérique du Sud (6.000 - 3.000 BP). La céramique d’Eva 2 est similaire aux premiers complexes céramiques d’Alaka (Guyana) et de Mina (Para, Brasil).

Résumen

El sitio de Eva 2 fue descubierto en 2004 por los miembros del Instituto Nacional Francés de la Arqueología Preventiva (Inrap) durante una prospección de la carrera llamada Eva (Jérémie, 2005). El sitio se sitúa sobre una colina al límite del alto llano costero pleistoceno y el zócalo precámbrico, yuxtapuesto entre el bosque tropical y las sabanas costeras. Dos niveles de ocupación sobrepuestas

1 I would like to thank the Inrap team on Eva 2: Pierre Texier, Axel Daussy, Christian Vallet, Clara Samuelian, Sandra Kayamaré, Alban Oculi, Sandrine Delpech, Monique Ruig and Matthieu Hildebrand. I would like to thank Steve Black and Alston Thoms (University of Texas) for their help on identifying the cooking pits of Eva 2 and Josey McDonald for correcting my terrible Franglish.
hemos detectado y hemos excavados una cubierta de 0.51 has. El primer nivel antropogénico, encontrada en una profundidad de los 20 cm, rindió cerámica indígena y un poco de material colonial. Este nivel d’ocupación se interpretó como lugar de hábitat amerindio que databa del tiempo colonial y al principio del XIX° siglo (1775 -1875) gracias a los aspectos tecnológicos de las perlas en vidrio, encontrados en varias sepulturas. El segundo nivel, encontrado en una profundidad media de los 80 cm, es un nivel arqueológico (10-15 cm) y caracterizado por el debitage del cuarzo, herramientas de piedra pulidas, y la cerámica. Apenas debajo de este nivel, sobre 200 racimos de rocas del cuarzo fueron encontrados. Estas estructuras de la roca son el tema de este papel y se han interpretado como hornos a piedra (modelo polinesio). Las muestras del carbón fueron recogidas de estas estructuras y rindieron fechas calibradas alrededor de 4.200 AC pero también alrededor 2.100 AC, sugiriendo una ocupación larga. El sitio se ha atribuido al Período Arcaico Tardío (cerámica / formativo) del norte de Suramérica (6.000 - 3.000 BP). La cerámica de Eva es similar a los primeros complejos de cerámica de Alaka (Guyana) y de minó (Para, Brasil).
Introduction

In 1994 Stéphen Rostain wrote that “The existence of pre-ceramic sites was never doubted for French Guiana but was simply not likely to be found” (Rostain, 1994: 411). However, in 2005, two archaic sites were excavated by members of Inrap, pin-pointing for the first time pre-ceramic sites in French Guiana, namely at the Plateau des Mines (Saint-Laurent du Maroni) and Eva 2 (Sinnamary). Both sites, situated on the White Sand Formations, yielded similar lithic technology in quartz, polished stone tools and quartz rock features. Their radiocarbon and thermoluminescence dates range between 7,000 to 3,000 BP. The Plateau des Mines site is 1,000 years older than Eva 2 and yielded no pottery (6,200 ± 30 BP: Mestre, 2005; Delpech, 2005; see also their contribution is this volume).

The Eva quarry is situated halfway between the villages of Kourou and Sinnamary south of the former RN 1 (Fig.1). At this point, an outcrop of the Precambrian shield overhangs the Pleistocene coastal savannahs. Here, the site is located on a bean shaped White Sand hill attaining 26m in height and measuring 2.5 hectares in surface.

The geological profile shows clearly two archaeological layers embedded in a giant podzol which probably started to develop at the beginning of the Holocene. The profile starts with a black humic layer of 10cm thickness with rootlets (US 1). Below this layer is situated a black anthropogenic layer of approximately 20cm in thickness and corresponds to the XIX century Amerindian occupation (US 2). The next layer is a brownish yellow layer, which is sometimes difficult to distinguish at the highest parts of the site, and marks a sterile transition layer (US 3). Below this layer, the second archaeological level is found: a dark grey layer of approximately 15cm thick containing abundant lithic artefacts, charcoal and some pottery (US 4). This buried archaeological layer (or paleo-sol) represents an ancient dwelling level and

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2 This anthropogenic black layer is often referred in Lowland South America as a *terra preta* layer. It’s colour is the result of an enrichment of the sediment of organic matter during human occupation (eg. De Boer, 1972: 101-106). The physicochemical elements characterizing this level are in particular responsible for the black colour of the layer by lessivage of the sediment (Kern, 1994).
represents clearly a refuse layer of the Archaic Period. This layer is found on top of a sterile white sand stratum, which reaches at least 2 meters in thickness (US 5) before touching the non-bleached red clayey sand\(^3\) (Fig. 2).

A geological survey of the site and its surroundings revealed that the presence of the white sands were limited by two pegmatite veins; one situated the south-west (directed WNW-ESE), and to the east by another vein directed SW-NE. Its presence, a source of raw lithic material, is probably one of the most important reasons for the archaic Amerindians to settle at this spot (Fig. 1). The pegmatite veins consist of quartz, feldspar, mica (white or black) and tourmaline. The feldspars weathered completely and what remained was merely quartz and tourmaline. In fact, these pegmatites are very rich in quartz (approximately 75 to 80%) and the deterioration of the feldspars weakens the veins and finally disaggregates them. Tourmalines and micas are subsequently deteriorated and washed out by weathering which resulted in almost pure quartz sand or arena.\(^4\)

**AMS dates**

In total, 21 datings have been performed on archaeological material from the Eva 2 rock filled features. Unfortunately, 16 thermoluminescence estimations performed on the temper of the early ceramics and the fire-cracked quartz rocks did not yield satisfying results due to methodological problems. In total, 5 AMS dates on charcoal of which 4 were taken from the content of quartz clusters and one was taken from a non-defined layer during the diagnostic

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\(^3\) The superposition of two archaeological levels questioned (again) the origins of the White Sands. When, and in what manner was the archaic occupation covered with white sand? In fact, the geomorphology the White Sand Formation in the Guyana’s has been a geological enigma over the last 35 years. The archaic occupation proofed that White Sand deposits cannot be considered to be a sedimentary deposit related to marine incursions after abandonment of the site. In fact, the last marine incursions are dated at least 6,000 years ago which coincides with the first occupation of the site.

\(^4\) Another important question had to be solved: the volume of sand compared to the age of the latest deposits on top of the archaic occupation level. The total volume of arena on top of the archaic occupation level is approximately 400x50x0.8m or 12,000m\(^3\). The length of both veins is about 200m each and the veins measures a width of 30m, which equals a thickness of 12,000/(2x200x30) = 1 meter of erosion. This rate is sufficient to cover the archaic site and actually corresponding to the geological description of the profile. When this erosion or alteration is considered to be a post archaic process, a time span of hardly 4,000 years (KIA 27630) shows us an alteration of 25cm per millennium or 0.025mm per year. This low rate is acceptable in terms of geological years. The author would like to thank Hervé Théveniaut (BRGM).
phase in 2004 but may represent the final phase of the occupation (KIA 26019; see table below). The sample taken from feature 23 (ETH 31230) is considered to be too young and discarded. The other samples are correct and represent an occupation between 5.150 and 3.025 BP. This fairly large time span suggests an occupation of 2, or a maximum of 3 thousand years. The KIA 27630 sample also yielded a date for the ceramics found in the same rock feature (3.690 BP). This younger date surely stresses the large occupation span of the site but also represents the introduction of pottery during the occupation of the site in late archaic times.

<table>
<thead>
<tr>
<th>Material</th>
<th>lab n°</th>
<th>conventional</th>
<th>cal (2 sigma)</th>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charcoal</td>
<td>KIA 26019</td>
<td>3025 ± 20 BP</td>
<td>1290 - 1263 BC</td>
<td>layer</td>
</tr>
<tr>
<td>charcoal</td>
<td>KIA 27630</td>
<td>3690 ± 25 BP</td>
<td>2142 - 2010 BC</td>
<td>fcr</td>
</tr>
<tr>
<td>charcoal</td>
<td>ETH 31229</td>
<td>5125 ± 50 BP</td>
<td>4221 - 3944 BC</td>
<td>fcr</td>
</tr>
<tr>
<td>calcinated bone</td>
<td>ETH 31230</td>
<td>1775 ± BP</td>
<td>132 - 381 AD</td>
<td>fcr</td>
</tr>
<tr>
<td>charcoal</td>
<td>ETH 31228</td>
<td>5150 ± 55 BP</td>
<td>4216 - 3796 BC</td>
<td>fcr</td>
</tr>
</tbody>
</table>


The C14 dates are correct but one must be cautious and can not underestimate the pre- or post depositional processes in tropical South-America. Especially, forest fires during the Holocene period have been current phenomenon and have been reported with certainty between 6.000 and 3.000 BP (Vacher et al, 1998: 76; Carcaill et al, 2002). These paleo-fires have resulted in enormous quantities of charcoal, which (could) have been mixed with the archaeological layer. Whether these fires are the result of human activity or of natural events during this period is now the subject of much scientific discussion.

**The archaic occupation of Eva 2**

*Introduction*

In total, 20 pits (0,51 ha) have been excavated by mechanical means. The refuse layer was removed by shovel and eminent archaeological material was collected in 2,5m by 1,5m
rectangles. The archaeological material consisted mainly of enormous quantities of quartz flakes, flaked quartz tools, quartz cores, hammer stones, anvil stones and pottery\(^5\). The principal characteristics of the latter are small open hemispherical bowls, ranging from 12 - 15cm in diameter with a wall thickness of 5-6mm, and convex bases tempered with coarse (pounded) quartz particles. The absence of griddles is notable.

A segment of the refuse layer (pit 12) was completely sifted over 5mm in 70 squares of 1x1m in 3 arbitrary levels in order to collect the smallest archaeological material. Over 3,000 quartz flakes and 9,000 pieces of quartz residue were collected in this test unit. Once the refuse layer was removed, multiple clusters of quartz blocks, isolated large quartz blocks and several deposits of polished axes (made primarily of dolerite or amphibolite) were detected below the refuse layer.

**Description of the quartz clusters**

In total 210 clusters of quartz rocks were located in the excavated area (Fig. 3). The clusters contain blocks of quartz which vary in size from 5 to 20cm and show cracks due to thermal shocks (fire cracked rocks). Nearly all quartz rocks found in these clusters do not show any sign of flaking and have probably been collected from the surface or extracted from the nearby pegmatite veins. A cluster of rocks is generally found in a shallow roundish pit with a maximum depth of 40cm (Fig. 2 and 4). Except for 6 overlapping clusters, all the clusters are considered to be single features. The latter fact may suggest that the clusters were probably visible at surface level. The distribution of the rocks in a pit show a sink shaped formation and may consist of several layers of rocks. Some clusters appear to have an intentional or ‘organized’ pattern of arranged rocks but others consist of a few dispersed blocks and leave an untidy impression. A few cross-clusters fittings showed that the rocks were re-used in different clusters. The shape of the clusters is variable but a round form is common;

\(^5\) Sandrine Delpech has studied the lithic material and Matthieu Hildebrand studied the ceramics, both Inrap. Their results can be found in the final report of the Eva 2 excavations (van den Bel *et al.*, 2006).
rectangular edges are present as well. Size varies between 30 and 90cm in diameter with an average measurement of 54cm. The majority of the clusters feature a ‘hole’ or empty space in the middle of the cluster.

This variety in cluster appearance enabled us to deduct 4 types of clusters by defining the shape, size and manner of arranged blocks:

1. Clusters with an organized and defined shape (round and square) of any size
2. Type 1 but with an irregular and dispersed side (25 to 50%)
3. Clusters with a horse shoe shape
4. Irregular clusters

Note: type 1, 2 and 4 may also have ‘holes’ in the middle.

Batteries and/or concentrations of clusters were already visible during the excavation: multiple alignments of 4 to 6 clusters in linear and crescent shape partitions divided the excavated area into 3 distinctive zones with a high density of clusters (Fig. 3). These zones tend to be situated on the highest part of the plateau and each consists of approximatively 70 clusters (note: not one zone was fully excavated). Outside these 3 zones a few (isolated) clusters and the polished axe deposits were found.

The sifting of the sediment from the pits yielded few results: some small charcoal particles were found. The small quantities of carbonized material from the pit filling is probably due to the extensive leaching of the coarse grained White Sand deposits. There are 58 clusters containing a few sherds and only one cluster yielded a polished tool (a bell shaped grinding stone).

The presence of ceramics cannot exclude a zone or a specific alignment, which can hence be used as a tool for time depth within the concentration. In zone 2 there is a concentration of ten clusters with pottery. The parameters of cluster shape and size do not allow the definition of a comprehensible spatial pattern of alignments nor a construction method of the features. On the contrary, the application of GIS did not reveal homogeneity but rather a variety in
dimensions and typology which may evoke a certain way of **using** and re-using the rock-filled pits.

**Interpretations**

At the moment, the only reference in French Guiana concerning this type of rock filled pits dating from the same period, has been found, as mentioned before, on the Plateau des Mines (Mestre, 2005; Delpech, 2005). This older site is also located at the edge of a White Sand plateau (45m in height) and situated east of the Maroni River. Here, the slightly larger sized clusters are also compiled of fire cracked quartz blocks and pebbles which were intentionally laid out on one or two layers of rocks. The lithic industry of the latter site which is also based primarily on quartz (98%), shows striking resemblances with the Eva 2 site.

The discovery of rock filled pits and their spatial distribution questioned primarily the function of these features. The excavations at Eva 2 showed clearly that a shallow pit was dug and filled with (pre-heated) quartz rocks in order to heat its content; it is plausible that the rocks and its content were covered with sand. According to our opinion, these observations may represent the construction and use of a cooking pit which has been used to prepare food, such as meat, (shell) fish and/or tubers by hot air or steaming. Although information on this last matter had not been gathered during the excavations, the hypothesis for cooking pits remains plausible when considering the fire-cracked aspect of the rocks and its shape. To our opinion, the various shapes of the clusters are representing stages of its use and the alignments of several pits may show evidence of a series of multiple cooking events at one moment. The aligned pits were probably operational at the same time and may represent the preparation of one hunting party or several hunting trips during a visit at the site. A concentration of alignments or one zone may represent several visits of one band over certain period of time.\(^6\)

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\(^6\) There is only one indication for an archaic dwelling place in zone 1: a distribution of several large blocks of quartz which constitute an area of approximately 40m² is observed in the middle of this zone at the central axis of the hill. Pit alignments are found at both sides of the possible dwelling zone which itself is ‘empty’ of pits and may represent a habitat.
The last fact is another interesting element found at the Eva 2 site. In total, 3 zones have been recognised which can be considered to be a specific activity area in time. Although we have hardly any information on the spatial distribution concerning the quartz flaking areas at the site: we do consider the pits and its refuse layer to be a kitchen area. A possible large stretched occupation span, as suggested by the dates, the huge size of the site, the enormous quantities of quartz flakes and the 3 cooking pit zones may suggest a regular frequentation of this site by nomadic bands during the whole late archaic period.

Although the occupation span seems rather large for (semi ?) nomadic hunter-gathering bands, the quartz veins may have caused them to return to the same spot every year or season. Recently, research on settlement patterns of archaic bands in northwestern South America tends to show a strict cycle in a specific area or territory over a long period of time (Gnecco and Aceituno, 2004). This hypothesis is supported by the cyclic territorial settlement behaviour of the actual Nukak hunter gatherers in south east Colombia (Politis, 1996, 2001).

**Hot-rock cookery in the coastal Guyana’s**

Although archaic sites are known in the Guyana’s for a long time, references on archaic features such as rock filled pits are absent which is probably due to the lack of large scale excavations. In order to find similar features it is thus necessary to broaden our scope geographically or look for ethnographic analogies (eg. Conte, 1988; Pétrequin and Pétrequin et al, 1993).

In the middle Orinoco Valley, three archaic sites have been detected in stratified alluvial terraces and relict channels (Barse, 1990). These sites, Culebra, Provincial and Pozo Azul, yielded the oldest dates for the Orinoco Valley hitherto at 9.000 years old. Barse defined an archaic tradition (Atures I and II) of which the last site is attributed to the Late Archaic period, dated 7010 ± 190 BP (Barse, 1990:1380). The later is distinguished by the presence of projectile points, quartz flaking being indicators for adaptation to the drier savannahs in the
Middle and Late Holocene. The first earliest ceramics, the Galipero complex (maybe related to the early Cedeñoid of the Llanos), were also found at the latter site and dated around 3,500 BC. Features, like charcoal filled hearth pits and burned rocks were found but spatial patterns could not be detected due to the small size of the test pits.

Recently, the late archaic San Jacinto 1 site (Caribbean Columbia; this site yielded dates ranging throughout the 6th millennium BP), situated at the edge of the Serrania foothills, yielded 112 clay lined earth ovens. These cooking pits also featured medium and small amounts of fire-cracked rocks (Stahl and Oyuela, 2007). It is suggested that San Jacinto 1 site was a special-purpose settlement for foraging groups that logistically moved from base camps to special-purpose camps as they collected and processed plants and animals at the onset of the dry period in a highly seasonal tropical savannah.

Similar rock filled features from the pre-ceramic period have also been excavated on the Antilles: on the island of Saint-Martin (Red Bay), the Virgin Islands (Belmont) and the Bahamas (Three Dog Site). Its excavations only yielded one or two rock features which do not correspond to the massive presence of rock filled pits in French Guiana. The Banwari Trace site (dated around 5,000 BC) in southwest Trinidad also yielded a quartz based lithic industry and similar polished tools but alas no features (Harris, 1973 and pers. comm. Harris, 2006).

Rock filled pits have probably also been found at archaic sites in the very southern parts of coastal Brazil but at the time have not been recognized as such or have not been published yet according to André Prous and Lévy Figuti (Prous, 1991: 276; and pers. comm. Prous, 2005).

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7 Information on these sites was discussed with respectively Dominique Bonnisent, Peter Drewett and Mary Jane Berman during the IACA Congress, Trinidad (2005). Gasson (see Gasson, 2002) and Oyuela-Caycedo (pers. comm. 2008) confirmed the absence of archaic rock filled pits for both Venezuela and Columbia.
In the United States, various excavations yielded similar features dating back to the very beginning of the North American archaic period.\textsuperscript{8} Rock clusters have already been recorded for over a century in archaeological and ethnographic research where they have been interpreted as the fillings of earth ovens. In literature, these cook stones are often referred to as Fire Cracked Rocks or FCR’s and represent heated rocks for hot-rock cookery (eg. Dering, 1999; Thoms, 2003; 2005). Within the last few decades, North-American archaeologists have systematically studied cook stones and their use and have concluded that these types of features are actually a distinctive marker for the Archaic Period. The similarity between the cooking pits in French Guiana and in the United States is striking and remains the most plausible explanation for the South American rock filled pits. As well as in the United States, rock filled or charcoal filled pits are very common in Europe and exclusive features for Mesolithic and (early) Neolithic sites\textsuperscript{9}.

The presence of cooking pits in an archaic context has already been modelled for the North American continent where a wide increase in the usage of rock heating elements during the Holocene resulted primarily from population packing and related intensification of broad-spectrum foraging (Binford, 2002; Willey and Philips, 1958). The relationship between foods and cook-stone technology has been checked by ethnographic data and by experimenting with various roots, squash, agaves, lilies, and bulbs.

Thoms (2003:93-94) even suggested a working model for land-use intensification through time in which the archaic earth oven is a transition phase in cooking technology from direct cooking to direct boiling in a ceramic container. His description of an earth oven is as follows: first a pit is dug in which a hot fire is built. On top of or within this fire, rocks are thrown and heated. When the rocks are hot (and wood reduced to coals and ash), a long wooden pole is

\textsuperscript{8} The following part is mainly based on the publications of Steve Black and Alston Thomson hot-rock cookery in the North American Archaic period.
used to ‘arrange’ the rocks in a circular layer (i.e. oven bed). Then a layer of green plant material is added to generate moisture/steam and protect the next layer from burning. Next, a layer of food is added, usually roots/tubers which require 24 - 48 hours of (steam) cooking due to complex carbohydrates. A second layer of green plants is added to separate the food from the sealing earth layer to hold a steamy heat (fig.4).

**Final remarks**

The discovery of two archaic sites (7.000 - 3.500 BP) in 2005 confirmed the long expected presence of Archaic Amerindians in French Guiana. Just as in British Guyana and northeastern Brazil, the sited are situated in the coastal zone at the fringe of the Guyana shield and the Pleistocene floodplains. Both archaic sites are located on the White Sand Formations and may reveal a particular relationship between this soil deposit and archaic Amerindians for the Guyana’s.

The Eva 2 site also showed that this site was located in the close vicinity of submerging quartz veins which provided raw material for the quartz based lithic industry and the cooking pits. The primary activities at the latter site were quartz flaking and food processing according to the enormous quantities of quartz flaked material and cooking pits. Although rock filled pits have been revealed for the first time on the Guyana Plateau, its proposed interpretation as cooking pits is common and widespread for the Mesolithic or Archaic Period since these features reflect a technology utilized by hunter-gatherers across western North-America and in many other regions worldwide (cf. Dering, 1999; Thoms, 2005).

Extensive excavations at Eva 2 showed a clear spatial distribution of cooking pits in three distinct zones and multiple alignments within these zones. The large number of cooking pits, its distinct spatial distribution and the radiocarbon dates put forward important information on

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9 In a sense, the fact that cooking pits are common or key markers for archaic periods is also true for Europe: (rock filled) cooking pits are common during Mesolithic and the Early Neolithic Period (eg. Carozza et al, 2005).

10 This action might explain the ‘holes’ present in the quartz clusters.
archaic residential mobility, social organisation and economics. In this way, the cooking pits can be considered as key features for the Archaic Period in the Guyana’s and the northern lowlands of South-America.

Faunal and macro-botanical data is lacking for the sites in French Guyana due to geochemical processes in neo-tropical soils. The exploitation of natural resources during the Archaic Period is mainly known from the Alaka sites in British Guyana and the Mina sites in Brazil. These semi-sedentary occupations of coastal and riverine regions have formed shell mounds or sambaquis on the Atlantic coast (Proust, 1992; Boomert, 2000; Seda, 2001; Williams, 1998; Plew, 2005). These mounds vary in size and reflect the exploitation of shellfish and crabs and represent a ‘broad spectrum’ diet. Next to food remains, these mounds also contain bones of mammals and birds, stone tools, burials and burned (heating) stones (Barse, 1990; Boomert, 2000: 64). Subsistence was based on shellfish gathering, hunting of animals and the collection of wild vegetable foods. These sites are highly characterized by the presence of a lithic industry of small, multifunctional flake and core tools produced by crude percussion flaking (Rouse, 1963: 59).

Although shell middens have not been encountered at both archaic sites in French Guyana, these sites are presumably affiliated to the shell mound sites of northeastern South America and the Antilles, which are assigned to the Ortoiroid series. This assumption is thus mainly based on its similar lithic industry and datings. The fire cracked rocks in the before mentioned shell deposits may eventually reveal the presence of hot rock cooking pits in the vicinity of these shell mounds when extensive archaeological research is conducted around the shell mounds.

Finally, the Eva 2 site also yielded a highly weathered kind of sand tempered ceramics dated around 3,690 BP. This type of ceramics are highly related to the incipient or Formative pottery of the Late Alaka shell deposits at Hosororo Creek and the ceramic complex of Mina
in north eastern Brasil (Williams, 1998; Simões, 1981, Roosevelt, 1995). In general, the presence of early ceramics at late archaic sites marks a shift in food preparation from toasting, smoking or steaming in pits to boiling food in ceramic containers (Thoms, 2003, 2005). The early Eva 2 ceramics show that late archaic Amerindians were combining and / or changing food preparation methods around 2.000 BC.

The cooking pits at Eva 2 are features in which the archaic Amerindians have processed their food such as shell fish and game. The author would like to put forward that they also may have processed tubers such as manioc or potatoes. The introduction of ceramic griddles in the Neo-Indian Period does not reflect the introduction of horticulture but merely another way of processing food.

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11 According to Boomert, the first Orinoco Basin ceramics are probably related to the ceramics attributed to the Puerto Hormiga Tradition as have been excavated at the San Jacinto 1 site in northern Colombia which date back to 6.000 - 5.500 BP (Oyuela-Caycedo, 1995, 1996; Boomert, 2000:100).

Fig. 1. Localisation of the Eva 2 site.
Fig. 2. Section of a rock filled pit.
Fig. 3. Spatial distribution of cooking pits.
Fig. 4. Archaeological and experimental cooking pits.
Fig. 1. Localisation of the Eva 2 site.
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Ceramic Age

Spot Valley cave: a new inventory and survey of Jamaica’s fourth pictograph site
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¹ Jamaican Caves Organization
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A Ceramic Age Settlement in Transition: Saladoid and Troumassoid Artifacts from the First Street Site in Holetown Barbados
Brendan J. M. Weaver and Frederick H. Smith - Western Michigan University and College of William and Mary

Exotics from Pearls, Grenada A preliminary assessment.
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The Question of the Aboriginal Use of Sails in the Circum-Caribbean Region
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The Palo Seco Site and Complex: A Multi-Component Ceramic Age Settlement in Trinidad
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Side by Side: Faunal Exploitation at Two Villages from Different Time Periods on the Lower Río Tanamá in Northwest Puerto Rico.
Lisabeth Carlson and David Steadman - Southeastern Archaeological Research and Florida Museum of Natural History

Investigations of Five Lucayan Graves in Preacher’s Cave, Eleuthera, Bahamas
Robert S. Carr¹, William C. Schaffer², and Michael P. Pateman³,⁴
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Finding the Lost Ceiba Sites: Relocating and Testing of Ceramic-Age Sites Recorded by Irving Rouse and Michael Woods in the Cano del Indio, Eastern Puerto Rico
Timothy R. Sara and Lisabeth A. Carlson - Southeastern Archeological Research, Inc.

Ceramic Paste Studies in the U. S. Virgin Islands
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Puzzling Piles: Elenan Teepee Firing and Satellite Site Ceramic Production in Puerto Rico
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Informe Preliminar de los Restos Invertebrados Malacológicos de la Cultura Huecoide de Sorcé, Vieques, Puerto Rico.
Yvonne M. Narganes Storde - Universidad de Puerto Rico

Analysis Functional del Sitio las Dos Puertas del Valle de Quibor
Nicolás González Jukisz
Spot Valley cave: a new inventory and survey of Jamaica’s fourth pictograph site

by

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Abstract

Spot Valley cave was located by Mr David Fletcher and was mapped by Dr James Lee in 1970. He reported that fragments of human bones and teeth were found in crevices against the walls and in the floor associated with numerous potsherds of White Marl (Meillacan) type. The collection now kept at the University of the West Indies consists of 693 potsherds and 1 reconstructed vessel as well as a small chert component. The study of the human remains has shown that there were a minimum number of 8 individuals here, 4 adults and 4 juveniles, some of them showing pathological lesions. Dr Lee reported that there were about a dozen poorly preserved pictographs applied to the cave wall in black pigment, in the same style as those at Mountain River cave. He illustrated some of these pictographs in the form of drawings which he presented to the 11th IACA Congress in 1985. A new survey of the interior of the cave has now been carried out, and a photographic record of the pictographs made, thanks to the kind co-operation of the present owner of the property, Mr David Lee.

Résumé

La grotte de la vallée du Spot a été localisée par Mr David Fletcher et a été schématisée par le Dr James Lee en 1970. Il a rapporté que des fragments d’os et de dents humaines ont été découverts dans des fissures sur les murs et dans le sol associés à de nombreux tessons de poterie du type White Marl (Meillacan). La collection actuellement conservée à l’Université des Caraïbes consiste en 693 tessons de poterie, 1 récipient recomposé, ainsi que d’un petit composé de chaille. L’étude des restes humains a démontré qu’il y avait au minimum 8 personnes ici, 4 adultes et 4 adolescents, certains d’entre eux présentant des lésions pathologiques. Le Dr Lee a écrit dans son rapport qu’il y avait à peu près une douzaine de pictogrammes piétérement préservés appliqués sur les murs de la grotte d’un pigment noir, dans le même style que celui de la grotte de la Mountain River. Il a illustré quelques-uns de ces pictogrammes sous la forme de dessins qu’il a présentés au 11ème Congrès de l’AIAC en 1985. Un nouveau levé de l’intérieur de la grotte a été fait, et un enregistrement photographique des pictogrammes aussi, grâce à la coopération du propriétaire actuel du site, Mr David Lee.
Resumen

La cueva de Spot Valley, en Jamaica, fue encontrada por el Señor David Fletcher y fue mapeada por el Dr. James Lee en 1970. El ha registrado que los fragmentos de huesos humanos y dientes fueran encontrados en grietas junto a los muros y en el suelo asociado a numerosos fragmentos de cerámica del tipo White Marl (Meillacan). La colección que ahora pertenece a la University of the West Indies consiste en 693 pedazos de cerámica y en un vaso rehecho así como una pequeña muestra de sílice. El estudio de los huesos humanos ha revelado un número mínimo de 8 individuos, 4 adultos y 4 juveniles, algunos de ellos revelan lesiones patológicas. Dr. Lee ha registrado, en la pared de la cueva, la existencia de cerca de una decena de pictogramas de color negra y mal conservados, que son de estilo idéntico a los de la cueva de Mountain River. Estos pictogramas fueron dibujados y ilustrados por Dr. Lee en el XI Congreso Internacional para el Arqueología del Caribe (IACA) en 1985. En Enero de 2005 la cueva fue de nuevo prospeccionada y fue echo el registro fotográfico dos pictograma, con la simpática colaboración del presente propietario, el Señor David Lee.
Introduction

Spot Valley cave, in St. James Parish, was located by Mr David Fletcher, a member of the Archaeological Society of Jamaica who then lived in the vicinity, and it was mapped by Dr James Lee in 1970 (JC7 in his notation) (Lee, 1970). He subsequently visited the cave again and made some further observations (Lee, 1971, 1973) as well as including it in his more general surveys of Jamaican rock art sites (Lee, 1974, 1990). Lee observed some pictographs in the cave, as well as potsherds and human and animal bones, which were removed for safe keeping to his property at Runaway Bay. His collection (including the material from JC7) was handed over to the University of the West Indies in the year 2000, and it has been inventoried (Allsworth-Jones and Rodrigues, 2005; Allsworth-Jones, 2008). A detailed report on the human bones and teeth has been made by Santos (2008).

Lee recorded the position of the site in terms of one of the old Jamaican 1:12,500 maps, but he made no detailed plan of the interior. It was decided that this should be done, and the work was carried out in January 2005, thanks to the kind co-operation of the present owner of the property, Mr David Lee. The mapping was undertaken by members of the Jamaican Caves Organization, including R. S. Stewart, G. Van Rentergem, and I. Conolley.

Site situation

The position of the cave lies somewhat inland on the north coast of Jamaica between Montego Bay and Falmouth in St James Parish [Figure 1]. As indicated by Lee, it is 1.22 km south east of an open air settlement which he referred to as Spot Valley (J-15 in his notation) (Lee, 1970). The cave is some way up a steep northward facing escarpment and because of the extent of vegetation it is by no means easy to find. As shown on the plan [Figure 2], its dimensions are no more than about 8 by 12 metres, with a small entrance on the north east side. The coordinates as established by Lee in terms of the Jamaican grid system (metric version) are North 194836.08 and East 158163.76. The Jamaican Caves Organization team established the GPS location of the site in terms of the World Geodetic System (WGS 84)
(Stewart, 2003). It is at latitude 18° 29' 11.7" North and longitude 77° 46' 45.0" West. It is at an altitude of 283 ± 10 metres.

The pictographs

In his first report on the site, Lee stated that there were “about a dozen poorly preserved pictographs applied to the cave wall in black pigment” in the same style as those already known at Mountain River Cave and Worthy Park in St. Catherine Parish (SC-1 and SC-6 in his notation) (Duerden, 1897; Lee, 1967; Watson, 1988; Aarons, 1988). It was the “first north coast occurrence” and at the time the third such site in the island. In 1993, another site with pictographs was discovered at Potoo Hole, near Jackson’s Bay in Clarendon Parish (Fincham and Fincham, 1998), hence (since it has not been published in full before) it seems reasonable to refer to Spot Valley cave as Jamaica’s fourth pictograph site. As Lee pointed out, the other sites are situated in the southern part of the island, south of the Dry Harbour Mountains, at a distance (as the crow flies) of some 80 to 100 km from Spot Valley. In his final general account of Jamaican rock art, Lee (1990) mentioned that the Spot Valley paintings were “partly obscured by dirt, dust or smoke”. He did not further elaborate on what they might represent, but he did include a diagram showing some of the pictographs (Lee, 1990, Fig. 7). Some of the representations as redrawn by him are clearly of human-like figures, but others appear to be schematic or even geometric.

It is clear from the new plan of the site [Figure 2] that the images are concentrated in one small area along the south western wall of the cave. They were recorded photographically, and two of these images are reproduced here [Figures 3 and 4]. The first shows human-like figures which appear to correspond to Lee’s Figure 7b, the second may correspond to his Figure 7c, although that is not quite sure. A detailed mapping of the figures, such as was recently carried out for Warminster (Loubser and Allsworth-Jones, 2007), remains to be done. It may then be possible to correlate the images as they appear on the walls with Dr Lee’s
drawings, which do not show them in the position or in the orientation in which they appear in the cave.

The artefacts

When Lee first went to the site in 1970, he recorded that “fragments of human bones and teeth were found in crevices against the walls and in the floor associated with numerous potsherds” (Lee, 1970: 2). When he returned one year later, “another search produced considerable additional pottery fragments” which tended to “complement” what had been found on the first occasion (Lee, 1971: 2). In particular, “one bowl approximately 10 inches in diameter and 3 inches deep, roughly circular and devoid of handles or decoration” was pieced together from 57 fragments, which together made up about 75% of the original bowl. This bowl is now part of the Lee Collection [Figure 5]. As at all the other petroglyph or pictograph sites for which evidence is available, the ceramics at this location, in Lee’s view, were essentially of White Marl type. In that case they can be expected to date to the period from approximately 1000 to 1500 AD.

Apart from the bowl which Lee reconstructed, the collection from the site now at UWI consists of 693 pottery fragments, of which 600 are body sherds and 93 are rim sherds. Only one of the body sherds and 14 of the rim sherds are decorated. The body sherds are mainly dark in colour with prominent white temper, like the reconstructed bowl. A few however are reddish in colour, and there is evidence of at least one massive water jar in the form of a base and a top with a spout. Although the intervening pieces are missing, probably these were parts of a single vessel, with a characteristic yellowish colour and a temper distinct from the majority ware in the cave. There is a small chert component, consisting of 2 flakes and 1 core. In general, the impression is created that this was (at the time of discovery) an undisturbed burial cave, and that the present collection represents more or less the totality of what was left strewn on the surface (Allsworth-Jones, 2008).
The term burial cave is well known in Jamaica, and goes back at least to Duerden (1897, chapter II, pages 21-31). He was concerned to counter the notion then prevalent that these caves could have been “regular places of habitation”. On the contrary, as he pointed out, all the evidence suggested that they were “natural ossuaries”, that is, places where “the (human) bones, perhaps some time after death, were collected and deposited” (Duerden, 1897, 25). Burial in this context did not imply inhumation. That is the sense in which the term is used here, as it was also by Lee (1978, 3-4).

The fauna

The few faunal remains (8 in total) have been catalogued by Dr Lisabeth Carlson (2008). There were four identified bones of Jamaican hutia (Geocapromys brownii) belonging to a minimum number of two individuals. Of the two bird bones at the site, one was identifiable to a species, the Caribbean dove (Leptotila jamaicensis).

The human remains

There were 185 identifiable human bones and teeth in the Lee Collection, including 35 fragments diagnosed by Dr Carlson. The majority of bones are fragmented and showed post mortem damage, such as bone discoulouration and periosteum destruction, deposition of limestone, and strong mineralization.

The minimum number of individuals represented is 8, of which 4 were adults and 4 juveniles. This estimation is based on adult mandibles [Figure 6] and juvenile right humeri respectively. It should be noted that the lower left mandible has some limestone attached which precluded tooth observation. More details are given in Santos (2008).
The apparent disarticulated origin of the material together with bone fragmentation prevents a detailed determination of the age of these individuals, but they do range from infants to mature adults. The youngest individual whom it was possible to identify, on the basis of the left humerus, was between 1.5 and 3.5 years old at time of death, according to Johnston’s tables (1962 in Bass, 1987). One innominate bone could confidently be identified as male, and seven other bones are most likely male as well, whereas there was at least one talus which, on the basis of its size, could reasonably be identified as female. Thus, the mixture at this burial cave of individuals of all ages and both sexes is similar to that observed at the end of the 19th century in such well known sites as Halberstadt (Flower, 1895) and Cambridge Hill (Duerden, 1897).

In addition to the mandibles, seven teeth were recovered, 2 permanent and completely formed, 4 permanent in formation, and 1 deciduous molar in formation. No caries or dental enamel hypoplasia was observed, although it should be noted that the crown of one permanent lower incisor could not be observed due to taphonomic changes. One permanent canine has slight deposits of calculus, an oblique occlusal dental wear, and moderate dentine exposure, grade 4 according to Smith’s (1984) scale. An estimated age similar to what is indicated here (2 years ± 8 months) was obtained for the deciduous molar, since its root was not completely formed (cf. Ubelaker, 1989).

There is clear evidence of pathology in some of the human bones from this cave (Santos et al., 2002). Most obvious is osteoarthritis, manifested in an adult left humerus fragment and in a lumbar vertebra, and an adult femur shows signs of periostitis. Similar lesions on vertebrae were found on human remains from Hartfield, an open air site, also in St. James parish (Santos et al., 2002).

In terms of bone variability, one humerus fragment presents a septal aperture of medium size, in terms of development, according to Bass’s classification (1987). This non-
metric, or qualitative, trait causes no symptoms and represents a minor anomaly of skeletal anatomy (Mays, 1998).

Discussion and Conclusion

The pictographs in Spot Valley cave may not be as spectacular as those in Mountain River cave or Potoo Hole, but (unlike the situation in those two cases) they are closely associated with human remains and archaeological material indicative of a burial location.

From a stylistic point of view, they are comparable to the figures depicted elsewhere. Watson (1988) was able to identify 148 pictographs at Mountain River cave, of which 61 were zoomorphic, 84 were anthropomorphic, and 3 abstract. At Potoo Hole, according to A. G. and A. M. Fincham (1998), there were at least 46 pictographs, of which 18 were zoomorphic, 7 anthropomorphic, 8 geometric, and 13 undefined. Obviously the numbers are much less at Spot Valley cave, and the images do not appear to include zoomorphic representations, so any comparison essentially relates to the human-like figures and to a lesser extent the geometrics.

The pottery, fauna, and human remains recovered from the site have been carefully safeguarded in the Laboratory of Archaeology at UWI, and the importance of the cave itself is clear to the present owner, who has undertaken to protect and preserve it.

Acknowledgements

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Carlson for identifying the animal bones, as part of the process of creating an inventory of the Lee Collection at UWI. The Centro de Investigacão em Antropologia, University of Coimbra, for their support of Dr A. L. Santos.

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A Ceramic Age Settlement in Transition: Saladoid and Troumassoid Artifacts from the First Street Site in Holetown Barbados

by

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Abstract
Archaeological investigations on First Street in Holetown, on Barbados’s west coast, have unearthed Amerindian materials that are shedding new light on the Caribbean island’s prehistoric past. Ceramic evidence indicates that the primary Amerindian occupation of the site occurred at a transitional period between the late Saladoid and early Troumassoid phases (ca.500 AD to ca.800 AD). Stone artifacts, shell tools, and shell ornaments recovered during the excavations also indicate a late Saladoid and early Troumassoid occupation of the site. This paper discusses the ceramic, stone, and shell evidence recovered during our investigations on First Street and uses it to explore issues of settlement patterns, inter-island trade, tool production, subsistence activities, and body ornamentation of the Saladoid and Troumassoid peoples of Barbados.

Resumen
Las investigaciones arqueológicas en First Street en Holetown, sobre la costa oeste de Barbados, han desenterrado materiales amérindios que arrojan nueva luz sobre la isla caribeña del pasado prehistórico. Evidencia cerámica indica que la ocupación principal amerindia del sitio ocurrió en un período de transición entre las fases de saladoide tardío y troumassoide temprano (ca. 500 DC a ca. 800 DC). Artefactos de piedra, herramientas de concha, y adornos de concha recuperados durante las excavaciones, también indican una ocupación del sitio saladoide tardío y troumassoide temprano. En este artículo se analiza la evidencia cerámica, piedra, y concha, recuperadas durante nuestras investigaciones en First Street y lo utiliza para examinar las cuestiones de los patrones de asentamiento, el comercio entre las islas, la producción de las herramientas, las actividades de subsistencia, y la ornamentación del cuerpo de los pueblos saladoideas y troumassoideas de Barbados.

Résumé
Les recherches archéologiques sur First Street à Holetown, Barbade sur la côte ouest, ont mis à jour matériaux amérindiennes qui apportent un éclairage nouveau sur l'île des Caraïbes passé préhistorique. Céramiques indiquer que la principale occupation amérindienne du site a été pendant une période de transition entre la fin de Saladoïde et au début des phases Troumassoïdes (ca. AD 500 à ca. AD 800). Artefacts de pierre, coquilles, et coques ornements ont été récupérés lors des fouilles aussi indiquer une fin Saladoïde et Troumassoïde début de l'occupation du site. Ce document traite de la céramique, pierre et coque récupérés au cours de nos enquêtes sur First Street et l'utilise pour étudier les questions de modes d'habitat, entre les
îles le commerce, production de l'outil, les activités de subsistance, et l'ornementation de le corps de les peuples Saladoïdes et Troumasoïdes de la Barbade.
Introduction

Archaeological investigations on First Street in Holetown, on Barbados’s west coast, have unearthed materials that are shedding new light on the Caribbean island’s prehistoric past. Ceramic evidence indicates that the primary Amerindian occupation of the site occurred at a transitional period between the late Saladoid and early Troumassoid phases (ca.500 AD to ca.800 AD). Stone artifacts, shell tools, and shell ornaments recovered during the excavations also indicate a late Saladoid and early Troumassoid occupation of the site. Here we will discuss this evidence to explore issues of settlement patterns, inter-island trade, and subsistence activities, in the context of an important transition in the Barbadian Ceramic Age.

The investigations at the First Street site began in 2003. Then, the site was an open lot roughly 12 meters wide and 25 meters long on First Street. The lot has been vacant since a fire destroyed a shop on the site nearly 15 years ago. Initially the excavation was conducted to investigate questions about early colonial life in Holetown, the site of the first British settlement on the island. The site proved to possess an extensive historic period component, and the analysis of that material was published by Smith in 2004. The team of archaeologists opened five 2-meter by 2-meter excavation units. The units were excavated down to the water table, which appeared at about 140 centimeters below the ground surface. We screened the soils through 1/4-inch mesh and collected the artifacts according to stratigraphic context. The complex stratigraphy revealed several distinct periods of human occupation, the earliest of which contained Saladoid and Troumassoid materials (see Figure 1). This stratigraphic context consisted of a thick organic layer of grayish-brown sandy silt, probably representing the remains of the prehistoric estuarian marsh environment.
While archaeologists have developed rather precise cultural sequences for prehistoric peoples of the Lesser Antilles, they have often found it difficult to categorize the cultures of Barbados (Allaire 1984, 1991; Boomert 1987, 1995; Bullen and Bullen 1966; Keegan 2000; Rouse 1992). The first peoples with ceramic technology to settle Barbados replaced Archaic-Age hunter-gatherers (Hackenberger 1988; Drewett et. al. 2000: 103-112; see also Keegan 1994: 266-267) in a new wave of migration from the Orinoco Delta. Known to archaeologists as Saladoid, they arrived in Barbados relatively late, probably sometime around 350 AD, perhaps 850 years after the initial migration of Saladoid peoples into the Caribbean islands (Boomert 1987: 15; Keegan 2000). The lateness of the Saladoid settlement may reflect the more isolated location of Barbados in the Lesser Antillean chain.
The Saladoid tradition remained dominant in Barbados until about 650 AD when it
was replaced by a new ceramic tradition known as Troumassoid. As demonstrated by this site
and others like it, the transition between Saladoid and Troumassoid was not abrupt, suggesting
that the shift in pottery styles was a local internal development rather than the result of a
complete replacement of Saladoid peoples by new migrants from South America. William
Keegan (2004) has argued that the changing pottery styles associated with Troumassoid may
reflect local responses to changes in population density in the islands during this time. The
Troumassoid ceramic tradition ended around 1100 AD and was followed by the Suazey or
Suazoid ceramic tradition, which dominated Barbados until about 1500 AD. Suazoid shares
many elements with the Troumassoid tradition meaning that it too was likely a local internal
development. Some archaeologists working in the Caribbean, including Adelaide and Ripley
Bullen (1966), believe that Suazey is the material culture of the Island Carib peoples who
Europeans encountered in the Lesser Antilles during the age of European exploration and
settlement of the Caribbean. The relationship, if any, between Suazey and the Island Caribs is
one of the most hotly contested issues in Caribbean prehistory (see Allaire 1991; Davis and

The presence of Saladoid and Troumassoid materials from the First Street site is
significant because of its location along Barbados’ west coast. Although the Saladoid are
known to have lived primarily along coastal areas near fresh water resources, prior to the
excavations at First Street, other sites in the Holetown area have yielded only Suazoid
material. However, investigations at Heywoods, a site 8 kilometers to the north, provide
evidence of a substantial late Saladoid and early Troumassoid presence on the west coast.
Drewett (2000:168), who has written extensively on Barbadian prehistory, argues that the island probably had “a minimum of five major Saladoid settlements (Heywoods, Brandons, Maxwell, Chancery Lane and Hillcrest) together with minor and as yet undiscovered sites.” While the excavations on First Street were not on a scale to determine the extent and influence of the site, it is clear that there was a late Saladoid to early Troumassoid presence in the area of what is today Holetown.

There are a number of similarities between First Street and Heywoods. Both sites have pottery from this transitional period. Moreover, mangrove-sheltered inlets and estuarial swamps would have characterized the environmental conditions at both sites. The First Street site is located less than 100 meters from the Hole River. The mangroves and fig trees that lined the estuary and inlet would have provided protection for numerous migratory and permanent bird species including the Barbados blackbird, sparrows, haysocks, finches, and various species of duck. The waters just off the west coast were habitat for plentiful fish, including parrotfish, flying fish and tuna, as well as various species of shellfish, such as the Queen Conch (Strombus gigas). The fertile lands around the marsh would have also been excellent for horticultural pursuits, especially the cultivation of manioc for the production of cassava bread. The processing of manioc at First Street is indicated by an assemblage of what appear to be cassava griddles. Sites like First Street and Heywoods give us a context from which to understand the exploitation of these resources.
Material Analysis

The ceramic fragments recovered from First Street were sorted according to diagnostic characteristics in order to develop a temporal framework for the occupation of the site. Using stylistic attributes identified by Drewett (1991) and Mary Hill Harris (1991) as important for Barbados, the ceramics were ordered into five categories, Saladoid, Late Saladoid, Saladoid or Troumassoid, Troumassoid, or undeterminable (see Table 1). Many archaeologists believe that the Saladoid pottery in Barbados is part of the Barrancoid-influenced Saladoid complex, a late Saladoid complex that developed in Trinidad and the Windward Islands sometime around 350 AD. It is considered part of the Palo Secan subseries, named for an assemblage in Trinidad with this Barrancoid influence (Boomert 1987:15). It is not clear whether earlier, pre-Barrancoid Saladoid peoples, known as the Cedrosan Saladoid, ever inhabited Barbados.

![Sherd Style Characteristics](image)

Table 1. Ceramic styles from First Street, Holetown.

Saladoid pottery in Barbados is generally characterized by thin to medium-thick walled vessels with intricately decorated incised designs and impressed patterns. Vessels tend to be
bowl forms, often in the shape and curvature of an inverted bell. Rims are generally flanged and thickened, and sometimes the interiors and exteriors of vessels are painted, usually in white-on-red. Black paint was sometimes added, especially in the later periods. The clay was usually tempered with fine sand or grit (possibly shell or quartz composite) and the finished product typically well polished.

During the late Saladoid period, environmental change, increasing population density, and perhaps new cultural influences from the Orinoco led to changes in Saladoid pottery traditions in Barbados that resulted in the development of Troumassoid. During the transitional period, thick walled vessels become more common. There is also a greater emphasis on polychrome decorations. Bullen (1964) referred to the earliest pottery forms in this transitional phase as “Terminal Saladoid.” What we describe as Late Saladoid, is the transitional pottery that has more Saladoid than Troumassoid influence.

Saladoid ceramics represent the greatest proportion, nearly 46%, of ceramic fragments recovered from the First Street site in Holetown. The Late Saladoid category, pieces that have Saladoid characteristics with Troumassoid influence, and the Saladoid or Troumassoid category, pieces with characteristics that may be either Saladoid or Troumassoid in origin, together make up an additional 40% of the ceramic assemblage. There were very few pieces with purely Troumassoid characteristics suggesting that the First Street site saw its greatest activity during the Saladoid and Late Saladoid periods.

Analysis of ceramic thickness supports the transitional Late Saladoid – Troumassoid occupation of the site. Harris defined six thickness codes to assist in the interpretation of Pre-Columbian ceramics from Barbados. Harris (1991: 39) defined six thickness codes to assist in
the interpretation of Amerindian ceramics from Barbados. These are 0-5 mm, 5-7 mm, 7-10 mm, 10-12 mm, 12-15 mm, and over 15 mm (fragments exactly 5, 7, 10, 12 or 15 mm were counted in the larger group). Table 2 provides an overview of the thicknesses of ceramic fragments recovered from First Street, and the evidence seems to supports Harris’ claim that ceramic fragments between 7-10 mm thick generally make up the largest category for late Saladoid sites in Barbados. Forty percent of the ceramic fragments fall into this category and about 30% fall into the 5-7 mm category. The range is consistent with an early to mid-Ceramic Age site in Barbados. Moreover, the results show that the simplistic ceramic thickness scales starting at fine and thin to crude and thick are not always the best way to categorize ceramics in Barbados as they may be on nearby islands. This is because there is much variation within these Saladoid and Troumassoid complexes.

![Thickness Code for Ceramics](image)

Table 2. Range of ceramic thicknesses from First Street, Holetown.

We recovered a wide variety of Saladoid ceramic materials. Although it was difficult to determine the vessel forms, wall curvatures and rim shapes suggest that many were large
basins or restricted bowls. The ceramic fragments clearly show decorative elements and production techniques. The ceramic fragments revealed a number of different pastes, which indicate that a variety of local clays were employed in the production of these vessels. Rims from this collection are also variable and range from triangle flanged to round. Some of the more plain or “classic” Saladoid ceramic fragments, have thin vessel walls of 4 mm, a grey paste, and quartz inclusions. The thickness of these fragments may be a reflection of their earlier Saladoid production. Others from this site have impressed patterns resembling the pores of brain or star coral. They are unlike other impressed or incised pottery styles typically associated with Saladoid pottery in Barbados, such as Zone Incised Cross-Hatch (ZIC) and Barbados Incised Rim (BIR). Other ceramic fragments from the collection have incised patterns, characterized by several sherds with wide groove patterns on the exterior, sometimes represented in parallel bands and decorated with red paint over a grey paste.

The Late Saladoid fragments are set off from the rest by their unique designs and other diagnostic features. The sherd pictured in Figure 2 is of particular interest, having a large downward pointing triangle decoration incised below a triangular flanged rim. The vessel walls are 12 mm thick, and it has a grey paste. The interior shows evidence of red paint or slip and the exterior is highly burnished. The vessel is probably a large circular bowl, but the irregular shape of the vessel has prevented us from determining the rim diameter. Triangular decoration becomes a part of the Troumassoid tradition, but like many geometric forms its significance is lost to archaeologists. This triangular emblem, which appears on at least one other sherd from the site, may be the same as the three-point zemis, which have been
interpreted as symbolic representations of the cassava root, representing fertility (Hostos 1923).

Figure 2. A Late Saladoid ceramic fragment with a triangular decoration

Ceramic fragments that most resemble early Troumassoid styles could also be placed in the Late Saladoid category. These ceramics seem to be transitional and are typically very similar to Late Saladoid forms. They have a number of Troumassoid features, which sometimes mask their Saladoid influence. One rim fragment in particular has splotches of red paint covering its triangular-flanged rim.

In addition to the ceramics recovered from the site, there were a number of shell and lithic artifacts which indicate a range of subsistence and trade activities associated with the exploitation of the site’s location along the Hole River and the west coast of the island. Of 185 shell fragments, whole shells, and shell tools, nearly 50% are of the genus *Strombadea*, presumably queen conch (*Strombus gigas*). A finely worked Type I Conch axe-adze measures 15 cm by 6 cm. This tool has the typical Barbadian “twist” and one side clearly forms a scoop. Although the Type I Conch axe-adze does not provide a specific occupation date for the site, it is clearly associated with Ceramic Age peoples (Drewett 2000: 103). The Barbadian conch
shell axe-adze takes on a variety of forms and shapes and is generally thought to have been an all-purpose tool without specialized function. Some may have been used in the production of dugout canoes or as hoes and digging tools. The scope of the excavation at First Street was not sufficient enough to indicate tool production, but the large number of Strombadea fragments provides some evidence that conch was being exploited locally. A large fragment of a conch shell lip was also found. However, without evidence that it had been worked, it is difficult to tell if it was refuse from a food source or débitage from tool manufacture.

Two nearly complete Strombus gigas shells have extraction holes, which were made by some percussion tool to extract the animal within. Other conch shells missing their outer lips may provide similar evidence. With the outer lip removed, the meat could have been extracted without the need to make a hole or completely fracture the shell. These shells together with a multitude of other fragments are evidence of the dietary importance of the queen conch to the people who occupied the site. Perhaps this site served as a location for the harvesting of conch. Drewett (1991:107) and his team have made similar arguments to explain the large amount conch waste material recovered from the Silver Sands site in Barbados.

In addition to the conch, remains of other mollusks and were also recovered from the First Street site and presumably had some dietary importance. These include the shells of Triton’s trumpet, Chama sp., and Mactra sp. The thick and robust Chama sp. probably also served a dual purpose as scoops or other simple tools for removing fish scales and grating manioc. Some smaller shells may have been used for aesthetic or ceremonial purposes. The most obvious examples of the use of shells for body adornment are two shells of the Mactra sp. found with drill holes. The holes may have been produced by a shell boring worm, but it is
likely this attribute was utilized for ornamentation. Additionally several Barbados keyhole limpets, have exposed holes dorsally. This natural feature may have been exploited for decorative purposes similar to other limpets used by other groups on mainland South America. The dark zebra nerite may have also served a decorative or ceremonial function.

The people of the First Street site likely engaged in other subsistence activities which exploited the marine resources of both the estuary and the calm Caribbean waters of the west coast. A stone fishing sinker was also recovered. Three land crab claws were also found in the Amerindian context. Although they do not necessarily indicate subsistence activities, the Amerindians who lived at the First Street site almost certainly ate land crabs, which were ubiquitous on the west coast of the island and would have provided a good source of protein.

A great deal of information as to trade can be gleaned from the relatively small number of lithics found at First Street. These objects testify to what must have been an elaborate trade network connecting populations throughout the Caribbean islands and South American mainland, and additionally give clues to how disparate groups within Barbados may have been engaged in networks of intra-island trade. A rubbing stone and several sedimentary hammer stones may have come from the island’s northeastern Scotland district.

A chisel having an inclined surface with a fine edge, and incised with a groove that spans the length of the polished body (about 8 cm long and 1.5 cm wide), is constructed of a metamorphic source. Together with two igneous specimens it provides the clearest evidence for sea-bound trade. These types of stones are not native to Barbados and must have originated elsewhere. It is unclear however if the chisel was shaped at its place of origin or after its arrival on Barbados.
Conclusion

The presence of these foreign materials tells something about how the people of Barbados related to the other regions of the southeast Caribbean. Intricate trade relationships must have involved a complex network of oversea routes. This same system of trade, which facilitated the procurement of igneous rock and mainland greenstone, undoubtedly allowed the Saladoid peoples to maintain cultural ties to others in the region. As a result, a regional “culture” emerged that shared pottery styles and other forms of material culture. Despite its relative geographic isolation, Amerindians in Barbados maintained regular contact with other groups in the region.

The First Street site indicates a rich and varied material culture, revealed in the variety of Saladoid and early Troumassoid ceramic vessels, shell materials, and stone artifacts, expanding our knowledge of an important transitional period in the Barbadian Ceramic Age. The artifacts present contribute to our understanding of how environments and resources were exploited during the Saladoid and Troumassoid periods. The transitional ceramic material also raises interesting questions about local development of the Troumassoid tradition. The location of the First Street site along Barbados’ west coast sheds new light on the expanse of territory early Barbadian ceramic age peoples occupied. In addition to this site’s contribution to our understanding of Saladoid and Troumassoid settlement patterns in Barbados, the evidence also provides invaluable clues about the subsistence activities and relationships with other inhabited regions of the southeast Caribbean.
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Exotics from Pearls, Grenada
A preliminary assessment.

by

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Abstract
Study of a private collection of 561 stone, shell and bone beads and pendants collected during a period of more than a decade at the Saladoid site of Pearls on the east coast of Grenada indicates that during Early Ceramic times Pearls formed a workshop of personal accoutrements made of partially exotic green-, white, red-, and pink-coloured rock materials, including various semi-precious stones. These microlapidary artifacts include items manufactured of e.g. amethyst, turquoise, carnelian, chlorite, diorite, quartz crystal, limestone, serpentinite, and probably nephrite. Cylindrical, discoidal and barrel-shaped beads are most numerous, while a minority is formed by geometrical and animal-shaped pendants, the latter typically representing frogs as well as one king vulture. The Pearls artifacts reflect the position of the site as a major node in the network of trade and exchange that characterized the Saladoid and Huecoïd communities of the West Indies in the Early Ceramic age.

Résumé
Étude d'une collection privée de 561 corails de pierre, coquille et d’os et de corails pendentifs recueillies au cours d’une période de plus de dix ans au site Saladoïde de Pearls sur la côte est de la Grenade indique que pendant la période Céramique ancienne Pearls formait un atelier de accoutrements personnelles partiellement exotiques fait de matériaux de pierre vert, blanc, rouge, et rose, comprenant diverses pierres semi-précieuses. Ces bijoux petites comprennent des éléments fabriqués, par exemple, d’améthyste, turquoise, cornaline, chlorite, diorite, cristal de quartz, pierre calcaire, serpentinite, et probablement néphrite. Les perles cylindriques, discoidal et en forme de tonneau sont les plus nombreuses, alors qu’une minorité est formé par pendentifs de formes géométriques et zoomorphiques, celui-ci sont généralement grenouilles ainsi que un vautour-roi. Les objets de Pearls reflètent la position du site dans un grand noeud dans le réseau de commerce et d’échange qui caractérise les communautés Saladoïde et Huecoïde des Antilles du début de l’âge Céramique.

Resumen
Estudio de una colección privada de 561 cuentas de piedra, concha y hueso y colgantes recogidos durante un período de más de una década en el sitio Saladoíde de Pearls en la costa oriental de Granada indica que durante las primeras etapas de Cerámica Pearls formó un taller de pertrechos personales realizados de materiales de roca de parte exóticos verdes, blancos, rojos, y rosados, incluidas las diversas piedras semipreciosas. Estos artefactos microlapidarios incluyen artículos manufacturados, por ejemplo, de amatista, turquesa, cornalina, clorita, diorita, cristal de roca, piedra caliza, serpentinita, y probablemente nefrita. Cuentas cilíndricas, discoidales en forma de barril son las más
numerosas, mientras que una minoría está formada por colgantes geométricas y en forma de animales, esta última representa típicamente ranas, así como un buitre rey. Los artefactos de Pearls reflejan la posición del sitio como un importante nudo en la red de comercio e intercambio que ha caracterizado las comunidades Saladoide y Huecoide de las Indias Occidentales en la edad cerámica temprana.
Introduction

Situated at the entry of the Antillean archipelago, Grenada, the southernmost of the Windward Islands, is of special interest for the study of the prehistoric interaction and communication patterns between the South American continent and the West Indies. Crossing the some 150-km wide sea passage between Grenada and the coastal zone of East Venezuelan coast and Trinidad can be seen as the first major obstacle to travel between the mainland and the Antillean archipelago as it means battling partially adverse current and trade wind conditions. On the other hand, islands such as Los Testigos could have been used as midway stations and indeed travel by dugout between Margarita and Grenada appears to have been much easier than that between the latter island and Trinidad and Tobago. Grenadians report that while sailing to and from Trinidad and Grenada sometimes both islands can be seen in a position halfway the journey. It is even told that on exceptionally clear days in the rainy season the Venezuelan coastal range can be spotted from elevated locations in Grenada (Leon Taylor, pers. commun.), while according to Kerhallet (cited by Harris, 2001) the island’s major mountain peaks can be recognized at a distance of 100 km out to sea. In fact, there is an area at sea from which Trinidad as well as Grenada and Tobago can be observed (Callaghan, 2001). All of this reminds of Columbus’ claim that after having left the Dragon’s Mouths between Trinidad and the Paria Peninsula during his third journey to the Caribbean (1498) he could view two islands simultaneously, most likely Tobago and Grenada, from a position of 26 leagues offshore (Las Casas, in Morison, 1963:278).

Grenada is a heavily wooded, mountainous island, measuring in all some 310 km². Except for a small development of coral limestone in its northern portion, it is entirely of volcanic origin. Grenada’s main range traverses from north to south, reaching 840 m above MSL at its highest point, Mount St. Catherine. From the central range cross ridges run to the sea, enclosing sheltered pockets of lower land and lofty valleys. Most soils in the mountainous parts of the island are heavily leached. Grenada is well watered by streams and cold mineral springs while at least five lakes formed in ancient volcanic craters are to be found across the island. The most famous one is Grand Etang, situated on a summit some 530 m above MSL in Grenada’s central mountain range. The island is
characterized by five different plant communities at increasingly lower elevations: cloud forest, seasonal deciduous forest, dry scrub forest, mangrove swamps, and beach vegetation. Pollen analysis of a core extracted from the Lake Grand Etang area has shown that forest has persisted here for at least 25,000 years (Barbour & McAndrews, 1995). Present land use is highly influenced by the monocropping of nutmeg, cocoa, bananas and coconuts. The coastline is rugged especially on Grenada’s western shore and deeply indented with bays towards the south. Hurricanes struck the island infrequently, most recently in 1955 and 2004. Precipitation is highest in its mountainous central portion.

Although settlement sites dating to Archaic times are not known from Grenada, the individual find of a Manicuaran Ortoiroid-like biconical sling stone (bola) on the island (De Booy, 1916:23) suggests that it was at least frequented by the hunters, fishers and food-collectors of this subseries, living on the Paria and Araya peninsulas and the islands of Margarita and Cubagua offshore Venezuela, sometime during the last few millennia BC. Permanent settlement of Grenada begins with the occupation of the island by the horticulturalist Indians of the Cedrosan Saladoid subseries about the time of Christ. Its Ceramic age habitation continues through the late-prehistoric Troumassoid series until protohistoric times when the sparse evidence of the Cayo complex (Cody, 1998, Figs. 5-7:B, 5-8, 5-20) may partially reflect Grenada’s Amerindian settlement of the sixteenth and seventeenth centuries. In all 65 archaeological sites are known, including settlement sites yielding midden deposits with or without human burials, petroglyphs and activity areas composed of grinding rocks (Harris, 2001; also Dubelaar, 1995:47-91). Sites are to be found predominantly in Grenada’s coastal zone, but this is most likely due to the thus far concentration of research in this part of the island. Division of Grenada according to drainage basins and possibly significant natural features in terms of Amerindian cosmovision results in four directional quarters of perhaps sociopolitical relevance to the island’s indigenous population (Harris, 2001). In historic times Grenada was divided between the linguistically distinct but ethnically identical Kalina (Mainland Caribs), living in the south, and Kalinago/Kalipuna (Island Caribs), occupying the central and northern parts of the island (Boomert, 2002).
The Pearls site

The best known Saladoid settlement site of Grenada is Pearls (Gren-A-1) in the central-eastern portion of the island, some 750 m from the Atlantic shore. It consists of a series of midden deposits, situated on fertile alluvial land north of the mouth of the Simon River. Pearls is probably the largest archaeological site of Grenada and has been estimated to measure 25 to 100 acres (Bullen, 1964:19; Newsom, 1993:41; Newsom & Wing, 2004:87; Wilson, 1991). The site was discovered and largely disturbed due to construction work for the extension of the airstrip of the former Pearls International Airport in the early 1960s. At the time it was partially planted in sugar cane and a few coconut trees, extending to the northeast across a cornfield into an area of banana cultivation. The site was first investigated by Ripley P. Bullen of the Florida State Museum in the fall of 1962. He excavated two stratigraphic test pits (A and B) near the edge of the airstrip. Here the cultural deposit appeared to consist of a layer of dark brown clayey dirt on top of sterile soil at a depth of 30-40 cm below the present surface. The test pits yielded (exclusively Saladoid) pottery and stone artifacts next to animal bones and shells, predominantly virgin nerites (Bullen, 1964, Table 3). Bullen discussed the ceramics he found at Pearls in various publications (Bullen, 1964:19-21, 1965, 1968, 1970), while his small sample of animal bones was analyzed by Wing (1968) and Newsom & Wing (2004:87,108, 225-226). The finds were divided between the Grenada National Museum and the Florida State Museum.

In the 1970s and 1980s Pearls became a favourite site for surface collecting of pottery head lugs and stone artifacts by local residents for sale to tourists. After the recovery of a greenstone pendant in 1987, renewed investigations of the site were conducted by Thomas Banks and Ann Cody Holdren of the Foundation for Field Research in August 1988 and January 1989, followed by William F. Keegan of the University of Florida and Cody in August 1989. They performed surface surveys and test excavations at two locations (Units A and B) and also made an electromagnetic study of soil conductivity in order to establish the spatial configuration of the site. The two areas of midden deposits dug yielded refuse to a depth of maximally 120 cm (Cody, 1991a, 1991b; Keegan, 1991). Some of the ceramics and many pendants and beads made of
semi-previous rock materials, encountered during the 1988-1989 excavations, are discussed by Cody (1991a). The reportedly numerous animal bone finds were analyzed by Lippold (1991) and soil samples yielding fossil seeds by Newsom (1993:78-88) and Newsom & Wing (2004:87-88). Finally, it is noteworthy that pottery head lugs and stone implements, predominantly deriving from the Pearls site, which were donated by Leon Wilder to the University of Florida in 1985, were studied by Keegan & Byrne (2001) and Fandrich (1991), respectively. Several pottery adornos, equally picked up from the surface of the site by local collectors, are discussed by Sutty (1991). Numerous other pottery specimens and stone artifacts, including micro-lapidary work, similarly collected by local residents at Pearls, have been acquired by Leon Taylor, Point Salines, and Eva and Lutz Kachelriess, Fort Jeudy, since the 1990s.

**Stone beads and pendants**

The 1988-1989 excavations at the Pearls site yielded numerous beads and pendants made of semi-precious rock materials, many of which are undoubtedly foreign to Grenada. The site must have functioned as a workshop since several of these lithic types are represented in all stages of manufacture. Cody (1991a, 1991b) notes to have recovered cylindrical, barrel-shaped and discoidal beads made of amethyst, quartz crystal, serpentine, carnelian, diorite, nephrite, and turquoise, next to a rectangular ornament, blade and tablet as well as several frog-shaped pendants of ‘greenstone’, possibly nephrite. The amethyst, nephrite, turquoise, serpentine, quartz crystal, and carnelian beads were apparently locally made as bead blanks, small unworked cobbles and/or flakes of these rock materials were found in the Pearls refuse deposits. However, they yielded only complete specimens of diorite beads. The most spectacular find recorded by Cody from Pearls is represented by a pendant in the form of a king vulture made of ‘greenstone’, which was recovered by a local resident and reportedly sold to a tourist. Apart from personal accoutrements, Cody encountered chert scrapers, cores and flakes, pieces of micaceous schist, chert and microcrystalline quartz whetstones, pyrite crystals and the small bit of a stone drill, possibly used for bead manufacture. Other ornaments listed by
Cody to have been found at Pearls include discoidal shell beads, tubular bone beads, spherical and discoidal pottery beads, and a pendant made of a bi-perforated shark’s tooth.

The Leon Taylor Collection includes 561 stone, shell and bone beads and pendants, including numerous pieces made of semi-precious stones, recovered by local residents during uncontrolled collecting exercises at the Pearls site since about 1995 (Tables 1 and 2). The author’s study of this collection, reported in this paper, was made in order to increase our knowledge of manufacture and exchange of these Cedrosan Saladoid bodily adornments as well as their raw materials. Petrographic analysis of these ornaments is in progress. Apart from genuinely Cedrosan Saladoid artifacts the collections of both Taylor and Kachelriess contain a number of attempts by modern Grenadian craftsmen to produce zoomorphic pendants and sculptures intended to resemble the prehistoric finds from Pearls, using local ‘greenstone’ rocks from the eastern part of the island. In the 1990s this Seamoon River Artisan Group was quite active and examples of their work have been sold in appreciable numbers to locals and tourists alike. In fact, the author was offered a number of these fake sculptures by a resident of Pearls while strolling along the Carenage of St. George’s during his stay in Grenada in January 2007. Apart from iconographic differences, these imitations can be distinguished from the truly Saladoid beads and pendants by their often larger size and emphasis on figurine-like images showing zoomorphic and anthropomorphic features. In all 56 artifacts in the Leon Taylor Collection are made of the local ‘greenstone’ rocks also used by the modern artisans for their fake sculptures. Although some of these beads and pendants may represent genuinely prehistoric artifacts, all have been left out of consideration in the present analysis.

Shell beads and pendants form a minority in the collection (18.4%). An overwhelming majority (89.3%) of the shell beads represent discoidal specimens (Table 1). They are generally small sized: mean diameter is 4.5 mm, mean thickness 1.8 mm. By far most shell beads appear to have been manufactured of the body whorl of Queen Conchs (*Strombus gigas*), while 11 bright reddish to white specimens (10.7%) are made of the outer (calcite) and/or inner (aragonite) parts of Atlantic Thorny Oyster valves (*Spondylus americanus*). A single barrel-shaped shell bead is perforated twice, both
longitudinally and transversely. The few bone beads in the collection (0.9%) include cylindrical and discoidal specimens.

Stone beads and pendants are predominant. They are made of various rocks and minerals, including semi-precious stones (Table 2). The materials which can be identified with more or less certainty include chlorite, turquoise, diorite, serpentine, limestone, quartz, quartz crystal, and quartz varieties such as carnelian, amethyst and jasper. Two types of ‘greenstone’ are represented, including a dark-coloured nephrite-like category and a light-coloured, thus far not further identified type. In addition, a dark-brown to blackish rock type has remained unclassified. Most beads and pendants are made of diorite (34.4%), while light-coloured ‘greenstone’ (20.1%) and turquoise (11.0%) range second and third. Beads and pendants comprise in all 87.9% and 11.7%, respectively, of the stone artifacts in the collection. All beads are regular rounded; most of them (65.3%) are cylindrical in shape (Figs. 1 and 2). Barrel-shaped beads are longest, showing a mean length of 14.9 mm (Table 3). The cylindrical and barrel-shaped limestone beads reach exceptional proportions: the largest specimen has a length and thickness of 112.5 and 29 mm, respectively (Fig. 3). In all five cylindrical and barrel-shaped beads show concave or double-concave profiles in longitudinal cross section. They resemble the specimens from Trants, Montserrat, illustrated by Watters & Scaglion (1994, Fig. 5:E-G,J). By far most discoidal beads (98.1%) are rectangular in cross section; a small minority show semi-circular to almost triangular cross sections. Perforations are typically diabolo-shaped. In all seven beads are drilled twice, having longitudinal and transverse perforations. All bead forms occur as blanks and in finished state.

The stone pendants are geometrical (28.3%) and zoomorphic (69.8%) in form. Practically all of the latter represent frogs; the single exception is shaped as a raptorial bird, most likely a king vulture (Table 2). The frog-shaped pendants are ‘kenned’ by the lapidary craftsman’s indication of the typical position of the hind legs and eyes of the animal. The king vulture can be recognized by the representation of the bird’s large, curved beak. This particular pendant is made of a yellowish brown type of serpentine (Fig. 4). Exclusively green-coloured rock materials appear to have been selected for the manufacture of the frog-shaped pendants (Fig. 5). They include the nephrite-like type of ‘greenstone’ (56.8%), light-coloured ‘greenstone’ (32.4%), chlorite (8.1%), and turquoise
A larger variety of rock sources was used for the manufacture of the geometrical pendants than for the making of frog-shaped pieces. However, well represented semi-precious stone materials such as carnelian, amethyst and quartz crystal appear to have been used exclusively for bead manufacture. The frog-shaped pendants are somewhat larger than the geometrical pieces, but the king vulture-shaped specimen (33.5 mm in length) is the most sizeable one (Table 4). By far most pendants are perforated either transversally or longitudinally; a few frog-shaped examples show double, connecting drill holes.

**Discussion**

The beads and pendants from the Pearls site include specimens made of mineral and rock types naturally occurring in Grenada as well as of non-local origin. Unfortunately, due to the lack of petrographic studies of sufficient resolution few provenance areas of the stone sources used can be identified with certainty. First of all, materials such as diorite, limestone, quartz and quartz crystal are known to occur widely in the West Indies and, consequently, were available to lapidary craftsmen throughout the region. In contrast, most likely minerals and rocks represented at the Pearls site such as turquoise, carnelian, amethyst, chlorite, serpentinite, and nephrite are distributed differentially on the Caribbean islands and in the coastal zone of the South American mainland. Prehistoric artisans wishing to utilize these semi-precious stones and rock materials for manufacturing personal accoutrements would have to acquire the raw materials by exchange from the communities living close to their sources or obtain permission from the latter to collect them. Most likely only amethyst, diorite, quartz, quartz crystal, light-coloured ‘greenstone’, and limestone are locally to be found in Grenada (Cody, 1991a). Consequently, all other minerals and rocks used for bead and pendant making encountered at the Pearls site were obtained from elsewhere, either as raw materials or as finished products.

As a centre of manufacture of beads and zoomorphic, especially frog-shaped, pendants using semi-precious stones and shell Pearls resembles a series of Cedrosan
Saladoid and Huecoid settlement sites in the West Indies, notably Trants, Montserrat (Crock & Bartone, 1998; Watters & Scaglion, 1994), Elliot’s and Royall’s, Antigua (Harlow et al., 2006; Murphy et al., 2000), La Hueca/Sorcé, Vieques (Chanlatte Baik & Narganes Storde, 1983, 2005; Narganes Storde, 1995a, 1995b; Oliver, 1999), and Punta Candelero, Puerto Rico (Rodríguez, 1991a, 1991b). In addition, during Early Ceramic times less extensive microlapidary work apparently took place at Early Hope Estate, St. Martin (Haviser, 1999), Prosperity, St. Croix (Faber Morse, 1989; Vescelius & Robinson, 1979), Golden Grove, Tobago (Boomert, 2000:410-412), and at Recht-Door-Zee and Karapa Creek in coastal Guyana (Williams, 1985:79-82). The presence of these lapidary workshops throughout the Caribbean, using a variety of local and exotic semi-precious stones and other materials, suggests that complex patterns of resource utilization and processing as well as exchange of raw materials and finished personal ornaments developed in the region during the Ceramic age. Understanding the origin and evolution of this phenomenon as well as the mechanics of artifact distribution involved should take into account the processes of Caribbean migration and colonization by the Huecoid and Saladoid settlers in the last few centuries BC.

From the onset of Cedrosan and Huecoid settlement in the West Indies, both groups must have kept up dense interaction and communication networks involving the distribution and ceremonial exchange of both exotic-looking stone and shell valuables, predominantly bodily ornaments, as well as utilitarian artifacts and raw materials. Investigation of the Trants workshop has shown that the microlapidary items found at this site can be distinguished into artifacts which arrived in Montserrat as finished products and those which were made locally. The former, made of e.g. diorite, amethyst, turquoise, serpentinite, and aventurine, may represent ornaments which were obtained by the inhabitants of Trants as the result of exchanges with Saladoid communities elsewhere in the West Indies. Carnelian is heavily represented among the raw materials found at the site, the category of unfinished artifacts, and the bead debitage. Consequently, it is likely that the Trants workshop was specialized in producing microlapidary items made especially of carnelian. This is an exotic rock type to Montserrat which had to be acquired from Antigua. Clearly, the differential distribution of rock and mineral resources in the Caribbean formed a major, though not the single, factor determining the system of
ceremonial exchange among the Early Ceramic communities of the region in the first episode of settlement. Expertise in particular forms of microlapidary work, concentrating on particular materials, must equally have played a role in the development of the workshops specialized in bead and pendant making throughout the region.

Rather than establishing a ‘frontier’ with the existing Archaic populations of the West Indies, as Rouse (1992:90-92) postulated, the Cedrosan Saladoid and Huecoid settlers must have interacted intensively with the established Archaic inhabitants of the archipelago. In this respect it may be noted that the latter had already learned to manage or tend to wild grains and root crops as well as fruit trees and also independently had developed pottery manufacture prior to the arrival of the Saladoid and Huecoid migrants (Pagán Jiménez et al., 2005; Ulloa Hung, 2005). In other words, while probably introducing a series of new plant domesticates and a different style of pottery making, their material culture and subsistence strategies, based on horticulture, hunting, fishing and collecting, were less antithetical to those of the existing occupants of the northern Antilles than has long been assumed. Both the available radiocarbon dates and the uniformity of Early Cedrosan pottery throughout the region indicate that the primary movement from the South American mainland into the Antilles was rapid, perhaps due to the fact that few Archaic settlers were encountered in especially the Windward Islands. Such a fast initial spread into the Caribbean archipelago is incompatible with one allowing for a step-by-step colonization of each island due to demographic growth (Keegan, 1995, 2004). In fact, the scenario has been envisaged of a multiple series of fast initial migrations forming a direct leap forward along the Lesser Antillean island chain to the Leeward Islands, the Virgin Islands and Puerto Rico, followed by various return movements finally leading to the settling of all the islands first passed by.

The patterns of interplay of the Saladoid and Huecoid colonists with the existing Archaic populations of the northern Lesser Antilles and Puerto Rico were foreshadowed by the Cedrosan interaction with the Manicuaran Ortoiroid inhabitants of the eastern coastal zone of Venezuela and its offshore islands from whom the Saladoid horticulturalists may have learned about the existence of the Windward Islands and adopted the necessary maritime technology and navigational requirements to reach these islands. The Huecoid voyagers, who apparently migrated into the West Indies
simultaneously with but independently from the Saladoid pioneer settlers, must have followed comparable routes of migration. Although their antecedents on the mainland are unknown, sufficient evidence is available to suggest that Huecoid represents a cultural tradition essentially different from the Saladoid series in terms of ceramics, lithic and shell industries, as well as subsistence strategies (Boomert 2000:317,349-350; Hofman & Jacobs 2000/2001; Rodríguez Ramos, 2001, 2005). Besides, the Huecoid Amerindians must have interacted to a considerable degree with both their fellow migrants of the Cedrosan Saladoid subseries and the local Archaic inhabitants of the northern Caribbean.

The simultaneous appearance of numerous microlapidary workshops in the Caribbean during the first stage of Cedrosan and Huecoid habitation suggest the rapid establishment of densely knit ceremonial exchange relationships throughout the region. Apart from stone valuables, numerous beads and pendants made of bone, shell and fossil wood, made by highly expert village artisans and semi-specialists who may have combined this craftsmanship with shamanic activities, now spread throughout the region, from Puerto Rico to Trinidad (Boomert, 2000:435-444; Hofman et al., 2007). Besides, flint obtained from Long Island, Antigua, and greenstone for axe manufacture deriving from St. Martin disseminated as far as Puerto Rico and the French West Indies. In case of the Long Island flint, the Saladoid and Huecoid pioneer settlers may have tapped into an existing distribution network as it formed the preferred lithic material utilized as early as Archaic times in the Leeward Islands (Knippenberg, 2006). In fact, the outburst of exchange activities in the Caribbean during Early Ceramic times may be seen as reflecting an essentially social aspect of the settlement and dispersal strategies of the Huecoid and Saladoid migrants. Anthropological theory would classify their colonization procedures as a form of leapfrogging involving group movement over considerable distances after fissioning with the ‘mother’ community (Moore, 2001). Such long-distance migrations never represent events, but form processes which tend to proceed in somewhat predictable ways and resemble streams involving separate pulses of often kinship-linked colonists following each other along well-defined routes and return movements (Anthony, 1990, 1997; Curet, 2005:30-61). As leapfrogging migrations the Huecoid and Saladoid movements would have operated through the agency of advance
scouts who reconnoitred favourable settling locations, collected information and relayed it back to the potential migrants.

The communication and interaction networks established by the Saladoid and Huecoid communities in the insular Caribbean during Early Ceramic times ensured the maintenance of linkages among the various pioneer settlements and a major one, a ‘lifeline’, between the homeland and daughter communities. The keeping up of these connections during the first phase of occupation answers the critical situation encountered by small colonizing communities in virgin environments anywhere in the world. It is simply a strategy ensuring survival. Demographically such propagules are extremely unstable and the establishment of external ties in order to obtain suitable marriage partners is critical (Moore, 2001). Maintenance of a lifeline with the homeland ‘mother’ communities or establishing affinal relations with other pristine villages in a still sparsely inhabited region reduce the risk of extinction. The problem of acquiring suitable marriage partners is enhanced by the fact that it can be assumed that the colonizing communities were demographically skewed as to age and gender ratio. Anthropological investigations indicate that migrating groups predominantly consist of young adult males, say 20-30 years of age, often recruited from a particular kin group (Anthony, 1990). Members of leapfrogging (outpost) communities such as those of the Saladoid and Huecoid peoples faced the problem of finding spouses of suitable age, sex, and kinship distance. Such groups may be economically quite self-sustaining, but unable to guarantee their reproductive future due to the absence of a viable mating network.

Jaguar and peccary teeth pendants next to tapir bones recovered from the adjoining Huecoid and Saladoid hamlets at La Hueca/Sorcé on Vieques (Narganes Storde, 2003) and artifacts made of guanín, a gold-copper alloy, manufactured on the mainland, found at La Hueca and Maisabel, Puerto Rico (Siegel & Severin, 1993), clearly represent lifeline items or otherwise prized heirloom or curated objects from the South American continent and Trinidad, indicating some form of a homeland connotation. The same applies to the valves of nacreous freshwater mussels, originating in mainland or Trinidad habitats, which have been found in Saladoid and Huecoid contexts as far north as the Leeward and Virgin Islands (Serrand, 2001). They must have formed luxury items with profound social and ideological significance. A category of valuables which found
its way back towards the mainland and Trinidad is represented by relatively large pendants shaped as raptorial birds, most likely king vultures, examples of which are known from Pearls. All of them appear to have been manufactured at the Huecoid sites of La Hueca and Punta Candelero, using serpentinite from sources in Southwest Puerto Rico. Indeed, the specimen from Pearls resembles closely similar pendants in the form of king vultures from La Hueca made of yellowish brown serpentinite (Chanlatte Baik & Narganes Storde, 2005:22,38).

The king vulture-shaped valuables are illustrative of the mainland antecedents of the Huecoid and Saladoid communities in the West Indies as they clearly reflect a connection with the cosmological views of the South and Central American Indians (Boomert, 2001). No doubt the zoomorphic iconography of the other Early Ceramic micro-lapidary accoutrements, showing predominantly frogs, reptiles, bats, and owls, similarly refers to mythological themes at home in the mainland tropical lowlands. This is suggested also by the representation of tropical forest fauna, including monkeys, frogs, caimans, jaguars, lizards, and armadillos, next to dogs, on the ceramics dating from this period (Roe, 1989). Consequently, the patterns of exchange and other forms of Huecoid and Saladoid interaction may have been facilitated by a shared symbolic and religious frame of reference of mainland derivation. From the appearance of numerous shamanic paraphernalia at the Huecoid and Saladoid sites in the Caribbean islands it can be concluded that the migrants’ cosmovision was typically associated with shamanic rituals involving the ingestion of hallucinogenic drugs in order to induce an ecstatic-visionary trance.

Indeed, the particular rock types used for the Huecoid and Saladoid manufacture of beads and pendants at Pearls and elsewhere may have had highly symbolic associations. This is suggested by the attitude of present Amerindian groups on the South American mainland towards worked and unworked semi-precious stones such as quartz crystal, carnelian and agate, all of which are considered to possess specific powers which can be used by shamans for curing various diseases (Reichel-Dolmatoff, cited by Labbé, 1986:182). In addition, the selection of green-coloured minerals and rock materials for the making of the frog-shaped pendants by the Pearls artisans is quite understandable in view of the mainland symbolism of the colour green which is closely connected with
female fecundity. Frogs have strong female (and underworld) associations; they are typically connected with water, just as women, and their croaking is a sign of rain and the beginning of the wet season (Boomert, 1987). Finally, the exceptionally large beads of white limestone, encountered at Pearls, resemble the sizeable cylindrical beads of quartz worn by the present Tukano, Cubeo and other peoples of the Northwest Amazon. According to Reichel-Dolmatoff (1971:16), such beads, incorporating the power of the Sun, i.e. the principal factor of cosmic energy, formed an essential part of the local shaman’s equipment, symbolizing both semen and fertility. In conclusion, these beads and the other lapidary items recovered from the Pearls site clearly illustrate the manifold and multi-level interaction patterns among the Caribbean communities of Early Ceramic times and the derivation of their cosmological connotations from the South and Central American tropical lowlands.

Acknowledgements

The author’s research in Grenada took place under the auspices of the VIDI programme ‘Mobility and Exchange: Dynamics of Material, Social and Ideological Relations in the Pre-Columbian Insular Caribbean’, which is financed by the Netherlands Organisation for Scientific Research and directed by Professor Corinne L. Hofman of the Faculty of Archaeology of Leiden University, The Netherlands. Thanks are due to Mr. Leon Taylor, Point Salines, and Mr. and Mrs. Lutz and Eva Kachelriess, Fort Jeudy, for permission to study their private archaeological collections.

Literature Cited


Hofman, Corinne L., Alistair J. Bright, Arie Boomert & Sebastiaan Knippenberg (2007) *Island Rhythms: The Web of Social Relationships and Interaction Networks in the Pre-


### Table 1
Main categories of beads and pendants from Pearls, Grenada (Coll. Taylor)

<table>
<thead>
<tr>
<th></th>
<th>Button-shaped beads</th>
<th>Barrel-shaped beads</th>
<th>Cylindrical beads</th>
<th>Geomorphic pendants</th>
<th>Frog-shaped pendants</th>
<th>King vulture pendant</th>
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<th>%</th>
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<td>71</td>
<td>67</td>
<td>15</td>
<td>37</td>
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<td>4</td>
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<td>0.9</td>
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<tr>
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<td>37</td>
<td>3</td>
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### Table 2
Main categories of stone beads and pendants from Pearls, Grenada (Coll. Taylor)

<table>
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<th>Button-shaped beads</th>
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<th>Cylindrical beads</th>
<th>Geomorphic pendants</th>
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<tr>
<td>Light 'greenstone'</td>
<td>67</td>
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<td>3</td>
<td>6</td>
<td>12</td>
<td></td>
<td></td>
<td>91</td>
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Table 3
Mean diameter, length and thickness (mm) of the main categories of stone beads from Pearls, Grenada (Coll. Taylor)

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<th>Totals</th>
<th>%</th>
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<td>Diameter</td>
<td>Thickness</td>
<td>Length</td>
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<tr>
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<td>10.3</td>
<td>6.5</td>
<td>15.5</td>
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<tr>
<td>Nephrite (?)</td>
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<td>3.8</td>
<td>8.3</td>
<td>5.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Turquoise</td>
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<td>8.3</td>
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<td>4.5</td>
</tr>
<tr>
<td>Carnelian</td>
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<tr>
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<td>5.1</td>
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</tr>
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<td>Quartz crystal</td>
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<td>10.3</td>
<td>5.8</td>
<td>6.9</td>
</tr>
<tr>
<td>Quartz</td>
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<td>4.5</td>
<td>14.5</td>
<td>8.2</td>
<td>4.5</td>
</tr>
<tr>
<td>Jasper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.0</td>
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<tr>
<td>Diorite</td>
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<td>8.2</td>
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<td>Mean</td>
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<td>14.9</td>
<td>8.2</td>
<td>9.8</td>
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Table 4
Mean length (mm) of the main categories of stone pendants, Pearls, Grenada (Coll. Taylor)

<table>
<thead>
<tr>
<th></th>
<th>Geometric pendants</th>
<th>Frog-shaped pendants</th>
<th>King vulture pendant</th>
<th>Totals</th>
<th>%</th>
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<tbody>
<tr>
<td>Light 'greenstone'</td>
<td>21.8</td>
<td>25.0</td>
<td></td>
<td>18</td>
<td>34.6</td>
</tr>
<tr>
<td>Chlorite (?)</td>
<td>15.3</td>
<td>24.7</td>
<td></td>
<td>6</td>
<td>11.6</td>
</tr>
<tr>
<td>Serpentine</td>
<td></td>
<td></td>
<td>33.5</td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Nephrite (?)</td>
<td>14.8</td>
<td>22.7</td>
<td></td>
<td>22</td>
<td>42.3</td>
</tr>
<tr>
<td>Turquoise</td>
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<td>14.0</td>
<td></td>
<td>2</td>
<td>3.9</td>
</tr>
<tr>
<td>Quartz</td>
<td>?</td>
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<td></td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Jasper</td>
<td>36.0</td>
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<td>1</td>
<td>1.9</td>
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<tr>
<td>Blackish stone</td>
<td>12.0</td>
<td></td>
<td></td>
<td>1</td>
<td>1.9</td>
</tr>
<tr>
<td>Mean</td>
<td>18.7</td>
<td>23.4</td>
<td>33.5</td>
<td>52</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Fig. 1.**
Fig. 2.

Fig. 3.
Fig. 4.
King vulture pendant, made of serpentine. Pearls, Grenada (Coll. Taylor).

Fig. 5.
Frog-shaped pendants and cylindrical and button-shaped beads, made of various rock materials. Pearls, Grenada (Coll. Taylor).
The Question of the Aboriginal Use of Sails in the Circum-Caribbean Region

by

Richard T. Callaghan
University of Calgary

Abstract
The question of the aboriginal use of sails in the Circum-Caribbean region is rather problematic. A number of authors have argued both for and against sails in the region. These arguments have been based on historical documents, linguistics, vessel form and use. While none of the available data is conclusive one way or the other, several features associated with Caribbean canoes suggest technological knowledge existed that would have adapted dugouts so as to be seaworthy under sail. Arguments for and against sails are presented here and then features with the potential to increase seaworthiness under sail are discussed. These features include the addition of planking to the side of the hull to increase depth, skegs to increase stability, and the use of elongated paddles to counteract leeway.

Resumen
La cuestión del uso aborigen de velas en la región Circum-Caribe es algo problemática. Un número de autores han discutido a favor y en contra las velas en la región. Estas discusiones se han basado en documentos históricos, lingüística, forma y uso del bote. Hasta el momento ninguno de los datos disponibles son concluyentes en una u otra posición, varias características asociadas a las canoas del Caribe sugieren que existió el conocimiento tecnológico que habría adaptado las embarcaciones para navegar usando velas. Argumentos a favor y en contra de las velas se presentan aquí y se discuten las características con el potencial de aumentar navegabilidad usando la vela. Estas características incluyen la adición del tablaje al lado del casco para aumentar profundidad, aletas fijas que precede al timón para aumentar la estabilidad, y el uso de paletas alargadas para contrarrestar la deriva.

Résumé
L’emploi préhistorique de voiles par des populations aborigènes de la Caraïbe demeure une question assez controversée en archéologie. Plusieurs auteurs soutiennent des arguments pour et contre l’utilisation de voiles dans cette région. Cette problématique repose sur des documents historiques, des études linguistiques, ainsi que la morphologie et l’usage documentés des vaisseaux. Malgré un manque de données définitives, les canots caraïbes affichent certains traits indiquant des connaissances technologiques qui auraient permis l’ajout de voiles aux pirogues. Ce débat est d’abord discuté brièvement avant d’examiner les caractéristiques augmentant leur potentiel de navigation avec voiles. Entre autres, les traits étudiés comprennent: l’ajout de bordage à la coque pour agrandir la profondeur du bateau, la présence d’un aileron central pour stabiliser l’embarcation, et l’utilisation de pagaies allongées
pour résister à la dérive.
The question of the aboriginal use of sails in the Circum-Caribbean region is rather problematic. A number of authors (Callaghan 1990, 2005; Doran 2002; Edwards 1965a; Epstein 1990; Glazier 1991; Thompson 1947) have argued both for and against sails in the region. These arguments have been based on historical documents, linguistics, vessel form, and use. While none of the available data is conclusive one way or the other, several features associated with Caribbean canoes suggest technological knowledge existed that would have made dugouts seaworthy under sail. Arguments for and against sails are presented here and then features with the potential to increase seaworthiness under sail are discussed.

Historical documents from the contact period are ambiguous at best on the subject. Some of this ambiguity might be cleared up if a good analysis of fifteenth-century Spanish nautical terms were available. For instance, in Spanish the verb "navegar" can mean "to sail," but it can also mean "to navigate" or simply "to move about"; the noun "vela" - "sail," can also mean "awning" (The Williams Spanish and English Dictionary 1978). Such dual meanings or meanings that differ between nautical usage and common usage are not rare (Morrison 1949). An example of the confusion that can be caused when translations are done without knowledge of nautical usage can be seen in the argument that sailing rafts on the Pacific coast of South America carried square sails at contact (Edwards 1965b:67-69). Edwards’ translation with knowledge of Spanish nautical usage of the time clearly indicates fore-and-aft sails.

Oviedo y Valdes (1851:170-171) gives the earliest seemingly clear statement on canoes equipped with sails that I have been able to find. Thompson (1949:71) takes the statement as incontrovertible evidence that sails were used before contact. Though the phrase “navegan con velas
de algodon" (Oviedo y Valdes 1851:171) is in context most likely translated as "they sail (or navigate) with sails of cotton," there is another possibility. The phrase could mean "they move about with awnings of cotton." On Columbus' fourth voyage (Las Casas 1875:108-111) he encountered canoes with awnings or shelters - "toldos." A better appreciation of late fifteenth and early sixteenth century Spanish usage of both "toldos" and "velas" is necessary before the passage is taken as proof of sails.

There are other reasons for questioning Oviedo y Valdes' passage suggesting the precontact use of sails. He (1851:171) begins the relevant paragraph with "Estas he visto" - "These (canoes) I have seen." He is clearly speaking from personal experience. Oviedo y Valdes arrived at Darien in 1514 and spent most of the period from 1532 to 1546 at Santo Domingo, Hispanola. It was during his stay at Santo Domingo that he began writing Historia Natural y General de las Indias (1851) from which the above quotes are taken. Much of the work is based on second-hand accounts but, as noted, the relevant passage is a personal observation. It also pertains specifically to Hispanola (1851:170). Therefore he cannot have made the observation before 1514 and more likely not before 1532. Either date is considerably after contact. In reference to Oviedo y Valdes, Sauer (1966:38) points out "Espanola he knew briefly at a time of advanced decline and later reconstructed its early condition from what he was told by early settlers." For these reasons I do not believe that Oviedo y Valdes' statements can be taken as evidence for the precontact use of sails.

Thompson's (1949:72) gives a brief discussion of Mayan words "sail," "to hoist sail," and "to navigate with sail." This does however need some clarification, as it seems strange that the words were replaced in colonial times with the Mayan word for "standard." Epstein (1990) gives an
analysis of this and other evidence for the use of sails in the Caribbean and clearly rejects the idea.

In light of Oviedo y Valdes’ suggestion that sails were used on canoes in the early sixteenth century the story of Friar Blasius is curious. The story is recounted by John Stoneman, the pilot of the ship Richard of Plimouth which rescued Friar Blasius from the Island Caribs on Dominica in 1606. The relevant part of the story is as follows:

And that hee [Friar Blasius] had beene there sixteene moneths a Slave unto those Savages; and that other two Friars which were of his company they had murthered and throwne into the Sea. We demanded of him then, how he got so much favour to preserve his life, his Brethren being murthered: Hee answered, because hee did shew the Savages how to fit them Sayles for their Cannoas, and so to ease them of much labour often in rowing, which greatly pleased the Savages as appeared, for wee saw them to use sayles in their Cannoas, which hath not beene seene before [Stoneman 1965:285-286].

Even though the Island Caribs were less affected by Europeans than the Taíno of the Greater Antilles in the early historic period, they would have had a great deal of opportunity to observe sails in use over the century between initial contact and 1606. The story is, however, hard to interpret in any other way than that they did not use sails until Friar Blasius introduced them.

The story of Mendez de Segura who sailed a canoe from Jamaica to Hispaniola after
Columbus and his men were shipwrecked there on the fourth voyage has some bearing on indigenous hull shapes and sailing. In preparing the canoe for the voyage Mendez de Segura states:

> On the following day I drew my canoe on shore, and fixed a false keel to it, and pitched and greased it, and I nailed some boards on the stern and bow as a defense against the sea that it might not come in as it might come owing to the low freeboard. And I put up a mast and sail, and laid in the supplies necessary for me and for one Christian and for six Indians, for we were eight persons, and the canoe would not carry more [Mendez de Segura 1932:130].

This account of Mendez de Segura suggests hull shapes of native canoes were not suitable for use with sails.

Studies of traditional watercraft reported by Colin Palmer (1990) evaluate sail and hull performance. Palmer (1990:80-81) points out that the hull shape determines the amount of sail that can be carried and that this, in turn determines vessel speed. Further, the lateral area and shape of the hull determine the sideforce generated by the hull. A vessel which does not produce an adequate amount of sideforce cannot be sailed to windward no matter what type of sail is used.

The basic hull that was used in one of these studies (Palmer 1990:80) was modeled on an 8.8 m fishing boat from the Tuticorin area of India. This is a size in keeping with moderate sized dugouts in the Caribbean. The shape without appendages (keels, leeboards, etc.) is also
in keeping with Circum-Caribbean traditional craft. The vessel was equipped with a dipping lug sail, a fore-and-aft rig that test show performs well (Palmer 1990:79). Given the direction of the prevailing winds in the Circum-Caribbean region most directions of travel would require some form of fore-and aft-sail.

Sailing to windward with a bare hull, comparable to a dugout, the vessel could not make any significant headway. Under the same conditions but with the addition of a deadwood, 2.5 knots could be reached. With the deadwood extended into a long (horizontal) keel, speeds attained were 3.0 knots to windward. If sails were used in the Circum-Caribbean region some kind of appendage on the hull would be necessary in most instances.

Doran (2002) discusses the Martiniquan yole from the Lesser Antilles. These are very efficient racing vessels capable of a top speed of 14 knots. They also have considerable ability to sail into the wind. This is surprising, as they do not have keels or leeboards. It is rather the technique of sailing that allows such performance. Doran considered whether or not the yole design might be of European origin and rejects the possibility favoring the hypothesis that it is a Precolumbian Caribbean design. Part of this conclusion is based on his comparative analysis of the Martinique yole and the Dominican gommier. In examining the lines of the two vessels he finds a remarkable correspondence. The yole appears to be a plank built version of a much earlier Carib design made from a single, tree trunk. An interesting aspect of the yole is that it does have a small skeg (Figure 1) similar to ones of Upper Orinoco Carib design (Figure 2). On the basis of what may once have been a wide distribution across the Carib speaking region I hypothesized (Callaghan 2007) that the skeg on the yole and the Carib canoes of the Upper
Orinoco represent a relatively ancient design element.

Figure 1. Yole Skeg.

Figure 2. Upper Orinoco Canoe Skeg.

The skeg functions to increase the seaworthiness of a vessel lacking a keel. The lateral stability or stability around the longitudinal axis, that the fin or skeg gives is important. When a vessel is moving through the water with the waves behind it the water within the waves has an orbital motion (Garrett 1987: 189-193). This causes the vessel to orient itself parallel to the
waves. If not countered, the vessel will broach turning onto its side and capsizing. This will happen with either wind driven waves or waves created in rapids. The skeg itself helps to prevent broaching and ultimately capsizing. Another advantage is that it produces dynamic positive stability which returns the vessel to its original position. Further, increasing lateral stability helps to prevent a vessel from shifting position when wind gusts are at right angles to the longitudinal axis. The stability that the skeg adds is important for a vessel carrying sails but it also has a useful function in vessels that are only propelled by paddles. The device is found on Greenland Kayaks. Kayaks were difficult to control when attempting to harpoon seals due to shifts in currents and winds. The skeg increases control and lateral stability (Petersen 1986). These attributes would be very useful to Caribbean canoeists whether in the rapids of the Upper Orinoco region or on the sea in the Antilles. The device would have been useful in both areas for capturing turtles and hunting manatees. Generally, it is useful anywhere where there may be variable winds and surface currents. In effect it can provide some sideforce necessary to make sails on dugouts practical.

Another means of providing side force, although one often overlooked, are the paddles used in propelling the canoes. There is a controversy surrounding the use of sails in West Africa (Bourne 2006). One of the lines of evidence used in the argument for sails in that region is the long paddles that were used with dugouts. Long paddles can be used as leeboards to provide sideforce that the basic dugout hull lacks. Long paddles are used currently by Arawakan speakers in the Venezuelan state of Amazonas along the Rio Negro. They are considerably different (Figure 3) from the paddles used by neighboring groups such as the
Piaroa and Ye’kwana. However, these paddles are not used with sails.

The interesting thing is that prehistoric paddles have been found in the islands of the Caribbean and the Bahamas. Conrad et al. (2001:10) list a total of eight paddles recovered from the region. A partial paddle blade (Conrad et al. 2001: Figure 21) was recovered from the Mantanial de la Aleta in the Dominican Republic. A complete paddle (Turks and Caicos National Museum 2007) from Grand Turk is discussed by Keegan (1997:57-58). While not identical to the Arawakan paddles of the Upper Orinoco, it is similar in being long and narrow rather than broad. In fact it is longer and would provide considerable sideforce allowing the use of sails.

Figure 3. Paddles of the Upper Orinoco.
Another problem although one not exclusively related to the use of sails is the low freeboard on dugout canoes. In the 1980s I frequently observed dugouts being swamped while fishing off the coast of Belize. Since dugouts float even when swamped, the small sails used were simply taken down and the vessel bailed out. The frequency with which this happened suggested to me that for traveling moderate to long distances sails would be more of a nuisance unless the vessels were built up with washstrakes. The Warao of the Orinoco Delta, traditionally built up their large seagoing canoes by adding washstrakes. While it cannot be ascertained that this was a pre-contact practice, it seems likely as the ritual surrounding the construction of a large Warao canoe (Wilbert 1977) suggests a great deal of conservatism. Further, it was noted by one of Columbus’ crewmen (Roberts and Shacklton 1983:16) on his second voyage that the largest of the Island Carib canoes did have washstrakes.

We now have two devices used in the Circum-Caribbean region that could provide the necessary side force allowing the use of sails for to windward travel. Coupled with washstrakes to raise the freeboard this would have resulted in a much more seaworthy sailing canoe than a basic dugout. The problem is that all of these devices are useful whether using sails or not. Further, we have no evidence to date that these devices were all combined in a single watercraft design. Despite a lack of clear evidence for sails in Precolumbian times I do not doubt that small square sails were on occasion used before European contact. I agree with Clinton Edwards (1965) that for the Caribbean region there is evidence that does exist for sails is inconclusive.
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The Palo Seco Site and Complex:
A Multi-Component Ceramic Age Settlement in Trinidad

by

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Abstract
The Palo Seco site is the type site for the Palo Seco complex of the Cedrosan sub-series, Saladoid series. It is located on the south coast of Trinidad, about 200 to 250 m inland from the shore of the Columbus Channel. In 1946 the site was excavated by Irving Rouse with the purpose of setting up a sequence of ceramic styles in order to correlate them with sequences previous established under the Yale University Archeological Program in the Orinoco Valley and Puerto Rico. The result of this excavation revealed a multi-component Ceramic Age settlement, which later yielded several calibrated radiocarbon dates from circa 50 BC to 550 AD. All the artifacts from the excavation have now been thoroughly analyzed in regards to temper, manufacture, decoration and vessel form and are housed at the Yale Peabody Museum.

Résumé
L'emplacement de Palo Seco est le type emplacement pour le complexe de Palo Seco du sub-series de Cedrosan, série de Saladoid. Il est situé sur la côte du sud du Trinidad, environ 200 à 250 m d'intérieur du rivage de la Manche de Columbus. Dans 1946 l'emplacement a été excavé par Irving Rouse en vue d'installer un ordre des modèles en céramique afin de les corréler avec précédent d'ordres établi dans le cadre du programme archéologique d'université de Yale dans la vallée d'Orinoco et au Porto Rico. Le résultat de cette excavation a indiqué un règlement en céramique à plusieurs éléments d'âge, qui plus tard a rapporté plusieurs dates calibrées de radiocarbone du cira 50 avant Jésus Christ à 550 après Jésus Christ. Tous objets façonnés de l'excavation ont été maintenant complètement analysés dans le respect pour gâcher, forme fabriquer, de décoration et de récipient et sont logés au musée de Yale Peabody.

Resumen
El sitio de Palo Seco pertenece al complejo Palo Seco de las subseries Saladoides Cedrosan. Se localiza al sur de la costa de Trinidad, aproximadamente a 200 a 25 metros al interior de la ribera del Canal de Colombo. En 1946 el sitio fue excavado por Irving Rouse, con el proposito de establecer una secuencia de los estilo ceramico para correlacionarlos con las secuencias previas establecidas por el Program Arqueologico laUniversidad de Yale en el Valle del Orinoco y Puerto Rico. El resultado de esta
excavacion revelo un asentamiento multi-componente ceramico, que tarde dio unas fechas de radiocarbon entre los anos 50 a.C. a 550 d.C. Todos los artefactos de esta excavacion han sido ahora completamente analizados en cuanto a su manufactura, desgrasante, decoracion y formas de las vasijas que estan almacenados en Yale Peabody Museum.
Introduction

The Palo Seco site is the type site for the Palo Seco complex of the Cedrosan subseries, Saladoid series, and is a multi-component Ceramic Age settlement site (SPA-30). It is located on the south coast of Trinidad, ca. 30 km east of the Cedros site which belongs to the earliest known ceramic complex in Trinidad. It is situated south of the village of Palo Seco, 200 m to 250 m inland from the shore of the Columbus Channel (Fig. 1: insert).

The site was discovered in 1906, but not excavated until 1919 by the English geologist, John A. Bulbrook, who was the first to use modern stratigraphic techniques in Trinidad (Bulbrook 1953). In 1946 Irving Rouse excavated on the island having for a while been interested in extending Yale University’s Caribbean Anthropology Program to Trinidad. The purpose of his expedition was primarily to set up a sequence of ceramic styles that could be correlated with sequences previously established under the Yale Program in the Orinoco Valley and in Puerto Rico (Rouse 1947). A previous study of the collections in Bulbrook’s laboratory had revealed the existence of three ceramic styles, Palo Seco, Erin and Bontour, each named after a typical site on the island.

Site and Excavations

The Palo Seco site occupies almost half of the Palo Seco Beach Camp which is owned by Petrotrin Ltd. and situated at the end of Palo Seco Beach (Rouse 1946). It consists of one large and several smaller, shallower and somewhat oval-shaped shell midden deposits, occupying the top and flanks of a gently sloping ridge (Fig. 1). The
large deposit, Midden 1, measures about 55 m by 25 m, has a depth of 1.5 m and is located in a northeast-southwest direction away from the sea. A smaller deposit, Midden 2, is situated about 180 m to the east and faces the sea. Bulbrook excavated two crossing trenches in Midden 1, A and B-C, in 1919 under the auspices of the British Museum, London, where his artifacts are housed. When Rouse excavated at Palo Seco in 1946, he dug a trench in Midden 1 (Excavation 1), consisting of six 2 m sq. units (Sections A1-6) parallel to and at a 2 m distance from Bulbrook’s trench A (Fig. 2). Section A1 was located closest to the sea and the other units extended in the direction of Bulbrook’s trench B-C. Two layers of stratification were noticed in Section A3-6; they consisted of dark brown loam in the upper strata and in the lower of medium brown sandy loam which at a depth of 120 to 140 cm turned into yellowish, sterile clay. A similar trench was dug by Rouse in Midden 2 (Excavation 2), consisting again of six 2 x 2 m units (Sections G1-6) with Section G1 located closest to the sea (Fig. 3). Excavation 2 consisted of only a single stratum of brown clay (Rouse, fieldnotes). The sections in both middens were excavated in 20 cm artificially controlled levels and yielded refuse to a depth of about 140 cm; shells, artifacts and charcoal were found throughout both of them.

A total of almost 6000 artifacts were discovered during the two excavations; almost evenly divided between them. The artifacts recovered from Excavation 1 were distributed with 16% from level 1 (0-20 cm), 19% from level 2 (20-40 cm), 22% from level 3 (40-60 cm), 18% from level 4 (60-80 cm), 16% from level 5 (80-100 cm), 5% from level 6 (100-120 cm), and 4% from level 7 (120-140 cm). In Excavation 2 the
artifacts division was 16.5% from level 1, 45% from level 2, 18% from level 3, 12.5% from level 4.5% from level 5, 2.5% from level 6 and 0.5% from level 7. The artifacts from the last three levels were all recovered from Section G5 (Rouse, fieldnotes)

Manufacture and Temper

The Palo Seco pottery shows considerable variation in texture, firing and finishing, but these variations in manufacture seem to be similar in both excavations and the various strata; the difference is stylistic. Compared with the Cedros ceramics which are relatively fine and thin, the Palo Seco pottery is medium thick, coarse and can be quite soft, and sometimes even disintegrates when excavated. Often the softer sherds are cracked and eroded. When properly fired it does make a good ware with a surface of a grayish red color and many of the better sherds are of this type. Sometimes the pottery is burnished which gives the ware a beautiful reddish brown color. It was probably made by hand-coiling and fired in an open fire; a process which readily could have caused some variations. The temper from a random sample of sherds from all levels of the two excavations were analyzed in a binocular microscope. It varied from mostly crushed rock (quartz) in the Barrancoid style sherds in the upper levels of Excavation 1 to crushed pottery (grog), shell, sand and fine grit in the Palo Seco pottery in both excavations. The temper in the Cedros ceramics is similar to that in the Palo Seco pottery, but slightly finer (Petersen 2004, personal com.). Typical is a combination of finely crushed grog and shell, which appears to increase the thermal shock resistance in ceramics (Hofman 1993).
Decoration

Several techniques and motifs have been used in decorating the Palo Seco pottery. Painting dominates, second is incision, third is modelling, both simple and complex, and last is punctuation, which is as rare as it is in the Cedros ceramics.

Red paint dominates in over half of the painted sherds. The color probably comes from red ocher, which is found in lumps in both excavations. Usually the color is placed on the outside of the vessel and/or on the rims and handles. White-on-red (WOR) designs, which are typical of the entire Saladoid series in the Caribbean, are common. Polychrome red, white and black designs are very rare, and incised lines filled with black and red painted cross-hatching have now disappeared. New techniques do appear in the late Palo Seco ceramics from the upper levels of Excavation 1 (Fig. 4). These are red-and-black painted designs, black lines separating red-and-white painted areas, and red-and-white filled incised lines; probably reflecting influence from the Erin complex.

Zoned incised crosshatching (ZIC) is rare in the excavations. It was only found in the lower levels of Excavation 2 at the Palo Seco site and looks more as if it was engraved or scratched than incised. A few sherds were found that had fine engraved designs with single or multiple parallel lines and semi-circles. Other incised motifs that continued from the Cedros complex are spirals, semi-circles and rectilinear design. These are found on the shoulders of bowls and the surfaces of keeled vessels (Fig. 5).

Simple modeled-incised designs with horizontal lines are still present, a carry-
over from the Cedros complex. Buttons and bars attached to vessel rims and bellies, and side lugs applied to D-shaped strap handles, also continue into the Palo Seco complex. Modeled-incised head lugs with geometric and zoo- and anthropomorphic designs now become more elaborate and varied. They appear on rims, handles and bottle tops and often have concave backs. Hollow mammiformed lugs continued to appear, but become rarer during the later period, as do simple adornos, consisting of punctuated nubbins or eyes indicated by short slits or punctuation (Fig. 6). Complex modeled-incised geometric adornos show both human and animal form and are beginning to show influence from the Erin (Barrancoid) complex, although they are less elaborate. These occur in the very top levels of Excavation 1 and 2. Although the zoomorphic designs often are vigorously expressed, it is difficult to identify the particular species (Fig. 7). They seem to include birds, such as parrots and macaws, besides turtles, monkeys, frogs and bats (Harris 1978).

Vessel Forms

The Palo Seco vessel forms are typically Saladoid like the Cedros forms and also resemble the ones from the Indian Creek site in Antigua (Rouse and Morse 1999). The seven most common Cedros vessel forms continue to be in use at the Palo Seco site and this also applies to some of the rarer Cedros forms, although their frequency of use have changed considerably. The opposite is the case with the “Flaring Open Bowl“ (Boomert 2000; Morse 2007, Fig. 10:2), one of the most frequent Cedros forms that Rouse (1947) compares with an inverted bell. During the Palo Seco period it becomes less frequent and
is occasional oval in cross-section. Two of the rarer Cedros vessel forms have become common shapes during the Palo Seco period. One is a bowl with restricted opening showing composite contours (Fig. 8:1); it also has a flanged rim that usually is concavo-convex in cross-section. The other is a bowl with restricted opening which shows biconical composite contours (Fig. 8:2). One rare shaped vessel form is a jar with an independent restricted opening, showing composite and complex contours (Fig. 8:3). Another rare form is the so called “sniffing bowl”, used for inhaling. It is a small bowl with simple contours and a pair of tube-like extensions (Boomert 2000: Fig. 8:4).

The rim and handle shapes of the Cedros complex continue during the Pale Seco period, but more dominant now are interiorly flattened rims and concave-convex flanged rims. Almost 50% of all rims from Excavation 2 have either a horizontally flattened rim or an interior thickened rim. The vertical D-shaped strap handle with geometric head lugs remains dominant, but a new addition is a D-shaped horizontal handle on the top of vessel rims.

Base forms from the Cedros period remain the same at the Palo Seco site. The annular, out-flaring ring-base with the unmodified basal angle is still the most common during the Palo Seco time; rarer are the flat bases (Fig. 8: 5-7). Fragments of griddles for food preparation were found in all levels of both excavations. They are similar to the griddle sherds in the Cedros complex both in form and thickness with slightly raised and thickened rims, most of which are triangular in cross section. One griddle sherd from Excavation 1 has an impression of matting on the bottom.
Other Artifacts and Finds

Few lithic artifacts were discovered during Rouse’s Palo Seco excavations in comparison to the overall amount of artifacts. They include one celt and several fragments stones, one rather worn; a few grinders and several fragments of milling stones were found. Also present were two large flat stones, a small spherical stone, a polishing stone, a paint stone, a pitted stone and last a thin stone with a worked edge, perhaps a scraper. Many small pieces of flint and many larger and smaller stones and pebbles, some rough and some water-worn, were discovered throughout the excavations.

Several artifacts made from bones of unidentified animals were also found. They include three double pointed bone objects, a bone needle that was perforated in one end, a finished bone point, a partially worked one and another bone piece with a grounded point. One shell artifact was discovered with two drilled lines, possible an ornament, and many unmodified shells were found in all levels of the two excavations.

Summary

In Excavation 1 Rouse in 1947 distinguished two strata and the majority of the ceramics in both were found to belong to the Palo Seco complex. A few specimens dating to the later Cedros complex were discovered in the lower levels and a few belonging to the Erin complex in the upper levels; thus establishing the sequence of Cedros-Palo Seco-Erin complexes. Based on these differences Rouse (1953), therefore, divided the Palo Seco material into two groups, an earlier one marked by the presence of a few Cedros
sherds and a later one by a few Erin sherds. The sequence in Excavation 2 differed from the one in Excavation 1 in that it yielded only one stratum that predominantly contained ceramics from the Cedros complex. Only the top level contained a mixture of pottery from the Palo Seco and Erin complexes which may have belonged to a later occupation.

In 1969 Rouse returned to Trinidad again with Jose Cruxent and Fred Olsen in order to obtain samples for radiocarbon dating. After first digging three test pits close to the old Excavation 1 at the Palo Seco site and only finding a thin deposit of Donax shell, they dug two 1 m sq. units slightly further north and lower down the slope towards the road. Here they excavated in 25 cm artificial levels and found charcoal associated with artifacts to a depth of 125 cm (Fig. 10). The artifacts belonged to the Cedros complex in the lower levels and the Palo Seco complex in the upper levels; thus establishing the sequence of ceramics that Rouse had previously observed. Charcoal samples were carefully collected from each of the five levels (Olsen 1969, 1974). The samples from the lowest levels, associated with the Cedros complex, yielded a radiocarbon date of circa 50 BC, and the ones from the upper levels associated with the Palo Seco complex yielded various dates of which the latest was circa 550 AD.

Acknowledgements

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Fig 1. Map of Bulbrook’s Palo Seco excavation (Bulbrook 1953, Fig. 2) with insert of Trinidad added.
Fig 2. Palo Seco Site. Excavation 1, Section A-1 (Rouse 1946)

Fig 3. Palo Seco Site. Excavation 2, Section G-6 (Rouse 1946)
Fig. 4. Palo Seco Site. Excavation 1. Painted and modeled-incised sherds from all levels.

Fig. 5. Palo Seco Site. Excavation 2. Painted, incised and modeled-incised sherds from lowest levels.
Fig. 6. Palo Seco Site. Excavation 2. Painted and modeled-incised sherds from the middle levels.

Fig. 7. Palo Seco Site. Excavation 2. Simple and complex modeled-incised sherds from the upper levels.
Fig. 8. Reconstructed Saladoid vessel forms (1-4) and base forms (5-7) From the Palo Seco Site (Boombert 2000).

Fig. 9. Irving Rouse, Jose Cruxent and Fred Olsen at the Palo Seco Site in 1969 Celebrating finding artifacts associated with charcoal in the two test pits.
Side by Side: Faunal Exploitation at Two Villages from Different Time Periods on the Lower Río Tanamá in Northwest Puerto Rico.

by

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Abstract
On the Tánamá River in northwestern Puerto Rico, fieldwork was completed at the Río Tánamá Sites 1 and 2 (AR-38 and AR-39) by Southeastern Archaeological Research and the U.S. Army Corps of Engineers. These two village sites date from the Late Saladoid and the Late Ostionoid period and are located 8 km inland. A continued reliance on the marine environment for subsistence is seen only at the Late Saladoid site. In addition, the sites produced bones from non-native species and extinct species of birds reflecting the impact of prehistoric human exploitation to terrestrial species on islands.
INTRODUCTION

Two pre-Columbian habitation sites are located on the south side of the Tanamá River, within the broad alluvial floodplain of the Arecibo River valley in northwest Puerto Rico. The sites are located at the transition between the river’s alluvial floodplain and the limestone hills, locally called mogotes. The coast is 8 km away.

The two Río Tanamá sites are separated by only 100 meters but differ in time period. AR-38 is a late Ostionoid occupation (post-1100 A.D.). AR-39 is a late Saladoid/early Ostionoid occupation, dating between A.D. 400 and 800. It contains both Cuevas and Ostiones style ceramics. This site appears to have been the initial long-term settlement in this river valley. Subsistence practices during the initial settlement of this inland location are the focus of this paper, with comparisons provided by the later site.

This faunal investigation was part of site testing and data recovery performed under contract with the USACE.

RESULTS

Bone from all excavated proveniences was collected and analyzed for this project. The general ¼-inch screened levels were augmented with 1/16-inch screened features, voucher samples, and one column sample.

AR-38

Excavations at the later site of AR-38 produced a small sample of six species consisting of freshwater turtle, mourning dove, two freshwater fishes, and two introduced mammal species: guinea pig and the Puerto Rican hutia. Guinea pig is not present in the earlier site of AR-39 and appears to be a later Ostionoid introduction to Puerto Rico. This was
an excavation within the habitation area of AR-38 and as a result a small sample of approximately 200 bones was recovered.

No marine species or items imported from the marine environment were identified in AR-38. Excavation units produced two hand-sized, reef-coral abraders. These, however, were not harvested from the marine environment. These coral artifacts were produced from Pleistocene Age fossilized corals that were found in the mogotes. Reports on coral use in Taíno sites are very common, but to our knowledge there are no previous studies or reports of Taíno fossil coral use.

AR-39

The sample of almost 7000 fragments of animal bone from AR-39 consisted of 41 species including 4 mammals, 15 birds, 8 reptiles, and 14 fish and sharks. One of the reptiles, two of the birds, and three of the mammals are extinct.

By NISP and MNI quantifications using ¼” screened samples, there is a fairly even distribution of each Class of animals’ contribution to the diet. By biomass, fish, reptiles and mammals contribute equally to the amount of meat in the diet, while the bird contribution is minor.

By MNI, birds are the most common resource providing 33% of the total MNI, with pigeons and doves dominating the sample. Mammals and reptiles provide 17% and 20% respectively of the MNI; dominated by hutia and freshwater turtle. Fish provide 30% of the MNI, with half the sample being marine species and half being freshwater species.

Aquatic Species: The freshwater species identified at AR-39 include eel, sleepers, mullets, snooks and slider turtle. These riverine fish were all small, mostly under 150 g in live weight. All the large fish in this site (with a live weight over 1.3 kg) were marine
species, consisting of triggerfish, snappers, groupers, and jacks. It appears that only large packages of marine meat were traded upriver. No small-bodied marine fish (under 500 g live weight) were found in this site. Also, no shell at all was found at this site. If marine invertebrates were part of the diet at AR-39, the meat only and not the shells of invertebrates were imported.

The typical early Saladoid diet in Puerto Rico focused on marine resources, which follows since Saladoid villages were primarily located near the coast. The Cuevas site of AR-39 shows a continuation of early Saladoid diet practices even though site location began to change with a movement toward the interior of the island. Marine resources continued to be a staple of this diet even though the ocean was 8 km away. This is in contrast to the results from the later site of AR-38 where no marine resources at all were found. This suggests that the people of this valley had by the later Ostionoid time become thoroughly inland inhabitants with a reliance on locally available foods.

At AR-39, the list of captured fish suggests the use of hook and line fishing techniques in coral reef environments. Schooling reef fishes were not found in the size range or abundance expected from net fishing. In addition, even though 26,000 sherds and 700 lithics were analyzed at AR-39, no net weights were found. In contrast, the late Ostionoid site of AR-38 produced five net weights from a very small sample of artifacts; net fishing was practiced in these upriver locations to capture numerous small-bodied river fish.

**Birds.** Sixteen species of birds were identified from over 400 bones at AR-39; two are extinct. The extinct flightless Puerto Rican rail (*Nesotrochis debooyi*) has been found in Amerindian sites from central Puerto Rico and the Virgin Islands and was the largest
flightless rail to inhabit the Caribbean. There also are extinct flightless rails of this genus from Hispaniola and Cuba. These rails would have been an easy target for harvesting and it possibly could have been a managed species. Las Casas noted in his early narratives that along the Cuban coast the people kept “enclosures of interwoven canes for liza (likely groupers) and on land for perdices, a bird that can’t fly.” Perdices literally means quail, yet this may be a reference to the flightless rail.

The second most common bird in the samples is another extinct species—the Puerto Rican quail-dove, Geotrygon larva, which also may have been managed. This large sample of bird bone from AR-39 was 67% columbidae (doves and pigeons) by MNI. Rails (Rallidae) are the second most common family of birds in the site, followed by herons (Ardeidae); the only water birds identified in the site.

Mammals. Three extinct mammals were identified in AR-39—the tiny Puerto Rican shrew (Nesophontes edithae), a large member of the spiny rat family (Heteropsomys insulans), and the introduced hutia (Isolobodon portoricensis).

No paleontological remains of Isolobodon have been found in Puerto Rico, but they do occur on Hispaniola. This hutia species has a culturally modified distribution from Hispaniola to Puerto Rico and the Virgin Islands. Isolobodon has been identified in prehistoric sites from early Saladoid through late Ostionoid times but has not been identified as yet in Archaic sites or Huecoid sites.

Another large-bodied rodent, a native spiny rat (Heteropsomys insulans) was identified from four bones at AR-39. Thus far, Heteropsomys has only been definitively identified at la Hueca on Vieques and at the Archaic site of Maruca, where no hutias were found. Although hutia is the dominant mammal at AR-39, the spiny rat is present. This is
tentative evidence of mixing of Saladoid and non-Saladoid cultural traits at this inland transitional period site.

It is possible the hutia were managed as a renewable and storable protein source. The mandibular tooth row measurements of six complete hutia mandibles ranged from 16.3 to 21.3 mm with an average of 18.48 mm. This suggests a harvested population of mostly young adults, all of reproductive age (>1 year). Just one full adult over 3 years of age was identified. No non-reproductive juveniles were identified from the jaws. This possible evidence of age selection suggests some sort of control of the harvested population.

**Temporal Changes:** Comparisons of faunal results were made between different radiocarbon dated contexts over the span of the occupation at AR-39. One area of the site contained the earliest dated deposits from the 5th century A.D. A second area contained deposits dated approximately 200 years later.

The early context was dominated by mammal remains; 75% of all the bone was either hutia or dog. Only two fish bones were recovered. The lack of fish in these early deposits is not a sampling or screen size bias. This area contained a 1/16-inch screened secondary hearth deposit that produced 1192 bones of which only 10 were fish. The late context contained over 1500 bones, with fish and bird dominant and mammals contributing only 13% of the sample.

The primary food item deposited in the earliest midden deposit on AR-39 was hutia, with some dog. This preliminary result suggests that these animals may have been brought by the initial settlers since captive animals provide the most reliable food source. Plant
propagules would, of course, also be carried to a new settlement, but plant harvests take work and time initially to produce a reliable food base, unlike managed animals.

**Worked/Butchered Bone:** Dogs had many uses in the pre-Columbian cultures of the West Indies including companion, food item, and source of raw materials for tool making. In some early Saladoid sites, dog remains are found exclusively in formal burials. Here at AR-39, dog was shown no such special reverence. Its bones were found in midden contexts. Dog was an economic resource that provided substantial protein along with bones from which tools could be made. This dog tibia was worked into a bone awl. The proximal end is broken away and the distal end has been sliced and smoothed to create a rounded beveled edge. This sort of tool could have been used in weaving. Evidence of mammal butchering was seen in cut marks on long bones and pelvis of both hutia and dog. In addition to worked dog bone, the site contained a fish spine needle and two perforated barracuda teeth.

**CONCLUSIONS**

This study provided the unique opportunity of looking at closed contexts of faunal materials from two pre-Columbian sites with the same available resource base. As the sites came from different time periods, the variations noted in the subsistence practices were the result of unique cultural or economic adaptations, which were not necessarily prescribed by the surrounding environment.
Investigations of Five Lucayan Graves in Preacher’s Cave, Eleuthera, Bahamas

by

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Abstract

The human skeletal remains and associated grave goods of five individuals from the Ostionoid period (AD 600-1500) were recovered from Preacher’s Cave on Eleuthera, Bahamas. The grotto is recognized as the safe haven for the first English settlers of the archipelago in 1648, a puritan band known as the Eleutherian Adventurers. Recent archaeological investigations have confirmed that the cave was utilized much earlier by the prehistoric peoples of the Bahamas, the Lucayans, principally for mortuary practice. Prior to the latest discoveries, no intact Lucayan grave had been fully documented in situ by archaeologists. Three males and two females were recovered representing various age ranges from the late adolescent phase to the fourth decade of life. Postcranial metric and nonmetric data provided important information concerning skeletal biology and occupational stress. Overall, the frequency of oral-dental pathology is high, reflective of a diet rich in starchy foodstuffs. Pathological analysis included documentation of healed fractures, osteoporosis, minimal advanced osteoarthritis, evidence for traumatic arthritis, degenerative disc disease, and developmental defects. Two individuals were wrapped in a plaited mat prior to interment. One individual, a young adult male, was interred face down, bound by cordage, with possible sharp force trauma to the right shoulder. Albeit the skeletal sample is small, this study provides a rare glimpse of the native peoples who encountered Columbus and his crew.

Resumen

Los esqueletos y ofrendas fúnebres de cinco individuos del período Ostionoide (D.C. 600-1500) fueron hallados en Preacher’s Cave (caverna del predicador) ubicada en Eleuthera, Bahamas. En 1648, la gruta fué el refugio de un grupo puritano conocido como los Aventureros Eleutheranos, los primeros pobladores Ingleses del archipiélago. Recientes investigaciones arqueológicas han confirmado el uso previo de la cueva por los pobladores prehistóricos de las Bahamas, los Lucayans, principalmente con propósito mortuorio. Antes de estos descubrimientos, ningún estudio arqueológico había documentado un entierro Lucayan intacto e in situ. Tres individuos de sexo masculino y dos de sexo femenino entre las edades de la adolescencia tardía hasta la cuarta década de vida fueron recuperados. Datos métricos y no métricos de elementos postcráneales proporcionaron información importante sobre biología esquelética y estrés ocupacional. En total, la frecuencia de patología oro-dental es alta, reflejando una dieta alimenticia abundante en almidón. El análisis patológico incluyó la documentación de fracturas
curadas, osteoporosis, osteoartritis poco avanzada, evidencia de artritis traumática, enfermedad degenerativa de disco, y defectos de desarrollo. Antes de ser enterrados, dos de los individuos fueron envueltos en esterilla tejida. Un individuo joven de sexo masculino fue enterrado boca abajo, atado con soga, con una posible herida de fuerza filosa en el hombro derecho. Aunque la muestra es pequeña, este estudio nos proporciona un vistazo inusual de los pobladores que se encontraron con Cristóbal Colón y su tripulación.

Résumé
Des restes de squelettes humains et de mobilier funéraire appartenant à cinq individus ayant vécu durant l’ère ostionoïde (de 600 à 1500 ans apr. J.-C.) ont été retrouvés dans la caverne Preacher’s Cave, située sur l’île d’Eleuthera, dans les Bahamas. La caverne est reconnue comme l’endroit où se sont réfugiés sans danger les premiers colons anglais de l’archipel en 1648, un groupe puritain connu sous le nom d’Aventuriers d’Eleuthera. De récentes recherches archéologiques ont confirmé que la caverne avait été utilisée bien auparavant par les peuples préhistoriques des Bahamas, les Lucayens, qui s’en servaient principalement pour des pratiques funéraires. Avant les récentes découvertes, aucune tombe intacte du peuple Lucayen n’avait été entièrement examinée directement sur un site par les archéologues. Trois hommes et deux femmes dont l’âge variait entre la fin de l’adolescence et la quarantaine ont été retrouvés. Des données métriques et non métriques postcrâniennes ont permis d’obtenir des renseignements importants quant à la formation du squelette et au stress professionnel. Dans l’ensemble, la fréquence à laquelle la pathologie buccale et dentaire est utilisée est élevée et démontre une alimentation composée de produits riches en féculents. L’analyse pathologique comportait l’étude des fractures guéries, de l’ostéoporose, de l’arthrose peu développée, de signes d’arthrite traumatique, de maladie dégénérative liée aux disques et de troubles du développement. Deux individus avaient été enveloppés dans un tapis tressé avant d’être inhumés. Un autre individu, un jeune homme adulte, avait été inhumé le visage vers le bas, attaché par des cordes et ayant possiblement subi un traumatisme de force aiguë à l’épaule droite. Bien que les échantillons squelettiques soient petits, cette étude fournit un rare aperçu des aborigènes qui ont rencontré Christophe Colomb et son équipage.
The earliest radiometric evidence for prehistoric occupation or colonization of the Bahamian islands is from Grand Turk, ca. AD 700 (Keegan, 1997), San Salvador, ca. AD 800 (Berman and Gnivecki, 1995; Berman and Pearsall, 2000), and New Providence, ca. AD 900 (Bohon, 1999). These people, known as the Lucayans, inhabited each of the major islands of The Bahamas at or around the time of conquest, and this has been verified by 15th century chronometric documentation on Middle Caicos (Keegan, 1997), San Salvador (Rose, 1987; Berman and Gnivecki, 1995), and Grand Bahama (Berman and Pearsall, 2000).

Columbus (1893) set foot in the New World on one of the Bahamian islands which the natives called Guanahané; he soon renamed it San Salvador. The Spanish explorers called the natives “Lucayo” derived from the Taíno word Lukki-Cairi meaning “island men” (Keegan, 1992, 1997). From Columbus’ accounts, the Lucayans seemed gentle and peaceful, untrained in the art of warfare, and without “offensive” weaponry. He also noted the curious broad appearance of their forehead from cultural modification (De Booy, 1912).

MATERIALS AND METHODS

Previous archaeological investigations at Peacher’s Cave on the northern tip of Eleuthera corroborated the veracity of historic and ethnographic accounts with the discovery of European burials and Palmetto Ostionoid sherds (Carr, 1991; Carr et al., 1993; Dickel, 1992). Additional archaeological survey of the cave and surrounding area was conducted in December 2005 (Fig. 1), revealing articulated human remains deeper inside the cave.

Individuals 1A and 1B were discovered during a one-week excavation session in
March 2006, and Individuals 1C-1E were uncovered during a two-month season from January to March of 2007. Individual 1A was transported to the University of South Florida in Tampa to undergo more intensive microscopic analysis. Comprehensive osteological measurements for this specimen are absent due to time constraints and poor preservation. Individuals 1B-1E were analyzed at the AHC osteology laboratory in Miami, Florida, then subsequently transferred to The National Museum of The Bahamas in Nassau.

Radiocarbon dating of materials associated with archaeological deposits was conducted using the AMS method by Beta Analytic, Inc., Miami, Florida. A culturally modified triton shell (Charonia tritonis variegata) found outside the cave dated AD 560-720 and a well-provenienced piece of charcoal recovered from Individual 1A, AD 700-980 (2σ). The triton shell dates are the earliest evidence of occupation in the northern Bahamas and suggest the peopling of the archipelago may have taken place on the island of Eleuthera 200-300 years than previously believed (Berman and Gnivecki, 1995; Berman and Pearsall, 2000; Bohon, 1999; Keegan, 1997). The archaeological context and associated materials advocate the remains dating to the broad Ostionoid period (AD 600-1500).

RESULTS

The Preacher’s Cave sample

A total of five individuals were recovered from Preacher’s Cave: three males and two females. Plan map and textual documentation of skeletal completeness (Table 1) and degree of preservation was conducted as well as gross skeletal and oral-dental pathology (Tables 2 and 3). A subadult female (1A, 15-20 yrs) represents the youngest age category, followed by two young adult males (1D, 20-25 yrs and 1E, 25-30 yrs) and a
young adult female (1C, 30-35 yrs). Individual 1B was also likely a young adult male, though remnants of his bodily remains were too scant for a more accurate assessment. The bodies were interred either, flat and extended (1A, 1B), or wrapped in a plaited mat and semiflexed on the side (1C, 1E). Individual 1D was the anomaly, having been interred face down and likely bound by cordage. Grave goods accompanied Individual 1E solely and they are detailed below.

**Individual 1A**

Individual 1A was a subadult female (15-20 yrs) at or around the time death, represented by a near complete skeleton with exception of the cranium and lower limbs below the midshafts of the femora. A complete mandible free of oral-dental pathology apart from minor calculus build-up on the lingual aspects of her lower incisors is present. Third molars appear in functional occlusion. Most available long and irregular bones are fused; though, partial union of the iliac crest and sacro-iliac joints are noted. No gross skeletal pathology was observed.

**Individual 1B**

Individual 1B was estimated to be a young adult male (24-36 yrs) at or around the time of death, though relatively few skeletal remains exist due to disturbances that removed the cranium, upper torso, pelvis and most long bones. The near absence of lines of fusion at the epiphyseal ends and presence of marginal arthritis in the major joints confirmed these assessments.

**Individual 1C**

Individual 1C was a young adult female (30-35 yrs) at or around the time of death, represented by a near complete skeleton. The partially intact cranium shows evidence of
consistent application of pressure, on the left aspect of the frontal bone, as a distinct indicator of artificial deformation. Evidence of active infection is present on the mandible and maxilla from advanced periodontal disease and caries (35%), many of them originating at the root surface at or around the cemento-enamel junction. Osteoarthritis is present in the articular facets of the cervical and lumbosacral regions (C1/C2; C4/C5, asymmetric, left; and L5/S1). Moderate to severe osteophytosis of the centra in the lumbar region (L1-L4) is also present. Appendicular arthritis is marginal in the joints of the shoulders and elbows. More severe osteoarthritis is present in the hands. Traumatic arthritis developed on the dorsal margin of the right wrist, from a preexisting condition such as a fracture or delayed union of the styloid process epiphysis. She also has multiple healed rib fractures, another sign of a traumatic event that likely caused hardship.

**Individual 1D**

Individual 1D was a young adult male (20-25 yrs), represented by a near complete skeleton, missing the skull, atlas, and most of the foot bones. He was interred face down. Remnants of cordage were found around the elbows and hands, and impressions were also recorded on the lower vertebrae and hips. This suggests he was tied-up prior to burial. No evidence of sharp force trauma on the dens of the axis or fracture of the hyoid, indicators of death by decapitation and strangulation respectively; although, possible sharp force trauma is present on the posterior aspect of the right humeral head. A fairly uniform horizontal incision (l=18 mm; w=1.5 mm) breached the cortical surface and penetrated the trabecular content (d=8 mm). The edges of the bone are sharp, which indicates a lack of healing, and therefore, if a legitimate wound, would have occurred prior to death. His vertebral column and joints are virtually free of even marginal
osteoarthritis. Non-fusion at the site of the sternum is evident as a result of genetic variation, or a shift or traumatic event during childhood development (Barnes 1994).

Multiple depressions and sclerotic formation resulting from disc herniation or progressive degeneration, are present on the end plates of his lower thoracic and lumbar vertebrae (T11-L4). The most severe depression is located on the superior aspect of T12. These depressions, known as Schmorl’s nodes, are frequently associated with the elderly and typically most individuals over 45 years of age as a form of degenerative disc disease (Aufderheide and Rodríguez-Martín, 1998). Since these lesions develop gradually over time, this condition originated earlier in life, either late adolescence or earlier; however, the presence of such nodules in adolescents is uncommon. Typical involvement is limited to one or two inter-vertebral joints, but in this case, it extends to several vertebrae as well as anterior end plates. This leads one to also include Lumbar Scheuermann’s disease or juvenile disogenic disorder in the differential diagnosis, whereby abnormally weak end plates are incapable of withstanding the pressures generated within the disc spaces thus causing premature herniation (Maat and Mastwijk, 2000; Scoles et al., 1991).

Alternatively, premature inter-vertebral herniation could be related to repetitive tasks associated with heavy lifting and possibly related to population variation, though, without a larger sample, it is difficult to presently distinguish. An additional developmental defect known as lumbarization of S1 present in this individual may have also complicated a predisposed or acquired spinal condition.

**Individual 1E**

Individual 1E was a young adult male (25-30 yrs), represented by a fairly complete skeleton with exception of the upper limb bones and lumbosacral region. A large (l=30...
cm) culturally modified triton shell (identical to the one previously found outside the cave) lay anterior to the thorax and a cache of 29 sunrise tellin shells (Tellina radiata) containing a piece of red ochre and a fish bone scarifier lay posterior to the left scapula (Fig. 2).

His cranium exhibits artificial deformation of the parallelo-fronto-occipital form. An active infection is observable in the mandible and maxilla including slight alveolar ridge reduction and caries, most originating at the root surface or cemento-enamel junction (29%). A small rim of calculus is present on most teeth. Osteoarthritis is noticeable in the articular facets of the lower thoracic and lumbar regions (T7/T8, asymmetric, right; T10/T11; and L2, asymmetric, right). Marginal osteoarthritis is present in the elbow and more severe pitting and osteoarthritic lipping is prominent in the patellae from considerable usage. Trauma to the fifth thoracic vertebra in the form of a healed compression fracture is apparent, likely from depletion of bone mineral content (i.e., osteoporosis); bioconcavity of adjacent vertebral bodies corroborated this assessment.

SUMMARY AND CONCLUSION

The Preacher’s Cave sample, to date, represents the most complete Lucayan specimens available for macroscopic analysis. The present study offers insight to Lucayan lifestyle and mortuary patterns from an underrepresented sample size of the population. The prevalence of oral-dental pathology supports ethohistoric accounts of Lucayan subsistence economies based of starchy foodstuffs. Healed fractures show an adaptation to environmental constraints; and, as with the case of an osteoporotic crush fracture, nutritional deficiency. Possible sharp force trauma functions as new information
regarding violence and available offensive weaponry in the Bahama archipelago during prehistoric times. The pattern of degenerative disease is distinct for each individual, giving credence to an occupational relationship, activity base or even a genetic disposition unique to that individual. The observation of developmental defects adds to the growing number of documented cases in prehistoric populations and serves as a basis for potential new finds looking at heritability of specific traits. Current metric and nonmetric data will hopefully add to a forthcoming data set focusing on Lucayan skeletal biology and biodistance. Future studies are underway to analyze the associated grave goods, the use of basketry in Lucayan mortuary ritual, and potential status of each individual.

ACKNOWLEDGEMENTS

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<tr>
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Table 2. Gross skeletal pathology

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<td>Ribs</td>
<td>1C</td>
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<tr>
<td>Vertebra</td>
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<tr>
<td>Schmorl’s nodes</td>
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<tr>
<td>Possible sharp force trauma</td>
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</tr>
<tr>
<td>Lumbarization of S1</td>
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Table 3. Oral-dental pathology

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Figure 1. Plan view of Eleuthera island with inset of Preacher’s Cave topographic map.

Interment locations of Individuals 1C-1E (a) and Individuals 1A-1B (b) (Line art by William C. Schaffer).
Figure 2. Plan view of Individual 1E (Photo by William C. Schaffer).
Ceramic Paste Studies in the U. S. Virgin Islands

by

Emily R. Lundberg

Abstract
The results of visual, petrographic, and chemical ceramic paste analyses in the U. S. Virgin Islands are compared, with particular regard to their applicability to questions beyond ceramic analysis. Among the complementary results are patterns that suggest differential stability and change within contrasting functional pottery domains. Methodologically it is concluded that relevance to broad research questions requires appropriate sample criteria and investigation of multiple variables for patterned interrelationships associated with vessels as the unit of study.

Résumé
Nous comparons ici les résultats issus de l'analyse visuelle, pétrographique et chimique de la pâte de céramiques provenant des Îles Vierges américaines. Une attention particulière est apportée à l'applabilité de ces études pour le traitement de problématiques dépassant le cadre de l'études des restes céramiques stricto sensu. D’un point de vue méthodologique, nous en arrivons à la conclusion que le traitement pertinent de ce type de problématique de recherche large nécessite l'établissement de critères d'échantillonnages appropriés et l'analyse de variables multiples afin d'atteindre la compréhension des inter-relations associées aux récipients en tant qu'unité d'étude.

Resumen
Los resultados de los análisis visuales, petrográficos y químicos de la pasta de restos cerámicos procedente de las Islas Vírgenes se comparan, con atención a su aplicabilidad a temas de investigación de alcance más largo del análisis de cerámicas. Entre los resultados complementarios encontramos asociaciones que sugieren diferencias en la estabilidad y el cambio dentro de clases funcionales contrastantes de vasijas. Afín de llegar a conclusiones de una amplia relevancia se necesitan criterios adecuados de muestras, junto con la investigación de variables múltiples para entender sus enlaces asociados con vasijas como unidad de estudio.
Introduction

The study of artifactual composition and manufacture entails data sets of minutia. In fact the time and funds spent recording these data truly demand justification in terms of contributions to significant research questions. One must ask: How is the work applicable to broad goals, and what are the elements necessary for creating linkage between the analytical results and those ultimate goals?

This paper deals specifically with pre-Columbian era ceramic research in the U. S. Virgin Islands (USVI), which includes St. Thomas and St. John, in the central part of the Virgin archipelago, and St. Croix to the south. The ceramic paste studies that have been done in the USVI have been diverse. (In this paper the term ‘paste’ refers to the total clay body, including plastic and nonplastic components.) The time has come to take stock of existing results and to develop ways to maximize the results of future studies. The present objectives are to compare the findings of completed studies, to consider whether or how they augment one another, and to propose methods to improve the aggregate product’s significance to research beyond ceramic analysis. Studies of pottery paste already undertaken in the USVI have used low-magnification observations, thin-section petrography, and physical/chemical analyses.

Low-magnification Observations

An early focus on paste and ware types was promoted by Bullen (1962) using visual methods in order to develop a type-variety classification, which has not been pursued by recent USVI
researchers. In contrast, the author’s work has emphasized characterization of ceramic assemblages as representatives of local styles. Study samples are carefully selected on the basis of stratigraphically defined assemblages. With the use of a binocular microscope at 30x on freshly broken edge samples, nonplastic inclusions are recorded for material types, size ranges, and estimated amounts. In the studied assemblages, the predominant nonplastic inclusions are nearly always igneous rock, occurring as rock grains and/or individual mineral grains, which can be visually categorized by color and angularity. Additional fields record other variables of fabric such as voids, charred vegetal remnants, color, and core. The sherds examined have also undergone analysis for variables of vessel type, manufacture, and use. All of this information can be entered into databases for investigation of patterns.

Four analytical samples have derived from the Tutu site on St. Thomas (Righter 2002). A total of 602 sherds were examined for paste attributes, in four temporally differentiated assemblages: a sequence of three Saladoid assemblages and one Chican Ostionoid assemblage (Lundberg 2002). These assemblages were analyzed from a vessel approach, seeking patterned attribute co-occurrences indicative of vessel types and wares. One of the objectives was to determine whether multiple wares existed within any one ceramic style and to identify temporal change or continuity within wares. This was pursued by means of correlations between paste types (represented by nonplastic inclusions) and vessel types interpreted as belonging to different functional categories.
The Tutu ceramic analysis suggests that by the end of the Saladoid period at Tutu there was functional differentiation of two ware types that crystallized from a range of variability present since early Saladoid times. In the early and middle Saladoid assemblages there is much variation in the mixtures of rock grains used in pastes. No correlation was found with the limited vessel forms that could be identified or with the occurrence of decoration. In the terminal Saladoid (cal A.D. 600-800) assemblage at Tutu, on the other hand, there is much more of a contrast between two major paste types that were both present in the earlier range of variation. The two paste types, furthermore, are cleanly separated by the identified vessel types of hypothesized domestic or food preparation function, on the one hand, versus those of hypothesized ritual or serving function, on the other hand. Table 1 shows this contrast in a simplified way, omitting other correlating variables such as wall thickness and surface finish. The opportunity to correlate paste data with vessel data allows us to hypothesize the development of distinct late Saladoid ware types with functional differentiation. This poses a culturally significant contrast with the earlier Saladoid components.

For the early Ostionoid period, material on St. John at Trunk Bay and Peter Bay fills in part of the temporal gap for in-situ deposits at Tutu. Analysis of samples from those sites has indicated that the distinctiveness of late Saladoid fine ware is not carried into the early Ostionoid period. From the Trunk Bay site, dated in the range of cal A.D. 800-1200, materials from multiple National Park Service excavations recently has undergone analysis directed by Ken Wild (Lundberg and Wild 2006). As part of a joint ceramic study, this author was able to examine the pastes of 122 sherd samples associated with rim or decoration data and selected
from good proveniences. The primary nonplastic paste components are similar to those from the Saladoid sequence at Tutu. The sample does not indicate a strict paste recipe for fineware, and either of the main paste types can occur in the style’s diagnostic shallow dishes with interior painted designs. Analysis of a small early Ostionoid stratigraphic sample excavated by the author from Peter Bay (cal A.D. 800-1000; Lundberg 2001) produced similar noncorrelation between pastes and vessel types.

No mid-Ostionoid assemblage has undergone this study yet, but a Chican Ostionoid occupation was represented at Tutu, dated at approximately cal A.D. 1300-1400 (Lundberg 2002). A dichotomy was again apparent between two temper types, although the small 92-sherd study sample yielded no evident correlation between paste and vessel types.

The analyses of these discrete assemblages resulted in a wealth of data. Temper differences become more distinct through time within each ceramic series. The correlation between paste and vessel type or functional domain also appears to change through time, although much more vessel information is needed for clarification of that question. The issue of vessel function intersects with socio-cultural variability that has wide applications.

Thin-section Petrography

High magnification thin-section petrographic identifications have been done for a few Virgin Islands sites. From the four assemblages of the Tutu site and fired clay samples from the site,
49 samples were selected in conjunction with the author’s ceramic analysis, and their thin-sections were classified by James Burton of the University of Wisconsin. Fourteen samples were also petrographically characterized in detail by Spectrum Petrographics, Inc. These studies provided a means to relate the low-magnification gross classifications to more specific geological classes indicative of collection and processing methods for temper and clay.

Petrography done with small sample groups has served to connect pottery to potential local geologic sources. Two kiln-fired samples of clay from the Tutu site of St. Thomas were compared to sherd samples, while groups of sherds from St. Croix and St. John have been compared to local geological formations by O’Connor (2001) and by O’Connor and Smith (2001, 2003). Results have shown that pottery-making materials were available and probably collected in the site vicinity or nearby parts of each island. O’Connor and Smith’s samples also are associated with visual paste observations and vessel information. By incorporating chronological variables and a multi-site sample, O’Connor and Smith (2001) provide preliminary results for temporal and inter-site paste variability on St. Croix.

Physical/chemical Compositional Analyses

Infrared spectroscopy: One of the early projects aimed at compositional comparisons of pottery in the Puerto Rico–Virgin Islands area was undertaken by Carini (1991), using infrared technology as well as high magnification observations. Infrared absorption analysis was applied to an initial study sample of 50 Saladoid sherds, most of which were from Puerto Rico
and Vieques, together with a few from St. Croix and St. Martin. Because the tested sherds were linked to stylistic attributes, the study was able to demonstrate that white-on-red ware and zoned-incised-crosshatched ware can have the same compositional fingerprint. Material analysis was shown to be effective in conjunction with stylistic analysis, and the combined results were applicable to the definition of wares and to social questions concerning the makers of the two decorative types.

PIXE, XRD, and NAA: Studies using these technologies have focused on clay resources for ceramic production. St. John clays and sherds were compared by Potter (1996) using proton induced x-ray emission (PIXE) and x-ray diffraction (XRD) to investigate the use of local clays. O’Connor’s (2001) study of pottery from the Aklis site on St. Croix by neutron activation analysis (NAA) allowed her to conclude that there was no significant temporal change in the elements present in the sherds sampled, which spanned the transitional Saladoid-Ostionoid occupation of the site. Hardy’s (2008) NAA study of Saladoid sherds and clays from St. Croix, augmented by Ostionoid sherds from the Salt River site (Morse 2006) and other Caribbean sherds in the database of the University of Missouri Research Reaction Center, demonstrated that most St. Croix pottery was produced from local clays. Instances of pottery movement to and from Puerto Rico and to Hispaniola also were suggested.

ICP: Chemical analyses have been done on a large sample from the Tutu site by the acid-extraction method of inductively coupled plasma emission spectroscopy (ICP). A preliminary set of sherds was tested by Warren Lynn of the U. S. Soil Conservation Service. An enlarged
set of 122 sherds was analyzed by James Burton at the Laboratory for Archaeological Chemistry, University of Wisconsin-Madison, in 1996-97 (Lundberg et al. 2002). The selected sherds pertained to four components of the Tutu site (a sequence of three Saladoid components and one Chican Ostionoid component), including examples of various types of vessels and temper as determined in the author’s low-magnification study. In addition the study included fired clay samples and a few comparative sherds from two other St. Thomas sites that represented an early Saladoid and a Chican Ostionoid component. The ICP direct results were measurements of twelve chemical elements. In the acid-extraction method of ICP, the chemical results express mainly a sherd’s clay component, with minor input from the less soluble rock inclusions (with the exception of carbonates). Results from this method may reflect differences in firing and use of ceramic vessels as well as raw composition, which means that it is a relatively complete reflection of a vessel’s production and history. Thus it was an optimal way to deal with the potential interrelation of paste recipes and vessel functions for the four different cultural components, and the results proved to be meaningful.

The ICP data were mathematically processed by Burton using various clustering methods. The clusters were then compared to visual paste categories and vessel interpretations. The broadest results of the ICP study demonstrated clear separation of three main groups: Saladoid quartz/feldspar tempered sherds, late Ostionoid quartz/feldspar tempered sherds, and mixed igneous sand tempered sherds of all periods. Three of the five clays collected from the site clustered with the latter. It could be concluded that the most common nonplastic material type (mixed igneous sand) represents a paste recipe (i.e., clay + nonplastics + manufacture) that had
long-term continuity, although there are slight differences between the sand mixtures of the Saladoid material and those of the late Ostionoid material. Within the less common nonplastic category (quartz/feldspar), there was clear distinction between the Saladoid and Chican Ostionoid assemblages. Also the Tutu late Saladoid nonplastic categories, which had correlated excellently with vessel function, correlated extremely well with the ICP data. These findings can be viewed as evidence for a distinct paste recipe for fineware. The Chican Ostionoid samples showed nearly as much clustering in the chemical data, suggesting paste recipes that are indicated by the visible nonplastic inclusions. In contrast, the early Saladoid sample lacked strong clustering of sherds in the ICP results and had no correlation with vessel types, which coincides with the observed continuum-like nature of heterogeneity within the visible nonplastics of that assemblage.

Discussion

The kinds of analyses described above have the potential to complement each other but would be most effective at that if studies were designed to take full advantage of interrelated information. This is increased if the same sets of samples are used for different kinds of analyses, or if at least the selection criteria take into account the results of other studies. Low-magnification observations can provide a classificatory foundation for large samples by means of relatively inexpensive, low-tech methods. Paste attribute types provide a basis upon which to interpret high-tech paste analyses and the clustering of other ceramic variables.
Petrography improves the identification of nonplastic grains and provides a basis for identifying geologic sources, even with small sample sets. If petrographically identified samples are linked to visual paste types determined for large sample sets, the detailed identifications have a much wider application. Compositional studies of ceramic clays have complemented petrographic studies in corroborating the use of local materials. It seems, though, that the results from different physical/chemical studies are difficult to translate from one to the other, without a shared basis in vessel or paste types. In general, the results of any of these analytical methods are not directly applicable to broad research questions but rather must be interpreted with reference to other factors.

The potential for interpretation of any method’s results is determined by the selection of samples. In that regard, certain conclusions can be drawn from the USVI pre-Columbian paste analyses accomplished to date. First, significant interpretations are facilitated if ceramic analysis is applied to representatives of comparable, defined assemblages such as those that represent one local culture at one time period. Second, the nature of the sample components is a key determinant. Studies in which the sample components are sherds without vessel identification are applicable to cultural typology by demonstrating chronological and/or regional similarities and differences in sherd traits. If, however, the study components are vessels as functional artifacts (i.e., sherds representing identified vessels), the results may be applicable to questions of social variability such as intra- and inter-site patterns. This approach is relevant for many current lines of research. Whether ceramic analysis is focused on paste or other variables, it ultimately will be advanced by replacing the study of sherds with the study
of functional artifacts (e.g., Harris 1995). Third, the interpretation of paste analyses is able to go farther if other ceramic variables are addressed. When multiple factors--such as paste types, vessel type or function, and other vessel traits of formation and finish--are examined not individually but with regard to patterned co-occurrence, the interrelationship of those factors may be shown.

For the studies in which the author has been involved, the most useful results have emerged when vessel type and function information could be incorporated. Clearly, vessel classes add an essential parameter for understanding ware types. The Tutu site ICP chemical study yielded the most productive results in terms of assemblage comparisons because it encompassed multiple factors: chemical composition correlated with visual paste traits and other vessel variables, as well as temporal period. For the four Tutu assemblages included in the study, the data show more Saladoid-to-Ostionoid continuity in utilitarian ware (cooking/domestic vessels) than in fine ware (serving/ritual vessels). That conclusion is consistent with hypotheses of cultural and ethnic continuity during a time of socio-political change. The ICP study also produced interesting preliminary results suggesting that inter-site correlations will be productive and perhaps distinctive for different time periods. These are issues of broad range that actually can be addressed through detailed paste analyses designed within appropriate frameworks.

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Table 1. Temper material and size in vessel types of the terminal Saladoid assemblage (Assemblage 3) from the Tutu site.

<table>
<thead>
<tr>
<th>Vessel Types</th>
<th>N</th>
<th>Primary nonplastic material</th>
<th>Grain size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Igneous sand</td>
<td>Quartz/feldspar</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Griddle, plain</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>with red slip/paint</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Large, simple bowl</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Composite vessel, medium to large</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Hammock/navicular vessel with handle</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Jar for liquids</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Shallow/med. bowl</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>plain</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>with red paint</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Rim point</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total sample:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sherd-units&lt;sup&gt;1&lt;/sup&gt;</td>
<td>117</td>
<td>80</td>
<td>30</td>
</tr>
<tr>
<td>decorated sherds</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

1. Sherd-units count groups of joining sherds as one.
Finding the Lost Ceiba Sites: Relocating and Testing of Ceramic-Age Sites Recorded by Irving Rouse and Michael Woods in the Cano del Indio, Eastern Puerto Rico

by

Timothy R. Sara and Lisabeth A. Carlson
Southeastern Archeological Research, Inc.

Abstract
Archaeological fieldwork conducted in early 2007 by Southeastern Archaeological Research, Inc. focused on relocating and testing a series of five late Ceramic-Age sites located around the Caño del Indio, a small inlet located on the Ensenada Honda in Ceiba, eastern Puerto Rico. Originally recorded by Irving Rouse in 1936 and Michael Woods in 1977, the sites were reported to include both ceramic scatters located along the mangroves fringes surrounding the inlet, as well as shell middens found on the summit and slopes of low coastal hills overlooking the inlet. The overall objective of the work was to determine the local and regional significance and research potential of each site prior to transfer of land from federal to private ownership. Preliminary findings indicate the ceramic scatters along mangrove fringe consisted of limited activity areas, likely associated with the manufacture of pottery and/or extraction of resources, while the surrounding hilltops were used for habitation and settlement-related activities.
INTRODUCTION

In March and April of this year archaeological investigations were conducted by Southeastern Archaeological Research, Inc. on behalf of the U.S. Navy and Government of Puerto Rico on a series of six Precolumbian sites located in the municipality of Ceiba in eastern Puerto Rico. The work was conducted in order to resolve identification and location problems and to determine their historical significance and research value prior to transfer of lands administered by the U.S. Navy to private ownership. The six sites had been previously recorded in 1936 and 1977, and included five ceramic scatters and one petroglyph site, all located in close proximity on landforms surrounding the Caño de los Indios, a tidal inlet located on the Ensenada Honda at Naval Station Roosevelt Roads.

BACKGROUND

Four of the sites (Ceiba 1, 3, 5 and 6) had been recorded by Irving Rouse during his Scientific Survey of Puerto Rico and the Virgin Islands in 1936, several years prior to construction of the naval base. The other two sites (Ceiba 9 and 11) were recorded in 1977 by Michael Woods during an independent investigation of the inlet.

During his 1936 trip to eastern Puerto Rico, Rouse was made aware of Indian relics in the Ensenada Honda area from local informants as well the namesake of the inlet (Cano de los Indios), and from a report from the French ethnologist Alphonse Pinart who had visited Ceiba in 1888-89 recording petroglyphs in the inlet area. During Rouse’s visit, he recorded six sites on
landforms surrounding the inlet, including three “campsites” (Ceiba 1, 5, 6), one “village” (Ceiba 2), and two petroglyphs (Ceiba 3 and 4). Rouse conducted limited excavations on two of the sites – Ceiba 1 and 2.

At Ceiba 2 - his “village” site - located near the mouth of the inlet, Rouse identified a dense concentration of ceramics and shell on a small hill. Within site of the hill were the two petroglyphs, both situated on prominent rocks along the shoreline and seemingly marking the entrance to the inlet. At Ceiba 2, he excavated two large pits, recovering several hundred Santa Elena style ceramic sherds, with smaller representations of Esperanza and Cuevas. Ceramics were described as both open and constricted bowls. Rouse also recovered clay figurines and disks, stone hammers and polishers, a bone pick and spatula, shell celts and chisels, in addition to bird, fish, hutia, manatee and turtle bone. This site was not reinvestigated during the present study as it lies within a protected conservation zone.

Rouse found Ceiba 3 – one of the two petroglyphs - on the northern side of the inlet. The image consists of two prominent figures and several smaller faces on a flat vertical face of a large boulder facing the inlet. Rouse described the lines of the pictograph as the clearest he had ever seen. The other petroglyph site - Ceiba 4 was identified on the opposite side of the inlet and consists of two images including a face with six lines radiating from the chin etched on the vertical face of a large boulder. It faces directly east toward Ceiba 2 - the village site - and directly south of Ceiba 3. Of the two petroglyphs, only site Ceiba 3 was revisited during the present study which, time permitting, I will talk briefly about at the end of the presentation.
Ceiba 1 was described by Rouse as one of three “campsites” in the inlet area—the other two being Ceiba 5 and Ceiba 6. At Ceiba 1, Rouse found a midden in a small roadcut through a shell heap revealing deposits of worked shell. He measured the deposit in a 10-m diameter area but established no definite boundaries. He excavated a trench recovering stone chips, shell tips, blunted clam shells, pieces of coral, as well as fish, hutia, and manatee bones. Due to the absence of ceramics, he speculated the deposit was attributed to the Preceramic period. Rouse conducted no subsurface investigation at Ceiba 5 and 6 - his other two “campsites”.

From 1936 onward, no further investigation of the Ceiba sites was conducted until 1977 when amateur archaeologist Michael Woods conducted an independent investigation of the inlet. Woods rediscovered several of Rouse’s original site locations and recorded two additional sites – Ceiba 9 and Ceiba 11 on other landforms around the inlet.

Woods reported Ceiba 9 as a scatter of ceramics on a hillslope on the eastern side of the inlet and Ceiba 11 as a scatter of ceramics on the eastern and western slopes of a small knoll on the western side. Woods also found a long scatter of ceramics along a trench at the edge of the inlet. There he excavated a 1-x-2-m pit recovered more than 600 ceramics from what turned out to be Ceiba 5. However, Woods made no professional report of his findings and the limited information is based on a letter summary of his work.

In 1983, during the Navy’s preparation of a Cultural Resource Management plan for the base, Carmine Tronolone and Michael Cinquino working for Ecology and Environment Inc., visited the inlet attempting to relocate the Rouse and Woods sites. Finding Ceiba 9, they recorded
numerous amounts of eroded but stylistically undifferentiated ceramics within a 20-x-30-m area at the base of the hillock along the former inlet shoreline. In 2004, I relocated the site and expanded its boundaries to 65-x-30 m based on surface observations.

Tronolone and Cinquino also relocated Woods’ site Ceiba 11 on the opposite side of the inlet observing ceramics and shell on ground surface within a 50-x-50-m area. They excavated two small pits and encountered intact midden deposits, recovering numerous ceramics, shell, coral and bone. During that time, attempts were also made to relocate Rouse’s sites Ceiba 5 and 6 but to no avail.

In 1981, the Navy requested an archaeological investigation on a small hillock west of the inlet prior to construction of a Navy Lodge. This work resulted in the discovery of a small habitation site – named Ceiba 10 - that was subject to data recovery excavation in 1988 by Miguel Rodriguez and Virginia Rivera and resulted in the identification of house structures, several burials, and refuse deposits. Based on the predominance of Esperanza and Chicoid ceramics the occupation was dated from the 12th to 15th centuries AD. After excavation, the site was completely removed from construction of the Lodge.

**PROJECT GOALS**

The goals of the current study were to:

1). Relocate, determine boundaries, and evaluate three of the four ceramic sites originally recorded by Rouse in 1936 (Ceiba 1, 5, and 6). (Ceiba 2 protected in conservation zone).
2) relocate, determine boundaries, and evaluate significance of sites Ceiba 9 and 11 recorded by M. Woods in 1977; and

3) Evaluate the topographic and geologic setting of the Ceiba 3 petroglyph site which had been recorded by Rouse. For the latter task SEARCH was assisted by Dr. Jeffry Walker.

These goals were met with a combination of surface surveys, shovel testing and unit excavation.

**IRVING ROUSE SITES (CEIBA 1, 5, AND 6)**

Using Rouse’s original field notes, maps, and photos obtained from the Yale Peabody Museum, two of his three original “camp sites” were relocated (Ceiba 1 and Ceiba 5). Relocating the third site – Ceiba 6 - was problematic and, as I will mention later, the authors believe it actually corresponds to site Ceiba 10 excavated in 1988 at the Navy Lodge.

**Ceiba 1**

Ceiba 1 was originally described by Rouse as a 10-x-10 m shell midden of possible Archaic origin. The reported site area is now located within a complex of small apartment buildings adjacent to mangrove that occupies the inlet. During our investigation, 84 shovel tests identified remnants of the original shell midden as well as two ceramic clusters located at the mangrove fringe. Midden remnants were found in discontinuous pockets beneath 50 to 100 cm of very
compact landscaping fill at varying depths ranging between 70 and 130 cmbs. However, it was clear that past construction and landscaping activities had completely disturbed the original context of the midden.

The two nearby ceramic clusters were found within landscaping and construction spoil piles at the edge of the mangrove. All cultural deposits were mixed with modern materials. The shell midden described by Rouse was likely originally associated with these nearby ceramic deposits, however, none of which were found in their original context.

**Ceiba 5**

Ceiba 5 was originally recorded by Rouse as a scatter of weathered plain sherds within a 15-x-5-m area, although Woods found ceramics along a 200-m-long post-1936 ditch following the inlet shoreline. During our study, surface finds were confirmed along the ditch and intact subsurface deposits confirmed, although shallow. Twenty-five shovel tests and two 1-x-2-m test units were excavated recovering almost 900 sherds of only plain, utilitarian pottery. What is unusual is that no buréns (griddles) were found, nor bone, shell, lithics, or charcoal, which suggests Ceiba 5 was a special purpose site where no cooking or food preparation was done.

**Ceiba 6**

As indicated, relocating Ceiba 6 was problematic. Following an extensive field survey and careful examination of Rouse’s original field notes, we concluded that Ceiba 6 corresponds to the location of Ceiba 10. This conclusion is based on the detailed map produced by Rouse, who describes finding the site 914 m N10W” from the 90° turn in the 1936 road. Measuring off the
1936 aerial photo, this direction and distance leads exactly to the hill where the Navy Lodge (Ceiba 10) is located. As indicated, the hill containing Ceiba 10 was excavated in 1988 and the entire hill was then reshaped, scraped, and filled. No archaeological deposits remain at this site.

New Site RR-SCH-1

During the search for Ceiba 6, a newly recorded ceramic site - RR-SCH-1 – was found at the opposite side of the ridge from Ceiba 5, near the mangrove edge and small pond. Ceramics were visible on the surface along the mangrove edge for 150 m. A total of 17 shovel tests encountered small amounts of pottery although one test produced nearly 100 sherds. Two 1-x-2 m excavation units produced approximately 600 sherds within 40-cm thick deposits.

The cultural deposit and location of RR-SCH-1 mirror those at Ceiba 5—a pottery-only scatter near the mangrove edge, adjacent to water and clay sources. Again, no griddle sherds, features, or decorated pottery were found and no bone, shell, lithics or charcoal are associated with the deposit, strongly suggesting this is not a habitation site as no food was either prepared or discarded.

MICHAEL WOODS SITES – CEIBA 9 AND 11

Ceiba 9

Ceiba 9, discovered by Woods in 1977, is on the western slope of a knoll located along the inlet. During our study, 48 shovel tests and two 1-x-2-m test units excavated at the site revealed dense ceramic deposits with one shovel test containing as many as 85 sherds. In total, 3,120 sherds
were recovered – all plain utilitarian ware. Of these, 157 are rims, 37 are bases and three are handles or lugs. Like Ceiba 5 and RR-SCH-1, Ceiba 9 contained no features, griddle sherds, stone, shell or bone tools.

Soil samples collected for petrographic studies may reveal the origin of the clays used to manufacture the pottery from these ceramic-only sites, and whether they were manufactured on-site. During analysis, a close inspection of sherds may reveal “waster sherds”, a byproduct of the firing process.

As coined by Miguel Rodriguez at our 2003 Santo Domingo meeting, these “Yacimientos Sin Burenes” remain a phenomenon which requires careful study. The function of these plain ceramic only sites has not been adequately explained to date although this type of site has been the subject of papers by both Rodríguez (2003) and Roe (2000). Roe (2000) suggested that these are ceramic production areas.

The utilitarian function of the ceramics suggests however alternative interpretations, perhaps water collection sites or locales where boats were regularly landed and broken vessels accumulated. Each site is in a water edge location near large boulders which would have been ideal for landing canoes. These sites are relatively common in this area and hopefully our current investigation and analysis of site attributes—topography, sedimentation, vessel morphology, paste constituents—will allow us to decipher their function and relation - if any – to the surrounding hilltop habitation sites.
The only definite habitation site identified and investigated during this study was Ceiba 11, located on a flat saddle at the apex of a ridge that lines the north side of the Caño de los Indios. During our study, 58 shovel tests and seven test units were excavated on the ridgetop and adjacent slopes. Although artifacts had eroded downslope in all directions, testing found most of the midden on the ridgetop.

The western edge of the site contains intact Precolumbian shell midden that has been deposited slightly upslope against large boulder outcrops. Because of its proximity to these rocks, the midden remained undisturbed by later farming practices. The midden contains evidence of site activities (sequences of shell dumping episodes, and two small posts) and contains a wide variety of shell and animal species that inform not only subsistence but past environmental conditions.

Decorative items such as an incised and shaped turtle shell and olive shell beads, and fishing items such as perforated shells were recovered, along with two human teeth. The ceramic style is predominantly Esperanza as with Ceiba 10 (Navy Lodge) and a significant amount of decorated pottery occurs in this midden. Also recovered was a large triton-trumpet, as well as clam shell tools, shell picks a conch celt, as well as a large trumpet. A very dense sample of fine shell and bone fragments was recovered from a column sample.

Testing of the midden found that this portion of the site has a good deal of integrity and contains data classes and features that can answer research questions regarding site formation and environmental exploitation during the Ceramic period in eastern Puerto Rico. Shortly we will
begin further excavations into the shell midden. These studies will address formation of shell middens, which has not previously been studied in this region of Puerto Rico. A larger sample from this site will provide 1) charcoal to radiocarbon date the deposits; 2) a large sample of decorated pottery which can help refine the later pottery styles for this region; 3) a sample of shell fishing implements; 4) faunal data to interpret surrounding habitat exploitation; and 5) data to address subsistence questions such as why certain species of shellfish were harvested at sea and carried to this hilltop for processing.

PETROGLYPH SITE – Ceiba 3 (time to talk?)

As indicated, the Ceiba 3 petroglyph – examined by Jeff Walker consists of three figures etched into a large standing boulder face, which marks the northern entry point into the Caños de los Indios. The figures face southeast and look across the water toward the Taíno habitation site of Ceiba 2 and the other petroglyph Ceiba 4.

Jeff and the Team’s work included 1) producing a mylar tracing of the image to provide a permanent to-scale record; 2) photo-documentation; 3) analysis of the current condition of the site, including noting defoliation of the rock surface and any additional later etchings or graffiti; and 4) investigation of the geological and geographical setting to determine if the base rock had ever been moved. Thus far, the findings indicated that the petroglyph rock is clearly in primary context and the location of the surrounding rocks and the angle of the pecking and grinding of the image suggest where the artist stood to make the image. I’m sure we’ll be hearing from Jeff at some point on his overall analysis.
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Sara, Timothy, R, and S. McClintock

Tronolone, C.A. and M.A. Cinquino

Woods, Michael E.
Puzzling Piles: Elenan Teepee Firing and Satellite Site Ceramic Production in Puerto Rico

by

Dr. Peter G. Roe and Juan González Colón, Ph.D
University of Delaware and Archaeologists & Associates

Abstract
Las Yucas (LO-26), Loiza, a small northeastern coastal Puerto Rican site, yielded an Elenan Ostionoid ceramic component. Like a number of other “anomalous” regional sites (LO-4-6, 8-10), it did not focus on the extraction of maritime (fish and shellfish) resources, nor, due to the absence of griddles, on manioc horticulture. Yet it was part of a regional explosion of sites during Period III. A satellite community for the large and contemporaneous site of Vacía Talega (LO-13), it revealed numerous piles of local limestone, placed too haphazardly for house post supports. Many boulders within them showed exposure to fire, with large rim sherds placed between them like “chinking devices” to level large inverted vessels. Since these are common traits for teepee firings in the Amazon, we hypothesize that the number of these piles suggests that LO-26 functioned as a ceramic production and firing station, removing this smoky and space-intensive activity from the central residential site while contributing its pottery production to it in exchange for manioc cakes and other supplemental subsistence goods.

Resumen
El sitio de las Yucas (LO-26), Loiza, es un residuario pequeño ubicado en la región costeña nord-este de Puerto Rico. Se caracteriza por un componente Elenoeide (Elenan Ostionoide). Como otros sitios cercanos, anómalos (LO-4, 5, 6, 8-10), no se enfocaba sobre la extracción de moluscos y peces. Ni tampoco había evidencia de burénes, indicando la ausencia de horticultura de yuca. Pero el sitio fué parte de una explosión regional de sitios durante Periodo III. Una comunidad satélite del sitio grande residential, Vacía Talega (LO-13), se revelaba numerosos montículos pequeños de piedras calizas, ubicadas sin patrón (que no correspondían nada a los soportes de sacos de casa). Se encontraba adentro de algunos de estos montículos tiestos de cerámica grande. Según analogía etnográfica, estos pedazos podían servir para nivelar vasijas grandes, boca abajo, para su cocción. Todos estos restos son semejantes al patrón de cocinar cerámica en manera de “teepee,” de poner fuego sobre una vasija amontado con leña en patrón cónico en aire libre. Nuestro hipótesis es que el sitio, como los sitios cercanos, funcionaban como sitios especialistas de preparar y cocinar vasijas por el sitio primata como parte del “complejo de fiesta” de éste época de transición hasta la complejidad social del cacicazgo en la isla.

Résumé
On a découvert à Las Yucas (LO-26), Loiza, un petit site au nord-est de la côte Puerto-Ricaine, de nombreuses piles de roches calcaires qui montraient des expositions au feu, ainsi
que d'important fragments de poterie placés entre ces piles. En comparant le site à la méthode de feux en pyramide utilisée en Amazonie, nous avons émis l'hypothèse qu'il a servit comme une station de production et de cuisson de la céramique.
Introduction: Setting the Stage

The small Elenan site of Las Yucas, Loiza (LO-26), on the northeastern coast of Puerto Rico (Figure 1a) was excavated by Juan González Colón, M.A., in 1999 as part of a Phase 2 study for the Jardines de Loiza Apartment Complex Project (González Colón 2002). It affords a significant opportunity to study a little-known era in Greater Antillean prehistory, the Pre-Taíno period of the Elenan Ostionoid occupation of eastern Puerto Rico.

The analysis of the Sitio de las Yucas assemblage suggests a function for the site which combines models of both changing gender roles in antiquity as well as altering patterns of residential and craft specialization within the context of increasing local social stratification. Based on the unique assemblage of artifacts and features at this site, and their similarities with other neighboring "satellite" hamlets like Mediania Alta (Oliver 1990) vis-à-vis the large "central place" villages of Loiza (Figure 1b), we suggest a specific function for this small residential site. It may have acted as a specialized ceramic production hamlet, locked in the exchange of pottery for foodstuffs (both processed shellfish and prepared bitter manioc cakes) with the larger villages of Hacienda Grande and Vacia Talega. This accounts for both the diminished shellfish remains at the site, despite its close proximity to the coast, as well as the paucity of manioc griddle (búrenes) fragments in its assemblage.

This time of relative "ceramic devolution" (Roe 1995) is sandwiched between two periods of ceramic complexity on the island: the early Saladoid apogee of polychrome, pottery (Roe 1989), and the late Taíno period of incision-modeling elaboration (Roe 2004). Little is known about the Elenan phase of comparative ceramic simplicity. Not many whole pots have survived and even fewer still have been accurately studied or drawn. Yet Elenan pottery shows
connections with both the antecedent Saladoid series and the subsequent, descendant Chican Ostionoid, supporting Rouse's (1992) thesis of in-situ evolution.

The Elenan Ostionoid diverged from the Ostionan pattern during Period IIIa (600-900 A.D.) and solidified as a style in Period IIIb (900-1200 A.D.), the dating of the material at the *Jardines de Loiza* site, before losing its cultural integrity during the Chican Ostionoid of Period IVa (1200-1492). Instead of becoming even more complex than the precursor Saladoid ceramics, this Pre-Taíno pottery paradoxically "devolves" (less evident in central sites like *Vacia Talega* than on its periphery). It got progressively simpler than its Saladoid heritage, losing the painted designs and the complex carinated and restricted battery of numerous Saladoid vessel shapes. Only an occasionally inflected vessel shape (a gentle vessel corner point) and brown or red slip remained, as well as simple spirals painted in red slip-paint on a plain buff surface of the earliest Elenan (Monserratean) materials.

After this last “Epi-Saladoid” painting / smudging, surface decoration constricted to just plastic surface treatments in late Elenan Ostionoid pottery, especially vestigial appliqué, non-functional, "C"-shaped solid appliqué handles, with vertical incised lines between them (Figure 1c-j), or on top of other *faux*-handles (functioning as tab handles), or vertical decorative tabs with puctations (Figure 2c). This pottery is characterized by “primitive sphericity” (2a-b), with heavy, frequently detached terminal coils (2d). Shallow open bowls (2e-f) and large hammock-shaped vessels nearly exhaust the vessel forms.

Instead of the Saladoid realistic and stylized bird and animal zoomorphic *adorno* handles, often identifiable down to specific mainland species, Elenan retained dual facing *adornos*, but morphed them into just "generic beasties." Highly variable, schematic and
fantastic, they have been variously described as "bats," "monkeys," "frogs" or "lizards," usually mounted below the mildly-restricted rims, looking inward. They are appliquéd onto the surface of the pot, modeled, and then transversely impressed or punctated (Figure 3). These paired *adornos* look backwards to Saladoid antecedents, but also gaze forward to the early Esperanzan of the Chican Ostionoid series. These Elenan reptilian critters (Figure 3a) peer from either side into the restricted orifice of the inflected bowls, while gripping the rim with splayed fingers. One LO-26 house lizard (3c) has two outward and upwardly curved limbs with deep impressions executed when the appliqué was very wet and plastic, producing a "nodal" wavy pattern identical to the non-figural appliquéd semi-circular fillets that persists in the very late Elenan component at the *Aguilta* site on the south coast (González Colón 1997). In turn, they reveal a limb treatment (appliquéd and impressed fillets) that encircle very early Esperanzan vessels (Ortíz Montañez 1993, Apéndice C: 22).

All these appliquéd figures lack the precision of execution that characterized Saladoid lugs. They also are plain, having lost the paint of the earlier *adornos*. Thus, despite their inventiveness, they reveal a continuous process of ceramic devolution in surface decoration. Yet these pots beg the question as to why such devolution occurred?

Perhaps it derives, in part, from a techno-social phenomenon, the inability of earthenware pottery to carry invidious distinctions (Miller 1985). As the material culture shifted from the Saladoid “personal presentation” tribal mode to the “public power” of the Taíno, monumental, long-distance visible media appeared, the locus of “art” shifting from ceramics to rock art and ball parks (Roe 1995), both suitable for expressing stratification.
Paradoxically, the very simplification of this pottery may also reflect the increasing subsistence and social success of the population that produced it! If the early Saladoid peoples, with their utilization of the land crab, looked more toward terrestrial resources, the Elenan Ostionoids, a "shellfish culture," looked more toward the ocean. This is where the protein is vis-à-vis the impoverished terrestrial Antillean faunas. The utilization of shellfish, coupled with fishing (both of freshwater fish via weirs, such as at the site of Maisabel Playa, and the hunting of saltwater fish, reptiles and mammals) indicated a true Ostionan insular adaptation, a more productive strategy than the earlier Saladoid one.

Such a localized adaptation (people slowly realizing they were, indeed, living on islands), and the apparent vanquishing or acculturation of the indigenous archaic peoples, allowed a demographic explosion that permitted the Amerindians to expand inland up the river drainages into the interior, going beyond the terminal and epi-Saladoid penetration of the highlands. In coastal valleys where we have adequate site survey, such as Valle del Toa of the Río La Plata, the locus of the Santa Elena type site, a "bipolar" movement simultaneously expands along the modern shoreline on the one hand (Saladoid sites are always some distance back from the coast on high ground) and up the river valleys with their fertile floodplains of easily cultivated and well-drained new alluvium on the other. The Santa Elena site is one such inland location, while sites such as Ojo del Buey, Punta Corozo or Punta Mameyes are examples of the coastal ones. It is tempting to map this double-pronged site movement pattern onto inland horticultural and coastal fishing stations.

Not only do the sites become much more numerous during the Elenan period, but the linear space between them drops. In contrast, the preceding Saladoid sites were huge, but
situated far apart, as befitted pioneering settlements in a hostile landscape. In addition to this multiplication of sites and bipolar movement of occupation during the Ostionoid period, there is also the first appearance of site hierarchy. Big sites tend to be surrounded by smaller, satellite sites (Ortíz Montañez 1993: 40). This pattern suggests sites locked together in a densely populated landscape of mutually-supportive, and functionally complimentary, settlements. Coastal sites produced maritime protein resources, perhaps trading them inland, just as inland sites sent cultivated foods rich in carbohydrates, such as manioc, to the coast. This pattern of exchange apparently continued into the Taíno period.

While this pattern explains the small size of the Sitio de las Yucas LO-26 site, it cannot account for its lack of shellfish remains (as well as its scarcity of griddles for bitter manioc cakes). Maybe this small site was engaged in some other form of activity that has remained archaeologically invisible. Miguel Rodríguez López, M.A., (Personal Communication, 2000) has also excavated several sites in the vicinity of the Las Yucas site which mirror its small size and "incomplete" material cultural assemblage. A picture of "central places" and a supporting "hinterland" of smaller, surrounding and dependent sites emerges.

The Matter of Gender, A Scenario for Ceramic Devolution:

Since men tend to be associated cross-culturally with “reductive” work in obdurate materials like wood and stone, and women with “constructive” work in soft materials like clay, textiles and basketry, the material evidence argues that masculine conceived and executed art (stone sculpture and monumental architecture) was becoming more important, and feminine art (ceramics) less so during the Elenan period. Pottery may have been demoted to mere craft to both broadcast the power of male-defined groups, and their masculine leaders, as well as to put
invited guests in their social debt within the context of the feast. Feasts are the first step in turning strangers into allies among cognate lowland Amerindians like the fishing and sweet manioc-based Shipibo (DeBoer and Roe 1998).

However, bitter manioc horticulture of the sort found in the Guianas and the Caribbean supplies a more suitable cultivar for this feasting complex than sweet manioc since it allows for the creation of a storable food surplus. Its unleavened flat, circular pancake-like loaves are resistant to mold and insect predation due to residual prussic acid content. Their pure carbohydrate content compliments the protein-rich meat and vegetable sauces in the pepper pot, yielding a complete meal. Such resources can be amassed and expended in attracting and indebting guests. There is only one obstacle to becoming a "Big Man" via a series of ever more successful and encompassing feasts where the "bait" of the feast is a mound of bitter manioc cakes and huge pots full of stews or vats of beer (the latter's absence in the Antilles is where island Arawaks differed from their ancestors). That impediment is the very element making the whole feasting complex possible, women.

Unlike sweet manioc production, which yields mere perishable pot vegetables, but has fairly low labor demands, and is therefore a staple usually associated with tribal societies, bitter manioc bread (like comparable corn meal) requires very heavy labor inputs on the part of women. Thus it is associated with both complex tribes and chiefdoms in the Greater Antilles, and perhaps even mini-states like the Tapajós on the Lower Amazon. Not only must increasing acreage of garden plots, the conucos, be planted and cultivated (a feminine task and domain after the men have cut down the trees and mounded up the soil), but countless weighty loads of produce (heavy manioc tubers) must be carried by women to the distant village on tumpline-
equipped burden baskets (woven by the women). The senior author’s ethnographic observations among the related Cariban Waiwai of Guyana, show the enormous loads carried by small, struggling females. To add insult to injury, these women must also carry the added burdens of piles of firewood and their own young children perched on the top of such toweringly-full baskets. Then, arriving in the village, the *yuca* has to be off-loaded and laboriously peeled, and scraped, often into old canoes, by teams of graterboard-equipped women. The women themselves have produced the flint grater teeth set into the faces of these boards (in ornamental patterns) by the only feminine method of stone-working, bipolar percussion. Thus they "arm," by providing the "teeth," the men's carved *guayos*, or graterboards. The women complete this complementary pattern of "gender alternation" in craft production by sealing the teeth with wax. Teams of sweating women employ these valued and traded boards to shred the tubers and, in the process, scratch their knuckles and tire their arms in an endless bobbing symphony of scrapping tubers, one in each hand, a grueling back-and-forward, hunched-over stretch.

This labor produces a sodden mass of mash and pools of lethal prussic acid in the bottom of the old canoe, or trough, which must be gathered (the liquid saved as fish poison) and stuffed into the *sebucán*, or manioc squeezer, (woven by men), along with a leaf and a gourd stopper. Then the women sit on the fulcrum of the manioc press, the framework that suspends it having been erected by men, while more prussic acid bubbles and drips from the skin of the diagonal weave of the suspended manioc tube, now lengthened and narrowed by the women's weight. Then the women unhook the *sebucán*, mythically an artifactual “anaconda,” and pop (vomit) the dried manioc flour out of the basket's narrow mouth onto a flat basket (woven by men and covered in the serpent's rectilinear hooked scale twill-weave patterns). Then the women must
sieve and sift the flour to isolate the finer grains and, having previously made the *burén*, or ceramic griddle itself, bake the bread on it. Often they drizzle expressed starch and other ingredients over the toasting cakes to make the presentation more elaborate, the cakes tastier. Then the women dry the flat cakes on storage racks in the sun or hurl them like giant frisbees onto the thatched roofs of the residences, there to sun-dry during the day, transferring them to hanging storage racks under the thatch at night. Finally, the women cook with the bread by adding the vegetable pepper sauces and/or soups or gumbos they have cooked, filled with men’s meat.

All of this labor, in its multiple stages, represents uncounted hours of drudgery for women, already burdened with child rearing and enculturation, in a tropical lifestyle that otherwise (particularly for men) requires but a few hours of work (usually less than three per day) for their part of the subsistence quest. This is decidedly "unfair" for women.

Moreover, the male role in subsistence is further diminished on islands, like those in the Caribbean, by the restricted fauna. With the consequent reduced role of terrestrial hunting (the traditional male role of aquatic hunting = fishing remaining unchanged--albeit with a refocus from riverine to the ocean), the burden on the women increases. Even shellfish gathering was probably assigned to women (due to the inertness of the quarry, easily plucked and pitched into burden baskets like so much "aquatic fruit"), leaving only work in obdurate materials (stone, wood, shell, bone), and fishing, assigned to men. Thus the men were free to funnel most of their time and effort into religion and politics.

Into this already unbalanced equation one adds ambitious senior men embarking on competitive political careers of large-scale and frequent feasts. They push their women to
produce yet more mountains of manioc cakes and vats of sauces, far beyond the normal subsistence requirements of their own immediate families and kin. The laboring women resent this imposition, for the feasts bring them little but added work. There have actually been recorded "rebellions" on the part of women who have refused to prepare and cook the required surplus manioc in Amazonia! Yet men try to intimidate the women through masked ritual, thus continuing to extract mounds of processed carbohydrates from them.

A tactical masculine social response to the reluctance of their wives to devote more hours to manioc is to recruit additional feminine labor to help them via polygyny. As in Melanesia, an pattern of élite plural marriages emerges where the senior men, successful in previous feasts and subsequent marital alliances, build production units of co-wives and their elder, as-yet unmarried daughters, all laboring together for yet larger and larger feasts. Bigger feasts confer more prestige, and attract more co-wives via the machinations of the young girl’s fathers searching for able and/or powerful senior sons-in-law. Multiple wives (often sisters to reduce polygynal friction), also confers additional prestige on the men who can gather, hold and control them, and we are off and running on a positive-feedback trajectory of increasing authority which can ultimately be cemented by the descent groups the senior males become the leaders of (whether directly in patrilineal or indirectly in matrilineal lineages) into real patterns of differential political rank. Certain of these corporate groups begin to outrank others with two-tier chiefly social stratification resulting.

What happens to pottery in all this? The first casualty is time, both to make intricate pottery and to teach elaborate ceramic skills to resident daughters. Men's economic usurpation of women's time and effort robs both of these dimensions from their ceramic production cycle.
Designs and vessel shapes simplify to the reduced set needed only for the feasting complex, the pots gaining in size to accommodate the increasingly prodigious quantities of gruel needed for the feasts. Meanwhile, the male arts of public and long-distance visible stone and woodwork proliferate and become larger and more intricate. Women's vessel sizes polarize into smaller serving vessels for domestic consumption and huge cooking and serving pots suitable for serving many guests. That is precisely the picture one gets from analyzing Elenan ceramic assemblages like those from *Sitio de las Yucas*. Huge pots, more than 50 cms. diameter and 3-4 cms. in width, massively reinforced at the rim in a futile effort to hold the weight of manioc gruel are Elenan hallmarks.

But where is female agency in this exclusively political-economic argument? Are women merely oppressed and passive "victims," or are they assertive actors interacting with men during this exploitative process. The simple economics of more food production = less time to do art cannot be the whole story? Lowland South Amerindian ethnography is replete with examples of stereotyped ceremonial "battles" between the sexes where the putatively downtrodden women actively contest and reject the hegemonic claims of their men, sometimes in an intricate choreography of alternating periods of dominance. Certainly there were similar venues for these clashes among the Taíno and Pre-Taíno: the ball game and the *areyto*. Unfortunately, the media that would show continued feminine investment, such as body paint, jewelry and textiles, are precisely those that do not survive due to preservational bias, so we may never know their potentially subversive perspective.

In the context of masculine political aggrandizement and the appropriation of female labor for their own purposes, the feminine crafts became devalued while the masculine arts were
further emphasized The esteemed (the amount of archaeologically-verifiable reuse and repair alone confirms this) and creative tribal Saladoid ceramics devolved into simplified and more stereotyped Elenan pottery. As their quintessential craft became devalued surely the status of women, particularly in the public arena, also declined. A further reason for the devolution of the pottery and the lower social position of women might have been the entry (perhaps as “captured brides”-there is evidence for war trophies into Elenan times at the site of Collores) of the remaining Archaic hold-outs in the interior of the island into ceramic production via forced acculturation. After all, this was the first time that the coastal Arawakan populations entered *en masse* into the highlands. The pottery skills of such women would not have been high. Lower feminine value may have operated in tandem with decreased skills as the material culture "changed gears" from a pottery-centered art to andro-centric stone and wood carving, the new premier media.

With the control of their production becoming more marked, as much in the manioc processing units as in the potter's work sheds, women may have become more sedentary via matrilocality. In controlling female mobility men could have robbed them of both the increased stimulation of other stylistic exemplars that traveling and interacting produces, and reduced the size and sophistication of their "audience" of pottery consumers, another key variable in stylistic complexity. Whereas before women could look forward to inter-village renown and commissioning with regard to their ceramic production, both judged and stimulated by knowledgeable and critical connoisseurs in the shape of other far-flung female artisans, now they produced only for their immediate family, co-wives and children. Such intimates hardly form a demanding audience, and the resulting simplified crude pottery more than answered their
limited needs. Both factors contributed toward the increasing simplification and stereotyping in pottery vessel shape and surface decoration. There are really just five forms in Elenan pottery, and most of these are actually variants on but a single shape, the round-based open bowl with upper body wall inflection and mildly restricted orifice! Decoration became rarer, often is reduced to just a series of parallel incised lines (the style’s defining attribute), usually between paired, solid, vestigial handles.

Only later, in Chican Ostionoid times, did the pottery once again gain complexity, but never to the level of its Saladoid precursors, being exclusively decorated by plastic techniques. Full-time female specialists directed by men may have produced this complex and subtle art while the bulk of the women became simple consumers, not producers. Because it is a common pattern with increasing stratification, certain masculine artisans probably usurped part of the feminine pottery-producing role. Comparative evidence suggests that this “Masculine appropriation” of feminine tasks may have produced the most "sculptural" class of Taíno ceramics: representational, hollow, detailed human effigy jars.

Yet anyone familiar with the considerable domestic authority and autonomy of Amerindian women knows that they could not have remained passive pawns throughout this aesthetic and technical assault of Elenan Ostionoid times. There were lingering cultural expectations, thanks to "artifactual animism," that vessels should still be effigies, and hence must continue to bear decoration, however restricted in scope or inane in execution. These vestigial decorations provided an abundant, albeit restricted, outlet for continued feminine creativity. The huge private collections of Elenan adornos, or decorative lugs, portraying a
fantastic variety of theriomorphic "critters," each one different from the last, are proof enough of this, as is the variability in the lizards that perch on the *Sitio las Yucas* vessels.

Perhaps the best illustration of feminine inventiveness and play comes in the "multiple-view" manipulation of representational imagery in Elenan pottery modeled and incised ceramic rim lugs and handles. This multiplicity-of-view of Antillean Amerindian style is situated within the larger context of the "dynamic dualism" of prehistoric Caribbean and South Amerindian animistic shamanism (Roe 2004), a dualism so profound that it endures in important "trans-cultural" artifacts of early post-European and African contact.

But maybe not all women in Elenan times engaged in both of their traditional pursuits: food and pottery preparation. Perhaps, instead, some were forced into the specialized production of either processed shellfish for animal protein, the making of mountains of bitter manioc cakes or the manufacture of large quantities of increasingly simplified, yet larger, pottery. Did these two sets of women work at different spatial loci?

A Forest of Stone Piles: Unusual Features at the LO-26 Site

Three anomalous facts about the *Sitio de las Yucas* (LO-26) assemblage may address this question: (1.) despite being only 1 kilometer from the shore, and in spite of the Elenan culture being called one of the "shell cultures" due to its heavy reliance upon shellfish, there are hardly any shell remains in the midden, indicating a lack of active littoral subsistence involvement. The second puzzling element (2.) is that if shellfish collecting is lacking, then so too is the "other half" of the Amerindian "pizza," overt horticultural activity in the form of griddle fragments (*burénes*). Fragments of these platters signal the cultivation of bitter manioc and the production
of manioc bread in other Elenan sites such as *Ojo del Buey* (Ortiz Montañez 1993:132, *Foto* 34, *burén* #778), or at the neighboring large sites of *Hacienda Grande* or *Vacia Talega*. The third (3.) anomaly is the presence of a series of piles (Figure 4a, represented by the triangles) of large soccer ball-sized limestone rocks, apparently hand-carried from the *Cueva María la Cruz* outcrops next to *Hacienda Grande*, some 2 kilometers away (4b). These irregular small boulders clearly did not get to the site by any known geological process since the rest of the substrate is fine sand, not gravel and outwash. Yet these five piles form no obvious spatial pattern, such as corresponding to a structure's outline, and differ in height and number of stones. The standard explanation for these features is that they were wedged into the sides of house posts, yet no post-molds are associated with them. Instead of forming rings around, or inserted into one side of the hole for now-decayed posts, these features have stones heaped in the center. Nor can they be piles of hearth stones as they were not associated with ash lens-depressions or food remains. Yet the geologist Eduardo Questell has determined that micro-cracks and fissures in these rocks are consistent with their exposure to high heat.

During a visit at the site with its excavator, Ing. Juan González Colón, M.A., the senior author recalled practices he had studied among both the Shipibo of the Peruvian jungle (renowned terracotta ceramicists), as well as the Cariban Waiwai of Guyana near the Caribbean. This pattern is used all over the lowlands, particularly for firing very large pots of the sort produced in Elenan times. The practice is to invert the pot (4c, Figure 5a) over a set of big potsherds (usually rim sherds due to their reinforced strength) inserted vertically, with their profiles jammed into the clay of the work area within the plaza (5f, this after firing). This cleared work area is always located downwind and apart from the residential area (5b), due to the smoke
and ash associated with the firing process. The large potsherds elevate the pot’s orifice in areas like the Peruvian montaña where stone is rare. In regions like the Guianas or the Greater Antilles, where rock is plentiful, a pile of small boulders or large rocks takes their place. Such piles look very much like the scattered mounds of stones at this Antillean site. The purpose of these ad-hoc constructions is to raise the vessel off the ground and thus allow convection currents to be drawn into the base of the fire (Figure 4d). The heated air is then forced to rise up through the kiln and jet out the top (the senior author has seen columns of fire licking up 2 or more meters out of the top of such blazing teepees!). Careful firing control insures higher temperatures than ordinary cook-fires (5c-e).

If the shapes of the stones are too irregular to form a level platform to support and fire the pot, large rim sherds are wedged between the uppermost rocks and the vessel's overturned orifice to level it. One such large rim sherd was discovered on top of one of the pile of rocks at the Las Yucas site (Figure 4c). This rim sherd could very well have functioned as an unburnable "wedge" like its South American analogs. The rest of the recorded five piles also had such large sherds within them. This, and the presence of other artifacts from the ceramic manufacturing process, like pebble polishers, suggests that pottery was, indeed, being made and fired at this site, and in some quantity.

Such teepees utilize all of the Indian's encyclopedic knowledge of woods and their burning properties. They begin with the selection of only certain species of hard wood. These kinds of firewood burn slowly, building temperature gradually and in a predictable way. Such split heartwood logs are laid against the side of the inverted pot, resting at their apex on the vessel's shoulder (Figure 5b). As the first fuel, they prevent too high temperatures from being
achieved immediately, thus avoiding trapping the remaining water of crystallization within the ceramics and turning it into steam, which would expand and cause the vessel to blow up in firing. As the firing continues, thin splints of wood like dried cane, which literally explode when placed in contact with the now-roaring fire, are placed radially on the outside of the teepee. This raises the temperature higher and more quickly than ordinary firewood. Now fed by a roaring draft of air being sucked into the raised base of the fire, and jetting out the top, the fire achieves maximum heat. The pot glows cherry red and translucent in the flames. As the temperature drops locally where wood touches the inverted pot, just below the shoulder, incomplete combustion occasionally produces fire-clouding. This is due to the touching of the pot's surface by the angled firewood. Just such fire-clouds have been noted on the appropriate sections of the sub-shoulder region of Sitio de las Yucas sherds. They had, in fact, been fired mouth-down, in an open teepee firing.

Since the firing was above ground a circle of ash did not surround the Loiza features. The firewood was so completely consumed, due to the efficient timing of the firewood types, that little ash was produced. Because the water table in this low-lying part of the site fluctuates, the rising and falling of the ground water has long ago carried off any ash that remained, obliterating firing traces save for the stone towers. Such pot firing would also explain the varying height, number of rocks and erratic placement of each stack. Since firing is an adventitious process, it will only occur when a big pot was being made. Hence, no two firings occurred in the same place. To save effort, the artisan "robbed" stones from one pile and carried them over to a pile currently being built (the heavy stones were only mined from the distant Cueva María la Cruz outcropping a single time; once on-site they were reused, and hence
moved short distances laterally). This, and the micro-cracks on only the uppermost rocks on the largest extant piles, indicates that the remaining piles were just the last (most recent) firing episodes that occurred just before the site was abandoned. The limited amount of refuse recovered from LO-26 indicates that it was not of long duration, nor large in size. The site data is thus congruent with this special purpose.

Spatial data from the placement of these features within the site context also coheres with this functional explanation of the enigmatic rock piles. The excavator discovered a perfect large post-mold in the northeastern part of the site. While he could not follow it out, it is of the size and depth of a major hut support post, and thus probably indicates the sole main residence. Just to the rear of this structure, as is the case in the lowlands, was a band of concentrated refuse (the midden). This was to the rear and down-wind from the hut itself, the "trash-yard" formed by the sherds and refuse swept daily by the family's women from the plaza in front. Beyond that, in the lowest part of the site, further down-wind from the prevailing westerlies, lies the five scattered piles of transported limestone cobbles. These are arranged without order save a certain minimal distance between them (roughly a meter) in precisely the pattern one would predict for a series of separate pot-firing episodes. The heat, smoke and ash would have blown safely away.

Since the pottery densities at the site are not great, limited to the sherds of vessels broken in firing or use (some destined to be reused as wedges in the kilns), a small household is indicated. The rest, if these piles do, indeed, indicate firings, would have been traded to the larger central sites. On her return trip the woman and her daughters would have struggled home under the burden of baskets heavy with shucked shellfish, protected by being wrapped in wet
leaves. These were destined for the pot, consumed with already processed manioc cakes also brought in, as exchange items, from the central primate site.

This symbiotic relationship would explain the ring of similar small sites around the larger ones, each with but a limited faunal and artifactual assemblage, one of which being LO-26, while another would be LO-22, 23. It would also explain the lack of *burenes* at the site (there was no need for them since only processed bread was being imported), as well as the absence of shellfish remains (no shells indicating that the moluscs were being brought in already processed). The larger “primate” sites like *Vacía Talega* would have been filled with teams of women gathering and processing shellfish (hence their numerous shell remains) as well as processing and cooking bitter manioc flour for cakes. The abundance of broken pottery at these sites witness the insatiable demand for large quantities of manufactured pottery (supplied by single-purpose sites like *Las Yucas*) that frequent feasts produces. Moreover, these large sites would not have been plagued with smoking pyres of firing pots, that unpleasant activity being left for households in the peripheral hamlets.

Directing and orchestrating this intricate pattern of regional site specialization would have been the "Big Men" of the incipient chiefdoms in the central places, putting out calls for manufactured pots and other goods from the tributary settlements and inviting them to feasts as well. Site hierarchy, site specialization and an over-all center-periphery settlement pattern thus all argue for such active agents acting as magnets of authority.

An alternate explanation for the lack of *burenes* at these small sites has been offered by Jeffrey B. Walker (Personal Communication, 2006). He suggests that these sites were the loci of impoverished folk who had to subsist on a cycad, *Marungüey (Zamia portoricensis, Zamia*
*pumilia*), as recorded by early chroniclers. It produces an edible root stock “like a potato” that was left to putrefy in water, dried and ground into a flour and then formed into balls and (steamed?), wrapped in leaves like a tamale, albeit a disconcerting black one. This plant abounds on the south coastal highlands, Guayama to Yauco, where it may have been a viable alternative to the local lack of suitable well-drained soils for manioc production. But it is not characteristic of the more well-watered northeastern coast with its sandy loams, ideal for manioc production. Moreover, manioc is the easiest crop to raise in impoverished soils by even the most destitute of farmers, so it would hardly make any sense that the poor were too impoverished to afford manioc. Additionally, this alternative hypothesis does not explain the enigmatic rock piles, nor their associated sherds, nor the fire-clouding patterns on the pots. Therefore, we incline toward the teepee-firing hypothesis, especially since it was confirmed by the recent (2007) discovery of similar piles at *San Lorenzo*, a pure Monserratean site in the interior of the island, by the junior author.

Conclusions:

Pottery, among Amerindians, is a metaphor for life and an analog of society. The devolution of Elenan pottery, its continued links to earlier assemblages, as well as its presaging of later styles, are all evident in the *Sitio de las Yucas* assemblage. They provide clear evidence for the decay of the ceramic arts, while confirming a modal description already begun for neighboring assemblages near the type site, and hinting at the Chican Ostionoid florescence to come. As we come to know this enigmatic period of transition better, our admiration for the
continued vitality of the feminine craft of pottery will increase as a compliment to the “obdurate” masculine arts of carving and politics in old Boriquén.
Figure 1
Figure 4
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The Guiana Western Coast around 1000 BP

by

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Abstract
Between 2003 and 2006, the French archaeological project “Prehistory of the western coast of the Guianas” provided new data on peopling of the Guianas during pre-Columbian times. Surveys, excavations, study of aerial photos and ceramic analysis were undertaken. From 650 to 1400 AD, Arauquinoid groups dominated the area. They shared several similar characteristics such as ceramic style and raised field agriculture.

Résumé

Resumen
Entre 2003 y 2006, el proyecto arqueológico "Prehistoria del litoral occidental de Guyana" entregó nuevos datos sobre el poblamiento de las Guyanas en la época precolombina. Varias prospecciones, excavaciones, análisis de fotografías aéreas y estudios cerámicos fueron efectuados. De 650 a 1400 DC, algunos grupos arauquinoïdes dominaron la región, compartiendo rasgos comunes tales como el estilo cerámico y la agricultura en campos elevados (camellones).
Introduction

Between 2003 and 2006, a collective scientific project was carried out on the Guianas coast. The main objective was a better understanding of the Indian people from pre-Columbian times up to the present. The research included archaeological, ethnographical and ecological aspects. Some results of the archaeological study are presented here.

The most noteworthy pre-Columbian remains found in the coastal zones of the Guianas are raised fields surrounded by ditches (Rostain 1991 and 1994). These agricultural fields were first made by a Barrancoid group in coastal Suriname from 300 AD. Later ones are ascribed to Arauquinoid groups (650-1400 AD) belonging to a cultural continuum settled between Cayenne Island and Berbice River in eastern Guyana (Rostain & Versteeg 2004). This represents a territory approximately 600 kms long, in which the raised field technique was intensively used for almost one thousand years before the European Conquest (Fig. 1).

THE “PREHISTORY OF WESTERN COAST OF THE GUIANAS” PROJECT

An overview of Guianas archaeology shows several gaps. Few excavations were conducted along the coast and no precise synthesis was made from collected data. Directed by the author, “Prehistory of western coast of the Guianas” was an interdisciplinary research project associating CNRS (Centre National de la Recherche Scientifique), INRAP (Institut National de Recherche en Archéologie Préventive) and SRA (Service Régional de l’Archéologie) in France and the Stichting Surinaams Museum in Suriname. The main objective was to obtain new information from the field and to compare them with the previous data. In this respect, local ceramic collections were classified and integrated in a regional typology, archaeological sites and raised fields were mapped, pre-Columbian
settlements pattern and archaeological cultures were defined, and the main stages of native coastal peopling from the origins up to the present were distinguished.

Works conducted by teams members included: archaeological surveys and excavations in French Guiana and Suriname, with a new program of 14C dating; flying over swamps to locate raised fields complexes; classification of archaeological collections in museums and storerooms; ethnological investigations of contemporary Indians, especially Kali’nas; study of archives and bibliography; palynological and phytolithic analysis of soil samples from raised fields; stereoscopic interpretation of aerial photos and drawing of thematic maps.

RAISED FIELD AGRICULTURE

The French Guiana coastal zone is part of the large Quaternary sedimentary plain extending some 1,600 kms between the mouth of the Amazon and the Orinoco Delta. The landscape is a low swampy plain bordered by mangroves on the mud flat of the seashore and by the hinterland to the south. The marshes are cut by narrow and elongated sandy ridges parallel to the seashore, representing old beaches. These dry sandy ridges were preferred locations for the Indians to build their villages. This landscape was not very attractive for Europeans during Colonial times since these lowlands were considered as inadequate for settlement and agriculture, together with its noxious air which provoked lethal fever. Conversely, pre-Columbian Indians intensively occupied this environment and profoundly modified the landscape.

It is generally accepted that slash-and-burn agriculture was the most common technique used by pre-Columbian Indians. However, various other elaborate agricultural techniques
were developed during pre-Columbian times, such as the *várzea*, the *terra preta* or raised fields (Denevan 2001).

In the Guianas, Arauquinoid communities settled between the Berbice River in eastern Guyana and Cayenne Island in French Guiana. In this area along the coast, they built raised fields for almost one millennium before the European Conquest (Fig.2). The first Arauquinoid raised fields date from 650 AD but they become common and spread almost everywhere along the coast circa 1000 AD. The highest density of raised fields is found in the east of the Arauquinoid territory, particularly between Sinnamary and Kourou, where the last Arauquinoid communities survived (Fig. 3).

Different methods were used to locate, map and study pre-Columbian earthworks. Land surveys were made in the swamps and in the savannas. Aerial surveys were conducted with aircraft and ULM at various altitudes. The most precise analysis was based on a stereoscopic interpretation of aerial photographs, which helps us to understand ancient and recent human impact on the landscape. Nearly two thousand aerial photographs were studied. Satellite photography has recently become available for use, enabling a closer examination of sites. While some raised fields complexes can be found on the photos, the scale is often too wide to see all the sites. The result of stereoscopic analyses and surveys is a complete and precise map of the pre-Columbian earthworks along the western French Guiana coast, from Cayenne Island to the Maroni River.

The highest density of raised fields is found between the Kourou and the Sinnamary Rivers (Fig. 4). In this area, it seems that almost every flood zone was used for agricultural purposes. A GIS analysis was made, enabling the raised fields distribution to be compared
with pedological, geological and botanical maps. This showed that the raised fields were constructed on two main types of soils.

In both French Guiana and Suriname, raised fields are not located along rivers as in Guyana and Venezuela, but are constructed in the floodplain. Raised fields are organized in clusters between the swamp and the sandy formations. Topographical location of fields is indicative of differences in adaptation to the hydrographical conditions and to the nature of the soil: large raised fields are located in the most flooded areas; medium-sized raised fields follow the curve of talwegs in savannas; most of the raised fields are distributed along the slope of sandy ridges; small and medium-sized raised fields cover the entire surface of the seasonally flood savannas that are completely dry in August.

The distribution of raised fields is related to water level and altitude. For instance, in the same complex, large rounded raised fields are found in the swamp. At the foot of the quaternary sand ridges, elongated raised fields follow the direction of the slope to allow easy drainage. On the upper part, the ridged fields are laid perpendicular to the slope for optimal water retention (Fig. 5).

Hydrological constructions are associated with the raised fields. Straight canals enclose the flooded area. They were used for the drainage of excess water and, perhaps, as water tanks or fishponds. Canals can measure 50 m long and 5 m wide. Belt ditches are small, winding features of 1-2 m wide and up to 100 m long, enclosing groups of raised fields. These belt ditches prevented waterlogging of fields during the rainy season.

Some causeways cut through the swamps to connect two sand ridges, or to link one sand ridge to the shore. They are straight and measure 300 to 600 m long and 5 to 12 m wide.
ARAUQUINOID TERRITORY

From 650 to 1400 AD, Arauquinoid cultures dominated the coastal Guianas. They include the Barbakoeba culture, whose territory extended from the Cottica River in Central Suriname up to the Kourou River in French Guiana, covering 250 kms (Fig. 6). New dating obtained during our project place this culture between 1000 and 1400 AD. The main activity of Barbakoeba communities was both intensive and extensive agriculture.

Earth samples were taken in various raised fields complexes in French Guiana to make palynological and phytolithic analysis. The results show that manioc and sweet potatoes were probably cultivated, but maize predominates. The same observation was made on Arauquinoid sites on Middle Orinoco (Roosevelt 1980). The diversity of cultivated plants is consistent with the ethnographic data. For instance, on the middle Orinoco, modern Karinya cultivate maize, beans, manioc and other crops on drained fields (Denevan & Schwerin 1978).

The Barbakoeba site of Sable Blanc, on the western coast of French Guiana, is located 1.5 kms west of the Iracoubo River. This seems to correspond with a characteristic territorial pattern common to all the Arauquinoid cultures in the Guianas. All these cultures occupied specific territories that are bordered by the main rivers. In each culture, a main village is always located on a sandy ridge a few kilometers west of a large river and some kilometers south of the seashore. The other settlements are strung out along the coastal sandy ridges. The Sable Blanc site is exceptional because it combines three different functions: residential, funerary and agricultural (Fig. 7).

The residential area is located at the top of a sandy ridge, so the houses were built in the driest place. An excavation was conducted by our team during August 2007.
The Sable Blanc cemetery was excavated by the Archaeological Service in 2005 (Gassies & Lemaire 2005 and 2006) and by the INRAP in 2006 (Van den Bel 2006). No domestic remains were found in the southern part, only numerous burials. Forty pits containing one or more urns have been found. They are round, oval or rectangular with their walls occasionally protected with one or two griddles. The urns, which form two groups, are undecorated. Differences between burials suggest a certain hierarchy. Ditches cut across the cemetery and they were probably used to prevent excess water accumulating in the cemetery during the rainy season.

An embankment 4 m wide and 1.5 m high encloses on two sides the cemetery. It formed a protection against flooding when the water level of the southern swamp rose too high.

In the lowest wet area, there is a complex of raised fields. They are rectangular and measure 3 m long, 50 cm wide and 30 cm high. These raised fields were not identified in the aerial survey because they were hidden in the forested area (Fig. 8). In many places on the coastal plain, the forest has overgrown certain raised fields clusters after they were deserted. The Sable Blanc raised fields were identified after the forest was burned to make a garden (Fig. 9).

The coast is densely populated by the Arauquinoid communities. Statistical calculations based on the surface area of the raised fields indicate 50 to 100 inhabitants per km2 (Rostain 2008). The Piliwa complex is located at the extreme west of the French Guiana coast, on the left bank of the Mana River mouth. It lies in a flooded depression between two sand ridges parallel to the river bank. Elongated fields are distributed in parallel and perpendicular groups. The surface of all the ridged fields is about 90 ha, representing about
3/4 of the whole surface of the depression. It can be suggested that 500 to 1000 people could have lived on the produce of these fields.

Such density is very different from classic estimations for Amazonia of less than three inhabitants per km2. They are comparable to the density of 160 inhabitants per km2 calculated in the San Jorge valley in Colombia, around 900 AD, where many raised fields were found (Plazas & Falchetti de Saenz 1987).

CONCLUSION
The “Prehistory of western coast of the Guianas” project has provided many new interpretations about peopling of the Guianas coast, particularly during the last millennium before the European Conquest. During this period, this coastal area was dominated by Arauquinoid groups who built thousands of raised fields and intensively transformed their landscape. All the new data collected during the project considerably change our understanding of the first inhabitants of the Guianas coast. Results of this investigation will be published in a collective book.

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Fig. 1: Map of the main concentrations of raised fields of the Guianas (shown in black) and the four coastal Arauquinoid cultures

Fig. 2: Raised fields complex at Galibi, eastern coast of Suriname
Fig. 3: Raised fields near Kourou, French Guiana

Fig. 4: Numerous raised fields in a flood savanna near Sinnamary, French Guiana
Fig. 5: Distribution of raised fields near Kourou: large round mounds are in the wettest area and elongated raised fields are along the slope (upper photo: IGN 1987)
Fig. 6: Adornos of Barbakoeba style from the Paramarica-Kreek site in eastern Suriname
Fig. 7: Specialized areas in the Barbakoeba site of Sable Blanc in western French Guiana
Fig. 8: Sable Blanc raised fields from an ULM (photo L’avion jaune 2007)

Fig. 9: Sable Blanc raised fields from the ground
Nuevas Investigaciones en el Asentamiento Prehispanico Ceramista de La Punta de Bayhib

by

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Resumen
El hallazgo de alfarerías respaldadas por fechados de radiocarbono que las ubican hacia el año 1600 a 1500 antes de Cristo, plantean una nueva posibilidad de que grupos recolectores arribaran a las costas de la isla de Santo Domingo. Las excavaciones arqueológicas realizadas en varias jornadas durante los años 2004 y 2006, obligan a la revisión del proceso migratorio de culturas con alfarerías tempranas pero sin el uso del burén para la confección de casabe de grupos posteriores.
INTRODUCCIÓN

Continuando con las investigaciones realizadas en octubre del año 2004, gracias al apoyo financiero del Asociación de Hoteles Romana Bayahíbe y el Banco Interamericano de Desarrollo, en marzo del 2006, se iniciaron nuevas excavaciones arqueológicas en el sitio arqueológico La Punta de Bayahíbe, ubicado en el pueblo de Bayahíbe, en la provincia La Altagracia, región Este de la República Dominicana.

Las excavaciones llevaron a cabo como parte de un programa que evidenciara el origen de un tipo superficial de alfarería que demostraba el uso del lugar por pobladores precolombinos, ya que los hallazgos de superficie, entre los cuales se recolectaron restos de varios tipos de objetos, apuntaban hacia la presencia superficial de habitantes de posible origen arawaco, anteriores a los grupos taínos.

Estos pobladores superficiales se caracterizan por una cultura agricultora con posible alfarería del tipo llamado “ostionoide” en la isla de Puerto Rico, ubicable en la isla de Santo Domingo a partir del siglo VII después de Cristo. La profundización de los trabajos de campo, produjo como resultado la presencia más temprana de una cultura basada en la recolección, con una gran presencia de pesas para redes ligeras, y el uso de alfarería aun no tipificada, pero evidenciando la presencia de un nivel que no era el ostionoide de la superficie del lugar.

LA PROFUNDIZACIÓN
La profundización de las excavaciones arqueológicas dio como resultado la presencia de otras expresiones que no coincidían, en cuanto a la alfarería y los objetos encontrados en superficie, con las culturas pasajeras “ostionoides”, de origen puertorriqueño. Los varios cortes practicados en el terreno, evitando la presencia de construcciones actuales y de remociones del mismo de orden artificial, fueron ejecutados en dos campañas de excavaciones, (una de salvamento y otra de prospección) que comprobaron, en la revisión estratigráfica, la idea de que solo había en el sitio dos niveles de ocupación estables; el uno algo disperso a partir de los 0.25 cms, constituido por una tierra gredosa y arenosa a la vez, y el otro constituido por tierra negra que se asienta en la base rocosa del lugar, con bolsones de este tipo de terreno, sin dudas, de origen cultural, siendo el estrato más profundo y antiguo de la excavación, y donde se identificaron las alfarerías tempranas, de una cultura cuya relación más evidente podrían ser las culturas llamadas “caimitoides”, comunes en Cuba y Santo Domingo con fechas no más antiguas del 500 antes de Cristo hasta el momento.

**LOS POZOS O CORTES**

Los cortes o pozos presentaron restos tempranos con alfarerías rústicas y pesas para redes, en su parte más profunda, cuyas sola fecha en su inicio, afirmaba la posible presencia de recolectores hacia el año 2.000 antes de Cristo. En la segunda campaña de investigación, extendidos los cortes o pozos de manera intencional para llegar a la base del terreno, el hallazgo de cerámicas tempranas se consolidó con cuatro fechas de radiocarbono que sitúan
estos pobladores recolectores, ahora con alfarería, entre los años 1.300 a 1.500 antes de Cristo, según resultados corregidos del laboratorio Beta Analytic de Miami

FAUNA

Considerando el lugar como un asentamiento donde la casi totalidad del terreno fue usado desde el 2000 antes de Cristo en adelante, los artefactos que se encuentran en la base del mismo consolidan la idea de que son parte de un posible campamento recolector de mediados del siglo XX antes de Cristo. La fauna fundamental es la relativa a la recolección de especies marinas, con la presencia igualmente de peces del litoral y algunos de alta mar, como varios tipos de rayas pequeñas. Un recuento del material excavado revela que la mayoría de los restos de peces se encuentran en la zona más profunda del sitio, donde estamos considerando el estrato llamado B, de la excavación. En esta misma zona aparecen babosas de tierra del género Polydon tes, las que han sido un a expresión muy continua desde los primeros grupos recolectores hasta los taínos; otro tipo de babosa de tierra es el Caracol us excellens, igualmente dieta tradicional de los grupos de fecha similares, pero sin alfarería, en todo el litoral sur de la isla, como son Cueva de Berna, provincia La Altagracia, Hoyo de Toro, La Piedra, Batey Negro y El Porvernir, todos relacionables con las llamadas culturas “banwaroides”, de origen continental.

La presencia del caracol Strombus gigas, llamado vulgarmente “lambi”, es la constante más intensa del lugar, en cuyo estrato más profundo, aunque en cantidad menor, han sido detectados restos hutía (Isolobodom portorricensis), la iguana (posible Cyclura cornuta), algunos restos de huesos largos humanos machacados, tortuga no identificable, quelas o
muelas de cangrejo (posible *Cardiosoma guanunni*). La presencia de peces óseos, antes ya mencionados, es común en todo el estrato negro que tipifica a los recolectores con cerámica. Se han encontrado como elementos aislados un posible resto de mamífero marino, y un resto de manatí (*Trichechus manatus*).

**OBJETOS LITICOS Y DE CORAL**

La presencia de pesas para redes es común en nivel más antiguo del estrato, donde obtuvimos fechas de 1.300 a 1.500 antes de Cristo. Un conteo provisional señala que en los cortes practicados durante la segunda excavación, las pesas de redes en piedra alcanzan los veinte ejemplares en diferentes tamaños. A estas pesas habría que adicionar las de coral que alcanzan un número de cuatro. Se trata de pesas de tamaño oscilante entre cinco a quince centímetros, siendo las más pequeñas la de mayor presencia, sugeridoras de que se usaron atarrayas de hilo fino, ya que las muescas de la mayoría de estas pesas son para hilado menor.

Aparece material pétreo lascado en cantidades importantes, algunas piezas en sílex y en diferentes piedras duras.

Las limas confeccionadas en material coralino, sin dudas son objetos para desbastar o desgastar, sin embargo la enorme cantidad de corales modificados por golpeo, al parecer intencional, sugieren el uso de los corales planos y curvos, como ralladores para raíces y otros frutos aun no determinados.
OBJETOS EN CONCHA

El caracol *Strombus gigas* es, además de la especie más importante en cuanto alimentación, materia prima para la confección de ciertos artefactos. La presencia de corales de numerosas especies traídos desde zonas con característica de este tipo, puede ser de algún modo considerada como material para confeccionar artefactos, pero igualmente como restos de alguna alimentación adherida a los corales.

La industria de concha es abundante en el lugar. Encontramos gran cantidad de gubias de concha, diferentes de las usadas en el área sur del Caribe. Picos de concha para descarnar, fabricados en concha de *Strombus*. Algunos restos de concha parecen haber sido utilizados como raspadores y para descamar peces. Se han localizado también algunos colgantes rústicos de concha, con perforación.

ASENTAMIENTO

Durante la excavación realizada se localizó un conjunto circular de huellas de poste en la roca de unos tres metros de diámetro, que atestigua la presencia de una antigua vivienda. En total se contabilizan 14 huellas de poste determinando el círculo y una huella central. El suelo de la vivienda está apisonado y del estudio estratigráfico realizado en el interior del recinto marcado por las huellas de poste obtuvimos los siguientes datos:

En las primeras etapas de ocupación no aparece cerámica, aunque en fases posteriores sí documentamos su presencia. Predomina la industria de concha y también cuentan con
industria lítica. La industria de coral es de gran importancia, probablemente usada para rayar tubérculos presumiblemente de guáyiga y probablemente como elementos de percusión. La dieta en la primera fase ocupación se centra en buena parte en la recolección de caracoles terrestres y en menor medida por moluscos marinos. Posteriormente los caracoles terrestres van siendo desplazados por los moluscos marinos. Aparecen evidencias de pesca e incluso en los niveles superiores, revueltos, se localizan restos de burén.

Dentro del perímetro de la vivienda, en la parte más profunda, localizamos un piso de ceniza. Bajando en el corte y envueltas en la ceniza localizamos ocho bolas líticas (esferolitos) dispuestas en fila cada una de tamaño diferenciado en el orden y en la posición. Los esferolitos se encuentran en desnivel y algunas enterradas en la ceniza casi concrecionada. Alrededor de los esferolitos se encuentran caracoles asociados o enterrados parcialmente en el mismo manto de ceniza. El fechado de C-14 realizado en el nivel de los esferolitos ofrece el siguiente resultado: 1.593 +/- 80 A.C.

ANÁLISIS PRELIMINAR DE POLEN

Según los análisis preliminares de polen encontrados, la presencia de la uva de playa (Coccoloba uvifera), la guáyiga (Zamia sp.), la Pereskya (Pereskya quisqueyana), pudieran haber estado presentes desde el 2.000 antes de Cristo en la zona, así como algunas plantas sin nombre popular y otras cuyos nombres científicos son Rachicalis americana, Guapira brevipetiolata, Busida bucera, Conocarpus erectus, (mangle botón), Citgharexylum fruticosum, , Pithecellobium circinale, Spindus saponaria, Opuntia dillenni, Cyperus sp.
En el conjunto de plantas identificadas, se destacan el mangle botón, el junquillo, el hicaco, la batata cimarrona, las tunas, y otras.

**CONCLUSION**

La presencia de recolectores tempranos en el Caribe ha sido muchas veces establecida, pero sin la evidencia de alfarerías que resulten más antiguas que el siglo V antes de Cristo. Trabajos hechos en la isla de Santo Domingo, poseen fechados de recolectores con alfarería desde por lo menos el año 450 antes de Cristo hasta el siglo I de la era cristiana. Los lugares denominados El Caimito, Honduras del Oeste, y Musiépedro, y Sabaneta de Juandólio, en la República Dominicana, poseen características recolectoras, ya que artefactos heredados de culturas muy anteriores y ausencia de budare para la cocción de casabe, se revelan como hereditarios de viejas formas de vida no agrícola.

Varios sitios cubanos trabajados por Veloz Maggiolo, José Gabriel Atiles, Fernando Luna Calderón y Gus Pantel, en colaboración con Jorge Ulloa Fung y Roberto Valcárcel, arrojan fechas que se corresponden con los sitios dominicanos anteriormente señalados, pero no con los hallazgos de La Punta de Bayahíbe.

Los resultados obtenidos los consideramos aun como provisionales, hasta que se realicen excavaciones en la totalidad del yacimiento.
Informe Preliminar de los Restos Invertebrados Malacológicos de la Cultura Huecoide de Sorcé, Vieques, Puerto Rico.

by

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Resumen
Este informe presenta los resultados preliminares del estudio de la fauna malacológica del depósito cultural Huecoide más importante del sitio arqueológico de Sorcé, Vieques, con el fin de completar el estudio fáunico vertebrado presentado en mi tesis de MA. Se presenta un breve estudio de las especies identificadas así como de los instrumentos elaborados en concha. Resalta del estudio que los Huecoide reciclaron y reutilizaron los instrumentos de concha que los pobladores arcaicos abandonaron en playas cercanas al sitio de Sorcé. Se ha encontrado en el depósito Huecoide, evidencia de instrumentos en concha erosionados por el agua sin retoques posteriores, otros sin retoques pero con evidencia de uso posterior y otros con retoques.
**Introducción:**

Han pasado dos décadas desde que se publicaron los resultados del estudio de la fauna ósea vertebrada de la cultura Huecoide del sitio arqueológico de Sorcé, en la costa sur de la isla municipio de Vieques, Puerto Rico. (Narganes, 1985) Este trabajo es un informe preliminar sobre los restos de fauna invertebrada, que trata específicamente sobre los moluscos recuperados del depósito huecoide denominado Z.

Los materiales arqueológicos fueron excavados en el periodo de campo de los siguientes años: 1977, 1979, 1995 y 1997. Las muestras fueron tomadas en cedazos de ¼ de malla que luego fueron lavadas y marcadas con su clave de campo.

El depósito Z se encuentra en una pendiente junto a la quebrada Urbano, a medio kilómetro del mar Caribe. De los 7 depósitos huecoides residuales descubiertos en la finca, el área Z es el más profundo, alcanzando 3 metros de profundidad en algunas unidades y el más abundante en materiales culturales en comparación con los demás. Todo el material cultural del depósito Z corresponde exclusivamente a la cultura La Hueca al ser este un depósito unicomponente. (Chanlatte y Narganes, 1983, 2005).

Se analizó el material fáunico de origen malacológico de 54 unidades de 2 x 2mt, excavadas en el depósito Z. Se recuperaron todas las muestras de moluscos de las excavaciones con excepción de las especies más abundantes, *Cittarium pica, Strombus gigas, Phyllonotus pomum* y *Polydontes lima*, que por el gran volumen no fueron conservadas. De estas cuatro especies se tomaron muestras representativas y el resto se contabilizó en el campo. La gran concentración de moluscos estaba localizada en los niveles posteriores al
metro de profundidad. En los niveles superiores (0.00 – 1.00mt.) el volumen de moluscos fue de poco a moderado, a medida que se profundizaba en la excavación de la unidad.

El material fue pesado en gramos y se determinó el Número Mínimo de Individuos para cada especie identificada. También se analizaron los diversos instrumentos de concha en la colección y se identificaron las especies a que pertenecen.

**Resultados:**

Se analizó un total de 12,309 restos de moluscos y se identificaron 145 especies. Estos resultados incluyen aquellos moluscos que fueron utilizados como alimento, así como por moluscos que también sirvieron como instrumentos de trabajo o adornos.

De los 12,309 restos identificados se obtuvieron 11,350 individuos. La mayor concentración de moluscos correspondió a los gasterópodos marinos, *Cittarium pica*, *Strombus gigas*, seguidos de los gasterópodos terrestres *Pleurodonte caracolla* y *Polydentes lima*. Ver Tabla 1.

Se contabilizaron los restos de estas cuatro especies, de las siguientes unidades de excavación: el Z-3, Z-6 y Z-9. De las tres unidades se registraron 2751 restos del *Cittarium pica*, 340 restos del *Strombus gigas*, 950 restos de *Pleurodonte caracolla* y 890 de *Polydentes lima*. Estas sumas fueron añadidas a las totalidades registradas para cada una de estas cuatro especies posteriormente analizadas en el laboratorio.

Otras especies de gasterópodos marinos de importancia son: *Nerita peloronta*, *Turbo castanea* y *Oliva reticularis*. Entre las bivalvas se destaca las siguientes especies: *Donax denticulatus* y *Chama sarda*. Y entre las especies de agua dulce la *Neritina punctulata*. 
El hábitat de mayor utilización fue el litoral rocoso con un 35.15% que incluye el *Cittarium pica* como mayor contribuyente, seguido de las aguas bajas con un 33.56% con el *Strombus gigas*, como mayor representante y finalmente el terrestre, con un 21.09% con las dos especies de mayor tamaño, el *Pleurodentes caracolla* y el *Polydentes lima*.

De las especies identificadas, figuran quince como objetos de trabajo o adorno, entre estos se encuentran 9 gasterópodos y 5 bivalvas. Las especies más utilizadas son el género *Strombus*, especialmente el *Strombus gigas*, la *Oliva reticulata* y la *Codakia orbicularis*.

Entre los instrumentos de trabajo del *Strombus spp.* se encuentran las siguientes: hacha sencilla; hacha con bisel sencillo y doble, raspador, perforador de nódulo, perforador de una y dos espinas, perforador fuerte, perforador doble, perforador de cuerpo con columnilla, perforador con canal sifonal, perforador rectangular, picos de mano, martillos, vasijas y alisadores. De las especies *Cassis tuberosa* y *C. flammea*, son generalmente recipientes y picos de mano. Tres de las muestras de *Charonia variegata* son fotutos o instrumentos musicales. Del *Cypraecassis testiculus* se identificaron instrumentos alisadores. La *Oliva reticularis*, fue utilizada para la preparación de instrumentos sonajeros. Las cinco especies de bivalvas, *Codakia orbicularis*, *Lucina pectinata*, *Macrocallista maculata*, *Tellina radiata*, *Tellina fausta* y *Mactra fragilis*, demuestran que fueron utilizadas como raspadores.

También se elaboraron adornos de algunas de las especies de moluscos en la colección. La mayoría de las cuentas discoidales y otros adornos se confeccionaron del *Strombus spp.*. Además se han identificado cuentas micro-discoidales, elaboradas de la bivalva *Spondylus americanus*, que se distingue por su color amarillo-naranja.
Los pequeños adornos en nácar fueron elaborados de dos especies bivalvas presentes en la colección, *Pinctada imbricata* y *Pteria colymbus*. Es de interés apuntar la presencia de dos especies adicionales, el gasterópodo *Turbo cananiculatus* y la bivalva *Pinna carnea*, cuya escasa presencia en la colección, sugiere que fueron consideradas como posible materia prima para la confección de adornos en nácar.

Entre las muestras analizadas notamos un número significativo de moluscos e instrumentos de concha que mostraron evidencia de algún tipo de erosión, como consecuencia de las acciones tafonómicas, causadas por el deterioro sufrido por las inclemencias tras el abandono o desecho del objeto. Las siguientes descripciones definen las características observables en los moluscos afectados: abrasión, fragmentos que tienen sus partes y bordes pulidos por la acción del agua; bioerosión, fragmentos cuyo cuerpo muestra una excesiva porosidad o canales causados por otros organismos biológicos y por último, la disolución o descomposición de la materia calcárea por razones químicas, degradando el objeto eventualmente en polvo calcáreo.

Se observó algún tipo erosión en 30 especies de moluscos examinados. Entre los identificados hay 21 gasterópodos y nueve bivalvas. Las especies más afectadas fueron el género *Strombus spp.*, particularmente el *Strombus gigas*, *Conus spp.*, *Glycymeris decussata* y *Spondylus americanus*.

Hay un 32.54% (NMI) de la totalidad de la colección de especies que muestran huellas de erosión. (Foto 1). El 70.99% de este total, lo compone el *Strombus gigas*. El restante 67.45%, de los moluscos identificados no muestran huellas de erosión y presumimos fueron
utilizados primariamente como alimento por los huecoides del área Z de Sorcé y posteriormente los seleccionados fueron elaborados en objetos de interés socio cultural.

Entre los instrumentos de trabajo erosionados recuperados del depósito Z se pueden distinguir tres grupos: instrumentos arcaicos erosionados que no muestran evidencia de modificación (Foto 1) o reutilización por parte de los huecoides; otro grupo demuestra que fueron reutilizados sin modificación (Foto 2) y finalmente están aquellos que fueron modificados. (Foto 3 y 4). Estos objetos serán analizados con mayor detenimiento utilizando microscopios potentes que puedan definir con más precisión las huellas de pulido en contraste con las áreas erosionadas.

Discusión:

Aunque la diversidad en la selección de especies de moluscos representada en esta colección es notable, solo seis especies se distinguen por su abundancia en el depósito huecoide y por lo tanto son consideradas como parte fundamental de su alimentación. De estas, el Cittarium pica, se destaca como el alimento predilecto. Es una especie muy utilizada como alimento por las poblaciones aborígenes en las Antillas.

La costa sur de Vieques, con sus múltiples bahías y ensenadas playeras proporciona una riqueza y diversidad de hábitats, todos localizados a corta distancia unos de otros y de fácil acceso.

Un número significativo de especies en la colección, con una escasa representación numérica, indica que su presencia en el sitio habitacional obedece a otros criterios de selección que no fueron exclusivamente de índole alimenticio. Coincidimos con Lundberg, 1989, en su estudio de los moluscos del sitio de Krum Bay, en Islas Vírgenes, que no todas las especies presentes en una colección son parte integral de la subsistencia de la población estudiada. Hay otras posibles razones para la recolección de estos moluscos tales como la elaboración de instrumentos de trabajo, de adorno corporales y otros objetos de uso socio-cultural. Otros moluscos con un solo especimen en la colección, debieron ser recolectados fortuitamente junto a otros moluscos más apreciados o por simple curiosidad.

La utilización de instrumentos descartados apunta hacia un singular comportamiento cultural no reportado con anterioridad entre las culturas aborígenes de las Antillas. Hay poca información sobre este tema en la literatura arqueológica Antillana. Aunque se ha reportado la presencia de instrumentos en concha erosionados no hay menición de que estos fueran reutilizados ni modificados por otra cultura como sucede con el Huecoide de Sorcé. (Brokke, 1999; Dacal, Sanpedro y Kelly, 2004; Jansen, 1999; Lundberg, 1989; Serrand, 1997).

Se ha encontrado evidencia de materiales arqueológicos semejantes a los instrumentos de trabajo en concha encontrados en el depósito Z huecoide, a pocos kilómetros al este de Sorcé. En dos sitios habitacionales arcaicos conocidos como Caño Hondo y Puerto Ferro se han encontrado las evidencias de este instrumental.(Chanlatte y Narganes, 1991; Figueredo,
Hay otro sitio arcaico playero cercano a estos dos sitios habitacionales arcaicos, localizado en la playa de Sun Bay, en Esperanza, en el cual los moluscos e instrumentos de concha ruedan en las arenas.

Proponemos que los huecoides reconocieron el potencial de estos instrumentos de concha descartados por los arcaicos, que supieron aprovecharlos a su conveniencia, ahorrándoles tiempo y esfuerzo en la recolección del molusco y en la elaboración del instrumento.

**Conclusiones:**

Podemos concluir que los recursos malacológicos suplementaron la dieta proteínica de la población huecoide de Sorcé, donde las especies vertebradas fueron el recurso de mayor utilización en su alimentación. La dieta malacológica consistió en la utilización de seis especies predominantes, donde el *Cittarium pica*, fue el molusco más abundante y un recurso alimenticio típico de las culturas tempranas antillanas. La gran utilización de caracoles de tierra en la alimentación huecoide es otro aspecto singular de esta cultura agroalfarera suramericana que comparte con los arcaicos antillanos.

El hallazgo de un inusual modo de trabajo desarrollado por los huecoides de Sorcé, en la cual se recolectaban y mejoraban instrumentos en concha descartados por otra cultura anterior, donde se aprovecha la preforma del objeto para confeccionar un nuevo instrumento, denota una práctica peculiar no reportada en las Antillas y apunta hacia un comportamiento social exclusivo de los huecoides.

Este singular comportamiento demuestra que la sociedad huecoide tenía la suficiente flexibilidad y madurez social que le permitía reconocer en estos objetos ajenos un recurso útil.
a su sociedad. Tabús socio-religiosos u otros impedimentos de índole social no fueron factores de peso como quizás lo fueron con otras culturas posteriores que no recurrieron a esta práctica.

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SORCE,  
VIEQUES  
FAUNA INVERTEBRADA  
Deposito Z  
Cultura Huecoide  
Tabla 1  
Listado General de  
Especies

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Analysis Functional del Sitio las Dos Puertas del Valle de Quibor

by

Nicolás González Jukisz

Resumen

Basados en la hipótesis propuesta por Arvelo (1995) acerca de la existencia de una industria de producción sal de tierra en el valle de Quibor, realizamos un estudio de las colecciones cerámicas del sitio Las Dos Puertas de dicho valle, donde definimos tres ajuares cerámicos diferenciados en base a las características físico-mecánicas de las vasijas presentes en el sitio. El análisis de la distribución espacial de estos ajuares permite inferir la presencia de una gran área asociada a la producción de sal de tierra, en la que también se observan actividades domésticas. Por otra parte, las concentraciones de los diferentes ajuares y la existencia de variaciones estacionales en la facilidad para la obtención del recurso salino, nos hacen proponer la utilización del sitio de forma temporal, tanto para la explotación de sal como para el asentamiento de los grupos encargados de esta actividad.

Abstract

Based on Arvelo’s propose (1995) about the earth salt production hypothesis in the Quibor valley, I carry out a study of the pottery of Las Dos Puertas site. It was define three ceramic assemblages based in the physical-mechanic performance of pottery. The analysis of the spatial distribution of these three assemblages in the site led me infer the presence of a great area associate s to the salt production and other domestic activity. On the other hand, the concentrations of the different assemblages in the site and the seasonal variation in the facility of salt obtaining suggest the temporal use of the site for the earth salt production and also for local handcraft settlement.

Résumé

Basés l'hypothèse proposée par Arvelo (1995) sur l'existence d'une industrie de production sel de terre dans la vallée de Quibor, nous effectuons une étude des collections céramiques de l'emplacement les Deux Portes de cette vallée, où nous définissons trois ajuares céramiques différenciées sur la base des caractéristiques physicoes-mécanique des récipients présents dans l'emplacement. L'analyse de la distribution spatiale de ces ajuares permet d'impliquer la présence d'un grand secteur associé à la production de sel de terre, dans laquelle on observe aussi des activités domestiques. D'autre part, les concentrations des différents ajuares et l'existence de variations saisonnières dans la facilité pour l'obtention de la ressource saline, nous font proposer l'utilisation de l'emplacement de manière temporaire, tant pour l'exploitation de sel comme pour le règlement des groupes chargés de cette activité.
Introducción

En este trabajo nos planteamos definir la funcionalidad del sitio Las Dos puertas del Valle de Quíbor, a partir del material arqueológico. En este sentido realizamos un análisis estilístico y funcional del material, en donde pudimos definir una serie de características físicas de las vasijas, las cuales fueron contrastadas a través de programas estadísticos para corroborar la presencia o no de áreas de actividad funcionalmente diferenciadas.


Mientras que Arvelo (1995) por su parte, realiza una nueva propuesta interpretativa para los sitios monticulares del valle de Quíbor, descartando la presencia de pisos de habitación en la estratigrafía de los montículos estudiados, además de proponer el desarrollo de la producción de sal de tierra a partir de suelos salinos basándose para ello en tres líneas de evidencia, a saber: 1) suelos salinos en el área de los montículos, 2) documentos históricos¹ y 3) evidencia arqueológica (Arvelo, 1995). Asimismo, atribuye la

¹ “…Los indios la fabrican muy artificial (la sal), en aquellos llanos que distan de aquí unas 5 leguas que llaman llanos de Quíbor, y la hacen de una tierra superficial, salitrosa, cocíéndola y colocándola con agua, hasta que se cuaja en ciertas vasijas...” (Cey 1995: 61).
construcción de los montículos a la acumulación de los desechos del proceso de elaboración de sal de tierra.

**Planteamiento del problema**

Apoyándonos en la hipótesis de Arvelo, la presencia de gran cantidad de vasijas burdas asociadas a pequeñas cantidades de vasijas finamente decoradas y grandes lentes de ceniza, nos han permitido formular estas interrogantes: ¿Qué funcionalidad pudo haber tenido el sitio monticular Las Dos Puertas dentro del proceso de elaboración de sal de tierra? Es decir, ¿De que manera fueron utilizados los espacios para la elaboración de la sal? Y finalmente, ¿Qué tan especializada fue la elaboración de sal desde una perspectiva espacial?

Nuestro objetivo general ha sido: determinar si los montículos o construcciones artificiales de tierra del sitio Las Dos Puertas del valle de Quíbor poseen una orientación habitacional además de la producción de sal de tierra, a través del análisis de los materiales cerámicos y su distribución espacial y estratigráfica dentro del sitio.

**Ubicación geográfica**

El valle de Quíbor se encuentra en la región noroccidental de Venezuela, 30 Km al sur oeste de la ciudad de Barquisimeto, en el Estado Lara. Está delimitado por las estribaciones de la Cordillera Andina al sur, el sistema montañoso de la Serranía de Falcón al norte, por la depresión de Barquisimeto al este, y al oeste por las escorrentías que drenan hacia las riberas del río Tocuyo (Figura 1). El valle de Quíbor comprende una llanura definida por acumulaciones de arcilla y su vegetación característica es el bosque tropical muy seco, con una fuerte variación entre la temporada de lluvias y la de sequía (M.A.R.N.R., 1982c).
El sitio

El sitio arqueológico de Las Dos Puertas (Lj8), se encuentra ubicado aproximadamente a 1 Km. de la margen izquierda del río Las Raíces, específicamente al sur del punto de confluencia entre la quebrada Atarigua y el río Las Raíces, en el municipio Jiménez del estado Lara (Figura 2). Éste se caracteriza por acumulaciones de tierra que alcanzan, en algunos casos, los 3 m de altura sobre el nivel del valle. El área de los montículos muestra una forma ovalada o de herradura, con una entrada o boca ancha que da acceso al área central del sitio y que se encuentra a nivel del valle (Figura 3).

Metodología de campo

El trabajo arqueológico en Las Dos Puertas, se enmarca dentro del Proyecto de Arqueología de Rescate en el Área de Afectación del Sistema Hidráulico Yacambú-Quíbor, realizado por Arvelo entre los años 1990-95.

En dicho proyecto, fueron definidas áreas arbitrarias de recolección, comenzando en la parte noroeste del montículo con el área 1 y continuando en sentido antihorario hasta completar las 17 áreas de recolección. El área 18, se estableció bajo el criterio de recolección en el área central o área no monticular (Figura 4).

De igual forma se realizaron dos pozos de prueba, el primero ubicado en el área 2, la cual comprende el punto más elevado del los montículos del sitio, con una profundidad de más de 21 niveles arbitrarios de 10 cm. El segundo pozo de prueba se realizó en el área 18 o área central, para contrastar la estratigrafía del área monticular con la del área plana, este contó con siete niveles arbitrarios de 10 cm (Arvelo, 1995) (Figura 4).

Perspectiva teórica
Para diferenciar la funcionalidad del sitio, comenzamos por tratar de construir la historia cultural del material. La noción de Estilo nos permitió establecer, primeramente, la ubicación espacial y temporal de éste, a la vez que el análisis estilístico procuró las pautas para el agrupamiento de los conjuntos (Cruxent y Rouse 1961; Rouse 1972). De igual forma, debimos incluir la reformulación del Estilo desde la perspectiva funcional propuesta por Arvelo (1995) y apoyada en los trabajos de Tarble (1977) y Rice (1987).

La búsqueda de un vínculo entre la forma y la función de las vasijas (Braun, 1983; Henrickson, 1983; Hally, 1986; Rice, 1987; Sinapolis, 1991; Frías, 1993), permitió además determinar los posibles contextos (Hodder, 1988) en los que estas fueron utilizadas; para finalmente poder definir las áreas de actividad dentro del sitio (Flannery, 1976).

**Metodología de Laboratorio**

Esta consistió fundamentalmente en la clasificación del material arqueológico para lo cual comenzamos por realizar una matriz de las formas en donde agrupamos las diferentes clases de bordes de acuerdo a su inclinación y tipo de labio, obteniendo así nueve formas de vasijas claramente diferenciadas (Figura 5).

Posteriormente realizamos la definición de las variables que permitieran dar cuenta de nuestros objetivos, de esta manera, formulamos las siguientes variables: 1) área de recolección, 2) pozo, 3) nivel, 4) forma, 5) diámetro, 6) pasta, 7) tratamiento de superficie, 8) decoración plástica y 9) decoración pintada.

A partir del cruce de variables reagrupamos nuestros datos con el fin de realizar el análisis funcional de las vasijas, para lo cual, fue necesario establecer las características físico-mecánicas de acuerdo a la forma, el tamaño, el tipo de pasta y el tratamiento de
superficie, a demás de diferenciar entre aquellas vasijas con decoración pintada y aquellas con acabados burdos y poco elaborados (Braun, 1983; Henrickson, 1983; Hally, 1986). En este sentido, agrupamos las formas de acuerdo a sus características y obtuvimos tres grupos de vasijas: las de labio engrosado y boca abierta, las vasijas de labio simple saliente (generalmente asociadas a la decoración pintada) y las vasijas de labio simple y cuello restringido. Un último grupo fue construido a partir de aquellas formas ubicadas en los extremos de la distribución y las denominamos extremos (Figura 6).

**Análisis**

Una vez establecidas las características físico-mecánicas de cada una de las formas de vasijas, estas fueron combinadas con la variable diámetro para obtener un análisis modal de las formas (Figura 7).

Asimismo incorporamos la evidencia etnográfica existente para los sitios de producción de sal de tierra del nuevo mundo, específicamente en Siyula México (Williams, 1999) en donde el autor describe y sustenta fotográficamente la presencia de un ajuar utilizado para el transporte de líquidos similar al que propuesto para dicha actividad en el sitio Las Dos Puertas.

Posteriormente realizamos la interpretación funcional del material cerámico del sitio basándonos en: a) el análisis de los fragmentos cerámicos, b) los trabajos etnográficos y c) la hipótesis de la sal (Arvelo 1995), a partir de lo cual fue posible la construcción de tres ajuares cerámicos funcionales para el sitio Las Dos Puertas, a saber, ajuar para la cocción de la salmuera, ajuar para el transporte y acarreo de líquidos y por último el ajuar asociado al servicio de alimentos y bebidas (Figura 8). Posteriormente,
contrastamos dichos ajuares cerámicos con su ubicación espacial y temporal para tratar de definir las áreas de actividad.

**Discusión**

Del comportamiento de dichos ajuares dentro del sitio, pudimos obtener una alta proporción de fragmentos de vasijas asociados a la cocción de la salmuera. Por otra parte, del contraste de las frecuencias de material en los niveles del pozo 1 fue posible observar la presencia de estratos de alta concentración de material cerámico asociado a la cocción de la salmuera y que se corresponden con la existencia de lentes de ceniza sobrepuestos uno arriba del otro, lo que sugiere una utilización temporal y cíclica de los montículos como área de desecho de material tanto cerámico como de ceniza y tierra (Figura 9).

**Conclusión**

Primeramente se determinó la variación formal y decorativa, a la vez que se definió el Estilo y la posible función de los artefactos cerámicos.

Por otra parte, no fue posible diferenciar la presencia de áreas de actividad dentro del sitio, sino por el contrario la existencia de una gran área asociada a la actividad de cocción de salmuera en los montículos.

Por último, a través del análisis de los materiales estratigráficos y su comparación con los recolectados en superficie, se estableció la variación temporal de los ajuares cerámicos funcionales, ubicando el inicio de la construcción del montículo a partir del 1300 d.C. y que se prolonga hasta por lo menos el siglo XVI de nuestra era, de donde inferimos en principio, una explotación estacional del recurso salino basada en las
propuestas de Gil y López (2002), así como la utilización de los espacios del sitios como área de asentamiento de los salineros durante los periodos de explotación de sal de tierra.

Referencias


Figura 1

Distribución de Sitios Monticulares al Norte del Valle de Quíbor
Figura 5

Figura 6
Formas asociadas al servicio de alimentos

Formas asociadas al transporte de líquidos

Formas asociadas a la cocción de la salmuera

Ajuares cerámicos Funcionales

Figura 7

Figura 8
Figura 9
Hablamos Espanol, Comemos en Ingles
Ana Cristina Rodriguz Yilo

Espacios en Disputa en el Noroccidente de Venezuela (siglos XVI-XVIII)¹.
Lilliam Arvelo y Marcia Lopez

Análisis Espacial en el Área de la franja nor-costera del Estado Falcón (Venezuela),
durante los siglos XIX y XX.
Yadira Rodríguez, Instituto Venezolano de Investigaciones Científicas

Etude des vestiges d'indigoteries en Guadeloupe
Tristan Yvon

Notes Sur les Mortis Chez les Caribes Insularis
Patrick Brasselet

Excavations at the Barrett House, Falmouth, Jamaica, 2006,
Kit W. Wesler, Murray State University

The Magens-Pedersen House, Charlotte Amalie: Archaeology of an Urban House
Compound in the former Danish West Indies
Douglas Armstrong, Christian Williamson, and David Knight, Syracuse University

African-Creole religious artifacts associated with a 19th century Dutch priest burial on St.
Maarten
Jay B. Haviser

¹ Este trabajo constituye un modesto homenaje a la memoria de J.M. Cruxent, fundador de la arqueología
Profesional en Venezuela, e Irving Rouse insigne arqueólogo norteamericano.
Blues From Bequia: Survey of Two Historic Indigo Processing Ruins
Margaret Bradford

Examining Refugee Peoples Living on Dominica before British Colonization: A Preliminary Report
Stephan Lenik, Department of Anthropology, Syracuse University

Seaman’s Valley Revisited
P. Allsworth-Jones1, K. Spence2, R. Dalton3, H. Savery3
1University of Sheffield; 2University of the West Indies, Mona; 3Binghamton University

The Spanish Ceramic Assemblage at the St. Joseph Site, Trinidad
Annette Silver and Birgit Faber Morse, Peabody Museum of Natural History and Yale University

Interpreting the Presence of Moravian Produced Slipware Pottery at Cinnamon Bay, St. John, U. S. Virgin Islands
Stephan Lenik and Douglas V. Armstrong, Syracuse University

Jamestown, Nevis: Fact, Fiction and Fable
Carter Hudgins, Eric Klingelhofer and Roger Leech
Hablamos Espanol, Comemos en Ingles

by

Ana Cristina Rodríguez Yilo

Resumen
A partir del análisis de la colección recuperada en la excavación arqueológica realizada en el Casco Central de la ciudad de Barcelona, Estado Anzoátegui, se tratará de establecer cómo a través de los motivos decorativos realizados en las vajillas procedentes de Inglaterra y otros países europeos en los siglos XVIII y XIX, se da una modificación y unificación en los patrones de costumbres y usos en la vida cotidiana de los venezolanos, en la que priva la experiencia y vivencias anglosajonas fuera de la realidad de la región que los rodeaba. Por lo que aun, cuando fuimos una colonia española, realmente la conformación de la nueva identidad esta influenciada directamente por el desarrollo y expansión manufacturera y comercial del Reino Unido, entre otros.
Ubicación geográfica:

La colección arqueológica proviene de la parcela ubicada al lado de la Catedral, Casco Central de Barcelona, estado Anzoátegui, Venezuela.

Antecedentes históricos de la ocupación de la parcela:

Con respecto, a la historia ocupacional de la parcela, no existe una investigación documental. Sin embargo, durante nuestro trabajo de excavación se entrevistó al cronista de la ciudad Oscar Parrella, quien informó que en el sitio se encontraba el primer cementerio de Barcelona y fue mudado a finales del siglo XVIII, fuera de la ciudad, posteriormente la parcela fue adquirida por la familia Monagas y a principios del siglo XX fue recuperada por el gobierno municipal para la construcción del Cine Central, demolido hace pocos años para la construcción del nuevo Teatro Municipal de la ciudad de Barcelona.

Objetivo:
Esta excavación no responde a un proyecto de investigación preestablecido para el centro colonial de la ciudad de Barcelona, sin embargo fue financiado por la Alcaldía de la ciudad para cumplir con una exigencia del Instituto del Patrimonio Cultural, con el objetivo de:

Recuperar los posibles restos que quedaban del cementerio colonial mudado a finales del siglo XVIII.

Recuperar sistemáticamente la mayor cantidad de información cultural antes de los trabajos de construcción del nuevo teatro.

La excavación:

De acuerdo a los objetivos, la metodología de campo utilizada pretendió abarcar la mayor extensión del área de la parcela, en el tiempo estipulado por el Instituto del Patrimonio Cultural para la realización de este tipo de trabajos de rescate. Por lo que se dividió el terreno en cuadrículas de 2x2m., enumeradas en forma consecutiva desde 1 hasta 252 y escogiéndose aleatoriamente las cuadrículas a excavar, según su ubicación en la parcela. Excavándose en total 17 cuadriculas hasta un máximo de 1,70m. de profundidad, resaltadas en el gráfico.

La excavación se concentró en las cuadrículas C63, C62, C75, C74, C76 y C87, en las que se localizó un basurero de aproximadamente 4 m. de diámetro, que por la tipología del material suponemos es de finales del siglo XVIII y siglo XIX: vidrios, oliveras, cerámica refinada, arcillas vidriadas mezclados con gran cantidad de restos óseos de animales y malacológicos. Además, de estratos de arena y ceniza que pueden ser evidencia de que luego de desechados los materiales fueron quemados y tapados para evitar los malos olores.

Colección:
Los detalles sobre el material recuperado, se encuentra en el informe entregado al Instituto del Patrimonio Cultural de Venezuela y a la Alcaldía de Barcelona. En el siguiente cuadro se presenta la cantidad de fragmentos recuperados en la totalidad de las cuadrículas, aunque hay que destacar que posteriormente se logró consolidar algunas piezas completas en las cerámicas refinadas.

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Aun cuando contamos con una colección que data desde el siglo XVI hasta el siglo XIX, compuesta por una variedad de materias primas y artefactos en este trabajo nos centraremos en las cerámicas refinadas del S. XVIII y S. XIX, específicamente en las que presentan motivos escénicos que de una u otra manera son reflejo de las vivencias europeas en ese periodo y que sin duda influyeron en la vida e idiosincrasia de la nueva sociedad venezolana, incorporando muchos de los elementos de confort y estatus social en las normas o pautas socio económicas en un nuevo grupo que trata de consolidarse en Venezuela y más específicamente en la ciudad de Barcelona pero con el referente europeo en su vida cotidiana.

Entre los siglos XVII y principios del XVIII encontramos la presencia de los holandeses, a través de las mayólicas, quienes explotaban o trataban de explotar las salinas de Píritu y Unare. Posteriormente los conflictos y guerras de los holandeses unido al desarrollo de la industria inglesa a mediados del siglo XVIII que causó un gran impacto económico a nivel mundial y una honda transformación social en los territorios en los que alcanzaban llegar sus flotas navieras, conquistando nuevos mercados con el abaratamiento de los productos, el surgimiento de una nueva clase social con capacidad económica y con una clara y típica concepción del arte cuya misión debía ser relatar una historia y proporcionar un reflejo lo más cercano posible a la realidad, por lo que los artistas de la época (siglos XVIII y XIX) se esfuerzan por presentar escenas íntimas de la vida diaria, paisajes caracterizados por su fidelidad a la realidad.

Dentro de este desarrollo industrial y artístico encontramos a los hacedores de cerámica refinada que tratan de complacer a esta nueva clase social, plasmando en las vajillas, esta nueva concepción del arte que para poder apreciarlo en las pinturas y exposiciones debían pagarla, lo que intensificaba el deseo de obtenerlo.
La clase media inglesa ejerció una gran influencia en la popularización de sus costumbres internas y de lejanos países de los que la mayor parte de la población jamás habría podido adquirir conocimiento. Sumando a esto el registro de los motivos lo que no permitía la copia en serie de las distintas fabricas. Por lo que para satisfacer este interés por el realismo y no infringir la ley, los pintores y literarios británicos se lanzan a la gran aventura denominada “El gran tours” a países europeos, al Oriente Medio etc. En el que el fin ultimo era localizar nuevos motivos que incrementaran las ventas y satisficiera a la nueva clase emergente.

En una época carente de cine y de televisión, la exposición de una importante obra de un afamado artista provocaba en el público una reacción muy similar a una ´première´ cinematográfica en nuestros días. Las gentes se apiñaban para poder contemplarla y aun se exhibía en distintas partes del país, en donde el público debía pagar por poder verla, intensificándose así el deseo de obtener. Consiguientemente, contra el elitismo artístico y cultural de épocas pasadas, la aparición de la clase media en el siglo XIX ejerció una marcada influencia sobre la popularización del arte y de las costumbres y tesoros artísticos y arquitectónicos de lejanos países, de los que la mayor parte de la población jamás habría podido adquirir ni siquiera el más mínimo conocimiento.

En ese sentido, podría sin duda afirmarse que el arte del romanticismo poseyó un carácter didáctico, quizás una manera diferente de imperialismo y globalización, ya que no solo causó un gran impacto económico, sino que además generó hondas transformaciones sociales.

Los hacedores de cerámica que no están ajenos a este proceso, ya que este creciente interés por el realismo y el desarrollo del proceso de transferencia en las cerámicas refinadas permitió llegar y llevar estos conocimientos y vivencias más allá de sus fronteras, llegando a nuestros territorios. Las vajillas mas que un instrumento utilitario pasan a ser un documento que
cuenta historias y nos acerca a la realidad europea, por lo que consideramos llega a modificar
nuestras costumbres y gustos, convirtiéndose en un marcador de estatus social, ya que una forma
de legitimación del poder de las nuevas clases en la región fue lograr parecerse más a su referente
europeo, alejándolo lo más posible del indio o negro que quizás forman parte de sus antepasados.

Las marcas en nuestra colección son mayoritariamente inglesas, lo que nos permite
considerar que si bien **hablamos español, comemos en ingles**. Estas son: Davenport,
stafforshire, Imperial stone, Copelland, Johnston Burdeaux entre otras.

Con respecto a los motivos encontrados y su significado dentro de nuestra sociedad tenemos:

1. Los motivos chinos fueron creados en un principio con la intención de imitar lo más
fielmente posible la porcelana china, los cuales reflejan la cotidianidad asiática, como la
vestimenta, peinados, costumbres de servidumbre y arquitectura. Estos elementos asiáticos están
en nuestro inconsciente colectivo desde el siglo XVIII, y al hacer referencia a algo chino lo
sentimos más cercano a nuestra realidad que lo que podrían estar los musulmanes.

   Sin embargo, los fabricantes de estas cerámicas refinadas también incorporaron elementos
de su propia cultura para lograr una mayor identificación del grupo social al que van dirigidos
estos productos, por ejemplo el cambio del sauce por el árbol de manzano en el motivo *Willow*,
uno de los más populares en nuestra colección. La manzana es una fruta que se identifica con la
cultura inglesa y se encuentra en gran variedad de platos de su gastronomía, sin embargo, en
nuestros textos escolares observamos que en el área de aritmética se suman manzanas y peras,
nunca granadas o uvas, anones o mamones, frutas que identifican a los españoles y al territorio
venezolano respectivamente.

   2. Aun cuando la mayoría de los barceloneses consumían carne de ganado, no conocían el
campo anzoatiguense. La referencia que tenían de éste provenía de los posibles relatos que
llegaban a la ciudad y de las imágenes estampadas en las vajillas, las cuales representaban una escena bucólica del campo europeo con condiciones climáticas totalmente diferentes, idealizando la concepción del campo de este lado del mundo, como por ejemplo casas con chimeneas, techos de varias aguas entre otros.

Con respecto a la vestimenta femenina se presenta una marcada diferencia en la representación del campo y la ciudad, reflejada en la existencia o no de sombreros y sus tipos, vestidos de corte y estilos diferentes que nos llevan a pensar en discriminación social y división de clase. Por otra parte y conociendo el traje típico de los llanos venezolanos podríamos afirmar que este posiblemente tenga sus orígenes en las imágenes estampadas en estas vajillas que representaban el campo inglés y que a lo largo de los años tuvo que ajustarse a la adquisición de telas y el desarrollo de la confección. Por ejemplo en la actualidad el ideal de campo es el representado en la serie de televisión La Familia Ingalls.

Basados en esta reflexión podríamos asumir que se produjo una reafirmación de la división de clases existente para la época como lo son: el indio, el campesino y la gente de la ciudad, a través de las representaciones bucólicas que los ingleses realizaban de la vida en diferentes contextos.

3. Otro aspecto que refleja influencia inglesa es el de la arquitectura de finales del siglo XIX evidenciado en la construcción de edificaciones monumentales de teatros y edificios de gobierno quizás copiadas o que se hicieron necesarias para dar un nuevo estatus a la ciudad.

4. El patrón de la rosa, que es la flor nacional inglesa, está representado en casi todos los bordes de los platos. No siendo una flor nacional hasta el presente es una de las flores que más glamour y mayor estatus representa en nuestra idiosincrasia, en lugar del jazmín o la orquídea.
5. Otro motivo tiene que ver con los animales exóticos como el tigre y el elefante que causan fascinación hasta la actualidad y son atracción de zoológicos, circos y películas, ¿esta fascinación responde al hecho de no ser cotidianos entre nosotros, o, acaso responden a una tradición de aventuras fabulosas vividas por los ingleses en sus colonias africanas? ¿Por qué no nos emocionamos con boas o con las tarántulas, que son parte de nuestra fauna si los lugares en que pueden ser vistas también representan o significan aventuras?, sin embargo, son símbolos de terror gracias a las películas que se han hecho sobre ellas. Otro animal que se encuentra representado en las cerámicas es el faisán cuya carne es muy apreciada e implica una actividad de casería realizada por una clase social alta.

Todos estos motivos fueron apareciendo en momentos importantes dentro de la vida social de los ingleses como: la creación de la Sociedad de Horticultura, la inauguración del zoológico, la necesidad de poseer porcelanas originales de Asia, la ley sobre el registro de los motivos, entre otros, y sin duda traspasaron sus fronteras influyendo en la vida cotidiana en territorios no colonizados por los ingleses. En consecuencia, se produce una homogenización en cuanto a los gustos, costumbres y división de clases dentro de la sociedad no sólo barcelonesa sino nacional, ya que este tipo de cerámica ha sido encontrada en la mayoría de las investigaciones arqueológicas sobre la época colonial y republicana de nuestro país.

Al contrario de las investigaciones sobre el período prehispánico, donde la distribución espacial-temporal de estilos refleja una gran variabilidad étnica, consideramos que a partir del proceso de colonización europea comienza a producirse el fenómeno de la globalización a través de medios o mecanismos que si bien no fueron tan rápidos como lo son los medios actuales, si fueron efectivos en la modificación y homogeneización de usos, costumbres, conductas y maneras de ver el mundo en diferentes clases sociales. Sin embargo, como parte de este mismo
proceso, los grupos sociales han creado, y continúan haciéndolo en la actualidad, mecanismos para negociar y conservar sus valores identitarios.
TABLA DE IMAGENES
Espacios en Disputa en el Noroccidente de Venezuela (siglos XVI-XVIII)\(^1\).

by

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Resumen
A principios del siglo XVI se realizaron los primeros contactos entre indígenas y europeos en la costa norte de Venezuela. Esto inició un proceso de transición en el cual se superpusieron dos paisajes humanos, el aborigen multicultural, y el colonial europeo. En este trabajo exploraremos, basados en datos espaciales arqueológicos y evidencia documental, este proceso. Proponemos dos hipótesis, la primera sostiene que entre los nodos urbanos creados por el sistema colonial europeo, sobrevivió el o los sistemas socio/políticos aborígenes. La segunda hipótesis, relacionada con la anterior, es que a partir del siglo XIX, con las guerras independentistas y luego las federales se origina la verdadera desestructuración de los sistemas regionales, comunales y familiares que lograron subsistir a la conquista y colonización. Este modelo hipotético ofrece explicaciones plausibles a las secuencias registradas en tres regiones del Noroccidente de Venezuela, y específicamente, a las discontinuidades observadas en el registro de la cultura material.

Introducción:

\(^1\) Este trabajo constituye un modesto homenaje a la memoria de J.M. Cruxent, fundador de la arqueología Profesional en Venezuela, e Irving Rouse insigne arqueólogo norteamericano.
A principios del siglo XVI se realizaron los primeros contactos entre indígenas y europeos en la costa norte de Venezuela (Figura 1). Esto inicio un proceso de transición en el cual se superpusieron dos paisajes humanos, el aborigen multicultural, y el colonial europeo. El estudio de este proceso de transición es el objetivo central de este trabajo, en el cual presentaremos dos hipótesis que nos han permitido elaborar modelos que explican las continuidades y discontinuidades observadas en el registro arqueológico del Noroccidente de Venezuela entre los siglos XVI y XIX Dc. Nuestra primera hipótesis sostiene que entre los nodos urbanos creados por el sistema colonial europeo, sobrevivió uno o más sistemas socio/políticos aborígenes. La segunda hipótesis, relacionada con la anterior, es que a partir del siglo XIX, con las guerras independentistas y luego las federales se origina la verdadera desestructuración de los sistemas aborígenes regionales, comunales y familiares que lograron subsistir a la conquista y colonización. Nuestro análisis comenzará por presentar la situación sociopolítica aborigen entre los siglos XII-XVI D.C.

At the dawn of the XVIth century the northern coast of Venezuela became the scenario for the first encounters between the local indigenous societies and the European newcomer’s. These events triggered a transition processes in which two human landscapes superimposed each other, the local multicultural aboriginal landscape and the monarchical European. This work aims to explore this transition, based on spatial archaeological evidence and written documentation from this period. Two hypotheses are put forward, the first one holds that between the nodes of urban centers created by the Colonial authorities, survived one or more socio/political
aboriginal systems. The second hypothesis, maintain that after the Independence and the Federal wars, during the XIXth century, the aboriginal systems that managed to survive the processes of conquest and colonization, was disarticulated. This hypothesis offers a model that helps us explain some archeological sequences recorded in three regions from northwestern Venezuela, and specifically, to interpret some discontinuities observed in the material culture record.

Au début du siècle XVI on a effectué les premiers contacts entre indigènes et européens dans la côte nord du Vénézuéla. Ceci j'entame un processus de transition dans lequel on a superposé deux paysages humains, l'aborigène multico. Dans ce travail nous explorerons, basés des données spatiales archéologiques et des preuves documentaires, ce processus. Nous proposons deux hypothèses, la première soutient qu'entre les noeuds urbains créés par le système colonial européen, a survécu ou les systèmes partenaire/politiciens aborigènes. La seconde hypothèse, en rapport avec ce qui est précédente, est qu'à partir du siècle XIX, avec les guerres independentistas et ensuite les fédérales commence la véritable déstructuration des systèmes régionaux, communaux et familiaux qui ont obtenu subsister la conquête et la colonisation. Ce modèle hypothétique offre des explications plausibles aux séquences enregistrées dans trois régions du Norocidente du Vénézuéla, et spécifiquement, les discontinuités observées dans le registre de la culture matérielle.

El Norocidente de Venezuela siglos XII-XVI D.C.

Este sistema se expresa materialmente en el espacio en comunidades pequeñas, contentivas de una o dos casas comunales (malocas), con algunas estructuras adicionales. Estos asentamientos tenían un patrón disperso, no centralizado, sin mayores variaciones en tamaño. Las distancias entre estos asentamientos no eran

El planteamiento de este modelo político prehispánico nos permitió elaborar otra hipótesis, la cual encuentra sustento en la evidencia documental y explica nuestro registro arqueológico a partir del siglo XVI D.C. Esta hipótesis sostiene que este sistema aborigen regional sobrevivió, modificado hasta por lo menos el siglo XVIII (Arvelo 2003), lo cual permitió que las sociedades aborígenes se reacomodaran dentro de la estructura colonial impuesta, utilizando para ello el nuevo ámbito rural creado por la imposición del eje urbanístico europeo (Arvelo 2005). El reacomodo cultural, social y político se generó por varias vías, una de ellas fue alejándose de los centros urbanos, y recreando los principios culturales propios de las nuevas unidades étnicas, lingüísticas, sociales y políticas, en este sentido los espacios rurales pudieron convertirse en áreas de refugio cultural (Arvelo 2005). Otra forma de resistencia fue el enfrentamiento directo, reseñado en diferentes fuentes históricas (Magallanes 1990).

**La conquista y colonización Europea (siglos XV-XVIII):**

¿Cómo fue entonces el proceso de fundación de centros urbanos europeo en la costa marítima venezolana? Los primeros encuentros entre europeos e indígenas no fueron amistosos, como no lo fueron tampoco los subsiguientes. No obstante, la experiencia antillana ya había generado conciencia ante el exterminio de las sociedades aborígenes de esta región, lo que generó algunos cambios en la empresa colonizadora. Por ejemplo, la política seguida por Juan de Ampíes para la fundación de Coro (1624) y
de Juan de Carvajal para El Tocuyo (1545) fue exitosa, debido a que sobre esta base fundacional se inició y desarrolló el eje urbanístico que subsiste hasta el presente (Lovera 1987). Ampíes y Carvajal siguen la política fundacional que se basó en la ideología del poblamiento, la cual perseguía mantener la población nativa para aprovecharse de sus comunidades como mano de obra, y de sus conocimientos del medio ambiente para establecer “granjerías” (producción agropecuaria tanto de sustento de las comunidades, como para la exportación) (Perera 1964, Ramos 1970, Ladero Quesada 1994, Aznar Vallejo 1994), e inclusive la mezcla biológica con estas poblaciones aborígenes, tal como se había hecho en la convivencia con los moros en España, y en la conquista de las islas Canarias (Ramos 1970, Ladero Quesada 1994, Aznar Vallejo 1994). A mediados del siglo XVI se instaura el régimen de la Encomienda (Arcila 1966), el cual deja muy poco espacio institucional para continuar con la ideología del poblamiento, no obstante, el funcionamiento pleno de esta institución en Venezuela se logra varios años después y se extingue a mediados del siglo XVIII (Arcila 1966) Paralelamente a estos éxitos fundacionales, también existieron fracasos, tales como los repetidos intentos de fundar los centros urbanos de Maracaibo, Barquisimeto y Nirgua, los cuales fueron fuertemente rechazados por los grupos que estaban asentados en estas regiones (Aliles, Toas y Zaparas en la laguna de Maracaibo; Coyones en las llanuras de Barquisimeto, y Jirajaran en la serranía de Nirgua). La resistencia indígena se mantuvo hasta bien entrado el siglo XVII, cuando fue posible establecer la red de caminos que comunicaran el Occidente, desde Coro, con la zona Central de Venezuela, con la ciudad de Caracas (Rivas 1989).
Esta red urbanística se superpone sobre la base paisajista indígena, a través de la encomienda, la cual asigna asentamientos completos como mano de obra a los colonizadores. Entre los espacios urbanos se genera un mundo rural, compuesto por los pueblos de indíos, pueblos mixtos, y haciendas y hatos, que constituyen otra parte de los nodos de distribución poblacional (Perera 1969: 59). La mayoría de los pueblos de Indios fundados en el siglo XVI, aún se consideraban como tales hasta el siglo XVIII, y algunos inclusive sobrevivieron las guerras independentistas y federales del siglo XIX (García 1977).


**La Costa Falconiana (1520-1800):**

Los Caquetíos fueron los habitantes de esta región para el momento del contacto con la sociedad europea. La alfarería incluida dentro de la Sub-Tradición Dabajuroide es representativa de estos grupos de habla arawak. Esta tradición tiene una cronología conocida que abarca desde aproximadamente el siglo IX hasta el siglo XVII D.C., y existe concordancia entre las comunidades Caquetías mencionadas en los documentos
escritos (Ramos 1970, Perera 1964) y varios sitios arqueológicos de la Tradición Dabajuroide (Oliver 1989). Son notorios los sitios Guarajurebo/Jurijurebo el cual de acuerdo a los documentos fue una de la comunidad Caquetía, visitada por Villegas en 1512, donde vivía una de las hijas de Manaure, el gran Cacique Caquetio (Ramos 1978). El sitio Falmi 100 Jose Gregorio Hernández, Dabajuroide también, tiene los fechados radiocarbónicos más tardíos de la Tradición, 1680 D.C. La mayoría de los pueblos de indios más tempranos reportados para esta zona, también están asociados a sitios arqueológicos de la Tradición Dabajuroide, por ejemplo, Jurijurebo y Moruy (Figura 2). Asimismo, se establecen como pueblos de Indios o Doctrinas Capatárída, Zazárí, Mitare, Cumarebo, Guaibacoa, así como Santa Ana, y Pueblo Nuevo en la península de Paraguaná todos estos pueblos están asociados con yacimientos arqueológicos Dabajuroídes (Figura 2). Durante los siglos XVII y XVIII se siguen reconociendo nuevos pueblos, hasta que ya para siglo XIX se reconocen muchos de estos pueblos como criollos o como parroquias (Figura 3, 4, 5). El registro arqueológico conocido hasta ahora indica que para este siglo ya ha desaparecido la cerámica Dabajuroide, y sólo se encuentran cerámicas importadas (diferentes tipos de semiporcelanas, gres), diferentes tipos de botellas de vidrio y lozas criollas, en contexto de ocupaciones rurales criollas, compuestas de estructuras habitacionales de bahareque, corrales, lagunas artificiales, y cementerios.

**El Valle de Quibor (1545-1800):**

El pueblo de Quibor fue fundado en 1620 (Perera 1964), pero antes de su fundación el valle de Quibor estaba habitado por comunidades indígenas gayón, axagua, ayoman, coyón (Perera 1964, Avellán de Tamayo 1997, Arvelo 1995, 2000,
2005). Tal como señalan los documentos, el valle o los llanos de Quibor era el traspatio de El Tocuyo, este valle estaba habitado por buena parte de los indios encomendados que nutrían a El Tocuyo con diferentes bienes agrícolas, así como telas y sal (Cey 1994, Rosas 1998, Arvelo 1995), asimismo era la zona donde estaban los hatos y haciendas de los europeos asentados en El Tocuyo, y que proveían de carne, cueros, leche y sus derivados, además de animales de carga (Avellán de Tamayo 1997, Cey 1994, Perera 1964), la distribución de sitios Tierroides tardíos y sitios con evidencias de ocupación colonial ilustran la situación para ese momento (Figura 6). Hasta 1776 Nuestra Señora de Altagracia de Quibor era el único pueblo reconocido en las llanuras de Quibor (Perera 1964). Sabemos por tradición oral, que los pueblos de Guadalupe y Poa Poa existían para ese mismo siglo, mientras que El Vigiadero y El Patriota fueron fundados en el siglo XIX (Aranguren 1991: 29), mientras que el resto debieron aparecer entre finales del XIX y el siglo XX (Figura 7). Durante nuestras investigaciones en el Valle de Quibor (1990-1995) pudimos observar la desaparición de algunos caseríos por efecto de la expansión de los latifundios, y la aparición o el crecimiento de algunos poblados a lo largo de la carretera asfaltada que atraviesa el Valle.

El registro arqueológico nos indica que la alfarería perteneciente a la Sub-Tradición Tierroide fue manufacturada hasta bien entrado el siglo XVIII, y que uno de sus estilos está estrechamente vinculado a la producción de sal de tierra, el estilo Guadalupe (Arvelo 1995, 2005, López 2000, González 2005). La cerámica Tierroide desaparece en el siglo XVIII, y es sustituida en el registro arqueológico por cerámicas importadas (semiporcelanas y gres), recipientes de vidrio y lozas criollas, la mayoría de
manufactura local. Lo mismo que en la secuencia falconiana, estos restos alfareros están en contextos de asentamientos rurales.

**Análisis:**

La comparación de estas dos secuencias deja claro los siguientes aspectos:

1) La mayoría de los pueblos fundados entre los siglos XVI y XVII, tanto en la costa norte de Falcón como en el Valle de Quibor, están asociados con ocupaciones aborígenes tardías (Series Dabajuroide y Tierroide), muchas de las cuales están estrechamente vinculadas con los grupos encomendados agrupados en dichos pueblos (Caquetíos y Coyones/Gayones/Ayomanes).

2) El salto cronológico encontrado en el registro arqueológico reseñado coincide con los eventos de las guerras de Independencia (1810-1824) y con las Guerras Federales (finales del XIX). Estas guerras, por un lado, ocasionaron problemas demográficos importantes, lo cual originó despoblamientos en el área rural. Por otra parte, con el gobierno de Guzmán Blanco se elimina a nivel legal la existencia del indígena, lo mismo que el pardo y el negro, y todos pasan a formar parte de la ciudadanía de la república. Con esto se pierden los derechos comunales y la posibilidad de existir legalmente como grupos étnicos diferenciados. Estos eventos históricos concuerdan con la desaparición de las lozas indígenas y la sustitución de estas por materiales importados y las lozas criollas.

**Conclusiones:**

En conclusión el proceso de disputa por los espacios habitados en el Norooccidente de Venezuela entre los siglos XVI y XIX fueron mucho más complejo de
lo que acepta nuestra historia oficial. Lejos de haber sucedido una eliminación de la población indígena en el siglo XVI, la evidencia documental y arqueológica, señala un período de transición de casi tres siglos, durante los cuales las comunidades indígenas se reagruparon y renegociaron su espacio ancestral con los nuevos pobladores europeos. En este trabajo no intentamos responder todas las preguntas que implican esta afirmación, pero abrimos las puertas a nuevas interpretaciones de nuestro pasado aborigen.

Bibliografía


Figura 1
Figura 2
Figura 3
Figura 4
Figura 5
Figura 6
Análisis Espacial en el Área de la franja nor-costera del Estado Falcón (Venezuela), durante los siglos XIX y XX.

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Resumen

En la franja nor-costera del estado Falcón (Venezuela), se ubicaron una serie de sitios arqueológicos que abarcan una secuencia cronológica de ocupación desde el siglo XIX hasta el XX. Estos sitios representan parte de un espacio rural, ocupado por “comunidades campesinas”. El espacio que estos grupos han habitado a través del tiempo ha sido modificado a partir de prácticas sociales, políticas y económicas, generando transformaciones en el paisaje. Por lo tanto, nos acercaremos a analizar los cambios producidos en el espacio, durante estos dos siglos en esta área de estudio, a partir de la cultura material proveniente de los sitios arqueológicos ubicados allí y de su correlación con la información histórica documental.

Abstract

In the norwest-coast of the Falcon state (Venezuela), many archaeological sites from 19th and 20th century was located in the rural space. This space has been modified by social, political and economic practices, generating transformation. Therefore, we will approach to analyze the changes produced in the space, during these two centuries in this area of study, through the archaeological evidence and its correlation with the documentary historical information.

Résumé

Dans la bande nor-costera de l'état Falcon (Vénézuéla), on a placé une série d'emplacements archéologiques qui s'étendent une séquence chronologique d'occupation depuis le siècle XIX jusqu'au XX. Ces emplacements représentent une partie d'un espace rural, occupé par des « Communautés campagnardes ». L'espace que ces groupes ont habité à travers le temps a été modifié à partir de pratiques sociales, politiques et économiques, en produisant des transformations dans le paysage. Par conséquent, nous nous approcherons analyser les changements produits dans l’espace, pendant ces deux siècles dans ce secteur d'étude, à partir de la culture matérielle provenant des emplacements archéologiques situés là et de leur corrélation avec l'information historique documentaire.
**Introducción**

La finalidad de este trabajo, es mostrar algunos avances de una investigación más profunda, en donde se tiene como objetivo realizar un análisis espacial a nivel regional con la evidencia arqueológica que se recolectó en el Proyecto de Arqueología de Rescate del Proyecto ICO (1)(Arvelo y López 2004), proveniente de 87 sitios localizados a lo largo de una transecta de 130 km de largo por 50 mt de ancho en la franja norcoaster occidental del estado Falcón, en Venezuela (figura 1). El análisis que pretendemos realizar nos permitirá inferir si algunos eventos históricos producidos durante el siglo XIX y XX tuvieron alguna incidencia en la organización espacial en nuestra área de estudio, por lo que hacemos uso de la historia para contrastarla con la arqueología.

Venezuela durante los siglos XIX y XX, atravesó por períodos donde se generaron cambios significantes en el ámbito social, político, económico y cultural, lo cual infirió directamente en la organización espacial de los grupos humanos asentados en nuestro país. Entre algunas de las causas de estos cambios estuvieron los procesos bélicos (Guerra de Independencia en 1910 y guerra federal producida entre 1858 y 1853) y la inserción del capitalismo en el siglo XIX, y el inicio de la etapa petrolera en el siglo XX. Estos eventos marcaron etapas importantes en el proceso de ocupación y/o reocupación de los espacios rurales o periféricos a nivel nacional.

El área de estudio, por encontrarse a las afueras de su centro urbano principal, la ciudad de Coro (figura 2), es considerada por nosotros como espacio rural y por lo tanto habitado por “comunidades rurales”, las cuales formaron y aún siguen formando parte activa en la construcción y apropiación del espacio, tomando decisiones sobre la manera en que ocupan estos (Knapp y Ashmore 2000). La organización espacial de los grupos...
humanos, va a estar determinada por el conjunto de factores naturales y culturales, permitiendo su establecimiento en determinadas áreas.

**La Evidencia Arqueológica**

El registro arqueológico estuvo conformado por dos tipos de evidencias de cultura material: la mueble correspondiente al material que puede ser transportado de un lugar a otro y la inmueble conformada por aquella evidencia que no puede ser trasladada (estructuras).

Entre la cultura material mueble pudimos encontrar diversidad de materiales, sin embargo el vidrio y la semiporcelana son los que nos permitieron ubicar cronológicamente los sitios arqueológicos con una mayor precisión y su identificación se realizó a partir de rasgos diagnósticos (figura 3 y 4) (Deagan 1997, Haviser 1998). La semiporcelana nos dio rangos temporales que van desde el siglo XIX hasta 1930 y el vidrio a pesar de mantenerse en el mismo rango nos proporcionó también fechas más tardías.

La cultura material inmueble estuvo conformada por estructuras, caminos, lagunas, entre otros (figura 5). Este tipo de evidencia nos permitió observar a nivel intrasitio los rasgos que caracterizaban a cada una de las áreas, y que fueron ubicadas a partir de coordenadas UTM por medio de geoposicionadores satelitales.

Entre las estructuras pudimos observar en su mayoría, plantas de habitación construidas principalmente a base de bahareque (figura 6) y en muy pocas estructuras se observó la inclusión del cemento como material constructivo. Existen también otras estructuras como lagunas naturales y artificiales (utilizadas como fuente de agua semipermanente por la escasez de esta en el área y las cuales también se usaban y se siguen
usando para regar plantaciones y para consumo humano), caminos, sistemas de contención de agua llamadas torobas (2), entre otras.

**Resultados Preliminares**

A partir de los datos obtenidos de nuestra cultura material mueble mediante su correspondiente identificación, se pudo observar que hay por lo menos dos períodos históricos representados en nuestra área de estudio: un período republicano que abarca desde 1830 hasta 1930 y un período actual que va desde 1930 hasta el presente. Tomando en cuenta esta periodización observamos que el 54% de los sitios fueron ocupados durante los dos períodos continuamente, mientras que 16% de los sitios fueron ocupados durante el período republicano y después fueron abandonados y el 30% restante fueron ocupados solo en el siglo XX (figura 7).

Por otro lado, nuestro registro espacial de sitios arqueológicos nos permitió observar una distribución diferencial de estos dentro de nuestra área de estudio, donde hay una mayor proporción de sitios hacia la parte oeste (donde se presenta una mayor aridez del terreno) y una menor proporción de sitios hacia la parte este (donde la vegetación es un poco más densa). Así mismo tenemos que hubo una baja proporción de sitios arqueológicos con respecto a estos asentamientos actuales, según la información que nos proporcionó los planos cartográficos de 1962 para el área, lo cual nos permitió inferir que para mediados del siglo XX, hubo un crecimiento poblacional. Es importante acotar, que a partir de la información cartográfica y nuestros datos arqueológicos, notamos que las mismas áreas donde se encuentran los sitios arqueológicos ubicados temporalmente en el siglo XX, aún continúan ocupadas pero en un área más extendida y con una mayor
concentración de asentamientos, por lo tanto estas áreas se convirtieron de asentamientos
aislados a asentamientos concentrados en forma de “comunidades” (figura 8).

A pesar de la existencia de centros urbanos importantes, como la ciudad de Coro,
La Vela de Coro y los pueblos de Mitare y Puerto Cumarebo, la documentación histórica
menciona que la mayor densidad de la población venezolana para la mitad del siglo XIX,
la cual representaba un 80%, estaba diseminada en pueblos, aldeas y plantaciones y apenas
algunos centros urbanos tenían más de veinte mil habitantes cada uno, según el Censo
Nacional de 1891. Por lo tanto, la estructura socio-demográfica de tipo rural-tradicional, se
mantuvo a pesar de la desestructuración política ocurrida durante el siglo XIX, a partir de
los movimientos sociales producidos allí (Brito Figueroa 1975).

La influencia de la etapa de modernidad europea con múltiples innovaciones
tecnológicas, toca muy de cerca la realidad falconiana de finales del siglo XIX en muchos
aspectos (De Lima 2002), uno de ellos es la construcción del Ferrocarril Coro-La Vela, el
cual inició operaciones en 1898 y la paralizó en 1938 (De Lima 1999, Mujica 2003). Este
ferrocarril aunque fue de corta distancia, marcó cambios importantes en el flujo de
mercancías, sin embargo este proyecto no tuvo mucho auge, pero fue hasta entrado el siglo
XX, cuando las vías de tierra comenzaron a construirse, sin suplantar los caminos de
recuas, que eran usados como medio de comunicación entre los distintos poblados, y por
donde transitaban las mulas para transportar bienes de comercio (figura 9). Muchos de
estos caminos de recuas se usaron como base para la construcción de las carreteras que
comunicaban principalmente con Barquisimeto, al sur de ese estado. Luego con el
desarrollo petrolero a principios del siglo XX, se comienza a construir la red de carreteras
asfaltadas que se encuentran en el estado, actualmente.
Como consecuencia de la Guerra de Independencia y la Guerra Federal, se trastocaron las relaciones productivas en Coro y su región de influencia, debido a los cambios profundos en torno a la tenencia de la tierra y la recomposición de las clases sociales, los cuales fueron algunos de los objetivos de estos dos movimientos (Brito Figueroa 1975). Esto permitió sentar las bases para la formación del mercado interno, con el desarrollo de algunas industrias de productos de consumo masivo hacia finales del siglo XIX (jabones, velas, aceite de castor, suelas, pastas alimenticias, tabaco, etc)(De Lima 2004) . El espacio rural, se convirtió con el surgimiento de las industrias centralizadas en la ciudad, en el proveedor de mano de obra necesaria para la producción. Sin embargo, los circuitos comerciales establecidos durante el siglo XIX por los arrieros, continuaban utilizando, pues la producción de algunos rubros como el café, el dividive y el comercio de pieles de chivo, continuaron siendo de mucha importancia para la exportación (De Lima 2002) .

En cuanto al aspecto de planificación urbana, el núcleo inicial de Coro se formó alrededor de la actual catedral; y a lo largo del tiempo, la ciudad se extendió primero hacia el oeste debido a la influencia ejercida por la vía de relación con Los Puertos de Altagracia y por consiguiente con Maracaibo, y más tarde hacia el este a lo largo de la vía, también por tierra, que iba al puerto de La Vela de Coro, a Pueblo Cumarebo y a continuación, hacia la depresión de Yaracuy (Fundación Polar 1988). Al mismo tiempo, tendía a avanzar hacia el sur por la influencia que ejercía la vía que llegaba hasta Barquisimeto rodeando la sierra de San Luís. No fue hasta más tarde que avanzó hacia al norte ocupando unas tierras ligeramente depresionadas que se encharcaban al producirse las lluvias. En esta franja había demorado la expansión del ambiente urbano; pero vencido este obstáculo se produjo
un nuevo avance hacia el norte debido a la atracción que ha ejercido la carretera que conduce a la península de Paraguaná, a partir de la década de 1940.

**Conclusión**

El análisis de la evidencia arqueológica a partir de la perspectiva espacial y tomando en consideración la documentación histórica, nos permitió tener un panorama más amplio sobre los cambios que pueden observarse en la ocupación del espacio durante los siglos XIX y XX.

Entre los siglos XVI y XVIII, se establece una organización espacial a partir de la fundación de pueblos, que en algunos casos fueron creados sobre los propios asentamientos indígenas, y vemos que para el siglo XIX y XX las áreas de ocupación se mantienen en los mismos espacios, con algunos cambios referentes tanto al aumento de tamaño de las áreas habitadas, como la inserción de elementos que modifican el espacio.

A pesar de las guerras producidas en el país durante el siglo XIX, donde hubo una disminución bastante significativa de la población y la posterior etapa de desarrollo petrolero durante el siglo XX, se mantiene una continuidad de ocupación humana en la región.

La historia siempre ha sido construida a partir del aislamiento de las regiones con respecto a un centro urbano, lo cual debe ser dejado atrás y tomar en cuenta a los verdaderos actores sociales, los cuales forman parte activa en la construcción de los espacios. La arqueología en este caso nos permitió observar algunas particularidades que la historia no ha tomado en cuenta por su gran generalidad.
Notas

(1). El Proyecto de Arqueología de Rescate del Proyecto ICO (Proyecto ARAAPICO), se realizó entre los años 2003 y 2004, en la franja costera noroccidental del estado Falcón (Venezuela). Este proyecto tuvo como objetivo rescatar la información arqueológica que se encontraba en la zona que iba a ser alterada por la instalación de un gasoducto. En este proyecto participaron las empresas PDVSA Gas, Vincler Oil & Gas, Universidad Nacional Experimental Francisco de Miranda (UNEFM) y el Instituto Venezolano de Investigaciones Científicas.

(2). Toroba es un sistema usado para retener la humedad de la tierra en zonas muy secas o áridas en la época lluviosa. Este sistema se elabora a partir de estacas clavadas en el piso y entre cada una de ellas se coloca un entramado de ramas secas.

Figura 1
Figura 4

Figura 5
### Figura 6

![Imagen 1](image1.png)

![Imagen 2](image2.png)

### Figura 7

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<th>Períodos Cronológicos</th>
<th>Cantidad de sitios</th>
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<td>16</td>
</tr>
<tr>
<td>Actuales</td>
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<td>30</td>
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<td>54</td>
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<tr>
<td>Total</td>
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</table>
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Etude des vestiges d’indigoteries en Guadeloupe

by

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Résumé
L’indigo a été produit dans la majorité des îles de la Caraïbes au XVII-XVIIIe siècle. Pourtant les indigoteries ont été très peu étudiés, délaissées au profit des vestiges liés à l’industrie sucrière qui a laissé davantage de témoignages d’ordre matériel et documentaire. Un programme de prospection thématique débuté en Guadeloupe en 2004 et poursuivi en 2005 et 2006 a permis de recenser de nouvelles indigoteries. Une trentaine sont aujourd’hui connues dans l’archipel ce qui a permis de mener une étude exhaustive de ce type de vestiges. Après une analyse de la répartition géographique des indigoteries, la réalisation de plusieurs sondages archéologiques a permis de confronter les vestiges de terrain aux sources documentaires anciennes et d’élaborer une typologie des installations qui est susceptible de servir de référence aux autres îles de la Caraïbe.
Introduction

L’indigo est une matière tinctoriale qui a été produite dans la majorité des îles de la Caraïbe au XVII – XVIIIème siècle pour être exportée vers l’Ancien Monde. Pourtant les indigoteries ont été très peu étudiées, délaissées au profit des vestiges liés à l’industrie sucrière qui a laissé davantage de témoignages d’ordre matériel et documentaire.

En Guadeloupe, les premières indigoteries ont été formellement identifiées à la fin des années 1990 grâce à une recherche menée par X. Rousseau et Y. Vragar sur l’île de Marie-Galante.

La nature des installations

Les installations nécessaires à la production d’indigo consistent en une série d’au moins trois cuves : la première appelée trempoire est remplie d’eau dans laquelle la plante fauchée va macérer. Par l’ouverture d’un conduit, on laisse ensuite s’écouler le liquide obtenu dans une seconde cuve appelée batterie. Par l’adjonction de chaux suivie d’oxygénation par battage du liquide, les particules d’indigo insolubles dans l’eau vont se former. On laisse s’écouler le mélange dans une troisième cuve appelée reposoir au fond duquel s’ouvre une petite cuve ovale appelée bassinot dans lequel il va finir de décanter. La bouillie obtenue est mise à égoutter puis à sécher dans des petits caissons en bois pour obtenir des carreaux d’indigo prêts à l’exportation.

La typologie des indigoteries de Guadeloupe

Sur les 31 indigoteries aujourd’hui en Guadeloupe, 12 ont été sélectionnées en raison de leur bon état de conservation pour servir à l’élaboration d’une typologie. La principale variable rencontrée est celle du nombre de cuves et de leur différente organisation entre elles. On note une grande diversité en la matière puisque six types ont pu être distingués. Les trois sous-types distingués pour le type 1 tiennent à la position du bassinot dans lequel est recueilli l’indigo à la fin du processus de fabrication. Il faut remarquer que cette cuve n’est quasiment jamais visible puisqu’en raison de sa configuration elle doit se combler rapidement après l’abandon de l’installation. Toutefois la réalisation de sondages archéologiques sur deux indigoteries a permis de les mettre au jour comme on va le voir dans la partie suivante.
**Étude de cas**

* - l’indigoterie de l’Anse des Rochers -

Cette indigoterie a été découverte fortuitement en 2004. Elle se situe sur le littoral sud de la Grande-Terre à moins de 20 mètres de la mer. Elle présente une trempoire carrée de 2,20 m de côté (dimensions intérieures). Le nettoyage des maçonntries a permis de découvrir quatre trous de poteaux de section carrée dans le mur de la trempoire. Les poteaux servaient à l’implantation d’un couvercle de bois qui permet de maintenir les plants d’indigofère bien immergés pendant tout le processus de macération. Les études documentaires ont permis de définir que ce type de dispositif s’est développé dans le seconde moitié du XVIIe siècle. Auparavant, des pierres étaient simplement déposés dans la cuve par dessus les plants pour bien les maintenir dans l’eau comme le précise Rochefort dans son ouvrage publié en 1658. L’eau servant à remplir la trempoire était puisée dans un puits creusé dans le substrat calcaire. Un sondage archéologique y a été réalisé mais nous n’avons pu atteindre le fond pour des raisons de sécurité.

En contrebas de la trempoire se situe la batterie. On remarque que cette dernière dispose d’angles arrondis probablement pour limiter le risque de débordement de la cuve lors du battage du liquide. On peut presque parler d’innovation technique puisque c’est la seule trempoire connue de ce type. Cette cuve a été entièrement fouillée ce qui a permis de repérer le conduit partant vers la troisième cuve dans laquelle est recueilli l’indigo après que le battage soit terminé.

Cette troisième cuve ovale appelée *bassinot* par certains auteurs est apparu très bien conservée. Ses parois internes ont conservé la couleur bleue de l’indigo. On remarquera au passage que la plupart des auteurs et les gravures représentent un bassinot qui s’ouvre sur le fond d’une cuve carrée appelée reposoir, ici absent.
- l’indigoterie de l’Anse à la Barque -

Cette indigoterie est actuellement la seule connue en Basse-Terre. Elle est située à un peu plus de 200 mètres de la mer, à proximité d’une ravine dans laquelle l’eau nécessaire au processus de fabrication était puisée. Les vestiges sont en remarquable état de conservation : cela s’explique par l’utilisation de roche volcanique dure pour sa construction alors qu’en Grande-Terre et à Marie-Galante les indigoteries ont été construites avec des pierres calcaires, plus tendres. Les murs de la trempoire ne présentent pas de trous de poteaux comme à l’indigoterie de l’Anse des Rochers. Il a été décidé de réaliser un sondage sur un des côtés de cette cuve pour vérifier si les poteaux ne se trouvaient implantés à l’extérieur comme cela apparaît sur certaines gravures anciennes. Très rapidement, nous sommes arrivés sur la semelle de fondation du mur, ce qui démontre que cette indigoterie ne disposait pas de couvercle.

La batterie située en contrebas a été entièrement fouillée. Sur le fond de cette cuve a été découvert du matériel correspondant à l’abandon de l’installation qui confirme qu’elle n’a pas fonctionné au-delà du XVIIIème siècle. On note la présence d’une bouteille carrée à col court caractéristique d’une production française de la première moitié / milieu XVIIIème siècle, de fragments de faïence probablement d’origine hollandaise et d’un fragment de fourneau de pipe en terre blanche hollandaise comme le prouve la marque apposée sur le pied du fourneau (chiffre 6 surmonté d’une couronne).

Un trou de poteau s’ouvrant sur le fond de la cuve a été découvert. Il est sans doute lié au dispositif de battage de l’eau. On peut imaginer par exemple une roue à palette reposant sur un axe vertical même si nous n’avons pas trouvé d’exemple d’un tel dispositif lors de notre recherche documentaire. Il faut savoir qu’un nombre important de systèmes différents ont été utilisés puisque nous en avons recensés 6 lors de notre recherche documentaire.
La cuve où était recueillie l’indigo a pu être mise au jour. Elle est plus petite et présente un profile différent que celle de l’Anse des Rochers. Cependant, on constate là aussi l’absence de reposoir.

**Éléments chronologiques et hypothèses**

Il est intéressant de noter qu’en Guadeloupe continentale (Basse-Terre et Grande-Terre), aucune indigoterie disposant de deux trempoires ou de deux batteries n’est aujourd’hui identifiée. On est en présence uniquement de plans simples comme celui de l’indigoterie de l’Anse des Rochers ou de l’Anse à la Barque. Par contre sur l’île de Marie-Galante les indigoteries disposant de deux séries de cuves constituent le type le plus courant.

Plusieurs indices laissent à penser que cet état de fait est le résultat d’une évolution des installations. Il existe en effet un décalage chronologique entre la production d’indigo de la Guadeloupe continentale et celle de l’île de Marie-Galante puisque pour la première l’apogée se situe en 1696 avec un nombre de 77 indigoteries alors que pour Marie-Galante il se situe en 1719 avec 86 unités de production. Cela s’explique par les attaques anglaises ou hollandaises qui vont se succéder à Marie-Galante, plus vulnérable que la Guadeloupe continentale pendant les différentes guerres qui se succèdent de 1676 à 1713. Les effets sont toujours les mêmes : la destruction des sucreries de l’île. Or différents auteurs s’accordent à dire que la production d’indigo dans les Caraïbes a souvent constitué une étape pour les petits propriétaires permettant de dégager des capitaux avant de se lancer dans la production de sucre, plus rentable mais aussi plus gourmande en investissements financiers. Ainsi ce contexte particulier a retardé le développement de l’industrie sucrière à Marie-Galante et donc contribué au maintien d’une production d’indigo forte pendant plus longtemps à Marie-Galante. Cela peut expliquer qu’une évolution des installations se soit poursuivie sur cette île. Des indices perceptibles sur le terrain vont aussi dans ce sens puisqu’on constate entre les
deux séries de cuves d’une même indigoterie des différences de taille conséquente qui illustrent sans doute l’antériorité de construction d’une série de cuves par rapport à l’autre.


Si une différence dans l’évolution des indigoteries existe entre la Guadeloupe continentale (Basse-Terre+Grande-Terre) et Marie-Galante comme on vient de le voir, la comparaison entre l’indigoterie de l’Anse à la Barque en Basse-Terre et celle de l’Anse des Rochers en Grande-Terre montre qu’une évolution est aussi perceptible entre ces deux îles.

L’absence de couvercle sur la trempoire de l’indigoterie de l’Anse à la Barque tend à démontrer qu’elle est plus ancienne que l’indigoterie de l’Anse des Rochers puisque comme on l’a vu ce dispositif s’est développé dans la seconde moitié du XVIIème siècle. La trempoire de l’Anse des Rochers comme d’ailleurs toutes celles de Marie-Galante disposent de trous de poteaux pour ancrer un couvercle.


En Grande-Terre, l’occupation est plus tardive puisque les premiers foyers de peuplement ne s’y développeront qu’à partir du premier quart du XVIIIème siècle.
Conclusion :

L’étude menée sur les indigoteries de Guadeloupe a permis de mettre en évidence une évolution de ces installations au cours d’une période inférieure à un siècle qui correspond à la durée de vie de cette industrie en Guadeloupe : les premières indigoteries y ont vu le jour dans les années 1640 et ont disparu définitivement en 1735.

Il reste à espérer que des études similaires puissent être menées dans d'autres îles de la Caraïbe puisque la quasi-totalité d’entre elles ont produit de l’indigo. Certaines régions du Nouveau-Monde comme la Caroline du Sud, le Brésil ou l’Amérique Centrale ont aussi été productrices. Les comparaisons qui pourraient en découler sont susceptibles de fournir des informations tant sur l’évolution des installations que sur leur conception qui est susceptible de varier en fonction des conditions géomorphologiques des zones étudiées par exemple ou de la nationalité des colons européens qui les ont construites.
Notes Sur les Mortis Chez les Caribes Insularis

by

Patrick Brasselet

Résumé

Prenant appui sur un ensemble de pratiques et de représentations tirées des chroniques françaises des 17e et 18e siècles, nous nous sommes interrogés sur les rapports entre vivants et morts chez les Caraïbes insulaires. Cherchaient-ils à gommer les défunts de leur mémoire ou au contraire à se les concilier ? Bien que les deux conceptions fussent présentes dans leur société, il nous est apparu que la pensée caraïbe mettait plutôt l’accent sur les idées de rupture et d’oubli.
Il est communément admis que les sociétés des basses terres d'Amérique du Sud s’efforcent d’exclure leurs défunts du monde des vivants. Nulle volonté chez elles de célébrer leurs morts, mais plutôt le désir souvent affiché de les oublier. Loin de chercher à maintenir une continuité entre vivants et morts, l’Amazonie indigène consacrerait donc la rupture comme attitude principale vis-à-vis de ces derniers. Partageant avec leurs voisins méridionaux de nombreux traits culturels - dont une cosmologie animique imputant subjectivité et sociabilité à un large éventail d’entités non humaines, morts inclus - les Caraïbes insulaires semblent avoir adopté sur le sujet une même position. En dépit de sources ethno historiques peu disertes, nous nous proposons donc de montrer dans ce bref article que les défunts caraïbes étaient rejetés dans le camp de l’altérité.

Soulignons d’emblée que nous ne nous étendrons pas sur les rites funéraires. Comme les travaux d’Arnold Van Gennep (1909) et de Robert Hertz (1970) nous l’ont appris ceux-ci sont toujours affectés, tout au moins dans un premier temps, d’un signe négatif. Partout quelqu’un qui vient de mourir est un être plein de rancune dont il faut se séparer, partout dans la phase initiale du rite, les sentiments qu’on prête au mort sont empreints d’agressivité. On ne sera donc pas surpris de lire sous la plume de Laborde, qu’après avoir inhumé le défunt au sein de sa demeure les Caraïbes lui plaçaient « deux petits canaris sur les yeux, afin qu’il ne voit ses parents et ne les rendent malades... » (1674, p. 37), ni encore sous celle de Labat, que lorsque le maître d’un carbet venait à mourir, les gens abandonnaient la demeure et allaient dans un autre lieu sans que personne pense à revenir loger ou s’établir en cet endroit (2004, p. 133). Le rejet, d’ailleurs, était d’autant plus radical que le mort était plus redouté de son vivant. Aussi est-ce avec les personnes accusées de sorcellerie qu’on atteignait des sommets en matière d’exclusion ; la hâte de les
expédier loin du village était telle, en effet, qu’après leur avoir brisé le crâne on abandonnait le corps à la mer sans lui accorder la moindre cérémonie (Laborde 1674, p. 12).

La figure du mort ennemi était si prégnante chez les Caraïbes insulaires, qu’on la retrouvait même lors des secondes obsèques de personnages influents ; fait d’autant plus surprenant, que le deuxième temps du rite consacre traditionnellement des actes d’intégration où les défunts sont honorés. Ainsi l’Anonyme de Carpentras rapporte qu’avant d’exhumer les os d’un chef de village, les plus vieux capitaines de l’île se tenaient autour de la fosse, « feignant en sautant de vouloir décocher leurs flèches sur la dite tombe » (1990, p. 227)

De toutes les entités peuplant l’univers caraïbe, les mapoya étaient les plus redoutées. Il n’est pas un observateur qui n’en ait relevé la trace, pas un qui n’ait évoqué les craintes qu’elles inspiraient. Souvent associées aux revenants, ces âmes erraient dans les lieux qu’elles avaient fréquentés de leur vivant. C’est pourquoi, dès qu’il faisait nuit et qu’ils allaient dormir, les sièges étaient renversés « sens dessus dessous afin, disaient-ils, que mabouya ne vienne s’y asseoir. » (Anonyme de Carpentras1990, p. 177). C’est pourquoi encore, lorsque que les Caraïbes percevaient une odeur nauséabonde, ils l’imputaient à l’esprit d’un défunt et décampaient au plus vite (Rochefort 1665, p. 527). A l’instar des spectres mirana d’Amazonie colombienne (Karadimas 2005, p. 85), les mapoya caraïbe étaient censés sécréter une odeur forte comparable à la puanteur de certains champignons auxquels, du reste, leurs noms étaient apposés : Mapoya ehuera (Breton 1666, p. 67). Sans pouvoir en apporter la preuve, avançons l’hypothèse que ces agressions olfactives liées à la présence d’un mort n’étaient pas étrangères à l’idée de « cadavre pourrissant ».

Signalons encore, au sujet de ces êtres solitaires, qu’ils s’attaquaient principalement aux humains les plus désarmés. Considérés plus vulnérables à cause de leur fragilité « animique », les femmes et les enfants étaient en effet les victimes préférées de ces fantômes. Une bonne illustration en est donnée par l’Anonyme de Carpentras qui, en présence d’un mabouya, se vit prier par son hôte caraïbe de se diriger rapidement vers l’épouse et l’enfant de ce dernier afin de les protéger (1990, p. 147).

Notons enfin que ces créatures, qui n’étaient jamais nommées que de manière générique, se manifestaient également dans les rêves. « J’en ai tiré quelques-uns hors du lit, dit Breton, qui se seraient volontiers jetés à genoux devant moi pour me remercier de ce que je les avais défendus de mapoya qui les battait. » (1999, p. 170).
A partir de ces discours sur les revenants, où ces derniers étaient perçus non comme des objets de « visions » mais comme des agents intentionnels, on peut inférer que les morts étaient dotés d’un poids ontologique semblable aux autres existants.

Les situations de rencontre avec les âmes des morts ne s’arrêtaient cependant pas aux seuls mapoya. Il arrivait parfois que l’une d’entre elles (probablement le ioüanni) descendît de la « case où se tient la lune » pour convaincre ses « parents » de l’y rejoindre en se laissant mourir. Le chamane qui incarnait cette âme avait beau user d’arguments séduisants, les Caraïbes ne s’en laissaient pas conter et, le renvoyant aussitôt, affichaient de façon patente leur volonté de s’en démarquer (Anonyme de Carpentras 1990, p. 179).

A considérer ce qui précède, on aurait bien des difficultés à voir dans les réactions des Caraïbe la marque d’un réel intérêt pour leurs morts. Pourtant, l’on demeure mal à l’aise devant des faits qui n’entrent pas facilement dans le cadre de cette interprétation.

Ainsi, exhumer quelques reliques, cheveux ou os, d’un défunt parent afin de solliciter son aide en matière de sorcellerie ou sa protection sous forme de prophétie (Laborde 1674, p. 15) n’est pas en vérité une donnée qui accrédite l’idée de rupture. De même, porter en pendentif de petites gourdes renfermant la poudre osseuse de chefs caraïbe décédés (Anonyme de Carpentras 1990, p. 227) ne conduit pas à penser qu’on assimilait les morts à des figures chargées d’hostilité. Pourtant, il semblerait que ce fût le cas. Chaque fois, en effet, que des restes corporels, cendres ou reliques, étaient exhibés en sautoir, (fêtes collectives, départs en guerre, rites de passage) ils provenaient d’êtres particulièrement redoutés, manifestant une propension à l’agressivité : oiseaux de proie, serpents, ennemis (ibid pp. 200-206, p. 227). Ainsi, les pouvoirs les plus forts étaient à l’évidence recherchés.
chez les êtres les plus dangereux, les plus profondément marqués d’altérité. Ce phénomène paradoxal qui consiste à « transformer un potentiel brut et dangereux, en un bénéfice pour la communauté » (Menget 1996 p. 131), renvoie sans aucun doute à la notion d’altérité constituante. Familière des idéologies amazoniennes, cette dernière semble donc pertinente pour rendre compte de la prédisposition des Caraïbes insulaires à considérer l’autre (morts, animaux, ennemis,…) comme nécessaire à leur reproduction sociale.

Interrogeons-nous désormais sur la présence ou non de formes de mémorisation des morts. C’est parce qu’ils qualifient exclusivement des individus singuliers que les noms propres seraient les mieux fondés à faire revivre les trépassés dans les mémoires. Or, les Caraïbes, comme bien d’autres populations amérindiennes, ne nommaient jamais les défunt « de peur, écrit Laborde (1674, p. 10), de penser à la mort ». Et puisqu’il était interdit de prononcer leurs noms, on voit mal comment un culte des ancêtres aurait pu se développer, si l’on entend tout au moins avec M. Fortes que ces derniers sont des « âieux nommés ayant des descendants vivants dans une classe généalogique donnée » (1965, p. 124).

La permanence du souvenir se manifeste souvent par des espaces durablement associés aux défunt. Tombes et cimetières, auxquels incombe traditionnellement cette fonction, semblaient néanmoins rejetés par la société insulaire. Aucune trace de cimetière n’apparaît en effet dans nos sources, quant aux tombes, si elles étaient bel et bien des lieux susceptibles d’entretenir le souvenir, l’impermanence résidentielle, liée à l’éclatement des groupes locaux lors du décès d’un chef, leur interdisaient de se fixer dans les mémoires.

Il est encore d’autres façons de retrouver ses morts. L’héritage en est une qui par la transmission de biens matériels ou d’attributs symboliques permet d’assurer une continuité

Pourtant, certains ornements de prestige subsistaient quelque temps encore. Calloùcouli, hérités pour certains de leurs grands-pères, mais également colliers composés d’ossements d’ennemis qui, selon Caillé de Castres, leur tenaient lieu de « titre de généalogie et d’actes affirmatifs de leur noblesse » (2002, p. 88). Si l’on ajoute à cela que cette société guerrière honorait ses défunts proches et lointains tués « au champ de bataille » en évoquant leur mémoire avant chaque expédition belliqueuse, une nouvelle question se pose alors sur leur réelle envie de « rompre les passerelles avec le passé ». Sans chercher à nous dérober gageons, cependant, que l’insistance sur une continuité entre vivants et morts, dont témoignent nos derniers exemples, traduise moins une volonté de se souvenir de la personne qu’un désir de faire valoir respectivement des droits statutaires et un devoir de vengeance.

En privant les morts d’une existence posthume dans la mémoire des vivants, les Caraïbes insulaires se sont donc donnés les moyens de les réduire rapidement à néant. Même si, comme on l’a vu, certains chefs célèbres ou guerriers éminents résistaient davantage à l’usure du temps, quelques décennies à peine suffisaient pour que leurs noms, leurs exploits, leurs objets fussent à jamais effacés des esprits. Si bien des sociétés ont choisi d’accorder une position privilégiée à leurs défunts en leur rendant un culte, les Caraïbes insulaires ont pris l’option inverse : celle de les oublier.
NOTES


3. On pourrait certes interpréter cette agressivité comme un témoignage rendant hommage au courage du défunt ainsi que nous l’avons parfois observé chez les Yanomami du haut Orénoque (Yeypê-theri, Iyêwei-theri) lors du rituel de consommation des cendres mortuaires (cérémonie correspondant aux secondes funérailles des peuples pratiquants l’inhumation).

4. Dans un précédent travail (Brasselet 2003, p. 280), nous avions suggéré l’existence d’un principespirituel nomméiaouia qui pourrait correspondre à l’une ou l’autre de ces âmes. Hypothèse d’autant plus vraisemblable que c’est par le même mot ya’wa que les Caraïbes de la Dominique désignaient, il y a peu encore, un esprit du «bush» (D. Taylor 1938, p. 153) dont on sait, que sous une forme animale, il est un avatar possible de ces âmes (Laborde 1674, p. 15).


7. On peut remarquer, par ailleurs, que cette destruction concerne toute trace matérielle susceptible d’évoquer le mort. Son jardin, par exemple, est frappé d’interdit (Anonyme de Carpentras 1990, p. 154).

8. Bijou en métal que les Caraïbes insulaires pendaient à leur cou (Breton 1990, p. 55).

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Excavations at the Barrett House, Falmouth, Jamaica, 2006

by

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Abstract
Murray State University (MSU) began an archaeological study of Falmouth, Jamaica in the summer of 2006, in conjunction with an ongoing restoration and development project conducted by Falmouth Heritage Renewal, Inc. Falmouth was founded about 1770 and soon became the major port of Trelawney Parish. By the mid-nineteenth century, the town began to stagnate economically. The first archaeological tests were placed in the yard of Edward Moulton Barrett’s house, home of the town’s leading citizen, built in 1798-1799. Preliminary analysis indicates that the lower soils zones contain relatively undisturbed occupation debris from the first decades of the house’s use. The ceramics, in particular, offer insight into the lifestyle of a wealthy member of the greater Atlantic mercantile community of the early nineteenth-century.

Résumé
Murray State University (MSU) a commencé une étude archéologique de Falmouth, Jamaïque en été de 2006, en même temps qu’un projet suivi de restauration et de développement conduit par Falmouth Heritage Renewal, Inc. Falmouth a été fondée environ 1770 et est bientôt devenue le port principal de la paroisse de Trelawney. Par le mi-dix-neuvième siècle, la ville a commencé à stagner économiquement. Les premières fouilles archéologiques ont été placés en cour de la maison d'Edward Moulton Barrett, maison du principal citoyen de la ville, établie en 1798-1799. L'analyse préliminaire indique que les zones bas de sols contiennent les débris relativement inentamé de métier des premières décennies de l'utilisation de la maison. La céramique, en particulier, aperçu d'offre du style de vie d'un membre riche de la communauté marchande atlantique plus grande du dix-neuvième-siècle tôt.

Resumen
Murray State University (MSU) comenzó un estudio arqueológico de Falmouth, Jamaica en el verano de 2006 conjuntamente con una restauración y un proyecto de desarrollo conducido por Falmouth Heritage Renewal, Inc. Falmouth fue fundada cerca de 1770 y pronto se convirtió en el puerto principal de Trelawney Parish. Por el medio del siglo XIX, la economía de la ciudad se comenzó a estancar. Las primeras excavaciones arqueológicas fueron puestas en la yarda de la casa de Edward Moulton Barrett, hogar del ciudadano principal de la ciudad, construido entre 1798-1799. El análisis preliminar indica que las zonas más bajas de la tierra contienen los escombros de ocupación que son relativamente imperturbados a partir de las primeras décadas del uso de la casa. En particular, la cerámica nos ofrece una idea de la vida de un miembro rico de la mayor comunidad mercantil atlántica de la primera parte del siglo XIX.
Introduction

On 19 July, 2006, the author began test excavations in the lot of the Edward Moulton Barrett house at 1 Market Street in Falmouth, Jamaica. The short-term goals of the project were first to recover a sample of artifacts from the early period of the Barrett lot occupation, towards assemblage patterning studies and spatial analysis of activities in the houselot, and second to reveal details of the architectural history of the Barrett house and lot, towards aiding the historic preservation efforts of Falmouth Heritage Renewal, Inc.

In the long term, the project aims to obtain a similar sample of lots representing households of varying social, economic, and ethnic character within Falmouth, to characterize archaeologically the range of the late eighteenth to early nineteenth century community.

Although the Caribbean has a rich history and archaeological record, synthetic, comprehensive investigation of any particular aspect of that record—particularly in the later eighteenth and nineteenth centuries, and for urban settings—is still in its beginning stages. Urban sites in Jamaica have not been ignored, as exemplified by Mathewson’s (1972a, 1972b, 1973) papers. His work, however, was not thoroughly published, and is represented only by specialized studies. Allsworth-Jones, Gray and Walters (1998, 2000, 2003; cf. Wesler 2002) made a recent foray into the Neveh Shalom synagogue in Spanish Town; it was ably reported, but only hints at the potential for archaeology that Robertson’s (2005) history of Spanish Town evokes. Port Royal, early capital of the British in Jamaica, has received some attention especially for its underwater component, but has not been thoroughly published in an archaeological analysis (despite useful popular treatments such as that by Pawson and
Buisseret [2000]). Despite these studies, Farnsworth’s (2001) collection of “Historical Archaeologies of the Caribbean” serves best to highlight the lack of systematic and integrative approaches to historical archaeology in general and the urban archaeology of the later historical record—the Georgian period and beyond—in particular.

Falmouth, Jamaica, offers itself as an excellent opportunity to remedy this gap in urban archaeology. Thomas Reid founded Falmouth in 1769, and named it in 1770, placing it on prime land along the harbor (Connolley and Parrent 2005). Adjacent land was owned by Edward Barrett, who began a subdivision called “Barrett Town.” In 1774, the first deeds were recorded in Barrett’s section, and by 1781 there were 8-10 houses connected by road to Martha Brae and along the coast. By the mid-1790s, Falmouth contained as many as 150 houses, a remarkable growth (Besson 2002:73). It was a mixed community from very early, as in 1775 a lot was purchased by two mulatto carpenters (Binney et al. 1991).

Falmouth’s prosperity, however, was not to survive the mid-nineteenth century. Three factors worked against it: the shallowness of the harbor which prevented deeper-draft steamships from entering the port; the bypassing of Falmouth by the railroad, which went to Montego Bay; and the rise of Kingston as the shipping center of Jamaica (Binney et al. 1991; Jacobs and Concannon 1970). In 1861 the census still showed more than 3,000 inhabitants (Ogilvie 1954), but Falmouth’s days of rapid growth were over.

Falmouth’s collection of intact structures and its retention of its Georgian street plan implies strongly that the archaeological record is equally promising. The current efforts of the Falmouth Heritage Renewal program emphasizes the significance of the town, and both
restoration and tourism development efforts will benefit from an active investigation of the town’s archaeology.

We started the project with the back lot of Edward Barrett’s town house, built in 1798-1799. There is a possibility that this property will be developed as a restaurant, and we chose to conduct archaeological testing here ahead of any disturbance to the lot.

Methods

The MSU project began by setting a grid datum at the northwest corner of the lot, with grid North oriented along the west (back) wall. The crew measured a 3 x 3 m grid throughout the yard. The excavators chose the northwest corner of the top step of the back porch of the main house as our elevation datum, set at arbitrary 100.00 Assumed Elevation (Figure 1).
The crew then conducted a surface collection within each 3 x 3 m unit, disregarding modern plastic and perishable trash. While parts of the crew began excavations, other crew members used a two-handed posthole digger to sample the deposits at each grid node. Postholes have been shown to provide an indication of deposit depth and stratigraphy as well a patterning in artifact distribution and assemblage content, while standardizing and minimizing the area of disturbance as compared to shovel test pits (South and Widmer 1977; Wesler 1984a, 1984b, 1987, 1993). Each TPH (Test Post Hole) was recorded on a standard record form, noting depth, stratigraphy, and representative materials collected. As with the
excavation, all soils were screened through ¼” hardware cloth. Three potential TPHs were not excavated because they were at the corners of active excavation units, and several grid nodes at large rubble piles were also skipped (see Figure 1).

The crew excavated four 1 x 2 m test units. The excavation proceeded by trowel and other small tools, and soils were removed in 10 cm levels except where practicality or visible stratigraphy suggested otherwise. The crew mapped and photographed the floor of each level, and measured all elevations by transit by reference to the elevation datum. Artifacts recovered were bagged by provenience unit and labeled accordingly. In the second and third weeks of the project, students were detailed to wash and catalogue the artifacts.

On the afternoon of Tuesday, August 1, a very heavy rainstorm interrupted the excavation, raising the local water table by approximately 20 cm. The bases of all four units were thus under water and impossible to excavate. Water still stood in two units as of August 5, when time constraints forced the crew to clean and record the profiles and backfill the units.

Excavations

In the interests of space, details of each test unit will not be presented here. In each unit, the crew recorded a complex stratigraphy of marl or brick fills and brick or flagstone pavements. There were also several buried foundations, indicating the complexity of past changes in the arrangement of structures in this yard. One point of note for architectural reconstructions is that the current back porch clearly is not original, because its base lies well above the original grade.

The base soils were moist sand, and stood at the water table even before the August storm. Therefore the excavators were not able to reach culturally sterile subsoils in any unit.
The deeper levels in all units are characterized by creamwares and pearlwares, without whitewares. Minority wares are consistent with a late eighteenth-early nineteenth-century occupation. Curved glass assemblages show a distinct dominance of olive green bottle glass in the lower excavation levels.

It seems, then, that the lower stratigraphic zones are relatively intact occupation zones which represent the first few decades after the 1798-1799 construction of the house.

Two special artifacts are worth mentioning. One is a T.D. mark, surrounded by a wreath, on a pipe bowl, very comparable to specimens from Michilimackinac, Michigan (Stone 1974:149) and from Ferryland, Newfoundland (Gaulton 1999:52), in later 18th-century contexts. The mark is thought to belong to Thomas Dormer who made pipes between 1748 and 1770 in London (Bradley and Camp 1994:103; Camp 1982; Walker 1971:65).

Another is a brass military sash plate with the stamped words “ARMED ASSOCIATION” surrounding the numerals 1798. Unfortunately this was recovered in cutting.
profiles, and its vertical context cannot be established. The author’s first interpretation was that “Armed Association” probably is a term used by or for the Jamaican militia of the period. It is interesting that in June 1798, three new companies of militia were raised, made up of free blacks, Indians, and loyal maroons, to fight maroons in Trelawney parish, where Falmouth is located (Chartrand 1996:40).

However, Ms. Natalia Wieczorek, Curator of the Department of Uniform, Badges and Medals, National Army Museum, London, wrote that “The shoulder belt plate you have, stamped ‘Armed Association’, is basically a unit, like the volunteers, that served locally. There were many of them. It is not connected with Jamaica and is British, and was worn by members at the time of the Napoleonic Wars, in time of threat from invasion” (Wieczorek personal communication 2006).

On first reading, it is difficult to understand what the difference between “a unit, like the volunteers, that served locally” and a militia is, but it appears that Ms. Wieczorek referred to units that served locally in England. How the belt plate might have ended up in the Barrett yard, then, is a curious question, as is the coincidence of the stamped number with the date of construction of the Barrett house and the date of the raising of new companies to deal with Trelawney bandits.

Discussion

Because the analysis is still at a preliminary stage, only a few concluding remarks may be offered here. It is clear that the Barrett yard is architecturally complex. The presence of the water table within artifact-bearing sands suggests one reason why the yard underwent so many grade-raising fill episodes. On the other hand, global sea level has been rising slowly in
the historic period, and at the first occupation of the houselot, the land may have seemed slightly higher and drier (albeit still coastal and low-lying) when the house was built. Many of the fill and pavement episodes may be attributable more to renewal of working or aesthetic surfaces after wear and tear than to any conscious effort to rise above a swampy land level. In this, the Barrett yard resembles yards of Charleston, South Carolina, “a work area presenting either a brick-paved surface or aggregate crush of shell, dirt, bone, and debris” (Herman 2005:121).

Large quantities of ceramics attest to domestic activities. However, a close look at the ceramics shows that only about 10% of the wares belong to utilitarian stonewares and red earthenwares. Most of the ceramics are fine wares, generally representing the teawares and table settings that would grace an upper-class household of the Georgian period.

In one sense, this may be expected. Edward Barrett, a leading planter and merchant of Trelawney Parish, certainly was a member of what Bernard Herman (2005) calls “a larger Atlantic culture steeped in acquisition, display and exchange.” It is possible that he used his town house primarily for entertaining and business, and not as a residence for more than short periods. Therefore, a large quantity of creamwares and pearlwares would be predictable.

On the other hand, evidence for the support services for lavish entertaining is conspicuously lacking. Barrett’s house and yard complex probably served both at least part-time residential as well as commercial purposes. At least in the ceramics so far examined, the presence of the staff and support services is little in evidence. Only a single sherd of colono or yabba ware was recovered that might betray the presence of African-Americans. But free or
enslaved servants almost certainly were involved in creating the archaeological record in the Barrett houselot.

Finding the living quarters of these less fortunate citizens of Falmouth may be difficult. Servants’ quarters are generally poorly documented in urban settings. Would the house and business servants of Barrett’s urban establishment have lived in the lot, or in districts with other Afro-Jamaicans elsewhere in town? We can hope that further analysis of the Barrett excavations, as well as continued investigations within Falmouth, will begin to answer such questions.

Acknowledgments

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The Magens-Pedersen House, Charlotte Amalie: Archaeology of an Urban House Compound in the former Danish West Indies

by

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Abstract

Archaeological exploration of the Magens-Pederson house compound in the King’s Quarter of Charlotte Amalie provides insights into urban life in the Danish West Indies. The house compound includes main house, cook house, and outbuildings once occupied by property owners, enslaved laborers, servants, and mid-level managers. This study examines a cross section of life and social interaction within an urban residential compound. This paper focuses on tests to identify the relationship between early ruins on the property and the main house and outbuilding that were destroyed by hurricane Marilyn in 1995. The findings from this site are being incorporated into a broader study of the historic district on Blackbeard’s Hill (Skytsborg), St. Thomas West Indies.
Research has been initiated to examine the archaeology, history, and cultural landscape of the Blackbeard’s Hill section of King’s Quarter, Charlotte Amalie, St. Thomas (Figure 1). The project involves excavations, public interpretation, and the development of a research center and museum. Our initial investigation examines a walled urban house compound (double lot 26-27 Kongensgade, 28-29 Dronningensgade) containing ruins (and buildings) representing living areas, yards, and gardens associated with owners, mid-level managers, enslaved laborers and servants. Over the next several years, we plan to expand research to several adjacent urban house compounds in and around the part of Charlotte Amalie popularly known as Blackbeard’s Hill (in reference to Skytsborg, a National Historic Landmark located at the top of the hill).

The property owner of Blackbeard’s Tower has initiated a cooperative project with archaeologists from Syracuse University in New York and local Virgin Island historians to conduct an in-depth study of properties on Blackbeard’s Hill. The archaeological project is being coordinated by Dr. Douglas V. Armstrong, Professor of Anthropology at Syracuse University and by historian David Knight of the Virgin Islands Historical and Genealogical Resource Center (Figure 2).

The project is being conceptualized on two scales. First is a site based study focusing on the Magens-Pedersen family house compound that will address issues related to urban life in a Danish colonial port town. We will expand to other house compounds within the Blackbeard’s Hill section of King’s Quarter. Blackbeard’s Castle is a National Landmark Property and the surrounding sites are in the Charlotte Amalie Historic District. Hence, all of the properties in question are on the National Register of Historic Places. Several of these properties have already been developed into historic tours at the beautifully restored homes of Haagensen House (built in
1827), Britannia House (1830), and Villa Notman (1860) (Freiesleben 2001; Gjessing and Maclean 1987; Gosner 1971).

The archaeological research at sites on and adjacent to Blackbeard’s Hill is being incorporated into an ongoing public interpretation program and historic tours of the hill. Archaeological field work is designed to engage the public through formal tours for visitors as well as educational tours for residents. Visitors will have a chance to examine recent finds in the research facilities archaeological laboratory and historic records archive at an interpretive museum.

The sites offer a unique opportunity to examine the complexity of social relations in an urban context in the Caribbean and present those findings to travelers and local groups. Charlotte Amalie is a destination port of call for a large number of cruise ships traveling through the Caribbean with hundreds of thousands of visitors each year. The Blackbeard Hill / 99 steps area is one of the main cultural destinations for tourists (drawing between 80,000-100,000 tourists a year), but tours currently lack historical depth and offer inadequate representations of the cultural and historical landscape of Charlotte Amalie. The property owner would like to create an active venue for archaeology that would provide a more nuanced representation of the history of the site and the area. The presence of active archaeological studies would enhance the visitors experience while enriching historical representation of the 17th through 19th century cultural landscape through high quality historic tours incorporating archaeology and history. Conversely, the tours could provide a long term financial base for archaeological research.

In order to facilitate research on properties on Blackbeard’s Hill and in the King’s Quarter of Charlotte Amalie, a research center including archaeological laboratories, historical archives, and a small interpretive museum are being set up in the Bankhus property (1844) at 25
Kongensgade, adjacent to the archaeological excavations at the Magens-Pedersen property. Visitors will have a chance to see recent finds and learn about current research as they visit the house after exploring the archaeological excavation at the Magens-Pederson House.

**Historical background of St. Thomas and Charlotte Amalie**

For a majority of its history, St. Thomas and the other current U. S. Virgin Islands were controlled by Denmark. The Danish West Indies were Denmark’s only colonial possession in the highly contested Caribbean. Initially settled as early as 1672 by Danish colonists, St. Thomas remained under Danish control until 1917 (excluding two brief periods of British occupation) when the Danish West Indies were officially sold to the United States of America (Dookhan 1994; Westergaard 1917). The scale of settlement remained rather small until the latter 18th century and its expansion relates to a shift in hemispheric trade associated with the emergence of North America and the shifting role of financial interests of colonial systems throughout the region (Dookhan 1994). By the late 18th century, Charlotte Amalie had become a major port town, replacing places like the port at St. Eustatius in terms of volume and breadth of global trade (see Hurst 1996). Although officially under Danish control, St. Thomas developed into a cosmopolitan island that attracted merchants and sailors from throughout the Caribbean and Europe (Sonesson 2004; Tyson 1991). The town of Charlotte Amalie developed into an incredibly important and profitable port during the late 18th and 19th century, catering to virtually every nationality in the Caribbean.

According to Dr. Charles Taylor (1888), “At St. Thomas, the town is the island and the harbor is the town.” Charlotte Amalia (named after the Danish Queen) developed from Fort Christian, the initial military fortification and residence of the settlers to St. Thomas. The town initially grew west along the harbor, mainly as warehouses and wharves (Westergaard 1917).
Residences built up the hill to take advantage of the breezy trade winds and to have an excellent view of the harbor (Gjessing and Maclean 1987). The town expanded rapidly through the first half of the 19th century in cadence with the shift away from slave based agro-industry and shifts in sea transportation associated with the steam engine. The town settled into a relatively stable port engaged in local, regional, and global trade. As with most areas of the Caribbean, the economic structures and the trajectories of specific sites reflect a series of punctuating events related to fire, hurricane, earthquake, and tsunamis.

Despite its lovely views and commercial prosperity, the residents of Charlotte Amalia were no strangers to suffering. Victims of numerous fires (due to poor planning and crowded, wooden houses), hurricanes (this is after all the Caribbean), pestilence (like cholera and yellow fever), and even earthquakes and tidal waves (Svensson 1980; Taylor 1888; Watlington and Lincoln 1997; Woods 1992). Not even Charlotte Amalia’s prosperity lasted forever, replaced by other Caribbean ports as transportation technology changed and European nations could trade directly with the various Caribbean colonies (Svensson 1980; Tyson 1991).

The research program is designed to generate data that will be integrated into a series of specific and general research questions relating to urban life in the King’s Quarter of the port town of Charlotte Amalie. In the early 19th century, this area of Charlotte Amalie was the center of commerce and interaction of the Danish Colonial administration (Moolenar 2005) Urban house compounds like the Magens-Pederson complex included residences of merchants and colonial administrators along with the houses of enslaved laborers, servants, and managers (Singleton 1984; Wade 1964; Welch 2003; Woods 1992) The urban context should allow us to get a better picture of the diversity of social relations on the island. The town house setting put people of different ethnic, racial, and economic contexts in close quarters but still demarcated
social differences through spatial separation (albeit in close quarters) and differential housing (Wade 1964; Welch 2003; Zierden 1999) But, the urban context also provides some potentially sharp contrasts from rural plantation social infrastructures as it is based on a maritime economy that attracted a wide range of people from throughout the world (Hall 1992; Welch 2003) As a maritime free port, that was open to world trade, the town welcomed just about anyone with skills or resources (Hall 1992). It was a setting that was highly dependent upon skilled laborers and independent crafts persons (Tyson 1991).

The core of Charlotte Amalie’s economy was its role as a port town. Private residences in this part of town were owned and occupied by merchant traders who brokered goods being shipped in and out of the port. As a result, from the earliest point the settlement included persons of many ethnicities and nationalities. There was a substantial free black population (Knight 1999). Even though the official religion of Denmark was Lutheran, the town encouraged the settlement of persons of many religions and is the site of one of the oldest synagogues in the New World (Cohen 2004; Larsen 1954) Hence, each household in the King’s quarter is expected to yield its own distinctive aspects of social interaction that reflect the complexity of social interaction. It is expected that each site on Blackbeard’s Hill will have its own story to tell. All may fall within the infrastructure of a Danish Colonial domain, but each household will follow its own trajectory representing the rich diversity of a port town environment.

The King’s Quarter was one of centers of the Danish Colonial Administration and developed along with the expanding global mercantile trade of the Danish colonial enterprise. Blackbeard’s Hill, in particular, was one of the earliest areas settled as part of Danish colonial expansion into St. Thomas and the Virgin Islands in the late 17th century (Figures 3-4).
Skytsborg Castle, or signal tower, was initially constructed in 1678 to protect the fledgling harbor settlement from both sea and land (Taylor 1888; Tyson 1991).

The earliest map of the island (circa 1733) shows that the Blackbeard’s Hill area is near the center of Danish colonial administration. Fort Christian guards the shore; the Crown House was built half way up Blackbeard’s Hill, and the hill overlooking the settlement is capped with Skytsborg Castle. In addition several administrative structures are illustrated on the lower flanks of the hill. Maps and plans from the era show a row of docks and warehouses lining what was then an irregular shoreline of Charlotte Amalie harbor.

By 1777, when Oxholm was charged by the crown with mapping the island and providing detailed drawings of the islands defenses and fortifications, Charlotte Amalie was a thriving port town. Oxholm only drew the formal governmental buildings (including structures associated with the Lutheran church) (Westergaard 1917). Since most of these sites are within the King’s Quarter, his map is particularly useful to our proposed study. Oxholm maps out what was to become the formal street arrangement for the city. His map shows the area that has been settled with commercial and domestic construction as well as the location of roadways. The layout presented by Oxholm conforms to the current roadways. Interestingly, Oxholm mapped out Blackbeard’s Hill in rectangular blocks, as one would in the flat environs of Denmark. Today, these same roadways are there but many of the roads are actually steep sets of steps. One of these steps is popularly known as “99 steps”, a public access way that separates the Magens-Pedersen house from the Haagensen House & Hotel 1829 to the west on Blackbeard’s Hill.

The property appears in the records as early 1805 but does not seem to have been developed until shortly before 1826, when Danish government official Joachim Melchior Magens (the 2nd) purchased the double lot with help of this brother-in-law & neighbor Captain
Rohde (living at 25,26,27 Dronningensgade) for his children. Magens had a rather colorful career in a number of government posts on St. Thomas, St. John and St. Croix before an extremely public and bitter feud with the famous Governor General Peter von Scholten led Magens to leave the island for Denmark permanently (See Lawaetz 1999). The double lot was sold at auction in 1847 to Duncan McDougal, a Scottish merchant and partner in the hardware and commission business of Briscoe, McDougal & Co, which had offices worldwide including Liverpool, Buenos Aires, Jamaica, Australia and New Zealand. According to census records of the property, Duncan McDougal rented out the double lot separately after acquiring the neighboring property of 32,33 Kongensgade as his family’s residence in 1853. The local paper, *The St.Thomae Tidende*, contains several rental advertisements for the property, which is often be rented to various employees of McDougal’s from Scotland (living in two houses in the lower lot) and several prominent merchant families renting the main house in the upper lot. The McDougal family owned the property until the beginning of the twentieth century.

The structures extant on the property in the late 19th century are clearly demarcated on an 1897 insurance map and details relating to residents present and size and scale of buildings are well documented in a series of Censuses taken for the island (Figure 3). Of interest is the presence of persons representing at least three tiers of social and economic relationships, the fact that there is considerable turn-over in persons present through time, and a fact related to the Port Town environment in which few are actually born on St. Thomas but rather come from diverse backgrounds in the Caribbean, Europe, and Africa.
We also have several photographs from the 1940s and a series of aerial photographs beginning in 1947 (Figure 1). The main house on the property was periodically abandoned in the 1970s and 1980s and was destroyed by hurricane Marilyn in 1995. The lot sat vacant through the early 2000s until it was and was then acquired by Michael Ball for restoration and inclusion in his historic Blackbeard’s Hill complex.

**Initial Archaeological Findings**

In order to demonstrate the archaeological potential of the Magens-Pedersen property, preliminary background research and excavations were carried out in March and May of 2007. The site was mapped and nine 1x1 meter units were dug to define subsurface remains and to plot the slope of the hill in relationship to construction over time on the property. The excavation units were placed along a North-South line running from the upper portion of the site on Dronningensgade across the various terraced levels (most recently used as gardens) down to the ruins of the Magens house (Figures 2 and 5).

Local history tells us that the Magens family used the upper portion of the house lot for goats, chickens and possibly cows. There is also rumored to be graveyard within one of the terraces. Although the artifacts have not yet been analyzed, we did recover substantial amounts of animal bone, European ceramics, nails and brick / mortar associated with the nearby walls of the terrace with relatively little intrusive modern material typically associated with urban sites.

Structures on the hill were built on a series of terraces and each terrace was sampled. Findings included detailed information on building construction and construction sequences. The deposits yielded well stratified remains spanning the early 19\(^{th}\) through 20\(^{th}\) centuries. Units on the upper terraces included evidence of a bone button workshop. Evidence included dozens
of cow bone fragments from which bone buttons were cut. This cottage industry probably provided an extra source of income to servants and or enslaved laborers on the property (Ascher and Fairbanks 1971; Brown and Cooper 1999; Klippel and Schroedl 1999; Nicholson 1995). Extensive excavation of the site will begin in September of 2007 as part of Christian Williamson’s dissertation research.
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Illustrations
Figure 1: 1941 Arial photograph of Kongen’s Quarter. Magens-Petersen walled house compound identified in circle (1941 Aerial photo of “Blackbeard’s Hill” US Aeronautics 12 May 41 V1X2724)

Figure 2: Magens-Pedersen House with preliminary test excavations.
Figure 3: Goad insurance map 1897 showing structures on the Magens-Pedersen property.
Figure 4: Map of Kongens Quarter including Magens-Petersen house compound (Hingelberg 1837).
Figure 5: Bone button blanks. Buttons manufactured as part of cottage industry at Magens-Pedersen site.
African-Creole religious artifacts associated with a 19th century Dutch priest burial on St. Maarten

by

Jay B. Haviser

Abstract
In July 2006, the remains of a 19th century Dutch priest of the Dominican Order were excavated from the Frontstreet cemetery on St. Maarten. During the course of this excavation, African-Creole religious artifacts were found in both the direct burial contexts and also as subsequent activities at the burial location. This paper identifies a specific African-Creole religious artifact assemblage from St. Maarten to discuss aspects of distinctions among African-Creole religious artifact groups, as well as association between the Catholic Church and local religious practices on the island over the last 120 years.
INTRODUCTION

This research was initiated by the St. Maarten Catholic Church, to have the remains of a 19th century Dutch priest of the Dominican Order exhumed for reburial at the main Cathedral (Haviser 2006). One of the primary concerns for the church was the desecration of the grave site by African-Creole religious practices over the years, which had resulted in numerous artifacts being recovered from the site. From these artifact specific collections, came the opportunity to define an African-Creole religious material culture assemblage from St. Maarten, with the further potential to also identify the specific form of African-Creole religious practice which was manifest at the site.

HISTORICAL BACKGROUND

The Dutch Priest
Father Jordanus Onderwater, was born Engelbertus Antonius Onderwater at Leiden, Netherlands, on November 9, 1850. He was raised in an orphanage of Dominican Sisters, and became a Dominican Priest, changing his name, in 1869. In 1881, he was sent Curacao to serve the Dominican mission there, and in 1887 he was moved on to St. Maarten for service of the three Windward Islands including Saba and St. Eustatius. By 1890, Father Onderwater was a highly respected member of the community, introducing Dominican nuns as teachers, and he was a signatory benefactor for many emancipated Africans to acquire land. On October 13, 1891, just days before his intended date to leave St. Maarten for Holland, he died of unknown causes, with rumors of poisoning. On October 14, 1891, he was buried at the main Catholic cemetery on Frontstreet, with remarkable eulogies of appreciation and loss in the local newspapers (Veen 1999)

The Cemetery
In 2006 there were over 100 graves in the Catholic Frontstreet cemetery, however only eight date before1891, and all after 1848. There is a large stone cross monument at the center of the grounds, and all of the oldest graves are in proximity to this monument, including Father Onderwater who is immediately adjacent to it. It is important to note, that only some few graves have modern African-Creole religious artifacts associated at all, and yet the Father Onderwater grave was covered with African-Creole artifacts (Figure 1). The headstone of Father Onderwater was made of a unique metal alloy material, obviously imported, which had been moved about a meter from it’s original location atop a small stone base.

EXCAVATIONS

Three excavations were conducted at this site (120X180cm; 130X160cm; 80X90cm) in the immediate area of the Onderwater grave, all dug in 20cm levels, to a maximum depth of 210cm below surface. Noted in the soil stratigraphy of loose fine sand, was evidence that about 40cm of sand had accumulated over the site since 1891. The specific burial pit fill was completely full with large beach-worn boulders, and had three separate-depth layers of mortar poured over the stones. The deepest of these mortar layers at about 135-
40cm bs., also contained five large conch shells, just above the head of the coffin (Figures 2-3). General artifacts associated with the burial pit were all 19th century ceramics and glass. In the upper 40cm of the excavations, were also recovered numerous small African-Creole religious bundles (to be described later) which had been buried into the site.

ARTIFACTS

Artifacts associated directly with Father Onderwater
The primary material remains in direct relation to the priest were his complete skeleton, brass tacks and iron nails in the soil color outline of the coffin box, and several personal artifacts (Figures 4-5). The personal artifacts consisted of bone buttons, brass clothing clasps, a brass crucifix (12.5cm long) and black glass beads with white dots on them at his left waist (as his rosary with the Dominican Order black-white colors). His skeleton revealed that he was a slight man, with probable chronic knee and back pain, and having a distinctive birth defect on the left side of his face. Later tests on the bone material for poisons were inconclusive.

Artifacts associated with African-Creole religious practices
Thousands of artifacts associated with African-Creole religious practices were recovered from this location, in both surface and sub-surface contexts. On the surface, there were make-shift alters at all four sides of the monument, each covered with food offerings, small animal sacrifices, artifact bundles, candles, cigars and coins (Figure 6). The multiple placements of these objects indicate repeated religious practices at the site. Among the buried artifact bundles, included conch shells, bottles filled with objects and wrapped with thread, as well as three handmade dolls with pins in them and wrapped in thread. The majority of these objects date from after the 1960-70’s.

OBEAH PRACTICES

Most African-Creole religions transformed their beliefs in the new contexts of slavery and colonial domination, with the strongest influences mostly from the Yoruba, Fon, Bantu, and Kongo groups. The larger African-Creole religions of the Caribbean are very formalized with established liturgy and community rituals, such as in; Vodou, Santeria, and Regla de Ocha, and they have specific syncretism elements with the Catholic Church. Other African-Creole religious practices of the region are less religion and more a system of beliefs in spirituality with individualistic practices focused on ritual invocations, fetishes and charms having an African ancestry, with examples such as; Obeah, Myal and Quimbois (Fernandez Olmos and Paravisini-Gebert 2003).

Obeah is an Ashanti-influenced practice, and comes from the Ashanti word ‘obeye’ meaning witch or wizard spiritual being, and is noted most often in the English and Dutch colonial areas. The focal point of Obeah is the PERSON who conducts Obeah practices as ‘Obeahman’ or ‘Obeahwoman’, and who treats clients in a one-on-one basis I secrecy,
avoiding public or community attention. Physical deformities are often associated with Obeah practitioners and/or beliefs, as they are believed to be born with special powers.

The Primary Authority recognized for Obeahmen is their knowledge of African-derived healing practices, using herbal and animal medicinal properties. The Secondary function of Obeah, is to direct relations between the human and spirit worlds, by casting spells for both good and evil purposes, on an individually commissioned basis, such as: 1. Protecting oneself, property, family or loved ones; 2. Harming real or perceived enemies; 3. Bringing fortune in love, employment, personal or business pursuits; and 4. Veneration of ancestors. The objects of specific Obeah practice have been identified in historical documents since the 17th century, with the primary noted being: candles, cigars, coins, bird feathers, egg shells, honey, nails, cat skulls, dog teeth, rags, twine, bottles, rum, compiled bundles of twine and rags, sealed bottles of blood and other liquid concoction, food offerings, animal sacrifices, and various forms of charms/dolls. Keep those ‘Obeah Practice’ artifacts in mind while observing the specific artifacts listed below, which were collected from the Father Onderwater burial site.

**Excavation Unit #1, level 1 (0-20cm incl. surface)**
523 Coins (343 copper); 442 USA, 53 Netherlands Antilles, 28 other (Figure 7)
19 wax candles (white)
8 cigars, 3 cigar wrappers
1 woven basket, 1 ball of black thread
22 glass bottles/bottle fragments (4 identified as rum)
12 razor blades
9 iron nails, 15 iron fragments, 1 steel wire, 14 bottle caps (9 rum), 1 steel knife, 1 aluminum cook pot with top
2 Whiteware ceramic bowls, 3 coarse earthenware shards
1 melted plastic bottle, 1 black shoe polish plastic bottle, 1 plastic lighter, 1 melted plastic drinking cup, 1 vapor-rub plastic bottle, 16 plastic pin heads
10 chipped basalt fragments, 1 burned limestone, 7 beach pebbles,
2 polished marble fragments
9 whelk shells, 12 clam shells, 2 arca shells, 1 oyster shell, 16 land snails
1 cat mandible, 3 bird bones, 4 goat bones
4 egg shells

**Unit #1, Level #1, discreet deposit features**
3 wax bundles with numerous steel sewing pins
1 wax bundle wrapped in red thread
1 cloth bundle (with zipper inside) wrapped around many square nails
1 bundle of white string
1 plastic bag with cloth and square nails wrapped inside
1 Goya honey bottle with thick wax on top, inside paper with writing (Figure 8)
3 plastic powder drink bottles filled with dirt and objects

**Unit #1, Level #1, discreet deposit features**
3 cloth doll bundles (Figure 9):
1 white doll at front, red doll at back, with pins joining them (on red side pins in random pattern, white side in a cross); painted white-green eyes on white side; head tie on white doll
1 two identical front-back dolls of black cloth with blue shirts and same white-green painted eyes (same as above); wrapped and tied together with black thread; no pins; head ties present
1 single doll, black with flower-print dress, head bound with black thread, hands and feet bound with red thread; no pins; head tie present

**Excavation Unit #1, level #2 (20-40cm)**
1 large whole conch shell, with machete cut mark, at the old surface level
1 rum bottle wrapped in white thread, filled with liquid and cigar

**Surface Deposits on the grave after the 2006 excavation of the priest burial.**

**Coffin with doll:**
1 small wooden coffin (22cm length), black with white letters “E.P.D.” on the lid; single black cloth doll inside with pins in arms and genitalia, red thread and black ribbon pinned on; cloth body filled with cotton; sewn white slit eyes

2 cloth dolls (Figure 10):
1 dual black cloth dolls wrapped in white thread and connected with many colored plastic-head pins, headpiece on one also with black thread body wrap and red thread leg wrap; cloth bodies filled with dirt; sewn red slit eyes
1 dual black cloth dolls wrapped in red thread; cloth filled with dirt, sewn red slit eyes; no pins

**REBURIAL CEREMONY**

The Father Onderwater skeletal remains with the excavation report and an altar cloth were sealed in a stainless steel box, by Father Krosnicki, Bobby Velasquez and this author. On the day of the reburial, a ceremony was performed at the old grave site with the stainless steel box present, then a procession walked with the box from the cemetery to the main cathedral, with much singing along the way. It is of no small importance that the largest ethnic group present at this ceremony was the Haitian Catholic community of St. Maarten, and during the official reburial ceremonies within the cathedral they performed very energetic songs and dances. This emphasizes the particular interest of the Haitian community, as a potential for religious syncretism within the formal Catholic contexts, and/or their sympathetic understanding that a form of African-Creole beliefs were involved.

**INTERPRETATIONS**

Father Onderwater was a slight man, with an obvious deformity in his lower right face, a feature significant to Obeah practitioners. His appreciation by the public is evident in the newspaper eulogies, as well as by the placement of conch shells at the time of burial and
after, indicating African descendants showing affection for him with the African-Creole symbolic tradition of conchs on graves, already in the 19th century.

Serious efforts were made in the burial refill, with three mortar layers, perhaps as fear of disease, or fear for Obeah practitioner exhumation. Although unconfirmed, even the rumor of poisoning is typical of Obeah involvement. The headstone placed at his grave, was a very unique non-local metal alloy material, attractive to Obeah practices.

Multiple episodes of Obeah practice are noted with numerous artifact feature deposits, as well the probability of more than one practitioner through time is indicated in the change of eye styles on the dolls.

Modern Obeah activities have extensively and exclusively focused on this individual priest, due to the previous-mentioned attributes and also likely as the only Catholic priest (as a male spiritual leader) buried on the island. Obeah practices have increased at this site since the 1960’s, perhaps related to increased English island immigrants, and showing the continuity of Obeah practices on the island. Increased Haitian and Dominican Republic populations also began arriving in the 1960-70’s, yet the specific type/presentation of artifacts at this site suggest more a continuity of individualistic Obeah belief practices, rather than new influences of Vodou or other African-Creole formal religious symbolisms. Yet the serious interests of the Haitian community in the reburial actions of this case, suggests a broader sympathy for the association of African-derived religious contexts. As well, that this specific grave site has continued to attract Obeah practices, even after the removal of the priest’s remains, exemplifies the strong sense of traditional focus on location for these practices on St. Maarten.

Of significance is that this study now provides an African-Creole material culture assemblage for Obeah practices on St. Maarten, which can be used as a reference in future archaeological and/or anthropological investigations on the island and elsewhere. The greater lesson of importance for the professional archaeological community is that they must now look more closely at African-Creole religious artifacts, to distinguish between the artifacts of the individualistic Obeah-like practices, from the remains of the more formalized religions like Vodou and Santeria.

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Figure 1. Father Onderwater gravesite, metal-alloy headstone (left), and original footing for the headstone (right).
Figure 2. Excavations and soils at the Father Onderwater grave site, note the foot of the monument is about 40cm below ground surface.

Figure 3. Soil profile just above the coffin box (175cm bs), with the conch shells layer (one conch present) just above the head of coffin.
Figure 4. Bone buttons and a brass clasp, direct association with skeleton

Figure 5. Rosary beads and crucifix, direct association with skeleton
Figure 6. One of many altar contexts at the grave site, note the candles, cigars, coins, and food offerings.

Figure 7. Coins found in both surface and subsurface contexts at the site, (523 total, 65.6% copper coins).
Figure 8. Rag-thread bundles and honey-bottles with offerings were in both surface and subsurface contexts at the site.

Figure 9. Handmade dolls with pins and bound with thread, found buried at the site (note the painted round-eye shape on the dolls).
Figure 10. Handmade dolls placed at the gravesite after removal of the skeletal remains (note the sewn slit-eyes on the dolls).
Blues From Bequia: Survey of Two Historic Indigo Processing Ruins

by

Margaret Bradford

Abstract

During the seventeenth and eighteenth centuries, indigo was grown and processed by Europeans living in the West Indies and the dye was usually shipped back to Europe where it was used to dye cloth. The ruins of two indigo processing sites on the island of Bequia in the country of St. Vincent and the Grenadines, were surveyed in order to photograph and document what remains of the structures. Intriguing questions remain about the original number of processing vats and the time period during which the cultivation and processing took place.

Resumen

Durante los siglos XVII y XVIII, índigo fue cultivado y procesado por los europeos que viven en las Indias Occidentales y de la tintura se suele enviadas de vuelta a Europa, en el que se utiliza para teñir tejidos. Las ruinas de dos índigo procesamiento de los sitios de la Isla Granadine de Bequia fueron investigadas con el fin de fotografiar y documentar lo que queda de las estructuras. Intrigante sigue habiendo dudas sobre el número de cubas de procesamiento y el período de tiempo durante el cual el cultivo y la transformación se llevó a cabo.

Résumé

Au cours des dix-septième et dix-huitième siècles, l'indigo a été cultivé et traité par les Européens vivant dans les West Indies et la teinture est généralement expédiés vers l'Europe où il a été utilisé pour teindre les tissus. Les ruines de deux sites de traitement de l'indigo sur l'île de Bequia Grenadine ont été étudiés afin de photographier et de documenter ce qui reste de la structure. Intriguant questions demeurent quant à l'origine de nombre des cuves de traitement et de la période pendant laquelle la culture et la transformation a eu lieu.
**Scope of the Project**

In 2002, on the island of Bequia, an investigation of the two known historic indigo processing sites was begun. The study continued in late February 2005, this time to document and photograph what remained of the ruins in the aftermath of Hurricane Ivan’s 2004 destructive pass by the windward coast of Bequia. Two years later, in February 2007, the two sites were revisited in order to take additional measurements and photographs that would help us gain additional knowledge of this little-understood Colonial industry on Bequia.

**History of research**

Until recently, the manufacture of indigo in the Windward Islands has not attracted the study given to sugar production since it is often considered to be one of the secondary products of colonial agriculture. Although indigo was not as important as sugar, it was still a significant export from islands such as Jamaica, Barbados, Saint Dominigue (Haiti), and Montserrat (Balfour-Paul 1998:66); as well as Tobago (Quintanilla 2004:6). Recent research on Guadeloupe (Evon 2007; Rousseau and Vragar 2004) has contributed to our knowledge of indigo production there between 1686 and 1735 and helped to establish a typology of Caribbean production facilities.

**How is indigo is cultivated**

The genus Indigofera is a member of the Leguminosae family and about 80 species are found in the Americas, however, *Indigofera tinctoria L.* (Figure. 1) is the most widely cultivated species (Balfour-Paul 1998:91). Dyestuff from these plants, which are perennial
shrubs, is produced during fermentation of the leaves. The paste that exudes from the fermented plant material is then dried and processed into cakes.

Growing conditions in the West Indies were ideal, particularly on the windward side of the islands (Rousseau and Vragar 2004:50) where sunshine and the prevailing northeast trade winds worked together to provide a hot and dry climate. The best dye came from the season’s first harvest but two or three cuttings could be made from growth from the stubble (Southern Agriculturalist 1829). About two or three months after planting, the plants reached a height of four or five feet and before they bloomed, they were harvested (Petit 1974:26). Since the plants required prompt processing, they were quickly transported to the tanks that were necessarily located close to where the indigo was grown. Indigo plants still grow wild on Bequia, particularly in the area of the indigo factories.

The manufacturing process

Although there has never been a universally recognized method for processing indigo (Sandberg 1989:22), in the West Indies the indigo manufacturing operation was almost always carried out in large cisterns or tanks located out of doors because of the very unpleasant smell associated with fermenting indigo (Robertson 1973:102). The usual arrangement consisted of a series of tanks arranged in stair-step fashion so that gravity could drain liquid from one tank to the next. In a three-tank arrangement, the first, or upper tank was for “steeping” the indigo and it was often about three feet higher than the next tank in the series, which was the “beater”. The third tank, the lowest, was the “settling” tank wherein
the bluish precipitate was allowed to settle. The tanks were usually constructed of stones coated inside with cement (Petit 1974:34).

Since the entire operation required large quantities of clean, fresh water, the tanks were situated near sources of water such as rivers or wells. This location also facilitated the discharge of wastewater into rivers or ravines after the dye was precipitated (Southern Agriculturalist 1829:9). The steeping tank was packed with bundles of indigo that were weighted down, often with heavy timbers, and water was run into the tank to cover the plants (Petit 1974:34). Left undisturbed for twelve hours or more, the indigo began to ferment and the fermentation process was carefully monitored (Balfour-Paul 1998:110). When the liquid turned yellow, drains were opened and the liquid ran into the lower beating vat leaving the rotting plant remains in the upper tank; these were then removed and discarded or used for fertilizer (Petit 1974:35).

In the “beater”, the fermented indigo was agitated with wooden paddles or bare hands (Balfour-Paul 1998:110), split bamboo sticks (Petit 1974:35; Sandberg 1989:20) or bottomless buckets (Southern Agriculturalist 1829:4). Although more-complicated aeration methods such as horse-powered beaters and water wheels were used on the French islands (Balfour-Paul 1998:67) there seems to be no evidence of this on Bequia. After about two hours of beating, scum covered the surface. This was at first white, and then it turned blue as it oxidized (Sandberg 1989:20). The mixture was then left undisturbed to allow the precipitate to settle either in the beater or in a settling tank where limewater may have been added. The water was then drawn off, the clay-like blue paste removed and strained through
cloth and dried. Sometimes it was pressed into a box, cut into 4 oz. cubes and dried for two or three months in a special shed out of direct sunlight (Sandberg 1989:22). This process was complicated but it was a very efficient way of reducing a very bulky crop to a compact cube—in fact, the four ounce cube required a hundred pounds of raw indigo plants.

**Details of findings**

Both of the Bequia indigo factories are located on the windward or eastern side of the island and are less than two miles apart (Figure 2). The Park indigo processing remains are located near the beach at Park Estate, about 3 miles via road from Port Elizabeth. The Anse La Coite ruins are accessed via dirt track and path about one and one-half miles from the paved road.

**Park Site.** At the Park Site, the ruins of a double set of tanks (Figure 3) are situated about 200 feet from the beach and adjacent to a river, which is presently dry except in the rainy season. A well is located nearby. By using a double set of tanks, the processing could be continuous since the settling tank had to be cleaned between batches.

The footprint of the four tanks at the Park Site occupies an overall area of about 25 feet by 30 feet. Within this area are two larger tanks with inside dimensions of 13’ x 9’6” and two smaller tanks measuring 11’ x 9’6” on the inside. The interior and exterior walls all have a thickness of about 2’.

One wall of the larger tank is presently about 4 feet in height while the height of smaller tank wall is about 2 feet. All of the tanks are filled with rubble and several of the walls have partially collapsed. Trees, which fell on and into the ruins, are remnants of the 2004
Hurricane Ivan. It was impossible, without excavation, to determine whether the unit may have also consisted of additional structures, which might have been used as settling tanks. Several years ago, someone used the tanks as a foundation for a dwelling. After this building collapsed (probably assisted by the hurricane), it was again possible to gain some idea of the layout of the indigo factory.

**Anse La Coite Site.** Ruins of the indigo operation at Anse La Coite are located about 50 feet from the beach adjacent to a dry river which runs full in the rainy season. About 100 feet above the indigo tanks, the river has been dammed up to create a reservoir, which may have provided a stable supply of water for the indigo operation. The river course is quite steep and filled with boulders and many had washed down and lodged against the wall of the largest tank. Undoubtedly, this steepness has also contributed to the large deposition of soil and debris around the tanks.

Two stepped tanks are presently visible (Figure 4). Unlike the double set of two tanks at the Park site, this factory consists of a single series of two tanks. There may have also been a third, lower tank but because of the large amount of rubble both in and surrounding the tanks, this couldn’t be established without excavation. The tanks are not in good condition; two walls have partially collapsed but enough structure remained so that approximate measurements could be taken.

The Anse La Coite tanks cover an area of about 12’ x 20’. Each tank has a wall thickness ranging from 24 to 29 inches. The largest tank is about 8 feet square on the interior while the smaller tank’s inside dimensions are 6’ 10” by 5’ 11”. A somewhat unusual arrangement...
exists in the relationship between the two tanks in that the exterior wall on the large tank overhangs the smaller tank by about 10 inches. Perhaps this was where the drying rack was located—an arrangement similar to one shown in an illustration by Pierre Pomet done in Paris in 1694 (Balfour-Paul 1998:59). The height of the existing wall on the largest tank was 5 feet 8 inches above the present level of the ground.

Efforts to probe for the original floor of the smaller tank were successful and indicate the actual wall height would have been closer to eight feet—a depth necessary to contain the splashing indigo solution in the beating tank. The smaller tank still had the remains of plastered mortar that absorbed the indigo dye and a small piece of this was recovered for analysis. The mortar was about ¾ inch thick and appeared to have been applied in two different sequences. There was a partial hole between the two tanks, which is similar to openings between the tanks at the Capesterre Site on Marie-Galante (Rousseau 1998:21) and this area may have enclosed a pipe, which connected the two tanks.

**Tank architecture**

Without excavation, it was impossible to determine whether the Bequia indigo processing operations originally consisted of more than the presently visible sequence of two tanks.

Commenting on the difficulty of finding the final tank in Guadeloupe, Yvon (2007) explains that since it is the lowest, it is the first to fill in after abandonment. Even though there are four observable tanks at the Park Site it is important to point out that these are parallel systems, that is, two sets of stepped tanks—an upper and a lower in each set and not a set of four interconnected tanks.
In the West Indies, the most common indigo processing tank arrangement is a simple three-tank straight-line sequence, but there are other designs as well, such as a four-tank straight-line series (Petit 1974:34; Rousseau and Vragar 2004:48) where the largest, uppermost tank functions as a basin to store fresh water; the second is the steeping vat followed by the beater and then the settling tank. A more complex double series of parallel tanks is sometimes used, such as at the Park Site and also the Le Gouffre Site on Marie-Gallant (Rousseau 1998:21). Occasionally, double tanks are arranged at right angles with one common steeping vat such as on Marie-Gallant (Rousseau and Vrager 2004:54).

On Bequia, it is unlikely that a water storage basin would have been necessary since water was readily available from the reservoir at Anse la Coite and from both the well and the river at Park. The water supply used by both indigo factories was probably even more dependable before the deforestation of the hills for sugar cultivation. Perhaps indigo was processed on Bequia in just two tanks—a vat for steeping, and one which doubled as a beating/settling tank.

**Dating the indigo ruins**

The dating of these two indigo operations remains an intriguing question. Although indigo cultivation was introduced into the Greater Antilles by the Spaniards, other European countries soon followed. Indigo was being produced on Barbados (Games 1996:167) and Saba (Emmer 1999:126) as early as the 1640’s. By 1672, the British had established sixty indigo plantations on Jamaica and others on Montserrat, and by the 1780’s, St. Dominigue had 3150 French indigo plantations (Balfour-Paul 1998:66). In the Lesser Antilles, the
French were processing indigo on Marie-Gallant as early as 1670 (Rousseau and Vrager 2004:49) and by 1686, Guadeloupe and its dependencies had more than 100 indigo plantations but this number declined by the 1730’s (Kelly 2004:7). Further south, in Tobago, indigo production increased seventy-eight percent between 1775 and 1780 (Quintanilla 2004:6) and indigo estates on Grenada in 1772 accounted for 742 acres (Sheridan 2000:458).

In the 1760’s and 1770’s the Grenadine Islands were growing cotton, cocoa and indigo (Quintanilla 2004:3). According to the Byres map, which reflects a Bequia survey of 1776, the eighty-acre property at Anse la Coite was owned by Monsier Estancan and the 400-acre Park Estate was owned by Peter Broucet. Ragatz (1928:27) reports almost 7100 pounds of indigo were imported into England from St. Vincent during the six-year period between 1774-1779. Most of this probably came from Bequia since the only mention of indigo production on St. Vincent was fifty acres reported in the 1779 census (Sheridan 2000:458).

What is not known with any certainty is whether indigo was also produced on Bequia before the 1770’s. Possibly it was, since French people reportedly came from Martinique to Bequia after the Carib Wars of 1719 and established lime, sugar and indigo factories (Mitchell 1994:14; Price 1988:7). Perhaps the indigo factories at Park and Anse La Coite were put into production by these French settlers shortly after their arrival in about 1720. In any event, the French were still living on Bequia when the islands were ceded to the British in 1763 since Quintanilla (2004:4) reports that the early British settlers were forced to purchase improved estates from the French residents.
Relevance of Study

The author has been a concerned visitor to these historic indigo production sites for many years and began a project to photograph and document the remains after the 2004 Hurricane Ivan. Although the hurricane removed about thirty feet of beachfront at the northern end of the Park Site, no damage to the ruins could be observed. In fact, the winds may have encouraged the collapse of the structure atop the ruins, allowing them to be more easily surveyed. At Anse La Coite, there was some hurricane disturbance to the beach and more rocks seemed to have tumbled downstream in the heavy rains associated with the storm but no wind damage was apparent.

Hurricanes and human intervention (such as the construction of a structure on the ruins at Park) remind us of the fragility of the archaeological record. For this reason it is crucial that these heritage treasures be fully documented before they are destroyed. Information from this survey will not only help us better understand indigo production but will contribute to the establishment of a typology for the Windward Island Indigo ruins. It is also quite possible that since so little is known about the history of the French on Bequia, these indigo estates and processing facilities actually date to an earlier part of the eighteenth century, many years before the table of exports of the 1770’s which were documented by Ragatz 1928). Careful excavation of the area around the indigo tanks might reveal datable artifacts that could establish a more secure chronology for Bequia’s early historical “blues” period.

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Figure 1. *Indigofera tinctoria* L.  
Figure 2. Bequia Indigo Sites

Figure 3. Park Indigo Tanks
Figure 4. Anse La Coite Indigo Tanks

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Examining Refugee Peoples Living on Dominica before British Colonization: A Preliminary Report

by

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Abstract
Before the British officially settled Dominica in 1763, the island was a frontier harboring refugees of multiple origins. Not only was the island a center for the people known to Europeans as “Carib,” but Dominica also attracted refugees of African, European, and mixed ancestry. Recent survey and test excavations have begun to collect data which will help to better understand the people living on Dominica before official colonization began. This paper presents the preliminary results of excavations at Indian River, Grand Fond, and Grand Bay.

Resumen
Antes de que Los Ingleses oficialmente establecieron Dominica en 1763, la isla fue una frontera que escondía refugios de varios orígenes. La isla no solo fue el centro para la gente conocido por los Europeos como “caraib” pero Dominica también atrayó a refugios de origenes Africanos, Europeos y mezclados. Recientemente, investigaciones arqueológicos han empezado coleccionar datos e información que ayudarán a mejorar la comprensión de la gente que vivieron en Dominica antes de que la colonialización oficial empezara. Este ensayo refleja los resultados preliminarios de las excavaciones en Indian River, Grand Fond, y Grand Bay.

Résumé
Avant de la colonisation anglais de la Dominique en 1763, l’île était une frontière pour les réfugiés d’origines multiples. L’île était un centre pour les gens que les Europeans connaissaient sous le nom de ‘caraïbe’, mais Dominique attirait les réfugiés d’ascendance africain, européen, et composite. Les fouilles récents commence à collectionner données que aidèrent améliorer les gens que habitaient au Dominique avant de colonisation officiel. Cette rédaction présente les résultats préliminaire des fouilles à Indian River, Grand Fond, et Grand Bay.
As soon as European colonization of the Caribbean region began, there were areas on the mainland and on islands which remained outside of colonial control. These places served as temporary or permanent refuges for various peoples, including maroons, Amerindians, former indentures, European squatters, people of mixed ancestry, and others who would not or could not submit to colonial regimes. Until the 1620s, most islands on the eastern Caribbean frontier were not actively colonized and thus many served as refuge areas. But once European colonization intensified available refuges significantly decreased, so that by the end of the eighteenth century only the most inaccessible parts of islands remained as outlets. One such frontier region was Dominica [Figure 1], which was officially either a Carib or neutral island until it became British after the Seven Years War in 1763. During the frontier period it is documented that Dominica had a large Carib population, but there were also maroon sites, European squatter settlements, and a Jesuit-owned plantation. Archaeological data from frontier period sites on Dominica offer an opportunity to examine how people responded to multi-ethnic frontier contexts.

Traditional interpretations among contemporary observers and until recently many scholars viewed Dominica as the homeland of an Amerindian ethnic group known as Carib or Island Carib, or self-ascribed as Kalinago. Violent resistance by these people to European encroachment on their lands has been perceived for centuries as verification of the myth of the warlike cannibal Carib. Past research has focused on determining Carib origins, finding when the supposed migration or invasion from South America occurred, and defining a Carib pottery type (Allaire 1977, 1980, 1984; Boomert 1986, 1995; Bullen 1964; Bullen and Bullen 1972; Davis and Goodwin 1990; Honychurch 2000:29-35). By approaching post-Columbian Dominica as a frontier area attracting refugees and other settlers a new series of questions are raised. What changes occurred? How did people living on Dominica respond to the influx of new people and
manufactured trade goods? In what ways did site locations change? Historical evidence shows that Dominica attracted a variety of peoples in addition to the Carib (Bogat 1967, 1969; Boromé 1967:10, 1972:35; Boucher 1992:49; Honychurch 1995:37, 44-45; Hulme and Whitehead 1992:89-106; Marshall 1976). Amerindian peoples fled to Dominica from the Greater Antilles (Sued Badillo 1978). European squatters set up temporary settlements to collect wood or to grow provisions, and ships traded with the island’s Amerindian inhabitants (Honychurch 1997, 2000). Marooned or free Africans came from Guadeloupe or Martinique, or fled coastal squatter settlements where they were enslaved. There were people of mixed ancestry such as Carib Warner, the son of a Carib woman and a European governor (Honychurch 1995:44-45; Hulme and Whitehead 1992:89-106).

This perspective must be accompanied by a critical approach to documentary evidence from the Circum-Caribbean, as demonstrated by a number of recent works (Curet 2003:21; Forte 2005; Hill and Santos-Granero 2002; Hulme 1986; Keegan 1989, 1991:xiv, 1996, 2007; Patterson 1991; Roe 1994:187; Sued Badillo 1978, 1984:21; Whitehead 1988; Wilson 1993a, 1993b; Wobst 1978). For example, several challenge accounts of Carib cannibalism (Hulme 1978, 1986; Moore 1973; Myers 1984; Whitehead 1984). Observations of the peoples that Europeans labeled as Carib record a population after several generations of contact and exchange. It is likely that there would have been intermarriage and cultural exchange among the variety of peoples in refuges like Dominica. The specific time and place of European-authored sources, primarily the seventeenth and eighteenth century ethnographic data, must be considered. For instance, I argue that observations of native peoples and their material culture on Guadeloupe during the second voyage of Columbus in 1493, Breton’s experience among Caribs on Dominica in the 1640s, and Père Labat’s observations of Caribs on Martinique and Dominica
in the early eighteenth century are not necessarily equal representations of the same ethnic group. Such accounts might be viewed as a record of a post-Columbian people having experienced significant changes since precontact times. Instead of assuming Amerindian people on Dominica belong to a discrete Carib/Kalinago ethnic group in the Windward Islands, orienting study toward the post-contact period necessitates some reconsideration of the people known as Carib. Honychurch shows that the Dominican Carib acquired European goods via trade, particularly metal cutting tools (Honychurch 1997:297, 2000:127). Other objects may have been obtained by inter-island raiding and from shipwrecks, but are undocumented. The Carib increased tobacco production for trade (Honychurch 1997:299), and settlements were maintained on the leeward coast in places like the future site of Roseau and Prince Rupert Bay (Honychurch 1995).

Examination of this frontier period requires data from archaeological sites on Dominica dating from 1492 to the 1760s. Locating such sites is not easy, as others have found when searching for Carib sites in the eastern West Indies (Allaire 1977, 1994; Allaire and Duval 1995; Clement 2000; Cody Holdren 1998). Based on historical research and site reconnaissance at pre-Columbian and historic sites, I tested five sites between 2005 and 2007. Three are discussed here. A site of Carib-European exchange on the Indian River in Prince Rupert Bay on the west coast was located based on documentary references. A second location, near Grand Fond on the north coast, is marked as a Carib village on British maps and has the first known petroglyph site on Dominica. A third site of pre-1763 occupation is at Grand Bay in the south, which may be the remains of a mid-eighteenth century Jesuit-owned estate.

**Indian River:** Prince Rupert Bay, on the northwest coast of Dominica [Figure 2], offers a natural harbor on an island with few landing places for large vessels. Since the second voyage of Columbus, Prince Rupert Bay was a stopping point for European ships before and after trans-
Atlantic voyages. Here fresh water was available, sailors could rest in the hot springs, and food or tobacco could be acquired via trade with the island’s inhabitants. Spanish and English sources document that the Carib lived in Prince Rupert Bay at least until the 1640s and perhaps as late as 1700 (Honychurch 1997, 2000:44-47). This historical evidence as well as Honychurch’s (1997) discovery of an archaeological site on the Indian River led me to conduct excavations at the site from 2005 to 2007. I hoped that collected data would allow the examination of life among Carib and Amerindian refugee people living on Dominica before 1763. The site measures approximately 110 by 80 meters. Excavations in the sandy soil at the site revealed significant site disturbance from crabs, trees, and flooding. Colonial period artifacts were often mixed with or below low-fired earthenware fragments. The few diagnostic European manufactured ceramics with production dates ranging before the 1760s were recovered from disturbed contexts.

Collected materials include European trade goods such as pottery, glass, and tobacco pipes dating from the mid-eighteenth to the late-nineteenth century. The earthenware ceramic sample (n = 429; minimum of 56 vessels) includes several rimsherds resembling the Cayo type [Figure 3] which would seem to support Boomert’s argument that Cayo is Island Carib pottery (Boomert 1986, 1995, 2004). Indian River is intriguing because of these Cayo fragments, but without an intact deposit verified with reliable radiocarbon dates or diagnostic European objects it is difficult to learn much about the frontier period on Dominica. If Caribs acquired European goods via trade at the Indian River, excavations failed to reveal material evidence of such exchange. Furthermore, with the exception of the pieces in Figure 3 most of the ceramic assemblage consists of sherds which cannot clearly be classified as Cayo. Therefore, the disturbance of the Indian River site and the many undiagnostic ceramics make the collected data difficult to interpret.
Relying on the historical evidence, it is clear that after contact Amerindian peoples lived on Dominica’s coasts, where they traded with Europeans. There also may have been inter-island interactions with other Amerindian peoples in the region, but these are undocumented. Certainly there were violent encounters with Dominica’s inhabitants, which European observers interpreted as evidence of the violent nature of the Carib. But trade and exchange occurred, and production of clay pots for local use appears to have take place. Thus the Carib at Indian River accommodated the European presence and incorporated themselves into a trade network.

**Grand Fond:** As European activity on Dominica’s coasts increased, by the early eighteenth century the Carib abandoned the west in favor of the interior and the windward coast. One such site is Salybia on the east coast, which became part of the Carib Reserve founded in 1903. Two British maps from the 1760s mark a second Carib site on the north coast between the Taffia River and Reposoir (P.R.O. MFQ 1 1173; CO 700/DOMINICA5). During reconnaissance in 2005, a surface scatter of colonial-period and earthenwares that appeared to be of Amerindian origin were found near a freshwater spring near the abandoned village of Grand Fond, about 350 meters inland, at over 76 meters (250 feet) in elevation [Figure 2]. I began testing in 2007 in the hope that the Carib site marked on the maps would be found.

At Grand Fond I discovered what to my knowledge is the first petroglyph site on Dominica [Figure 4]. On a volcanic stone are six simple faces and one partial face, for a total of seven. Six of these are oriented north-northwest (magnetic), and a seventh faces north. These petroglyphs follow the pattern of being located near water (Dubelaar 1995), as a freshwater spring is located in the ravine to the west. There are many similar stones in the area, but no additional petroglyphs were found. A series of petroglyph sites on southern Basse-Terre, Guadeloupe, have simple faces like these at Grand Fond, including the Parc Archéologique, Deruss Plantation, St.
Julien, La Coulisse, Anse Duquery, Petit Carbet River, and Duplessis River (Dubelaar 1995).

The artifact assemblage from Grand Fond suggests a British colonial era occupation from circa 1765 to 1850, but no European artifacts date to before the mid-eighteenth century. Pre-Columbian occupation is indicated by an assemblage of 268 earthenware fragments. Most of this collection appears to be late Saladoid, and only a few pieces may be post-Saladoid. Unfortunately there are no artifacts which can be unambiguously linked to the Carib site on the maps. This may be a Carib site where European manufactured goods were used, but without a more secure verification of such circumstances with clear historical evidence such a hypothesis cannot be confirmed. Some pottery may be related to the Carib village marked on the maps, but it cannot be identified as such. Finally, this assumes that people living at this site produced or used pots in the mid-eighteenth century, as materials like calabash may have served as vessels.

According to the cartographic evidence, there was a post-Columbian Carib site on Dominica’s north coast during the 1760s. The Grand Fond site is a likely candidate for several reasons. The site is concealed in a ravine, but provides a view of maritime traffic in the Guadeloupe Passage. European sources refer to Carib sites being located in areas allowing views of ocean passages (Rochefort [1665] and Davies [1666] cited in Honychurch 2000:31). A fresh water source and fertile soil are nearby to sustain long term occupation. Furthermore, this particular hill is marked by petroglyphs, and the ravine is identifiable from the sea by a small island off the coast. This is not to say that these petroglyphs were made by Caribs, but this site was used by Amerindians at least during the Saladoid period and also after contact.

**Grand Bay:** In 1691, Jeannot Rolle de la Garonne, a free person of color from Martinique, bought land from the Carib in Grand Bay on the south coast of Dominica. After conflict with the Carib over the display of a cross, Rolle set up an estate. He petitioned to Martinique to send a
priest, and in 1747 a priest arrived to bless the cross and in 1749 a church was consecrated and a small parish began operation. Under the direction of Père Antoine de La Valette, the Jesuits of Martinique acquired land in Grand Bay, slaves were purchased, and a Jesuit-owned estate was in operation from 1748 to the early 1760s. Eventually La Valette’s activities were found out, and the Jesuits became enmeshed in a series of court cases in France, on the grounds that a religious order should not have been engaging in selling goods for a profit. This contributed to the Suppression of the French Jesuits in 1764. The British took and sold the Jesuit holdings on Dominica (Boromé 1967; Honychurch 1995:56-58; Moris 1926, 1950; Thompson 1988, 1996). The church building appears to have survived into the 1790s (Moris 1926:284).

In 2001, during road construction on the coast at Grand Bay, Lennox Honychurch observed the outlines of three structures which he thought might be the Jesuit site. Testing completed by the author in May 2007 located stones suggestive of structural foundations on the surface. Subsurface testing identified two structures. In Locus A I identified a wall running from southwest/northeast [Figure 5]. There is a stone and mortar floor on the east side. Testing of Locus B revealed the intersection of two walls. Much of the assemblage consists of architectural elements such as tile and brick fragments, mortar, and nails. Dateable ceramics, including French and British wares, date from the 1740s to the 1780s. The small sample of glass and tobacco pipes is consistent with a mid to late eighteenth century date as well. The earthenware assemblage has a minimum of 23 vessels, several of which are wheel-made European wares. These materials suggest that this is the site of the Jesuit estate at Grand Bay, and continued excavations will define additional resources associated with the Jesuit period occupation.

Thus far the data collected from the Grand Bay site are the most promising record of the pre-British period on Dominica. In contrast to the Carib and refugees living at Indian River and
Grand Fond, Grand Bay attracted Jeannot Rolle, a free person of color, who left Martinique and built an estate on neutral Dominica. Later, Grand Bay was used as an illegal investment by the Jesuit mission in Martinique. Archaeological evidence collected from this site will contribute to an improved understanding of daily life on the multi-ethnic Dominican frontier.

Several main points have been emphasized. First, I have tried to orient studies of colonial Dominica toward a perspective which views the island as a frontier harboring a multi-ethnic population, rather than simply viewing Dominica as the home of the Carib. This idea may also be applied to other refuge islands in the eastern Caribbean. This must be accompanied by a critical reevaluation of the historical evidence, which can complement archaeological data. Second, the historical record indicates that during the post-Columbian period the Carib lived on the west coast in places like Prince Rupert Bay, but less accessible areas like Grand Fond and Salybia were also occupied. Archaeological data from this period have been elusive, and pre-Columbian settlement of Dominica is poorly understood. The island is among the least known archaeologically in the region, and along with Benoit Berard’s (2007) work this paper is one of the first IACA papers about Dominica in almost 30 years. Third, identifying Carib pottery continues to be a problem, assuming that such a type existed. The possible Cayo pottery identified at Indian River is intriguing. There may be fragments of pots used by historic Carib populations within the assemblages from Indian River, Grand Fond, and Grand Bay, or during this period they may have used other materials which do not preserve.

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Figure 1: Map of Eastern Caribbean.
Figure 2: Commonwealth of Dominica, West Indies. Three sites tested between 2005 and 2007 are indicated. (Ordnance Survey, Government of Dominica, 1991).
Figure 3: Possible Cayo Ceramics from Indian River, Commonwealth of Dominica.
Figure 4: Petroglyphs at Grand Fond, Dominica. Six complete and one partial simple faces have been identified. Six face NNW and the seventh faces N (magnetic). (Photograph by the author).

Figure 5: Test unit in Structure A at the Jesuit-owned estate at Grand Bay, Dominica. (Photograph by the author).
Seaman’s Valley Revisited

by

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Abstract

Excavations were conducted by Kofi Agorsah and his colleagues Samuel Bandara and Donaldson Bernard at Seaman’s Valley in 1994 and 1995 as part of the Maroon Heritage Research Project. Two unpublished preliminary reports for 1994 and 1995 are available in the UWI library, and the preliminary results for 1995 were also published in the volume of “Archaeology Jamaica” for that year. A general account concerning the Maroons in the Blue Mountains, published in 2001, is also relevant in this context. The Seaman’s Valley inventory has been re-examined as part of an ongoing project to put the UWI Departmental holdings onto a computer database. At the time it was said that the relationship between the plantation features at the site (which include such obvious relics as a wheelhouse and an aqueduct) and the battle which took place somewhere in the vicinity in 1733 remained undetermined. The findings now in the UWI collections are overwhelmingly of a plantation character and the indications are that they probably belong to the latter part of the 18th century.

Résumé


Resumen

Las excavaciones del Seaman’s Valley fueron dirigidas por Kofi Agorsah y sus colaboradores Samuel Bandara y Donaldson Bernard como una parte del Maroon Heritage Research Project (Proyecto de Investigación de la Herencia Maroon) entre los años 1994 y 1995. Dos informes preliminares sin publicar están disponibles en la biblioteca de UWI y los resultados iniciales de 1995 se publicaron también en el volumen de “Archaeology Jamaica” de ese mismo año. Resulta relevante la publicación de un informe general en el 2001 de
Maroon en Blue Mountains. El inventario del Seaman’s Valley ha sido reexaminado como parte de un proyecto en curso para colocar los fondos del departamento UWI en una base de datos computerizada. En aquel entonces se dice que la relación en este lugar entre lo que parece una plantación (que incluye vestigios tan obvios como una cámara por una rueda y un acueducto) y la batalla que tuvo lugar alrededor de 1733 está indeterminada. Los artefactos en las colecciones de la UWI señalan el abrumador aspecto de una plantación y los datos de los que se dispone pertenecen a los últimos años del siglo XVIII.
Historical background

As described by Agorsah and Bandara (1994, 1995), Seaman’s Valley is in the parish of Portland, about 12 km south of Port Antonio and 3 km north of Moore Town (18° 04’ N and 77° 43’ W). The settlement is on the Negro River near its confluence with the Rio Grande, mainly on its eastern side, where there is a tributary known as the Massa River, flowing down from the Seaman’s Valley Falls.

Somewhere in this vicinity, an important battle took place between the British colonial forces and the Maroons in 1733, as recounted by Hart (1985, vol. 2, pages 66-68). In August of that year, a force commanded by Lt. Thomas Swanton marched inland from Port Antonio, and was ambushed by the Maroons. The force consisted of 200 seamen and 200 slaves “to carry the expedition’s baggage”. At the point where they were ambushed, they were “within half a mile of the N E River … not above 2 miles from Negro Town”. 11 of the force were killed and 15 wounded, and the rest of the party retreated to Port Antonio, leaving behind a quantity of arms and ammunition. Lt. Swanton refused any further engagement and left by ship with the remaining sailors. The Maroons on this occasion were successful, but, as Agorsah and Bandara put it, the cost of this victory was the British attack on Nanny Town in the following year.

Nanny Town, reputed to be “the most formidable of the Maroon settlements in Jamaica in the early 18th century” (Teulon, 1967), is situated on the north bank of the Stony River, at an altitude of about 2000 feet above sea level and south west of Seaman’s Valley (Agorsah, 1994, Fig. 11.3; 2001, Fig. 2). According to Teulon, “a reasonably fit person” can travel from Windsor (on the Rio Grande, downstream from Seaman’s Valley) to the site in nine to ten hours. As recounted by Hart (1985, vol. 2, pages 74-78), Nanny Town was occupied by British forces under the command of Col. George Brooks in December 1734 and they remained there until some time in 1736. The Maroons did not subsequently re-occupy the site, and today, according to Hart, “this wild and almost impenetrable region of the Blue Mountains is normally visited only by the hunters of wild hogs”.

Following a peace treaty with the Maroons in 1739, land was officially allotted to them in Moore Town, south of Seaman’s Valley, in 1740 and again in 1782. The boundary of Moore Town as established in 1782 is indicated by Harris (1994, Fig. 2.1). In 1810, the
Golden Vale sugar estate, north of Seaman’s Valley, on the west bank of the Rio Grande and along the Back Rio Grande, was surveyed by David MacNae (Higman, 1988, Fig. 4.30). We do not have a plan of the Seaman’s Valley estate itself, but we have a very good idea of its position because it was situated along the Negro River between these two properties.

Areas excavated in 1994-1995

Excavations were conducted by E. Kofi Agorsah, Samuel Bandara, and Donaldson Bernard in the period August 6 – September 2 1994 and July 30 – August 20 1995. At that time, five areas north and south of the Massa River, and east of the road between Port Antonio and Moore Town, were marked out by Agorsah (Fig. 1; after Agorsah and Bandara, 1995, Fig. 4). Excavations were said to be mainly concentrated in areas 2, 3, 4, and 5, and practically nothing was said about area 1, which is closest to the road. The characteristics of the areas, as described, are as follows.

Area 2. House feature. Eleven trenches were excavated to a maximum depth of 1 metre. The “exact plan” of the structure was “yet to be established”, and its purpose was “not certain”, although a circular feature, possibly a fireplace, was located within it.

Area 3. Mill wheel house. Five trenches were excavated to a maximum depth of 1.3 metres. “No parts of the water wheel, the drive mechanism, the gears, the drive shaft, bucket paddles, or other major structural features, were observed or excavated”. There was a deposit in the vicinity with imported roofing tiles and slates, and three associated house features.

Area 4. Field camp. “Features which appear to be graves” were located to the east of it.

Area 5. The aqueduct. During the two seasons, this was cleared over a length of 124.5 metres. Excavations reached a maximum depth of 65 cm.

Finds reported in 1994-1995

The finds from 1994 were shown as three graphs according to area and type of material (Agorsah et al., 1994, Fig. 4). The categories of artefacts were listed as: ST stone, LC local ceramics, IC imported ceramics, GL glass, MT metal, BN, and OT other. Area 1 produced the highest quantity of surface material, particularly imported ceramics and glass. Despite the fact that specific details were not given of any excavations in this area, material from excavated level 1 is also shown as coming from here. Most of the material from levels 1 and 2 comes from areas 2 and 3.
The finds from 1995 were shown as four graphs: a total of all artefacts, and three diagrams of imported ceramic types by surface and level (Agorsah and Bandara, 1995, Fig. 5). Most frequent in general were imported ceramics, glass, and metal objects. The imported ceramics were divided into six categories: PELW pearlware, CRMW creamware, SLPW slipware, WHTW whiteware, PORC porcelain, and TNGL tinglaze ware. The predominant ceramic types were pearlware and creamware.

Commenting on the finds in general, Agorsah and his colleagues stated that very much the same types were recovered in both years of work at the site. Specific items were said to include bricks and roofing slates; glass bottles intended for drinking and pharmaceutical purposes; glass and stone beads; and white clay smoking pipes. Metal objects were said to consist of implements and scraps of various kinds, including nails, knives, hinges, horse shoes, pots, buckles, buttons, “lots of lead”, spearheads, fragments of gun barrels, and musket balls of various sizes and weights.

Conclusions drawn in 1994-1995

1. “Generally the range and type of finds are similar to those found at Nanny Town”.
2. This similarity “supports the speculation” that the Maroons had regular contact with Seaman’s Valley in the years before the signature of the peace treaty, and “raided it from time to time”. The plantation existed at some point during that period, and the artefacts particularly the imported ceramics suggest an occupation (if not necessarily a plantation) between about 1650 and 1750.
3. Nonetheless, “the relationship of the plantation features to the site as a battle ground remains undetermined”.
4. “The cache of arms, ammunition, and possibly weapons abandoned or buried in the wake of the flight of the colonial forces, remains hidden”.

Inventory established in 2005

The results of the new inventory of the finds from the site are summarised in Tables 1-4. The material was divided into nine broad categories as follows: 1 imported pottery, 2 earthenware, 3 other ceramic, 4 glass, 5 iron artefacts, 6 iron slag and fragments, 7 other metals, 8 miscellaneous, 9 fauna. According to the information at our disposal, the finds from 1994 and 1995 were recorded as being either from the surface or from excavated levels 1 and
2. These two levels have been amalgamated for the purposes of the present study. 7884 artefacts were recorded in 1994, and 2248 in 1995, making a total of 10,132. In addition, it seems that 52 artefacts were located on the surface in 1993, and there are 244 without indication of provenance, hence the grand total of all finds amounts to 10,428. In terms of percentage occurrence, 1994 accounts for 75.6% of this total, 1995 21.6%, and the remainder 2.8%. The finds from 1993 and without recorded provenance are not considered further here, but it can be seen that the categories of objects present are essentially the same as those from 1994 and 1995. It is instructive to note the proportions of surface and excavated finds in the two excavation years. In 1994, surface material accounts for 67.5%, whereas excavated finds amount to 32.5%. In 1995, 55% of the material came from the surface, 45% was excavated, but the total numbers involved are much less than in the preceding year. The categories of objects found by excavation and on the surface in both years are again essentially similar, but there are possibly significant differences in the proportional occurrence of some of them.

Taking the results for 1994 first, the proportions of different kinds of artefacts occurring on the surface and in excavation are generally similar, except for imported pottery, glass, and iron artefacts. The first two categories are relatively more frequent among the surface finds: 34.8 and 27.5 percent out of 5325, compared with excavated 5.7 and 11.7 percent out of 2559. The proportions are reversed in respect of the iron artefacts, where the respective percentages are 14.8 and 61.5. It is perhaps not surprising that imported pottery and glass should feature more prominently among the surface finds, but what can account for the reversal in the case of the iron artefacts? The answer may lie in the fact that the great majority of these artefacts consist of nails (638 out of 789 on the surface and 1529 out of 1573 excavated, or 92% of 2362 in total). Such things can easily work their way beneath the surface and would be less noticed anyway. The results for 1995 are not dissimilar. The surface %s for imported pottery, glass, and iron artefacts are 43.7, 32.5, and 3.2 respectively, whereas the corresponding %s for the excavated artefacts are 27.6, 20.8, and 21.5. In other words, the same tendencies are observed in both cases. In terms of an overall perspective on the site, it seems fair to say that we are dealing with a homogeneous occurrence, in which there are no marked differences between the finds on the surface and those which were excavated, except such as can be accounted for by taphonomic factors. Obviously however
those finds which were stratified have a greater claim on our attention from the point of view of establishing a reliable chronology for the site, in particular a terminus post quem. Comments on the individual artefact categories are as follows.

Imported pottery

Totals for the broad classes employed are set out in Table 4. It can be seen that, as Kofi Agorsah already reported, creamware and pearlware are predominant, making up 30.3 and 57.2 per cent of the total respectively. In view of the fact that the classes used here are not finely subdivided, and that a fine subdivision would hardly be justified since so much of the material is from the surface, a broad brush approach has been used in an attempt to calculate a mean ceramic date for the assemblage as a whole (South, 1977; Wesler, 1982; Barber, 1994). These days, of course, far more refined approaches can be adopted, such as those used by DAACS (2007), but they require exact contextual information, which is hardly available in this case.

According to the methodology employed by Kit Wesler (1982) median dates were assigned to the imported pottery categories as follows: 1 delftware 1750, 2 porcelain 1730, 3 slipware 1733, 4 stoneware 1738, 5 yellow ware 1890, 6 creamware 1791, 7 pearlware 1805, 8 white ware 1860. All the stoneware was treated as grey, and the porcelain was assumed to be of Chinese origin. With these assumptions, and using the frequencies as indicated in the table, a mean ceramic date was worked out of 1794.8 AD. A date late in the 18th century was of course expected in view of the predominance of creamware and pearlware. Even if a standard deviation of 22.5 years is taken into account, the broad conclusion remains the same. White ware, present in small numbers, is certainly indicative of a later date, but the signs of a very much earlier date are few and far between. One example of annular ware, a variety of pearlware, with a finger painted design – actually on a chamber pot or “chimmey” as it is known in Jamaica (Cassidy and Le Page, 2002) – is shown at Fig. 2. According to Hume (1991: 132), this technique was popular during the first 20 years of the 19th century.

Earthenware

By earthenware is meant locally produced pottery more or less in the African style. Such pottery is common in archaeological contexts in Jamaica, and has continued to be made up to recent times (Mathewson, 1972; Ebanks, 1984; Senior, 2003).
Other ceramic

Most of the pieces assigned to this category are roof tiles, but there are a few other highly specific items, which are important for dating purposes. In particular, attention may be drawn to a porcelain button excavated in 1994 in level 2, which exactly corresponds to Hume’s type 23 (Hume 1991, Fig. 23, page 91). According to him, a date in the range 1800-1865 is indicated. A porcelain doll’s head was also found in level 1 in 1994, and two arms or legs in level 2. These are also indicative of a 19th century date (Hume 1991, pages 317-319).

Glass

This is one of the most frequent categories found at the site. For the most part we are dealing with small green glass fragments of wine bottles (Hume 1991, pages 60-71), which in 1994 accounted for 1429 out of 1763 pieces, or 81%. Once again however there are a few which are diagnostic. They include one fragment of a cylindrical amber coloured vessel with the embossed letters “EMA&”. This was part of a Dutch Case gin bottle, similar to those examined by Margaret Bradford, from the island of Bequia in the Grenadines. The complete inscription will have read “vHoytema&C”. According to Bradford (2005, Fig. 1, Table 1 No. 41), this type of bottle was manufactured in Holland in the period between 1800 and 1850. Some fragments of window glass are also quite characteristic (Hume 1991, pp. 233-235). The UWI collection includes one window boss, and further examples of “broad” glass “crowns” were noticed on the surface in area 2 in 2005. Such “crowns” were shipped to the West Indies in crates, to be cut to size by the purchaser. But, as Hume says, the dating of such remains is possible only within the “widest brackets”, in a range from about 1690 to 1832. Also found were a small number of glass beads (Hume 1991, pp. 53-55).

Iron artefacts

These are even more frequent than glass, but, as already pointed out, the great majority of the recognizable items consist of nails. The remainder are not always easy to classify, but for the most part appear to be hand-forged implements for agricultural, industrial, and household purposes. They include such utensils as pots (some with makers’ marks), axes, wedges, buckles, horseshoes, and clothes irons.

Iron slag and fragments
There are also a large number of items in this class. Hence there is a strong suggestion that there was a blacksmith or blacksmiths on site. Michael Craton (1978) has discussed the importance of smithing on the plantation, and lists such items as barrel hoops, horseshoes, brackets, hinges, hooks, shackles, chains, nails, and replacement parts for sugar mill machinery, among others. The pattern at this site fits in with that.

Other metals

Less frequent than iron, and embracing a number of different materials such as lead, tin, copper, and brass, this category is certainly instructive in terms of the artefacts represented. There are only three lead musket balls, two of which had not been fired, and a third spent example which had been transformed into a bead. Some chew marks were visible on one of the others, evidently made during the shaping process. A single brass cartridge case must post-date the 1850’s. There are small numbers of other objects: a lead bead which had been annealed and rolled, some possible lead slag, a triangular brass balance weight, cuprous eyelets and buckles, a thimble, and a cuprous medallion. As in the case of the iron objects, there is nothing here to indicate activities other than those associated with agricultural, industrial, and household pursuits.

Miscellaneous

Included here are a number of clay tobacco pipe stems, all of which have narrow diameters, indicative of a late 18th century date for manufacture and use (Harrington, 1954; Hume 1991, pages 296-313; Barber, 1994).

Fauna

The excavations of 1994 and 1995 produced only 16 bones, inadequate to draw any conclusions as to the subsistence base of the inhabitants at the time of occupation.

General characteristics of the inventory

The overwhelming majority of the finds suggest that they belong with the visible remains of the sugar estate which existed here in the 18th and 19th centuries. A mid to late 18th century date for most of them is strongly supported. The uses of the artefacts appear to be mainly agricultural, industrial, or domestic in nature. There are very few pieces which could be argued to have a military significance, a few unfired musket balls and a spent musket ball transformed into a bead. Those artefacts which can be regarded as Afro-Jamaican (such as the
earthenware pots) could very well have belonged to workers on the estate. In our re-
examination of the inventory we did not come upon any spearheads or fragments of gun
barrels, previously said to come from the site, and this reinforces the conclusion that “the
relationship of the plantation features to the site as a battle ground remains undetermined”.

What could be expected from a site in the vicinity of a former battleground is clearly
different from what has actually been detected. Discard patterns in what one might call a
“military model” of activity would be otherwise. In particular, it should be noted that firearms
used in Jamaica and elsewhere during the 18th century were generally very delicate and were
easily damaged or broken during use. Although easily repaired, they were quite unpredictable
and spare gun parts were often carried as standard equipment. The most common breakage
was the gunlock and its parts and these are often found during archaeological investigations
(Hume 1991: 211). A variety of other gun parts are seen on former battle sites, including
gunflints and spares, trigger guards, trigger plates, barrel and barrel fragments, butt plates,
escutcheons, thimbles and tubes. According to Hume, “Gunflints are more common on
archaeological sites than are parts of the weapons themselves” (1991: 219). Gunflints in
Jamaica during the period in question were certainly not in short supply. According to Porter
(2006: 65), there were more than 70,000 of them in storage in Spanish Town in 1816. It was
advisable to carry spares with you, and on occasions the archaeological record can
demonstrate this. Thus, material recovered from the 18th century pirate vessel “Whydah”,
located off the Cape Cod Massachusetts coast, included animal hide pouches belonging to
several individuals, each containing spare flintlock parts (Michael Roberts, 2000, personal
communication).

Peter Bleed (1991) has suggested the use of Fault Tree Analysis to model the
interaction of factors that can cause a technological system to fail. Among other things, he has
presented a Flintlock Fault Tree diagram, shown here at Fig. 3. All the components of the
firearm – lock, stock, and barrel – were liable to failure, but the lock was most vulnerable of
all. He compares the hypothetical expectations of flintlock failure on the 18th century
American frontier with what has actually been observed at 26 archaeological sites (Bleed,
1991, Table 2). Clearly, at a site such as a Maroon stronghold or an ambush location, one
would expect to find gun parts and spares like this in the archaeological record. In fact, no
recognizable gun parts or spares, such as locks, plates, flints, or brass trigger guards, were observed in the Seaman’s Valley collection.

Comparison with Nanny Town

Nanny Town has been investigated three times in recent years (Teulon, 1967; Bonner, 1974; Agorsah, 1994). The site was rediscovered by Alan Teulon and his group in July 1967, and a sketch map was prepared, featuring in particular a rectangular “stonewall” structure. 98 artefacts were collected from the surface in the vicinity of this structure. These included 70 fragments of glass bottles, 19 pieces of imported pottery (mainly delftware), 8 iron fragments, and 1 pipe stem. The bottles were estimated by Mike Pawson to date from about 1730 to 1760. “No artifacts of military significance were recovered”, although it was considered probable that the “stonewall” dated to the period of British occupation of the site.

The investigations conducted by Tony Bonner and his group in the period December 1973 – January 1974 were on a larger scale and revealed a somewhat different range of finds. The site was gridded out into 10 foot squares, and excavations were conducted in three of them (G2, F3, and F4) as well as within the “stonewall”. The finds in these areas partially duplicated what had gone before, in that they included imported pottery, glassware, iron fragments, and pipe stems. The imported pottery was again mainly delftware. However, a new element was introduced by the finding of specifically military items, notably a number of musket barrels, flintlocks, musket balls (some flattened), and iron spear heads. It was not possible to decide which of these things had belonged to the Maroons and which to the British occupying forces, but the traces of military activity at the site were unmistakable.

Finally, excavations were conducted by Kofi Agorsah and his group in the period 1991-1993. “A three-metre grid was superimposed on the 10-foot grid of the 1973 excavation”, four more rectangular stone structures were discovered, and trenches were excavated usually to a depth of less than 1 metre in 9 designated areas (Agorsah, 1994, Fig. 11.4). According to Agorsah, the finds were essentially of the same type as before. There is mention of imported pottery, glassware, iron artefacts, and pipe stems. Also referred to are glass and stone beads and buttons, local earthenware including red clay pipes, and military objects of the kind noted by Bonner: fragments of gun barrels, musket balls of various sizes and weights, and iron spear heads.
From the above, not surprisingly, it is clear that there are undeniable traces of military activity at the Nanny Town site. Signs of such activity, as we have already noted, are absent at Seaman’s Valley. There is an overlap in some categories, including imported pottery, but even here it is doubtful whether a close comparison can be drawn between the two sites, since the principal type mentioned at Nanny Town (delftware) is only marginally present at Seaman’s Valley (31 pieces out of 2818 or 1.1 per cent). In the light of this, it seems that there is more of difference than similarity between Nanny Town and Seaman’s Valley, and no equivalence between them can be posited.

This assessment is at odds with the model proposed by Agorsah (2001) for the relationship between Nanny Town and Seaman’s Valley. According to him, “the similarities in finds from the two sites in pre-treaty years” indicate that they formed a “symbiosis” at that time, part of a Maroon “strategic communication system” which covered much of the Blue Mountains (Agorsah, 2001, Fig. 3). A “flow of goods” was maintained between Seaman’s Valley and Nanny Town, passing along the Windsor route, which linked the two sites, including staging posts such as Watch Hill, Pumpkin Hill, Mammee Hill, Killdead, and Gun Barrel. Agorsah admits that the finds from these intermediate sites are few, but in essence the idea of such a trail is reasonable. To survive, the Maroons had to know their territory and their landscape; but whether - in the light of the description of the material from Seaman’s Valley given here - the notion of a “pre-treaty symbiosis” between this site and Nanny Town can be sustained is another matter all together.

Conclusion and future research agenda

The inventory from Seaman’s Valley, which has been re-examined as part of an ongoing attempt to establish a computer database for the Departmental archaeological collections at the UWI Mona Campus, is essentially of the type that could be associated with a sugar plantation. Visible features of this plantation, which existed along the Negro River between the Golden Vale sugar estate and the designated area of Moore Town, are still plainly evident, and were investigated in 1994-1995. There are no signs of military activity, and it seems doubtful that this was the actual spot of the encounter which took place between the Maroons and Lt. Swanton’s force in 1733. The battle no doubt was somewhere in the vicinity. The finds from the site for the most part suggest a mid to late 18th century date, not earlier.
The similarity between the finds from Seaman’s Valley and Nanny Town should not be exaggerated, nor used to support the idea that the plantation was in existence before that time, and hence could be raided by the Maroons.

The history of Montpelier, at the other end of the island, may be instructive in this regard (Higman, 1998). As Higman explains, the earliest grants of land in the valley of the Great River, the site of Montpelier, were made in 1672. Nonetheless, the sugar estate there did not really get going until after the peace treaty with the Maroons concluded between Cudjoe and the British representatives Guthrie and Sadler on 1 March 1734. It was the “ambiguous resolution” of the conflict with the Maroons at that time which “led directly to the establishment of Montpelier as a sugar plantation” (Higman, 1998, 14). It may be suggested that something of the same sort happened in the valley of the Rio Grande in eastern Jamaica from 1739 onwards. There is, of course, no direct link between Seaman’s Valley and Montpelier. But their general situations, and the constraints upon them, were very similar; hence the suggestion that neither plantation flourished until the threat posed by the Maroons had been removed. In general, it is known that the latter part of the 18th century was boom time for the sugar mills. Their numbers increased from 57 in 1670 to 419 in 1739 and then to 1061 in 1786 (Higman, 1988:10).

Some suggestions may be made as to future research objectives.

1. There is room for further archaeological excavation and recording at Seaman’s Valley itself. Our brief visit in 2005 revealed a wealth of material still on the surface. Historical research also needs to be undertaken, in order to find out who the owners of this plantation were, and perhaps what it was originally called. Since it seems unlikely that this was the battle site, a survey should be undertaken to determine where that site was.

2. A full publication is needed of the excavations conducted at Nanny Town. A large amount of material is stored in the UWI Department of Archaeology, and it requires to be properly catalogued. This will provide a surer basis of comparison to Seaman’s Valley, but it is a task which needs doing anyway. A catalogue of the finds made at the small sites along the Windsor route would also be useful.

The excavations of 1994-1995 have so far contributed essentially to our knowledge of the plantation system as it functioned in this part of the island in the latter part of the 18th
century, but the place of Seaman’s Valley within the Maroon context is more difficult to be sure about. It is clearly important to present Maroon history accurately, especially when significant places and events are discussed based on materials recovered during archaeological excavations. Doing so will enable these materials and the information they convey to be placed within the broader context of Maroon heritage, including the transportation of goods and information exchange. Constructs based on preliminary field observations and findings from a limited cultural inventory need to be supplemented by precise and full accounts and inventories. If there is a lack of such information, researchers will find it difficult to compare and contrast these findings and draw out their full meaning. Only in this way will all the labour and enthusiastic effort put into the excavations both at Seaman’s Valley and Nanny Town really be brought to fruition. It is hoped that the present modest effort in cataloguing the finds from the first of these sites will provide a useful stimulus in this direction.

Acknowledgements

The re-examination of the artefacts from Seaman’s Valley was conducted by the authors with the help of the then second year archaeology students at UWI Mona in the 2004-2005 academic year. Thanks go to them for their willing participation in the exercise. The authors also revisited the site in February 2005, with indispensable guidance from Sam Bandara and Jill and Paul Byles. Transport was provided by Hermann Tobisch, with whom we enjoyed convivial accommodation at de Montevin Lodge in Port Antonio. Kit Wesler very kindly provided a mean ceramic date for the imported pottery from the site. At the IACA meeting Margaret Bradford drew our attention to the significance of the Seaman’s Valley embossed gin bottle. Thanks go to all these people. In particular we now remember Sam Bandara (Fig. 4), a great champion of archaeology, in Jamaica in general and at UWI in particular, who died in 2006, and to whom we dedicate this contribution.

References

### Table 1
Seaman's Valley
Surface and Excavated Finds 1994

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The Spanish Ceramic Assemblage at the St. Joseph Site, Trinidad

by

Annette Silver and Birgit Faber Morse
Peabody Museum of Natural History and Yale University

Resume

The 1953 Rouse-Goggin excavations at the St. Joseph site in Trinidad yielded a mixture of Amerindian and European artifacts which are housed at Yale Peabody Museum. The historic assemblage reflects the presence of the Spanish and English in the town of St. Joseph from the early 17th century into the 19th century. We describe here the Spanish majolica ceramics and earthenware olive jars (botijas) and present manufacture dates that reflect research subsequent to Goggin’s 1960s reports. The analysis reveals that the first Spanish settlers in St. Joseph were using majolica pottery shipped directly from Andalusia, Spain. Slightly later, they were importing a common grade majolica made in Mexico City. Mexican manufactured majolica dominated the town’s finer tablewares from circa 1640s throughout the 1700s. Although St. Joseph is documented as a small and impoverished community, fino and entrefino majolica as well as common majolica were used during the later Spanish occupation.

Résumé

Les 1953 Rouse-Goggin excavations à l'emplacement de St. Joseph au Trinidad ont rapporté un mélange d'Amerindian et européens objets façonnés (artéfacts) qui sont logés au musée de Yale Peabody. L'assemblage historique se reflète la présence de l'espagnol et de l'anglais dans la ville St. Joseph du tôt dans le 17ème siècle au 19ème siècle. Décrites ici sont les céramiques espagnole majolique et de poterie de terre espagnole (botijas) et les gammes de date de fabrication qui reflètent la recherche suivante aux rapports des années 60 de Goggin. L'analyse indique que les premiers colons espagnols dans St. Joseph employaient la poterie de majolique embarquée directement d'Andulusia, Espagne. Légèrement plus tard, ils importaient une majolique commune de catégorie faite à Mexico. La majolique manufacturée mexicaine a dominé les articles plus fins de la table de la ville du circa 1640s au 1700s. Bien que St Joseph soit documentée en tant que petite et appauvrie communauté ; la majolique de mediofino du fino y aussi bien que la majolique commune a été utilisée pendant la période occupation espagnole tarde.

Resumen

Las excavaciones que realizo Rouse-Goggin en 1953 en el sitio St. Joseph de Trinidad produjeron una mezcla de artefactos pre-colombenos y europeos que estan almacenados
en Yale Peabody Museum. Los niveles históricos europeos reflejan la presencia de los españoles y de los ingleses en la comunidad del St. Joseph desde principios del siglo diecisiete hasta el siglo diecinueve. Aquí se describen las cerámicas mayólicas españolas, las botijas de olivas y los datos de los rangos de manufactura que reflejan la continuidad de la investigación de los informes de Goggin de 1960. El resultado de esta investigación revela que los primeros asentamientos españoles en St. Joseph usaron cerámicas mayólicas que fueron embarcadas directamente desde Andalucía, España. Poco más tarde importaron algunas mayólicas fabricadas en la ciudad de México. La mayólica mexicana dominó las mesas más finas de St. Joseph desde aproximadamente el año 1640 hasta los 1770s. Aunque St. Joseph ha sido considerado como una comunidad pequeña y empobrecida, el uso la mayólica fina, medio fina y la común durante el último periodo de la ocupación Española.
Introduction

The town of St. Joseph is situated in northwest Trinidad on the Maracas River (Figure 1). The 1953 Rouse-Goggin excavations at the St. Joseph site yielded a mix of Amerindian and European materials and faunal remains. The pottery and ceramics included locally-made coarse plain grit-tempered earthenware and Amerindian pottery, besides European ceramics. There are five groups of the imported wares: Spanish majolica ceramics and Spanish earthenware olive jars (botijas), German ceramics, Oriental Export porcelain, and English ceramics. The historic assemblage reflects primarily the presence of the Spanish and English in the town for over two centuries, from the late 16th into the 19th century. Goggin (1960) previously included a list of the St. Joseph ceramics in his discussion of Spanish majolica and botijas. We report here on the re-examination of the majolica and botijas undertaken in order to associate specific sherds in the assemblage with the listed types and to provide the Yale Peabody Museum with a comprehensive report of the collection.

The Spanish Presence
The Spanish first established St. Joseph, or San Jose de Oruna, its original name, in 1592. Sir Walter Raleigh sacked the settlement shortly thereafter and it was then subsequently deserted. The Spanish rebuilt on the site in 1596 and the occupation of San Jose was continuous until the present day with two exceptions: an exodus from the town following a small pox epidemic in 1741 and again in 1766 following an earthquake (Newson 1976:19; Rouse 1953, fieldnotes). San Jose served as the capital of Spanish Trinidad from 1596 to 1783. Thereafter, the Spanish administrative offices were moved to Port-of-Spain, to where the most influential Spanish families had previously relocated. From the late 1600s until the 1780s, the total population ranged between a low of about 300 in the period 1700-1722 to 1050 in the 1770s (Newson 1976:188,123; Table VII citing Archivo General de Indias, Sevilla).

The Site

The excavation site, St. Joseph 2 (SGE-16), is located in the center of the town. It consists of a shell midden, approximately 50 x 50 m sq, extending underneath present-day Abercromby Street, between Richmond Street and Albert Street. Rouse and Goggin excavated a 2 x 6 m trench along each side of Abercromby Street. Trench 1 cut into the present-day plaza. Trench 2 cut into the steep downward-sloping southwest corner of the plaza. The roadbed overlies 88% of the midden area. Whether or not any intact shallow sections of the midden remain under the roadbed is undetermined. The trenches were
divided into three 2 x 2 m units and excavation proceeded by 10 cm arbitrary levels. The midden soils of Trench 1 consisted of dark brown clay mixed with pebbles. The soils of Trench 2 consisted of dark brown clayey loam with pebbles. Cultural materials were recovered from Trench 1 to a depth of 50 cm and from Trench 2 to depths of 70 to 80 cm. Sterile orange/yellow clays underlay the midden. Goggin’s earlier analysis demonstrated that the midden deposits were disturbed (Goggin 1968: 40-41; Rouse 1953, fieldnotes).

The Spanish Ceramic Assemblage

Over 2500 ceramic fragments were recovered from the two trenches. The Spanish ceramics represent barely one percent of the historic ceramic assemblage and only two classes of Spanish wares were identified in the early reports: majolica and olive jars (botijas, jarras de aceite). The assemblage is in very poor condition, totally fragmented with many pieces cracked and burnt. Our terminology here follows Carruthers (2003), Goggin (1960) and Lister and Lister (1976, 1982).

Majolica/maiolica

During the Caliphate period in Spain (11th to 13th centuries) the Moors introduced a distinctive thick tin-glaze technique to southern Spain, calling the ceramic majolica and loza blanca. The use of a similar thick tin-enamel glaze in central Europe began in the
14th century by the Italian potteries. As individual potters moved westward through Europe, the use of the Italian maiolica technique spread, becoming known variously as faience in France and Germany and as delft, Holland ware, and galleyware in Holland and England. During the 16th century, many of the distinct Moorish styles and decorative traits in Europe were replaced by Italian Renaissance styles. At the same time, the Moorish-Spanish or Morisco tradition was carried to Mexico (Lange 2001:11). Using data from stratigraphically controlled archaeological assemblages, Lister and Lister (1987) categorized the Spanish majolica recovered in the New World according to locale of manufacture and to the quality of the ware (fino, entrefino, and common/comun grade). In this analysis we refer to both Goggin’s typologies and the Listers’ categories.

Goggin (1968:41) counted 28 majolica fragments in the St. Joseph assemblage, 16 from Trench 1 and 12 from Trench 2. He identified a group of unclassified majolica sherds and seven different majolica types: Ichtucknee Blue on Blue, Santo Domingo Blue on White, San Luis Blue on White, San Luis Polychrome, Aucilla Polychrome, Puebla Blue on White, and Tallahassee Blue on White. Our re-examination identified 16 sherds of classified types and 13 sherds of unclassified Blue on White majolica.

Spanish and Italian majolica. The Santo Domingo Blue on White (Figure 2) is a Morisco Ware, a pottery ware manufactured in the Seville area of Andalusia. The Santo Domingo Blue on White is the second most abundant common grade ware identified at Spanish colonial sites of the early period according to Deagan (1987:59-61). Goggin associated this pottery with the “first Spanish occupation” at St. Joseph (1968:41).
Subsequent data from New World contexts now place the use of this specific majolica type between 1550 and ca. 1630/1640 (Deagan 1987:61; Marken 1994:224).

We identified six sherds as Ichtucknee Blue on Blue (Figure 2, upper right). In subsequent analyses of other assemblages, Goggin’s original Ichtucknee Blue on Blue type has been resorted into two types, Sevilla Blue on Blue and Ligurian Blue on Blue. The Sevilla Blue on Blue (Figure 2, upper middle right) was manufactured in the environs of Seville and dates from ca.1550 to 1630/1640 in New World contexts. Ligurian Blue on Blue ware (Figure 2, upper right) was made in Italy’s Liguria province and dates from 1550 to 1600 (Deagan 1987:70; Lister and Lister 1982:62, 72). Goggin (1968:41) associates his two sherd categories with the “first Spanish occupation” at St. Joseph. The more recent date assessments confirm the Spanish presence and direct trade with Spain at the very beginning of the St. Joseph settlement in 1592 and 1596.

Mexican majolica. San Luis Blue on White and San Luis Polychrome were manufactured in Mexico by European Spanish potters working in the environs of Mexico City. The San Luis Blue on White is a fino grade ware (Figure 2, middle left). This type is now dated earlier than Goggin’s initial assessment, presently dated as circulating throughout the Caribbean from 1550 to at least 1650. This end date is based on recovery from a 1642 shipwreck (Lister and Lister 1982:13-18; Marken 1994:223-34). The common grade ware San Luis Polychrome is a “more careful” treatment of the México City Green on Cream (Figure 2, middle right). Export of this ware from Mexico City was underway by the 1640s as based on shipwreck finds (Marken 1994:178, 233-234). San
Luis Polychrome had a sparse presence in Mexico City throughout the second half of the 17th century (Lister and Lister 1982:28). The Aucilla Polychrome is another type made in Mexico City (Figure 2, middle right, top sherd). This common grade pottery was made from 1650 to 1700 with peak popularity in Mexico City from 1680 to 1685 (Lister 1982:76-77). The Puebla Blue on White (Figure 2, lower right) is a fine ware (fino and entrefino grades) made in Pueblo, Mexico. This long-lived ceramic tradition was in use from 1675 to 1830 (Deagan 1987:84 citing Lister 1983; Lister and Lister (1982:76-77). The ceramic has been recovered from shipwrecks occurring in 1724 and 1733. The evidence that trade of the Puebla Blue on White was widespread in the Caribbean around 1730 suggests its use in St. Joseph during the early 1700s (Marken 1994:236).

Other majolica. Tallahassee Blue on White (Figure 2, lower left) is a scarce type recovered from sites in Florida, New Mexico, the Dominican Republic and Trinidad, from 1635 to 1700, but it is not found in Mexico. However, Goggin has proposed that the type was made in Mexico, based upon physical parameters (Goggin 1968:158-159). Finally, we also counted 13 majolica sherds of Unclassified Blue on White and one Unclassified Black on Emerald (Figure 3).

Olive Jars (botijas)

Goggin refers to the presence of “numerous” olive jar sherds of the Middle Style or type (1948:41). The Middle Style is distinguished by its thick vessel walls from 10 to
12 mm and ring mouth from 17 to 26 mm and there may be stamping on the ring mouth. Surface treatment can be plain, interior glazed, or both interior and exterior glazed, but handles are absent. In Goggin’s olive jar typology paste, finish (slip, glaze tint, plain), vessel size, and vessel capacity are all non-diagnostic traits. These botijas could have been manufactured in southern Spain, possibly Andalusia, and the type is commonly recovered from Venezuela to Georgia (Goggin 1960:15-16 and Table 8).

The olive jar sherds are easily visible in the collection. We counted 21 sherds. These represent a minimum number of vessel count [MNV] of three vessels as based upon body pastes (buffware and salmonware) and rims (Figure 4). This is not the “numerous” set mentioned by Goggin (1968:41). These few sherds are comparable to the sparse findings at the large mission sites of Texas, New Mexico, and Arizona in the United States (Goggin 1960:17). However, the assemblage size is drastically lower than the assemblage of 585 rim sherds recovered at the Santo Domingo Monastery site in Guatemala (Carruthers 2003).

Botijas were imported from Spain throughout the period of the Spanish Indies trade. Based upon the archaeological data, the Middle Style botijas date from 1500 to 1773, with very few finds prior to 1500 to 1550. Carruthers adjusts Goggin’s 1780 date for the transition from Middle to Late Style earlier to 1773, reflecting finds at the Santo Domingo Monastery, Guatemala (Carruthers 2003:41, 52-53; Marken 1994:52-53).
Conclusions

The first Spanish settlers in St Joseph were using majolica shipped directly from Andalusia, Spain. Slightly later, they were importing common grade majolica made in Mexico City. Throughout the 17th century the community was consistently described as small and poor, although we see the use of fino and entrefino majolica as well as common majolica which came from both Spain and Mexico. However, the extremely low sherd count of these more refined wares confirms the poverty of the town. Shipwreck evidence shows the early Mexico City San Luis Blue and White and San Luis Polychrome in circulation throughout the Caribbean until 1650 and 1700, respectively. Mexican manufactured majolica dominated the St. Joseph finer tableware from ca. 1640s through the 1700s. Evidence for trade circulation of the Puebla Blue on White and its widespread Caribbean circulation around 1730 suggests its use in St. Joseph as early 1700. The presence of Puebla Blue and White and of Aucilla Polychrome demonstrates importation of goods from Mexico City and Puebla, Mexico, a trade pattern that could have continued until the mid-1700s or to 1800, respectively.

Only one style of botijas, the Middle Style, was identified at St. Joseph. The absence of Late Style botijas, introduced circa 1773, provides material evidence for the move of the most influential Spanish families from St. Joseph to Port of Spain before that time. A few Spanish and mestizo families remained, approximately 22 landowning families, but these were “impoverished and isolated.” Based upon the material evidence
they no longer used the ubiquitous Spanish olive jar and other imported Spanish wares
during the 30 years prior to the English takeover in 1802.

Acknowledgements

We wish to thank Dr. Roger Colton and Maureen DaRos for their help and cooperation in
accessing the collection at the Yale Peabody Museum. Artifact photography was by Jerry
Domain, Yale Peabody Museum.

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Figure 1. Map of Trinidad Island.
Figure 2. Spanish majolicas and Italian maiolicas. Upper left, Santo Domingo Blue on White; upper middle right, Sevilla Blue on Blue; upper right, Ichtucknee Blue on Blue; middle left, San Luis Blue on White; middle right-upper sherd, Aucilla Polychrome; middle right-lower sherds, San Luis Polychrome; lower left, Tallahassee Blue; lower right, Puebla Blue on White.
Figure 3. Unclassified majolica sherds.

Figure 4. Olive jar (botija) sherds. Rim sherds (upper row, far left; lower row, middle).
Interpreting the Presence of Moravian Produced Slipware Pottery at Cinnamon Bay, St. John, U. S. Virgin Islands

by

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Syracuse University

Abstract
Excavations of a coastline settlement at Cinnamon Bay, St. John, U. S. Virgin Islands, have recovered evidence of one of the earliest occupations of the island. Included in the ceramic assemblage from this site is a type of slipware manufactured throughout central Europe and in eastern North America. The Unity of Brethren, or Moravians, shared in this tradition and produced these wares in Europe, Pennsylvania, and North Carolina. Moravian missionaries were active in the Virgin Islands from 1732, and the presence of this assemblage adds another facet to Moravian activities in the Virgin Islands and suggests regional patterns of exchange.

Resumen
Las investigaciones arqueológicas de la colonización costera en Cinnamon Bay, St. John, en las Islas Virgenes Americanas, han descubierto evidencia de la colonización Europeo más temprano de la isla. Incuido en la ensamblaje es un tipo de cerámica de “slip” que se fabricaron en Europa central y al este del América del Norte. El “Unitas Fratrum” o la hermandad de Moravia, compartió esta tradición y produjo esta cerámica en Europa, Pennsylvania, y Carolina del Norte. Los misioneros de Moravia habían sido activos en Las Islas Virgenes desde 1732, y la presencia de esta cerámica añade una faceta adicional a la misión de la hermandad de Moravia en las Island Virgenes y sugiere un patrón de intercambio regional.

Résumé

This paper examines slip-decorated lead-glazed sherds recovered from planter and enslaved laborer contexts at the shoreline settlement at Cinnamon Bay, St. John, Danish West Indies. The
identification of this bright colored slip-decorated pottery, most likely produced in North America and/or Europe by an evangelical Christian group known as the Unity of Brethren or Moravians, adds to our understanding of diversity in local and regional trade networks. During initial analyses of the Cinnamon Bay materials, it was noted that these sherds were unusual for the Caribbean region but were consistent with the general category of “American Slipware” as defined by Noël Hume (1969). After a small number of similar wares recovered from Estate Lower Bethlehem, St. Croix, were identified as being of possible Moravian origin (Lenik 2004, 2006), we decided to re-examine the materials from St. John and then to explore the particular historical context and social relations that might be reflected by these sherds. We suggest that these wares reflect the influence and interaction of the Moravian Mission in the Danish West Indies. The slipware found at Cinnamon Bay show that the islanders were linked to trade and social influence from Europe and North America, and point to the pervasive role of Moravians on an island where they established a mission in the eighteenth century.

In addition to the specific historic contexts that link the island materially to the Moravian presence, these data serve as an example of the complex network of trade relationships and social interaction in the Caribbean. Our goals here are to define these distinctive wares, examine the historical contexts of their presence at Cinnamon Bay, and finally, to examine the local and regional significance of these finds. The slipware that we attribute to Moravian production are part of a larger ceramic assemblage that includes a wide variety of types from Europe and Asia, as well as local coarse earthenware reflecting both African and indigenous influences. The plantation based society of St. John was linked to the broader social and economic structure of slavery, colonialism, and imperialism (Goveia 1965:52-53), but also illustrates the fragmentation and idiosyncratic nature of local social and political interaction (Armstrong 2003; Hall 1985;
The Danes were late comers to colonial settlement in the Caribbean, as Denmark began its colonial enterprise in the late seventeenth century. Danish interests, stemming from a close relationship between the Crown and the West India Company (Feldbæk 1986), were linked to plantation-based agriculture like much of the rest of the Caribbean, but were more strongly tied to maintaining a foothold for mercantile trade on a global scale and less to land based expansionist or imperial designs (Armstrong 2001, 2003; Armstrong et. al 2006). After unsuccessful attempts in the 1660s, in 1672 the Danes officially settled St. Thomas, which was desirable due to the port of Charlotte Amalie (Figure 1). In order to ensure their foothold in the Caribbean and because of the relative disinterest among Danes in settling the land, colonists of virtually any national or ethnic origin were welcomed to the Danish colonies. The Danes wanted productive estates raising crops and provisions and a reliable tax base to support the Crown. Moreover, the neutral port at Charlotte Amalie attracted local Caribbean, regional North American, and worldwide trade, both officially sanctioned and illicit (Westergaard 1917).

Soon the Danes directed their interests east of St. Thomas toward St. John, officially settling the island in 1718. At first, plans called for the establishment of sugar, cotton, and provisioning plantations. But the steep slopes, undulating shoreline, and irregular rainfall of St. John yielded land only marginally suitable for the production of sugar. St. John proved to be best suited for provisioning, ranging from foods to coal production, as well as maritime trades which included fishing and harvesting coral reefs. Along with St. Thomas and St. Croix, which was acquired from France in 1733, the Danish Virgin Islands were purchased by the United States in 1917 and are now known as the United States Virgin Islands (Armstrong, Hauser and Knight 2006).

Cinnamon Bay is located on the north central shoreline of St. John (Figures 1 and 2). Since
1956, the 300 acre estate has been within the boundaries of Virgin Islands National Park. The coastal portion has been utilized as a campground, interpretive center, and recreation area by the National Park Service. Between 1999 and 2003, archaeological investigations of shoreline structures associated with the historic settlement at Cinnamon Bay were carried out by Syracuse University under the direction of Douglas Armstrong, in cooperation with the National Park Service, coordinated with Kenneth Wild.

Archaeological testing identified three main loci (Figure 2). The first is a two story stone and mortar structure that served as a combined planter residence and storehouse, and at times also was a magazine and a warehouse. Two more loci are wattle-and-mortar structures that served as residences, but also were likely used for cotton ginning and maritime trades activities. The archaeological data indicate that there was a pre-1718 coastal settlement at this site. This indicates that despite the absence of “official” land claims or settlement, interlopers were informally occupying Cinnamon Bay from the last quarter of the 17th century, using it as a residential base of provisioning and seafaring (Armstrong, Hauser, and Knight 2006). Once the Danes established a formal colony and planters began to grow sugarcane, the small shoreline estate was consolidated into a larger sugar estate, or “plantation,” known first as “Kaneel” and later as Cinnamon Bay (Knight 1999). During the St. John slave rebellion of 1733-1734 the shoreline buildings were burned when enslaved laborers of the shoreline parcel joined the property owners in opposing the revolt (BD 1730-32; Knight 1999:21; Martfeldt 1765; Pannett 1994 [1733]).

The data indicate that the shoreline structures continued to be occupied through the eighteenth century into the early nineteenth century, despite the fact that hurricanes destroyed the buildings twice more. Each time new structures were built atop the ruins, so that a new floor was
added above the old, separated by rubble from wall fall associated with these traumas. Finally in 1819 a devastating hurricane crumbled the two story residence/storehouse and destroyed the other two structures. After this event the storehouse was rebuilt but the residential units were not (Armstrong, Hauser, and Knight 2006; Knight 1999). These rebuilding events provide archaeological contexts which enable fairly narrow dates to be established for these Moravian slipwares.

The artifact assemblage collected from this coastline settlement illustrates the diversity of material culture in the Danish Virgin Islands. The ceramic assemblage ranges from locally produced earthenware, as well as North American, European, and Asian wares (Armstrong, Hauser, and Knight 2006). In this collection are 107 fragments of a lead-glazed, slip-decorated pottery [Figure 3]. Based on comparisons to similar sherds collected from Lower Bethlehem [Figure 4], as well as fragments found at Long Point and Barren Spot, St. Croix (David Hayes, personal communication, 2007), this type has been identified as having been produced by Moravians. Interpreting the presence of these ceramics requires a summary of the Moravian mission to the Virgin Islands and the pottery that they produced.

The religious movement known as the United Brethren, or Moravians, traces its origins to the fourteenth and fifteenth centuries, when Czechs in Bohemia and Moravia sought reforms in opposition to the Catholic Church. In 1457 the movement organized as the Unitas Fratrum or United Brethren, commonly referred to as Moravians. Beginning in 1547, the Brethren were persecuted and many lived in secret or in exile (Bost 1834; Rican 1992[1957]; http://www.moravian.org/history/). In 1722, Count Nicholas Ludwig von Zinzendorf, a noble from Saxony who was sympathetic to the plight of the Brethren and came to share in their religious beliefs, provided some families of Brethren from Moravia with a refuge on his lands in Germany. Here
these Moravians built a village named Herrnhut. From this base the Brethren sent out missions around the world, beginning in North America and the Caribbean (Lewis 1962; Rican 1992 [1957]:384-385; http://www.moravian.org/history/). North American missions commenced in 1741 in Pennsylvania and in 1752 in North Carolina. These outposts were designed to be self-sufficient bases for missionary work. The Brethren living in these missions adhered to a system known as the “general economy,” in which resources were combined and shared within the community. Knowledge was passed from master to apprentice as artisans moved between Europe and North America, ensuring some continuity in material culture among the disparate settlements (Bivins 1972:3-72; South 1965, 1967, 1999).

Among the industries practiced by the Unity of Brethren in Herrnhut was pottery production. This Moravian pottery followed a central European design tradition of lead-glazed, slip-decorated redware for domestic use, which originated in the seventeenth century (e.g. Gaimster 1986, 1988). Illustrating this tradition are materials recovered from Olomouc in the Czech Republic, which have a red paste and yellow, green, and brown slip decorations (Bláha et al. 1998). Knowledge of how to produce this pottery was transplanted to northeastern North America with Central European immigrants (Turnbaugh 1985b:10-25). Production extended into New York, New Jersey, Connecticut, Virginia, and can be found throughout the eastern United States (Barber 1970 [1926]; Gribble 2005; Turnbaugh 1985a). Studies have shown similarities between European and American lead-glazed redwares and slipwares (Bivins 1972; South 1965, 1967, 1999). A subset of this transatlantic migration was the Moravians, who produced pottery according to this tradition in their settlements in Pennsylvania and North Carolina. Observations of fragments recovered from a Bethlehem, Pennsylvania pottery dating between 1749 and 1767 (Alleman 1939; Gill 1976; National Heritage Foundation 1977), and
descriptions of vessels produced at the Moravian settlement in North Carolina (Bivins 1972) are consistent with this central European design tradition, and are very similar to the wares found in the Virgin Island shown in Figures 3 and 4.

The United Brethren became interested in sending missions to the Danish Virgin Islands when Count Zinzendorf met a former slave from St. Thomas who spoke of the lack of Christian religious instruction for the slaves. Zinzendorf informed the Moravian leadership at Herrnhut of this fact, and after receiving permission from the Danish Crown two Moravian missionaries arrived on St. Thomas in 1732, where they began to evangelize among the slaves (Lewis 1962:78-83; Oldendorp 1987 [1770]:269-298). This effort expanded to St. John, and to St. Croix after Denmark purchased the island from France. The Brethren were most interested in providing instruction in Christianity for enslaved Africans, traveling to laborer villages and fields on the estates in order to accomplish this. After some initial resistance from estate owners the Moravian mission quickly gained converts from among the slaves, who numbered in the thousands after a few decades (Lewis 1962:82-83; Oldendorp 1987 [1770]:357-374). There is no record that these missionaries brought pottery with them, but one of the first missionaries to arrive on St. Thomas was a trained potter and tried to make pottery there (Oldendorp 1987 [1770]:285), and as previously stated the Moravians desired self-sufficiency. Fragments recovered from Estate Bethlehem and Cinnamon Bay are shown in Figures 3 and 4. While small samples are available from the Cruzan sites, at 106 sherds Cinnamon Bay has a larger sample size and thus a better contextualized interpretation is possible.

The majority of Moravian slipwares at Cinnamon Bay date to the 1799 to 1819 period, with the second most frequent at 1776 to 1799. A single sherd is an outlier at the 1735 to 1775 terminus. Most of the sherds were recovered from the planter’s house/warehouse, and these are
concentrated in the latest period, from 1799 to 1819. Sample sizes are small at the other two loci, so it is difficult to discern any patterns here. In spite of the differences in sample size, comparisons between the Cinnamon Bay and Lower Bethlehem slipwares are possible. Figure 5 compares the two sites according to mean ceramic date, since the Cinnamon Bay excavations proceeded according to discrete floor levels, as opposed to Lower Bethlehem where there are only individual features and no floor levels or other unambiguous structural remains (Lenik 2004). The earliest mean ceramic date from Cinnamon Bay is 1756, compared to an early date of 1749 from Bethlehem. The latest dates are 1800 at Cinnamon Bay, and 1770 at Bethlehem. The temporal data from the two sites correlates fairly well, dating to the second half of the eighteenth century to the first decades of the nineteenth century.

The analysis of ceramics from Cinnamon Bay relates the presence of specific types of slipware ceramics to a set of distinctive social interactions and trade relations that revolve around the Moravian presence on the island. The Moravian mission quickly emerged as the predominant religious institution on St. John, and also engaged the population by developing a system of schools open to all children and encouraging their members to learn skills related to craft and trade industries, which came to include fine needlepoint, as well as Moravian influenced basketry. The Moravian pottery found in archaeological contexts in the Virgin Islands, which is probably made in either Pennsylvania or Europe, is indicative of the Moravian’s interest in practical craft production. The Moravian pottery found at Cinnamon Bay illustrates the importance of specific sets of interactions that affect the material assemblage and allow us to tie what might otherwise simply be defined as simply “slipware” to a significant set of social interactions on the island.

The presence of the Moravian wares tie a small island in the Caribbean to Bethlehem,
Pennsylvania, as the center of Moravian missions in North America, as well as to Europe from where the missionaries initially derive. It also ties St. John to the other Danish West Indian islands where Moravians were increasingly influential during the eighteenth and nineteenth centuries. Evidence of these wares has been found on St. Croix and they can be expected to be recovered on St. Thomas. Moreover, it is likely that these materials will be present in sites associated with Moravian Missions throughout the region. Further testing should confirm or deny these expectations.

These data along with the array of ceramics found in the full assemblage at Cinnamon Bay project local permutations of multi-scalar trade and social interactions. The diverse and distinctive assemblage at Cinnamon Bay also includes wares reflecting access to goods associated with Denmark’s East India trade, such as gold-banded overglaze porcelains similar to Imari styles, as well as a suite of material culture reflecting goods from England, alongside locally produced earthenware that derive from regional African Caribbean potters. The assemblage from St. John is thus distinct from that seen in Jamaica and Barbados, Nevis and St. Kitts, Martinique and Guadeloupe, Puerto Rico and Cuba. The significance of this assemblage and its unique combination of types is that it reflects the distinctive history of a small Caribbean island – an assemblage reflecting variation and diversity in the insular Caribbean context.

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**Figure 1:** Map of U.S. Virgin Islands. Locations of Cinnamon Bay and Lower Bethlehem sites are indicated.
Figure 2: Site map of Cinnamon Bay excavations, 1999-2002.
Figure 3: Slipwares from Cinnamon Bay, St. John.
Figure 4: Moravian Slipwares from Estate Lower Bethlehem, St. Croix.

![Figure 4: Moravian Slipwares from Estate Lower Bethlehem, St. Croix.](image)

Figure 5: Comparison of Lower Bethlehem and Cinnamon Bay dates.

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Jamestown, Nevis: Fact, Fiction and Fable

by

Carter Hudgins, Eric Klingelhofer and Roger Leech

Abstract
As part of the University of Southampton (UL) archaeological survey of the island of Nevis (Nevis Heritage Project), an Anglo-American team undertook fieldwork from 2000 to 2005 at the reputed site of Jamestown on the northwest coast of Nevis. Jamestown was 17th-century port town that had disappeared by the 18th-century, reputed sinking beneath the sea in a tidal wave. Survey work and area excavations revealed substantial stone structures and occupation dating to the Jamestown period, but they had been built over by large villa complex in the Napoleonic era. The project discovered that the original shoreline had extended 200 meters inland, that that the foundations of at least one building had been twisted by an earthquake – and possibly further damaged by a tidal wave.
This paper summarizes archaeological investigations conducted from 2003 to 2006 at the site of Jamestown, a “lost” commercial settlement on the leeward shore of the island of Nevis. According to local legend and lore, Jamestown vanished in 1690, destroyed by tsunami. The town’s end came, without warning, on April 5, 1690, “about five of the Clock in the Afternoon,” an eyewitness would remember in a letter to a friend in London. “We heard a rumbling Noise, like that of distant Thunder, - - - from the Bowels of the great Mountain, - - - in the very Navil of the island.” Seismic events had rattled English colonists on Nevis before, but this one was different: “So strong was the Motion that . . . [a] few Moments after the Noise began, . . . a . . . Earth Quake, which shook the whole island to that degree, that all the Houses in Charles Town that were built of Brick or Stone, dropt of a sudden down from the Top to the Bottom.” As the earth shook, the sea suddenly went flat. “The sea it self for a time forfeit the Shoar for about three quarters of a Mile together, and left a great Number of Fish of a large size to lye gaping upon the Sand, till it returned again.” The eyewitness reported that the “violent Motion of the Water happen’d diverse times.” We can imagine that when the water “returned again” it lifted whatever was loose, throwing it together in mats of debris, slamming it into walls, houses, fields, trees, anything that lay in its path.

It is here, at the end of the eyewitness account, that historical fact, history imagination, and historical memory, as faulty as it can be, entwine. The romantic legend of Jamestown - - tumbled down by the rising sea, its residents swept away, all lost save a few who ran to higher ground - - first appeared in a 1870s amateur history of Nevis. Like other fanciful Victorian tales, the story of Jamestown’s destruction was a concoction of great inventiveness and imagination, spun, in part, from fact. If fact lay in late 17th-century reports, a new historical memory took root in the late nineteenth century, the legend of Jamestown, lost town under the sea. My colleagues
and I have in a series of short field seasons explored the facts behind Jamestown’s legend. First, was the historical Jamestown located where historical memory, and fanciful tourist maps, placed it? Had a tsunami really struck the town? Did Jamestown really vanish, drowned beneath the sea like Port Royal? Was there more to Jamestown’s story than myth?

Myths about Jamestown have proved resilient but historical records that pertain to the colonial port give shape to what Jamestown was before fiction obscured its facts. English colonists settled Nevis during the Great Migration, those decades of emigration from England to fledgling colonies as England staked more of its economy and its prestige on overseas possessions. Following its settlement in 1631, the island’s social and economic trajectory was much like Barbados, where mixed agricultural (spices, tobacco) gave way to monoculture. As part of this transition, large planters with large labor forces of enslaved African supplanted small independent farmers, some of whom, having sold their lands, migrated to other Caribbean islands, some to South Carolina, some to the Chesapeake, and some to New England. Sugar was the preferred, and most profitable, crop, secured with stupefying labor. Labor in the Caribbean shifted from indentured to a reliance on the importation of African slaves who cleared, cut, burned, terraced, planted and tended cane fields, fueled and operated boiling houses. Analysis of the Royal African Company slave traffic for the period 1673 – 1689 reveals that 90,000 slaves (slightly more than 5,250 per year) arrived in the English Caribbean. Nevitian planters acquired nearly twenty percent of this stream, and by the end of the 17th century the island’s population had reached 40,000, almost all of it enslaved.

By the middle of the seventeenth century the principal town on Nevis was Charles Town. One colonial administrator reported that Charlestown was “composed of wooden houses and huts . . . surrounded by marshy ground, and stagnant water.” George Ellwood reported to the
Royal Society, 1672 that “ye buildings [on Nevis] are poore much like to a Hogstie in England.”

Ellwood described Nevetians as “vulgar and illiterate.” English officials showered the same kind of compliments on Virginia in the seventeenth century, but in the way that they very much liked duties that flowed from the tobacco Virginia’s higgledy-piggledy plantations produced, they liked sugar even more and cane fields soon covered the lower slopes of Mount Nevis and terracing pushed cultivation above 1000 feet. Sugar production rose to 6 and then 7,000 hogsheads annually. A system of forts was constructed to fend off attacks on the lea side of the island and ports to facilitate trade were strategically placed around the island.

Tessa Machling, historian with the Nevis Heritage Project, has assembled documents from the Public Records Office that suggest that Jamestown’s rise and fall was tied more to the fortunes of sugar than the terror of wind and wave. By 1672 a town called Morton’s Bay had coalesced along the shore of a shallow bay and made a lawful port to facilitate commerce with plantations along the island’s northwest coast. Four years later Jamestown was noted as the second largest town on the island. William Stapleton reported (1676) to the Board of Trade and Plantations that there were on Nevis “five places for trade, there are but two considerable. First Charles Town where there are good dwellings and store houses” and “Morton’s Bay, the other place of trade where there are the like houses, but few in number because the shipps doe ride at Charleston Town and doe send their long boats to Morton’s Bay to fetch their lading from thence.” Subsequent acts (1682) by the island’s government “for the suppression of thatcht houses” and “against the making of dangerous fires in Charles Town and Morton’s Bay” attest to the town’s growing size. Subsequent efforts to require that chimneys at Morton’s Bay be built of brick or stone suggest that houses were still humble. The name “Jamestowne” first appeared in 1684 when the settlement was listed as one of the island’s “lawful places of receiving goods.”
The name Morton’s Bay then drops from historical records, and Jamestown, undoubtedly a way to honor a new English king, takes its place. Maps reveal the same path in place name. Seventeenth-century maps give the small settlement the same name as the shallow bay where it coalesced. Later maps, some drawn by French cartographers living on the French portions of neighboring St. Kitts, label the site “Petitbourg” or “Jacqueville.”

Modern archaeological exploration of Jamestown began in the late 1990s. The generally accepted location of Jamestown is roughly bisected by the island’s coast road, an equestrian center and old fields on its east side, a modern coconut grove to the west. Archaeologists of the BBC Time Team visited Nevis in 1998 and chose Jamestown for its television series. Time Team investigated a large area south of a reconstructed demi-lune battery, now called Fort Ashby, and which was thought to be located on, or near, the site of seventeenth-century James Fort, one of a string of batteries and fortifications that, with varying success, protected the leeward side of the island. Employing a range of techniques, including geophysical survey, shovel test pits, and test trenches, the Time Team found evidence of concentrated colonial activity related to the remains of a dry stone wall running north-south east of the coast road. A casual search of the coconut grove also revealed building foundations. In addition to discovering locally-made Afro-Caribbean wares, the Time Team recovered an assemblage of European ceramics that suggested two periods of activity at the site. The first, from circa 1680 to the first quarter of the eighteenth century, was indicated by a wide range of ceramic types typical of sites in the Atlantic world in the late seventeenth century. Factory-made slipwares and sponge-decorated and transfer-printed earthenwares indicated renewed activity at the site in the nineteenth century. This second group of artifacts presented a puzzle. Was Jamestown never really lost but just forgotten? Was it somehow reborn? Time Team, in a hurry
to shoot film for its next program, had no time to address the questions its brief investigation posed.

The Nevis Heritage Project, a partnership of historians and archaeologists associated with the University of Southampton (UK) and the Nevis Historical and Conservation Society, sponsored a second, and more recent, investigation at Jamestown. Part of a comprehensive effort to assemble an inventory of archaeological sites on Nevis, the Jamestown Project set a number of goals for the four seasons its participants devoted to the project: (1) Delineate the boundaries of the town; (2) Date previously recorded foundation and establish an archaeological chronology for the site; (3) Retrieve evidence of recent geo-morphological change at the site; (4) Recover evidence of seismic activity. In short, we set out to recover, in a systematic way, evidence of the town's seventeenth-century rise and fall, and we wanted to understand what seemed to us the nineteenth-century building foundations that poked to the ground surface here and there and that were, we thought, the source of much of the romantic misunderstanding of the lost town. If these weren’t evidence of Jamestown, what were they? And could we separate them from whatever survived of the seventeenth-century?

During improvements to the coast road in 2001, Roger Leech and his colleagues recorded a dry stone wall east of the coast road, interpreted then as part of an enclosure for the settlement and the stone foundations of four buildings on the west side of the coast road. In 2003 a Nevis Heritage team again led by Roger Leech conducted a brief examination of the coconut grove, the area identified by Time Team. Further geophysical testing as well as excavated test pits ascertained the extent of seventeenth–century occupation on the west side of the coast road. Distribution of the early artifacts from land crab burrows defined an edge of occupation running northwest to southeast from a tidal inlet feed by a fresh water ghut that drained the slopes above
the site. This edge presumably represents the seventeenth-century shoreline of Morton’s Bay. Artifacts - metropolitan slipware, Borderware milk pans, lead glass baluster-type wine glass stems and pipe bowls - confirmed European occupation in the third quarter of the seventeenth century. The absence of white salt-glazed stoneware suggested that occupation here ended before 1720.

While artifact scatter, as revealed by both subsurface testing and land crab burrows, indicated significant activity over a broad area, the precise boundaries for the site and the relationship of stone foundations and walls to the artifacts remained undefined. Three short field seasons followed, in 2004, 2005, and 2006, during which it was determined that from its northern boundary, the ghut, the town stretched 200 meters along the shore and reached inland 150 meters. Controlled excavations provided chronology that geophysical and surface collections could not.

We opened a small trench that transected a section of the dry-laid stone wall on the east side of the coast road identified by previous field work as a possible town enclosure. Soils were hard, compacted by horses and vehicles that bring patrons to a riding stable that occupies this portion of the site, and had accumulated against the wall and insinuated themselves into the small stones that comprised it. Mixed with these lenses were shards of a broad range of ceramic and glass objects dating from the late eighteenth to second quarter of the nineteenth century. Little of the wall survived, its lower irregular courses, below which excavators found shards of creamware, an indication that it was constructed no earlier than the 1760s and was thus not related to the seventeenth-century settlement. The slight character of this wall and its date suggested that it was a boundary wall or field enclosure.
A second trench on the eastern side of the road began soon after a JCB backhoe operator, digging a utility line for the Nevis Equestrian Centre, struck a deeply-buried stone. Our initial exploration of this wall, of which a substantial portion survived, exposed a short section of dry-laid stone foundation oriented roughly east to west. Constructed of irregularly laid stones, it was 80 cms wide and survived to a height of one half meter. A thick strata (42 cms) of silt washed down from the lower slopes of Mount Nevis buried this section of wall and contained pipe bowls and pipe bowl fragments that suggested that this thick, homogenous strata accumulated over the wall after the building was demolished and abandoned circa 1680-1720. Excavators recovered a fragment of North Devon sgraffito milk pan beneath this wall and the neck of a green glass bottle in the wall itself. Both artifacts date from the third quarter of the seventeenth. A cobbled surface abutted the base of the southern face of this wall, indicating possibly a pavement on the exterior of the building.

We returned to this area in 2006 and by the end of our second season there had opened a much larger area (a 2 by 6 meter trench and a 9 by 8 meter area in which we removed the overburden (approximately 40cms) mechanically) with the intention of revealing the entire ground plan of the building we glimpsed two years before (Within this larger area, we excavated a 3 by 6 meter area intensively by hand). Running through both units were the corners of not one but four buildings, each one closer to the ghut in a pattern that suggested serial rebuilding that moved each successive structure toward the north. Each of these walls was truncated at the north and east, further evidence of abandonment and rebuilding. Interestingly, the foundation we discovered in 2004 had been cut at both eastern and western ends so that only a stub of wall survived.
This portion of Jamestown, located adjacent to the ghut appears to have been first occupied in the third quarter of the 17th century. Abutting the dry laid stone wall to the north, toward the ghut and into what may have been a yard, we found an extensive sheet midden, broadcast trash and debris dating to the first quarter of the 18th century that contained many thousands of artifacts. Under the midden we found more occupation layers, and, most intriguing, a post hole under both the debris and under the occupation surface, but cutting through what appeared to be early soil layer, perhaps the ground surface when initial occupation began. The evidence suggested that this first building in the sequence of walls was a domestic structure constructed during the third quarter of the 17th century. The wall’s southern and northern faces differed in appearance. The northern face exhibited a more or less flat plane, and the stones here were well mortared in place. The south face, on the other hand, was roughly dressed. Three wrought nails remained in mortar, each 50 cms below the top of the surviving wall. A portion of the shank of each nail, between the surface of mortar and the head of each nail, protruded beyond the plane of the wall, suggesting that these nails had once held a board.

That building had been substantially rebuilt, with dry laid stone, and the site heavily occupied into the first quarter of the 18th century. The artifacts were diverse, with a number of high quality glass wares, especially German and Venetian, and Italian, Dutch, and German ceramics. The absence of English white salt-glazed wares indicated to us that the site had been abandoned about 1720. Each of the subsequent walls had been raised with mortar and the artifacts in the destruction debris about them suggested they had been razed in the second quarter of the 19th century.
The portion of the site that spills to the west side of the coast road proved equally complicated. We opened Trench IV, the most complex of our units at Jamestown, in 2004 and resumed work there in 2005 and 2006. Evidence for the early colonial settlement is limited here to an area wedged between the nineteenth-century building complex that abuts the coastal road and featureless marine sand deposits that extend some 300 meters to the current shoreline. The tunneling and retunneling of generations of land crabs complicated the excavation. The thorough mixing of sandy soils by this burrowing, which we termed “bioturbation,” had damaged, in some cases destroyed, stratigraphic evidence. We extended initial two meter trench into an area 7.5 by 6 meter unit and excavated three smaller units [2 by 2 meters] in an attempt to recover both a more precise chronology for this portion of the site and a profile of strata from the lowest portions of the site, its western or seaward edge, to the coast road.

Much of the unit was filled with nineteenth-century structural remains typified by squared stones laid in pink sandy mortar. We have tentatively identified these buildings as the “Pleasure House,” a cluster of outbuildings identified on an 1818 map of the island. Obscured and largely destroyed by this building complex was the earlier phase of occupation, seventeenth-century Jamestown, indicated here in the form of a fragmentary structure located at the seaward edge of the site. Here, we uncovered the southwest end of a stone building, which lay at an angle at least 10 degrees off the nineteenth-century orientation and which lay stratigraphically under it. The east and south walls are approximately 45 cms wide of coursed roughly squared stone, raised with sparing use of buff colored mortar. The upper courses of these walls have tumbled above the lower course, and both walls have been cracked and displaced by as much as 10 cms. The surviving end of the south wall, moreover, is canted at an angle of some 17 degrees from vertical. Most compelling evidence of seismic trouble was the undulating floor and the angle at
which the building pitched toward the sea. Interior features point to a doorway and a raised rubble-filled platform, perhaps the base for steps or a ramp. Stratigraphy and artifacts, no less than orientation and structural details, suggest that this building was a ware house, an element of the seventeenth-century waterfront tumbled in the shock of 1690.

One of the two by two meter units contained some of the most intriguing evidence we recovered. Just at the water table, nearly a meter below the surface and under a 19th-century foundation, we recovered ceramic sherds and small white clay pipes that date to the second quarter of the 17th century in a charcoal layer that contained iron fragments, chain, and the priming pan of a snapaunce, evidence of still earlier settlement, perhaps the first phases of the island’s colonization.

In conclusion, fieldwork conducted at Jamestown in 2003-2006 has confirmed and corrected the conclusions drawn by earlier archaeological research. It is, **first**, clear that the stone wall assumed to have enclosed the seventeenth-century settlement is, in fact, of much later date. Seventeenth-century Jamestown, rather than a walled, nucleated settlement, may have assumed an irregular plan, perhaps more like the early seaport communities of New England. **Second**, it is also clear that the town was never very big, 200 by 200 meters, a little bit more than two acres, or about the same size as 1607 James Fort in Virginia. **Third**, there is now, we think, no doubt, and there was some before we started, that the landscape of seventeenth-century Jamestown and the buildings that once populated it are deeply buried across the site. Seventeenth-century foundations lie close to the surface on the west side of the road but both there and on the east side of the coast road, seventeenth-century horizons are buried one-half to one meter below the surface. **Fourth**, distribution of finds to the west of the coast road presumably represents the seventeenth-century shoreline of Morton’s Bay. Beyond the edge of
the artifacts is deep clean beach sand, evidence, we think, of the filling in of what was once a broader and deeper bay.  

Fifth, it is also clear that the site was reconfigured by the construction of a significant complex of buildings in the nineteenth century. The foundations of structures associated with the “Pleasure House” obscure evidence of earlier activity at the site and have, we think, been the basis for conjecture and misunderstanding about the character of the seventeenth-century settlement. And, sixth, we are convinced that we see evidence of significant damage that an earthquake and tsunami could have inflicted. The rebuilding we observed on the east side of the coast road may represent what the eye witness account of the 1690 earthquake said about brick and stone houses in Charles Town, that they “dropt of a sudden down from the Top to the Bottom.”  

Dry laid stones were not very stable in a seismic zone. The rebuilding we observed, however, suggests that Jamestown did not, in fact, disappear, but was repaired and re-occupied. The greater puzzle is how to explain the end of the end of intensive occupation circa 1720.

Jamestown persisted into the eighteenth century. Why the town slipped away after about 1720 is now a point of considerable conjecture. There was another tsunami of sorts, although it was not as dramatic as the one reported in 1690. All the trash that accumulated around the stone buildings was buried by erosional soils, deposits of topsoil washed down from cane fields on the slopes of Mount Nevis. In other words, Jamestown was a buried town, lost and forgotten, before the island’s sugar economy hits its full stride. Construction of the nineteenth-century structures we have associated with the “Pleasure House” further obscured evidence of earlier activity. Perhaps in conversations there, overlooking a bay once busy with trade that in the waning days of slavery in the British empire and in the post-emancipation period, there was conjecture about what once was.

ENDNOTES
John Smith described Nevis this way: “The air very pleasant and healthful, but exceeding hot, yet so tempered with cool breaths, it seems very temperate to them that are a little used to it; the trees being always greene, the daies and nights always very neare equal in length, always summer; only they have in their seasons great gusts and raines, and sometime a Hericano, which is an overgrown and a most violent storme.” The True Travels and Observations of Captain John Smith in Europe, Asia, Africke, and America (London, 1629).

Late seventeenth-century transportation of enslaved Africans broken down by Caribbean destination: Barbados (38.4%), Jamaica (33.6%), Nevis (17.9%).

Quoted in Raymond Stearns, Science in the British Colonies of America (Urbanna, University of Illinois Press, 1970), 229. From 2001 assessment: “To date, very little is known about Nevis other than that the entire island is one live volcano.”

Trench III examined structural remains lying between the coast road and the coconut grove which earlier surveys had recorded as the gable ends of two nearly abutting buildings. Excavation of this unit made it clear that the stone from one building had been used in the construction of the other, but the construction of the later building had disturbed the area so thoroughly that no strata related to construction of occupation of the earlier building survived. The presence of a few seventeenth-century artifacts in the destruction strata (shards of sgraffito, in particular) hinted that this portion of the site, like the structure discovered in Trench I and the structure in Trench IV (discussed below) was occupied during the third quarter of the seventeenth century. Far more prevalent, however, were fragments of English ceramic and glass wares that dated from the nineteenth century. There was an absence of those ceramic markers characteristic of occupation during the eighteenth century, such as white salt-glazed stonewares, cream ware and pearl ware. It is likely that the buildings in Trench III can be associated with the “Pleasure House” or merchant’s villa noted on an 1818 map of Nevis.

English colonists had to adapt their houses, their building methods, and the style of what they built not only to the materials that they could find but to elemental forces. Buildings materials fell into two broad categories, timber, albeit of denser tropical woods than the timber to which they were accustomed, and stone, volcanic but workable. Both materials were familiar to Nevitian colonists. Colonists had little direct experience with tropical wind and earthquake. John Smith reported that the Caribbean winds could come in “great gusts and raines, and sometime a Hericano, which is an overgrown and a most violent storme.” They could do great damage. In 1681 a storm that struck St. Kitts and Nevis left Christopher Jeaffreson’s dwelling “miserably torn, and flat with the ground.” [John Cordy Jeafferson, A Young Squire of the Seventeenth Century: From the Papers of Christopher Jeaffreson, 2 vols (London, Hurst and Blackert, 1878), 2:275-76]. A great blow in 1707, still remembered as “the Grand Storm” 70 years later, flattened many buildings. The other significant natural threat was, of course, earthquakes. The Leeward Islands experienced frequent earthquakes, such as 1690 event on Nevis. A later visitor, for example, wrote that during his 5-year stay on Nevis he experienced at least a dozen earthquakes. [Sloane, A Voyage to the Islands Maderia, Barbadoes, Nieves, S. Christopher and Jamaica, 1:xliv; Dunn, Sugar and Slaves, 186-187; An Account of the Late Dreadful Earthquake in the Island of Nevis, St. Christopher, &c (London., 1690); William Smith, A Natural History of Nevis (Cambridge, 1745), 63]. Both forces, “hericano and earth quake,”
would, in time, affect the way Nevitian colonists built. It seems that the first English colonists on Nevis built no better than their counterparts in Virginia. Remember that George Ellwood reported to the Royal Society in 1672 that “ye buildings [on Nevis] are poore much like to a Hogstie in England.” These “poore” houses were often built of stone, a response to hurricanes that residents of the Leeward Islands had begun by the middle decades of the 17th century. Stone was stable in high winds, but building more than two stories invited catastrophe. The Rev. Robert Robertson was still advocating this advice following a 1733 hurricane, noting “such buildings wou’d prove a better Security against Storms than we can make of timber.”[ Re. Robert Robertson, A Short Account of the Hurricane (London, 1733), 18].

Robertson argued that colonists on Nevis and St/ Kitts who had settled since “the grand storm in 1707” “suffer’d nothing grievous from that Time by Storms, are too easily induc’d to study Ornament and Convenience in their Buildings, rather than Safety.” [Robertson, Account, 13-14. Rev. Robertson, “our Inhabitants wou’d do well to be constantly provided with strong wooden bars and Iron Hooks and Staples always ready fix’d at their Doors and Windows, into which to pin down those Bars on the Outside of the Houses.” Bolting down doors and windows provided greater security, because one a door blew open, “the Wind enters, and fills the House, and Whirls about within it, if the Doors and Windows on the opposite Side are not set open to give instant vent, the Roof is in Danger of being carry’d off at once.” Robertson also noted that 70 to 80 years prior to the 1733 storm, “our more provident Planters used to have what they call’d a Hurricane-Houes to take Refuge in, in a Storm.” [Account, 20-21] He had seen remains of such structures and recommended that planters build them again].

Colonel Stapleton, governor of the Leeward Islands, said the in Charlestown, Nevis, “There were good dwellings and storehouses [built with country timber], not exceeding 60 feet long and 20 broad, story and a half, the Hurri-Canes having taught the people to build low.” Low and stone could best the wind but not an earthquake. Earthquakes forced a re-consideration. In 1676 it was reported that colonists on Montserrat had previously built “some stone buildings, but earthquakes having thrown them all done, they build with timber only except the boiling houses for sugar, which in part must be built of stone.” [“Answers to the Inquiries sent to Colonel Stapleton, Governor of the Leeward Islands,” 22 Nov 1676, CSPC, 500]. During the 1690 earthquake on Nevis: “all the Houses in Charles Town that were made of Brick or Stone, dropt a sudden from the Top to the Bottom in perfect Ruins.” Wooden houses, surprisingly, fared better. Out eyewitness to the 1690 earthquake reported that “Those [houses]that were made of Wood were no less violently shaken, but stood, however; which shew’d that the Rivetings of wooden Structures are far stronger, and are not so easily disjointed as the Co-augmentations of Cement and Mortar.” [Lt. Governor Stede to Lords of Trade and Plantations, 23 April 1690, CSPC, 249-250].

6 French forces captured and occupied Nevis and left, when they retreated to neighboring St. Kitts, numerous claims for damages. Three volumes for compensation made following the French invasion of Nevis survive: 1706 PRO Kew, CO 243/2, Vol. 1/folio 42; William Venton,
**Art and Symbolism**

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Lawrence Waldron, City University of New York

**Rock Art and Ancestors in Pre-Columbian Caribbean Cultures**
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**Inverted Worlds: Possible Significance of Buried-Face Petroglyphs in Puerto Rico**
J. Loubser and Chris Espenshade, Stratum Unlimited and New South Associates Inc.
El arte rupestre en el Parque Nacional Jaragua, Republica Dominicano

by

Adolfo López Belando
Museo del Hombre Dominicano

Resumen
Dentro del Parque Nacional Jaragua se encuentran gran cantidad de cavernas y en muchas de ellas hemos localizado importantes muestras de arte rupestre prehispánico. También encontramos arte rupestre en pequeños abrigos rocosos y en algunos de los manantiales que jalonan la geografía cártica del área protegida.

La zona colindante con el Parque Nacional Jaragua, en la parte de la carretera de Oviedo a Pedernales, también contiene cavernas con arte rupestre que aun cuando no se encuentran dentro del área protegida forman parte del mismo complejo cultural.

Los tipos de arte rupestre presentes en la zona del Parque Nacional Jaragua son sumamente variados y responden a la actividad de los diferentes grupos culturales que a lo largo del tiempo poblaron estos parajes en época prehispánica. En el Parque Nacional Jaragua y el territorio colindante encontramos pintura rupestre de una calidad excepcional, al igual que los petroglifos, siendo este el tipo de representaciones que más abundan.
El Parque Nacional Jaragua se sitúa en las provincias de Oviedo y Pedernales, en el extremo Suroeste de la República Dominicana, cerca de la frontera con Haití. Esta área protegida, junto con el Parque Nacional Sierra de Bahoruco y el Parque Nacional Lago Enriquillo forman la “Reserva de la Biosfera Jaragua Bahoruco Enriquillo”, hasta el momento la única que existe en la Isla Española.

El parque Nacional Jaragua fue creado en el año 1983 y sus límites fueron variados en el año 2002 con la promulgación de la ley Sectorial de Areas protegidas 202-04. En cuanto a la geología, el parque está conformado por terrazas escalonadas emeridas en el cuaternario. Las terrazas están compuestas por calizas del mioceno. El clima del área protegida es tropical semi árido, con una temperatura media anual que oscila entre 26° C. y 28° C y la pluviometría oscila durante el año ente 380 mm³ y 800 mm³.

En el área protegida no existen corrientes fluviales superficiales; toda el agua que baja de la sierra de Bahoruco se filtra en el subsuelo donde existe un nivel freático muy desarrollado. Esta aguas nutren varios humedales, entre los que destaca la Laguna de Oviedo. Entre los ecosistemas presentes en el área protegida destaca el bosque seco, los manglares y los arrecifes de coral que rodean su costa. La flora es muy rica, contando con más de 400 especies, muchas de ellas endémicas. La fauna está representada principalmente por aves (unas 130 especies), reptiles, mamíferos marinos, corales y peces.

En el parque existen gran cantidad de cavernas y en muchas de ellas hemos localizado importantes muestras de arte rupestre prehispánico. También encontramos arte rupestre en
pequeños abrigos rocosos y en algunos de los manantiales que jalonan la geografía cárstica del área protegida.

El Parque Nacional Jaragua, en cuanto a su patrimonio espeleológico, es una zona muy poco estudiada. La enorme dificultad de desplazarse entre la vegetación desértica del parque, llena de cactáceas y plantas espinosas, hace que resulte sumamente difícil acceder a las zonas donde se presupone la existencia de cavernas. No obstante, sobre todo en parajes cercanos a los senderos y a las vías de comunicación que existen en el área protegida, hemos podido encontrar algunos sitios rupestres del mayor interés.

La zona colindante con el Parque Nacional Jaragua, en la parte de la carretera de Oviedo a Pedernales, también contiene cavernas con arte rupestre que aun cuando no se encuentran dentro del área protegida forman parte del mismo complejo cultural.

Los tipos de arte rupestre presentes en la zona del Parque Nacional Jaragua son sumamente variados y responden a la actividad de los diferentes grupos culturales que a lo largo del tiempo poblaron estos parajes en época prehispánica. Como es habitual en la isla de Santo Domingo aun no podemos asociar con seguridad los distintos tipos de arte rupestre a grupos humanos determinados, pero la diversidad de técnicas y motivos que observamos nos hacen pensar que fueron varios, a lo largo del tiempo, los responsables de este maravilloso legado.

Los sitios de arte rupestre más importantes del parque son los siguientes:

Cueva de La Colmena
La cueva de La Colmena, situada en la curva del mismo nombre, a unos 100 metros de la carretera de Oviedo a Pedernales, unos 15 Km antes de esta última población, es la caverna más interesante que se localiza dentro del área protegida. Hemos contabilizado en su interior alrededor de 350 petroglifos y unas 50 pictografías. Las pictografías son de pequeño tamaño, alrededor de 10 ó 15 centímetros, pero algunas de ellas son de una belleza espectacular. Destacan las aves pintadas en blanco y negro que asemejan a las espátulas y los pelícanos que aun podemos ver en los humedales del Parque Nacional Jaragua. Los motivos principales que encontramos son personas, animales, objetos de culto y representaciones abstractas de difícil interpretación.

Las pinturas son sorprendentes, ya que se encuentran en color negro y también en blanco sobre negro. Este tipo de pictografías blancas y negras, solamente se han localizado hasta el momento en la cueva de la Cidra, en el Parque Nacional Nalga de Maco y también se existen algunas pinturas blancas en la cueva de José María, en el Parque Nacional del Este.

Dentro de la cueva se encuentra un pequeño manantial al que se accede por una estrecha gatera; allí frente a exigua plancha de agua, vemos dos petroglifos, unos de los escasísimos que se localizan en zona casi permanentemente oscura, grabados en dos estalactitas que les confieren la forma de personajes erguidos vigilando el preciado líquido.

Abrigo del Guanal
El abrigo del Guanal se localiza en la franja costera que queda delimitada por la laguna de Oviedo y el mar Caribe. A unos 200 metros de la orilla de la laguna encontramos un abrigo bajo cuyo alero rocoso podemos observar tras paneles de petroglifos que representan típicas “caritas”, o sea, dos ojos y una boca encerrados por un círculo, asemejando una cara que emerge de la misma roca. Se han contabilizado alrededor de 55 representaciones de este motivo, distribuyéndose muy pegadas unas a otras y excavadas en la caliza con la técnica de abrasión.

Algunas se encuentran ya muy alteradas por los elementos, pero en general se observan con bastante detalle. Resulta interesante el que justamente debajo de este abrigo rocoso hoy día se excavan pozos en la arena con los que aun se proveen de agua los pescadores que frecuentan esta zona del Parque. A pocos metros del sitio también hemos localizado los restos de un “conchero” presumiblemente asimilable a los pobladores precerámicos de la zona adscritos a industrias de concha.

Abrigo de Bahía de Las Aguilas

El abrigo de bahía de Las Aguilas se encuentra justamente al final de la línea de playa, donde comienza la costa rocosa que encuadra la zona arenosa, a la misma orilla del mar. Solamente presenta un petroglifo, pero su tamaño y la calidad de su ejecución nos señalan claramente que se trata de una importante deidad que protege la maravillosa bahía de Las Aguilas.
La representación plasmada en la roca asemeja un personaje probablemente femenino cuya mirada domina toda la línea de arena. Este petroglifo es de gran tamaño y asombra por la precisión de su diseño, pues aunque sencillo desprende un halo de energía mítica que no deja indiferente a nadie que lo observe.

Cuevas del Farallón de Bahía de Las Aguilas

En el farallón que delimita la playa de bahía de Las Aguilas se localizan abundantes abrigos y cavernas de escaso desarrollo. En algunos de estos sitios se han localizado diferentes petroglifos dispersos.

Cueva Mongó

La cueva Mongó está situada en el cabo del mismo nombre, a poca distancia del mar. En su interior se han localizado alrededor de diez pictografías.

Pozo de Trujín

El Pozo de Trujín se encuentra a pocos kilómetros del pueblo de Oviedo en los alrededores de la laguna del mismo nombre. Es un lugar de aprovisionamiento de agua a cuyo fondo se debe acceder usando una cuerda. En el fondo contiene 14 petroglifos aproximadamente de tipo antropomorfo y geométrico. Destaca una pequeña representación geométrica que asemeja el diseño de una pintadera, realizado de manera extremadamente detallada con
trazos muy finos. En las cercanías se localiza un importante yacimiento arqueológico precerámico con industria de sílex.

Poza de Trujín

La poza de Trujín se encuentra a poca distancia del pozo anteriormente citado, pero su morfología es muy diferente. Se trata de un extenso manantial en cuyo extremo se abre una caverna poco profunda. Los petroglifos, en número de aproximadamente 14 representaciones, se encuentran grabados en una formación estalagmítica característica localizada justamente sobre la plancha de agua. En las cercanías se localiza un importante yacimiento arqueológico precerámico con industria de sílex.

Cueva de Butamin Valet

Este sitio se localiza en la carretera de Oviedo a Pedernales, pocos kilómetros después de salir del pueblo, dentro del área protegida. En la cueva de Butamin Valet encontramos alrededor de doce petroglifos de gran calidad artística. Este sitio arqueológico se encuentra muy bien conservado hasta el momento y presenta la particularidad de que en sus inmediaciones hemos localizado un importante yacimiento arqueológico precerámico, con unas características similares a los sitios de Barrera Mordán y de la desembocadura del río Pedernales. En base a las piezas localizadas en superficie pensamos que se trata de un taller donde se fabricaron gran cantidad de utiles.
CAVERNAS DE LA ZONA DE AMORTIGUAMIENTO DEL PARQUE NACIONAL JARAGUA

Cueva Cañada de Los Huesos, 1

La cueva de la Cañada de los Huesos, n°1, se localiza en la carretera de Oviedo a Pedernales, pocos kilómetros después de salir del pueblo. Contiene 12 petroglifos situados a la vista de la luz solar situados en formaciones características de la caverna. En su mayoría representan caras enmarcadas en estalagmitas de pequeño tamaño. En las cercanías se localiza un importante yacimiento arqueológico precerámico con industria de sílex.

Cueva Cañada de Los Huesos, 2

La cueva de la Cañada de los Huesos, n°2, se localiza en la carretera de Oviedo a Pedernales, a unos 500 metros más arriba de la cueva de la cueva de La Tortuga. En su mayoría son de tipo antropomorfo destacando su fina factura. Contiene 12 petroglifos que están situados en la zona exterior de la cueva que es de muy poca profundidad, casi podríamos calificarla como un simple abrigo. En las cercanías se localiza un importante yacimiento arqueológico precerámico con industria de sílex.

Cueva de La Tortuga

La cueva de La Tortuga se sitúa en la Cañada de los Huesos a unos 400 metros de la cueva n°1. Contiene 14 petroglifos y 18 pictografías. Los petroglifos se sitúan en dos paneles
diferentes, uno a la entrada de la cueva y otro al fondo de la caverna bajo una gran claraboya natural. Son en su mayoría de tipo antropomórfico y algunos de ellos presentan un excelente acabado.

Las pinturas son de gran interés. Una parte son de color negro, en su mayoría de tipo antropomórfico y de trazo fino. El resto difieren completamente en el estilo, pues son de trazo grueso y las hay de dos colores: grises y rojas. Las pinturas rojas se localizan en el techo de la cueva, donde destaca la figura de una gran tortuga esquematizada. La belleza de esta pintura es espectacular, pues su gran tamaño, alrededor de 60 cm., y su factura sencilla pero sumamente expresiva la hace una auténtica obra de arte prehispánica. En las cercanías se localiza un importante yacimiento arqueológico precerámico con industria de sílex.

Cueva de Tru Nicola

La cueva de Tru Nicola se localiza en la carretera de Oviedo a Pedernales, unos 14 Km antes de llegar a esta última población. Contiene 10 petroglifos aproximadamente, pero su estado de conservación es lamentable al haber sido cubiertos con pintura por personas que inconscientes del valor que tienen estas manifestaciones de nuestros antepasados.

Cueva de La Bruja

La cueva de La Bruja se localiza en la carretera de Oviedo a Pedernales, unos 13 Km antes de llegar a esta última población. Conserva tres pictografías en color negro y de pequeño tamaño, pero realizadas con gran delicadeza.
Cueva de La Jinagosa

La cueva de La Jinagosa se encuentra a la derecha de la carretera de Pedernales, tres kilómetros antes del pueblo. En la caverna se localizan varios petroglifos y cuatro pictografías. El arte rupestre está en muy mal estado debido a las visitas incontroladas que han propiciado su alteración con graffiti, e incluso raspando las pinturas y los petroglifos. Destacan las pictografías de aves en color negro de muy pequeño tamaño pero muy bien detalladas.

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Astronomía de los petroglifos de las Antillas por

by

Angel Rodriguez

Resumen

La mayoría de los trabajos sobre el arte rupestre en el mundo y especialmente en el área Antillana han centrado su atención en los motivos artísticos y en el simbolismo mágico-religioso. Hasta el presente se ha ignorado casi por completo las implicaciones astronómicas en los petroglifos antillanos. Este estudio expone otro aspecto de este tipo de arte al presentar las alineaciones de los murales pétreos y petroglifos aislados que fueron orientados intencionalmente por sus constructores. De esta forma, los ritos y ceremonias que se desarrollaron en estos lugares no fueron simples actividades ocasionales porque pudieron ser asociadas a las diferentes estaciones del año y celebrarse anualmente.
Introducción:

La mayoría de los trabajos sobre el arte rupestre en el mundo y especialmente en el área Antillana han centrado su atención en los motivos artísticos y en el simbolismo mágico-religioso. Hasta el presente se ha ignorado casi por completo las implicaciones astronómicas en los petroglifos antillanos. Este estudio expone otro aspecto de este tipo de arte al presentar las alineaciones de los murales pétreos que fueron grabados sobre superficies de piedras que están orientadas de forma natural. De esta forma, los ritos y ceremonias que se desarrollaron en estos lugares no fueron simples actividades ocasionales porque pudieron ser asociadas a las diferentes estaciones del año y celebrarse anualmente. La observación de los eventos celeste por parte de los indígenas Antillanos fue comentada por los cronistas durante los primeros años del periodo de contacto: “También saben de qué parte vinieron, y de dónde tuvieron su origen el Sol y la Luna . . . .” Fray Román Pané en Relación sobre las antigüedades de los indios. "sembraban la yuca “... después que la Luna ha hecho o se muestra nueva.”.Fernando Gonzalo de Oviedo y Valdés en Historia General y Natural de las Indias; “. . . creían que de una cueva salieron el Sol y la Luna.” Francisco López de Gómara en Historia General de las Indias. “ No han averiguado bastante qué es lo que adoran esas dos clases de gentes, fuera del cielo y sus lumbreras”. Pedro Mártir de Anglería en Décadas del Nuevo Mundo.

Determinación de las alineaciones:
La brújula es simplemente un largo y delgado imán que se balancea sobre un punto, pudiendo girar fácilmente y orientarse Norte a Sur con el campo magnético de la Tierra. La brújulas magnéticas no indican realmente el Norte debido a estas diferencias. Los primeros navegantes aprendieron que debían conocer la distancia en grados que separa el Norte verdadero y lo que indicaban sus brújulas magnéticas. Este ángulo medido entre los dos polos Norte se denomina ángulo de declinación magnética (Robert Wood, 1991:6-8). Este ángulo medido en grados Este u Oeste se suma o se resta de lo que indique la brújula para obtener la verdadera lectura. En resumen, el Polo Norte Geográfico y el Polo Norte Magnético no coinciden. Este último se sitúa al norte de Canada a 75º y la aguja imantada de la brújula señala hacia este punto. El Polo Norte geográfico de la Tierra coincide con la estrella Polar (Polaris). A la diferencia entre el Polo Norte Geográfico con el Polo Norte Magnético también se llama declinación magnética o variación magnética.

Para obtener la orientación o acimuto respecto al Norte...
Geográfico o verdadero se utiliza la siguiente fórmula:

\[ Z = z - dm \]

\( Z \): acimuto respecto al Norte verdadero

\( z \): acimuto respecto al Norte magnético (obtenido por medio de la brújula)

\( dm \): declinación magnética (obtenido de un mapa o calculado utilizando la página en línea del US Geological Survey o del Canadian Geological Survey).

Lugares estudiados:

I. Puerto Rico:

1. Piedra de la Campana, Gurabo.

2. Centro Multiestructural de Caguana, Utuado, Puerto Rico.
Centro Multiestructural de Caguana, Utuado, Puerto Rico. El Sol sale durante los equinoccios de primavera el 21 de marzo y de otoño el 23 de septiembre a un acimuto de $Z' = 96^\circ$, $a = 10^\circ$. 
El Sol sale durante los equinoccios de primavera el 21 de marzo y de otoño el
23 de septiembre a un acimuto de $Z' = 90^\circ$ geográfico.

4. La Danzante del Otao, Utuado, Puerto Rico.

90º, Orientación equinoccial
Frasseto (1960).
Mural pétreo de La Danzante del Otao. ◄90º Orientación equinoccial

Petroglifo del murciélago alineado hacia la salida del Sol durante el solsticio de invierno, 22 de diciembre.

Z° = 360° - 10° = 350°

d° = 360° - 10° = 350°

Mural pétreo alineado hacia la puesta de la Osa Mayor.
Fig. 9. Making a surface print of Caña type petroglyphs at the Icacos rock shelter.

Frasseto
(1960)

Icacos
Rock
Shelter

7. Mural
pétreo
entre la
unión
del río Cubuy con el río Icacos. Naguabo, Puerto Rico.
$Z^\circ = 20^\circ \ - \ d^\circ =$

$20^\circ \ - \ 10^\circ =

$10^\circ$

$d^\circ = 10^\circ$

(1986) .Punto aproximado de la salida de la Osa Mayor
Swaddle Infant Figures at Upper Icacos Frasseto (1960).

Ciclo de la Osa Mayor alrededor de Polaris en las posiciones de orto, ocaso y cenital poco después de la puesta del Sol.

Posición 1.
La salida de la Osa Mayor

![Diagram of Osa Mayor and Polaris]
ocurre poco después de la puesta del Sol a mediados de enero en el horizonte oriental nocturno.

Posición 2. A mediados del mes de mayo, la Osa Mayor alcanza su posición cenital en el horizonte nocturno poco después de la puesta del Sol.

Posición 3. Para finales de septiembre, la Osa Mayor a alcanzado el firmamento occidental y empieza a desaparecer bajo el horizonte poco después del ocaso solar.

Precipitación promedio para la isla de Puerto Rico basado en los datos ofrecidos por Guisti (1968)
Nota: Al poder indentificar los indígenas antillanos la salida y puesta de los diferentes cuerpos celestes, los pudieron relacionar con las variaciones climáticas o cambios estacionales. De esta forma los cuerpos celestes se convirtieron en indicadores o marcadores de las estaciones del año, pudiendo predecir las estaciones de sequía, lluvia y huracanes que afectaban su agricultura y modo de producción.

Conclusión:

Los murales pétreos con petroglifos en el Puerto Rico muestran unas alineaciones específicas hacia ciertos eventos astronómicos. Estos lugares parece que fueron
adoratorios en los cuales se desarrollaron actividades solsticiales o equinocciales, u otras en relación con los cambios estacionales.

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L’implantation et la symbolique des pétroglyphes des Antilles : Un modèle amazonien ?

by

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Résumé.
Pour les Petites et les Grandes Antilles l’art rupestre, art des hommes, a pour fonction de protéger les humains des effets de l’inondation ou de la sécheresse, causes de disette et de mort. Il semble raisonnable d’étudier la possibilité d’étendre la signification et la fonction de l’art rupestre des Antilles à l’Amazonie vénézuélienne, aire d’origine des populations amérindiennes des Antilles.

Abstract.
For the Lesser and Greater Antilles, Rock art, men’s art, operate to protect human beings from the consequences of floods or droughts, causes of scarcity and death. It seems reasonable to bring forward the probable extension of the meaning and function of rock art to the Venezuelan Amazonia, cradle of the Amerindian populations of the West Indies.

Abstracto.
Para las Antillas Menores y Mayores el arte rupestre, arte de los hombres, tiene como función la protección de los humanos, de los efectos de la inundación o de la sequía, motivos de escasez y de muerte. Parece razonable de estudiar la posibilidad de extender la significación y la función del arte rupestre de las Antillas a la Amazonia venezolana, región de origen de las poblaciones amerindias de las Antillas.
Dans une publication précédente (H. Petitjean Roget 2003) j’ai suggéré que l’art rupestre des Petites Antilles était en relation avec des périodes de sécheresses. Ma recherche étendue à l’art rupestre des Grandes Antilles m’a permis de préciser cette hypothèse. J’ai avancé l’idée que cet art réalisé par des hommes, par opposition à l’art céramique produit par les femmes, assumait symboliquement une régulation des situations météorologiques extrêmes qu’évoquent les mythes ; la sécheresse d’une part et le déluge des grandes pluies et des ouragans d’autre part (H. Petitjean Roget 2008). On sait que l’aboutissement de l’évolution de la culture saladoïde (arawak) des Petites Antilles issue du delta de l’Orénoque correspond à la culture taino aux Grandes Antilles. Il faut remarquer par ailleurs les similitudes qui existent entre les mythes des Tainos et des Caraïbes insulaires recueillis au début des 16° et 17 siècles et ceux de groupes de mythes amazoniens collectés bien plus tard. Enfin sur la zone d’origine des migrations humaines en direction des Antilles, des épisodes climatiques d’alternances de sécheresses ou de très grandes pluies, bien qu’ils ne se soient pas produits aux mêmes époques qu’aux Antilles, n’en ont pas moins entraînés les mêmes effets dévastateurs. Il semble alors raisonnable d’envisager de transposer la fonction que j’attribue aux pétroglyphes des Antilles à ceux de la région de l’Orénoque. Pour situer ma contribution au sein du débat qui pourrait s’instaurer, je dois rappeler les relations que les mythologies taino et caraïbe insulaire établissent avec les ouragans et la sécheresse, phénomènes naturels générateurs d’angoisse et de dysfonctionnements sociaux. Ce sont le monde brûlé et le monde pourri qu’évoquent des mythes amazoniens analysés par Claude Lévi-Strauss dans ses « Mythologiques ».

Déluge, ouragans et sécheresses.
Notre connaissance de la mythologie taino se résume principalement à la relation de Ramon Pane de 1571. Pour les Caraïbes insulaires des Petites Antilles on trouve seulement des bribes de mythes ou des mentions de rites qui renvoient à des mythes dans les chroniques françaises du XVII° siècle. L’une et l’autre mythologie évoquent la sécheresse et le déluge. Le chroniqueur de La Borde a raconté que les Caraïbes attribuaient l'origine de la mer au déluge causé par la fureur du grand maître des Chemeens. « Il fit pleuvoir plusieurs jours si grande quantité d'eau qu'ils (les caraïbes) furent presque tous noyés, hors quelques uns qui se sauvèrent dans de petits bateaux et pirogues sur une montagne qui était pour lors l'unique...C'est le déluge de l'Ouragan, qui a fait les Mornes, les Pitons et les falaises...C'est lui qui a séparé les îles de la terre ferme. ...Savacou a été changé en oiseau crabier. C'est le capitaine des ouragans et du tonnerre, c'est lui qui fait la grande pluie et c'est aussi une étoile. » (De Laborde 1684:7). Pane relate que lorsqu’il ne pleuvait pas, les tainos entraient dans une grotte nommée Giovovava d’où, selon leurs croyances, le Soleil et la Lune étaient sortis et aussitôt il pleuvait. Cette grotte, écrit-il, était entièrement peinte de motifs de feuillages, sans représentations humaines. On y trouvait deux Ciminis en pierre, des « zémis », aux mains liées qui semblaient transpirer (Pane, 1571, Chap. XI). Diego Colomb dans sa relation « La vie de L’Amiral… » qui contient le récit de Pane, indique que les Tainos utilisaient trois pierres. L’une facilitait l’accouchement des femmes, l’autre faisait pousser les plantes et, avec la troisième, ils obtenaient la pluie quand ils en avaient besoin. La suite du récit permet de comprendre qu’il s’agit d’une seule pierre sculptée, une « pierre à trois pointes ». Pane relate encore, dans le chapitre XXIII de sa relation, que le Cimi Guabancex, quand il se fâche, soulève le vent et l’eau, renverse les maisons et couche les arbres. Ce cimi féminin était accompagné de deux autres cimis:
Guatauua, qui appelle les vents et Coatrischie qui rassemble toutes les eaux dans les vallées et les laisse dévaler pour qu’elles détruisent tout. Il est clair que ces trois zémis provoquent les ouragans et les inondations. Le Mythe de Giaia et de son fils Giaiael, (Pane Chap. IX) qui se situe à l’opposé de la sécheresse relate la grande inondation créatrice de la mer et des îles. La mythologie taino, évoque donc bien ces deux extrêmes climatiques. Le manque d’eau est susceptible d’entraîner la famine. Le trop d’eau, l’inondation, conduit au même résultat par l’extinction des feux de cuisine et la destruction des jardins de vivres.

ménisques biconcaves superposés - Trois Rivières, Guadeloupe-, Wingfield Estate, Ste Lucie, et ceux qui exhibent une couronne rayonnante sur la tête (Yambou, St Vincent).

**Art céramique et mythologie.**

L’esthétique des sociétés arawak insulaires, connue par les objets de la culture matérielle qui nous sont parvenus, montre qu’elles ont été réticentes, comme la plupart des sociétés traditionnelles à des changements rapides. Des Saladoïdes aux Tainos, l’art sur tous les médias, la céramique, la pierre, le bois, le coquillage, s’est appliqué à représenter de façon obsessionnelle le thème de la grenouille et celui de la chauve-souris. Toutes les variantes de ces thèmes découlent d’un motif élémentaire. Un motif élémentaire selon le principe du *pars pro toto* est la représentation graphique peinte ou modelée d’un détail anatomique qui signifie l’être dans sa totalité. La répétition de ces thèmes ornementaux sur une très longue période aux Petites et aux Grandes Antilles m’a poussé à en rechercher la signification. Celle-ci se cachait dans le mythe d’origine de l’humanité transcrit par Ramon Pane. (Pane 1571. Chap. I, VIII : 127-131). Ce mythe raconte qu’au commencement du monde, dans la caverne primordiale, avant de devenir des humains distincts des animaux, les hommes étaient des chauves-souris frugivores et les femmes des grenouilles. (H. Petitjean Roget 1993). La signification de l’alliance entre ces animaux que leurs mœurs opposent est claire. Pour qu’une société se constitue et perdure il faut le rapprochement du masculin et du féminin.

**Les pétroglyphes.**

Le nombre des stations à pétroglyphes aux Petites Antilles varie considérablement d’une île à l’autre (Dubelaar 1995, Marquet-Jonsson 2001). Si l’hypothèse des effets du climat sur les sociétés des Antilles est juste, il y aurait peut être une corrélation à établir entre la
densité de population sur un territoire et le nombre de stations à pétroglyphes ? La plupart
des gravures des Petites Antilles sont rattachées à la culture arawak dont celle des tainos
est issue du fait de leurs similitudes stylistiques avec celles de Porto Rico attribuées aux
tainos. Hormis quelques formes stéréotypées comme le labyrinthe, symbole de la
grenouille, aucune des interprétations des figures ne convainc. Un point d’accord entre
chercheurs porte sur la relation constante qui semble exister entre l’eau douce, les gravures
et les polissoirs qui les accompagnent très souvent. Mais avant de considérer l’esthétique
de l’art rupestre je m’étais intéressé aux ruptures qui marquent les étapes de l’évolution de
la culture saladoïde aux Petites Antilles. Dans cette zone, dans toutes les îles des
discontinuités culturelles se sont produites sensiblement aux mêmes époques. Elles
marquent le passage du saladoïde insulaire au cedrosan saladoïde ou saladoïde modifié
autour de 400 AD, la transition vers le troumassoïde vers 700 AD, l’expression fugace du
style céramique caliviny autour de 900 AD, puis la fin des horizons culturels arawak avec
le suazoïde autour de 1200 AD. Les manifestations de ces ruptures correspondent au
passage dans l’ornementation de la céramique du « blanc et rouge » au « blanc sur rouge »,
à la destruction des « pierres à trois pointes » en relation avec l’émergence de la période
troumassoïde, aux poteries peintes polychromes caliviny, à l’apparition des statuettes
féminines et des phallus de terre cuite au début de la période suazoïde (H. Petitjean Roget
2001). Comme je l’ai avancé ailleurs, une pénurie de pluies expliquerait la destruction des
pierres à trois pointes auxquelles les amérindiens prêtaient le pouvoir de faire pousser les
plantes comme l’a rapporté Diego Colomb (Diego Colomb 1571 :126). Les travaux de D.
Bonnissant sur Saint Martin, d’autres chercheurs en Guadeloupe, ont démontré la réalité de
ces périodes de sécheresse aux Antilles dans les temps précolombiens. C’est pourquoi j’ai
reconsidéré l’art rupestre des Antilles en l’analysant dans un contexte de raréfaction de l’eau douce et de ses effets sur des populations horticoles. J’ai d’abord étudié l’environnement et la topographie des stations de pétroglyphes. Puis, faute de trouver la clé d’identification des êtres évoqués par les gravures, j’ai cherché à dégager les points communs et les différences entre l’art de la céramique et l’art rupestre. Dans ce contexte de significations sociales d’un art féminin ancré dans la mythologie, il était inconcevable que l’art rupestre qui incombe aux hommes, comme le travail de la pierre, la fabrication des parures de coquillages et celle des outils, ait été dépourvu de sens.

La méthode d’analyse.
L’art céramique n’est pas un art rituel. C’est un art de la tradition orale et de la mythologie. C’est pourquoi, toutes les céramiques même celles que l’on utilise au quotidien pour la cuisson des aliments portent sa marque. Le message de cette expression esthétique symbolique, l’histoire qu’elle raconte avec les modelages, les décors incisés, gravés ou peints sur les céramiques a été de tout temps comprise des amérindiens insulaires. L’art rupestre fait lui aussi partie du quotidien. Il s’exprime le plus souvent à proximité des lieux où les femmes vont puiser de l’eau. Visible de tous, c’est un art qui n’est pas exposé aux yeux des seuls initiés. Son efficacité symbolique comme pour l’art céramique, découle de sa référence permanente aux mythes fondateurs. Dans ces perspectives pour tenter de mettre à jour le sens et la fonction de cet art, j’ai comparé les démarches créatrices qui conduisent à l’art céramique et à l’art rupestre.

L’art céramique et l’art rupestre.
L’art céramique participe au passage de la nature à la culture par la médiation entre le cru et le cuit, qu’il induit par le biais de la céramique sur laquelle il s’exprime. L’ornementation des céramiques s’applique sur de petits volumes, la panse des vases. La symétrie entre les thèmes ornementaux est la règle de construction des décors. C’est un art de déclinaison de thèmes ornementaux variables et structurellement équivalents. Il exprime l’ordre et la mesure. L’art rupestre à l’opposé est un art monumental. Dans l’art rupestre à la différence de l’art céramique on ne retrouve pas de règles qui régissent le rapprochement des motifs. C’est une forme d’expression où la symétrie entre thèmes et la répétition de thèmes analogues d’un panneau mural à un autre sont absentes. A considérer l’environnement des stations rupestres, cet art est une esthétique du chaos. Les êtres qu’évoquent la plupart des gravures simples ne sont pas identifiables avec certitude. Un motif constitué par un cercle gravé autour de trois points obtenus par percussion pourrait évoquer toute autre figure que celle d’une tête humaine. Un oiseau est reconnaissable par son bec, un poisson par sa forme, ses nageoires et ses écailles, une chauve-souris l’est par ses grandes oreilles de chaque coté d’un visage et des crochets en lieu de pieds. La représentation conventionnelle de la grenouille est figurée par les pattes de l’animal repliées sous la forme d’un ventre ou par le thème du labyrinthe. Il semble, comme pour la céramique, du moins jusqu’à la période troumassoïde des Petites Antilles et sa correspondance l’ostionoïde des Grandes Antilles, que les gravures rupestres ont été rehaussées de couleurs franches tirées de colorants minéraux naturels. L’usage de la couleur dans les tracés des gravures rupestres tel qu’il a été noté par des auteurs rapprocherait l’art pariétal de l’art céramique. (H. Petitjean Roget 2003 : 588, Lopez Belando 2000 : 324)
Conclusions : Deux formes complémentaires d’art.

Nous nous trouvons confrontés à une situation qui veut qu’au sein de la même société cohabitent deux formes d’expressions symboliques distinctes, la céramique, art des femmes et l’art rupestre, art des hommes. Ces deux formes d’expressions sont probablement complémentaires comme les femmes sont complémentaires des hommes pour assurer la reproduction de la société, comme les hommes sont complémentaires des femmes pour rapporter la nourriture pour la survie des familles. L’art des femmes renvoie à l’origine de l’humanité. C’est le rappel permanent du rapprochement entre le masculin et le féminin pour construire la société humaine. L’art rupestre des hommes, possède une signification symétrique de celle de l’art céramique. Exprimé près des points d’eau, associé aux polissoirs, symbole de copulation, toujours situé à l’entrée des grottes, il est un art de médiation entre des situations climatiques extrêmes, la sécheresse et l’inondation (H. Petitjean Roget 2007). L’art des femmes renvoie à la fécondité qui découle de l’alliance d’un homme et d’une femme. L’art des hommes assure par l’alliance entre l’eau qui risque toujours de manquer, les polissoirs et les figures gravées, la régulation du temps pour la survie de l’humanité. La culture saladoïde issue du delta de l’Orénoque a achevé son évolution aux Grandes Antilles avec les tainos. Son histoire aux Antilles a été marquée, comme pour les amérindiens continentaux, par des alternances de périodes sèches et d’épisodes humides. De plus, on retrouve chez les populations actuelles du continent sud américain et en particulier dans le bas Orénoque des mythes qui ont trait à la sécheresse ou à l’inondation. Ils correspondent structurellement aux versions recueillies chez les tainos. A ce titre, la fonction que j’attribue à l’art rupestre des Antilles en relation avec les
sécheresses et les inondations aurait-elle son équivalent dans l’art rupestre amazonien, comme l’ont les mythes des amérindiens des Antilles qui se retrouvent en Amazonie ?

Tableau : L’art rupestre comme art de médiations.

<table>
<thead>
<tr>
<th>Monde noyé</th>
<th>Hommes</th>
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<tr>
<td>Pluie</td>
<td>Déluge</td>
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<tr>
<td>Sécheresse</td>
<td>Femmes</td>
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<tr>
<td></td>
<td>Soleil</td>
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<td></td>
<td>Monde brûlé</td>
</tr>
</tbody>
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Dans la grotte Cacibajagua

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Zooic iconography on Amerindian ceramics of the Lesser Antilles

by

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Abstract
Images of fauna abound on the pottery of the Pre-Columbian Caribbean. The Amerindians incised, painted and sculpted zoomorphic figures on the faces, lids and handles of their ceramic vessels. The use of these adornments on containers for food, beverages and intoxicants speaks of the significance of certain animals in the ritual life of the Caribbean peoples. This paper is an iconographic analysis of major animal motifs that appear in the Saladoid, Barrancoid and other phases of Lesser Antillean ceramic art.

Resumen
En la cerámica del Caribe pre-colombino abundaban las imágenes de fauna. Los amerindios hacían incisiones, pintaban y esculpían figuras zoomórficas en los lados, tapas y asas de sus vasijas de cerámica. El uso frecuente de estos adornos en las vasijas que se utilizaban para almacenar alimentos, bebidas e intoxicantes, indica la importancia que tenían ciertos animales en la vida ritual de las poblaciones caribeñas. Este trabajo es un análisis iconográfico de los temas que aparecen en las fases Salaloide y Barrancoide, entre otras, en el arte de la cerámica de las Antillas Menores.

Résumé
Des images de faune abondent dans la poterie caribéenne precolembienne. Les Amérindiens incisaient, peignaient et sculptaient des figures zoomorphiques sur les surfaces, les couvercles et les anses de leurs bassins céramiques. L’usage de ces décors dans des récipients de nourriture, boissons et intoxicants met en relief la signification de certains animaux dans la vie rituelle de gens de la Caraïbe. Cet essai propose une analyse iconographique des motifs animaux importants présents dans la céramique des phases Saladoïde, Barracoïde et d’autres phases de la céramique dans les Petite Antilles.
Images of fauna abound on the pottery of the Pre-Columbian Caribbean. The Amerindians of the Antilles painted, incised and sculpted zoomorphic figures on the lids, handles and surfaces of their ceramic vessels. The use of these adornments on containers for food, beverages and intoxicants speaks of the significance of certain animals in the ritual life of the Caribbean peoples. This paper is a brief iconographic survey of some animal motifs that appear in Pre-Columbian phases of Lesser Antillean ceramic art, and will explore some factors that led to the selection of certain animals as motifs. Research presented here represents preliminary studies in a wider analysis of Caribbean animal species, and their importance in the subsistence, religion and artistic symbolism of Caribbean Amerindians. The species discussed in this paper were selected because of their appearance on the broken adornos (lugs), shards and pot rims that abound in the displays at several museums in the Windward Islands.¹

Bats, birds, turtles, frogs, crocodilians, monkeys, armadillos and peccaries are among the creatures presented in remarkably varied and often multivalent stylistic treatments. Often, animal traits are combined with human aspects, deepening the meaning of these beings. Given Amerindian proclivities for informing and justifying most aspects of their lives with religious myth and meaning (Stevens-Arroyo 06 53), each zooic creature appearing as a motif in the ceramic record is likely to have had some mythic significance. Some creatures do not appear in the zoology of the islands as often as on the South American mainland, indicating that they were retained in cultural and artistic memory as migration through the Caribbean archipelago in the first millennium CE put distance between the potters and the animals’ natural habitats. The retained mainland

¹ Most important in the sample were examples from the Tobago Museum.
species must have had some mythological cachet worth keeping. But the emergent importance of some Antillean species would seem to indicate an iconographic and ritual shift in pottery style and usage that will be the focus of my further studies in this area.

We get clues about why certain animals became favored motifs by accessing the myths of the Amerindians. But these pre-Conquest beliefs are not always easy to ascertain.² When completely lacking any indication of the symbolic meaning of a species, looking to the original habitat and behaviors of the species itself may help indicate its importance as a motif. By overlaying this zoological data with what remains of the known mythological context, we might gain some shallow glimpse of the missing parts of that mythology. But we may never recover the whole significance of these curling, creeping, climbing, flying, devouring, grimacing creatures.

The animals favored in the iconography of the Pre-Columbian Antilles were often of nocturnal varieties. Some were predators but others were peaceful arboreal herbivores. Some were rare or seasonal, signaling some expected or unexpected shift in the year’s cycle, others were relatively ubiquitous. Much has already been learned about zoomorphic iconography, in the Greater Antilles especially, but artifacts and species in the Lesser Antilles may serve to augment and/or re-evaluate some of the conclusions drawn by previous scholars on this topic. And there may be yet some original data emerging in the Lesser Antilles to fill in missing areas in Island-Arawak symbolism.

Surveying the ceramic collections of several museums in the Windward Islands, many ambiguous creatures can be found amongst the ceramic remains. These might challenge the closed category of “zooic” iconography but hybrid creatures can nuance the

² Research sources would include: Conquest-era and early colonial records; ethnographic analogy with related groups of Amerindians still living in the Antilles and South America today; and archaeological contextual information, especially burials and middens.
study of “purer” forms. There must also be some accounting for Amerindian styles in identifying species, since potters seem to have rejoiced in redundant curvilinear and co-redundant (i.e. “Janus-faced” kenning) designs and anatomical stylization which sometimes obscures or enriches the speciation and iconography of some images. Some creatures, by virtue of their distinctive appearance, are always obvious: the swooping skislope nose of a fruit bat; the splayed flippers of a sea turtle etc. Some of these more obvious candidates are considered in this preliminary study.

Death on the Wing: Bats and Owls

Associations between nocturnal flying creatures and the Amerindian spirit-world have been evident since the first colonial accounts. From the writings of Fray Ramón Pané up to those of Irving Rouse and others, bats and night birds carried a more than archetypal correlation to the dead. At dusk, bats flitted out of their caves to rule the night. Their cavernous homes were sacred origin-places of the human race in Arawak mythology, and the bats themselves were a living link between the earth and the realm of Coaybay, the land of the dead. Bats were believed to be incarnated spirits of the dead (opía) who concealed themselves by day and came out to feed, frolic and “accompany the living” at night (Pané, 99 18; Arévalo in Bercht 1997 112).

The majority of Caribbean bats are neither carnivorous nor bloodsucking, and some of the largest, most spectacular species are herbivores, inordinately fond of guava (guayaba), guanabana and papaya. In Arawak mythology, Coaybay was ruled by Maquetaurie Guayaba and as befits the name of their great cacique, the dead were as fond of coming out to eat guava at night as their winged incarnations (Pané, 99 18; Walker in
Bercht 97 87). Thus bats and the dead shared the same habits and habitat, and were mutually analogous (Arévalo in Bercht 97 115; Petitjean Roget 1975, 257).

Bat wings were sometimes featured on the rims of pottery (Arévalo in Bercht 97 114), vessels that often contained liquids. It is uncertain why this afterlife symbol would be used to adorn domestic containers, but if the liquid within it was water, associations with the underworld were inherent (Siegel in Bercht 97 108-09) and as the clear liquid reflected back the land of the dead, the drinker would be connected symbolically with his or her ancestors. Ceremonial liquids like “tobacco water” used to “create a bridge between the behique (shaman) and the spirits” (Stevens-Arroyo 06 189); and yuca-water, used to bathe zemis (as reported in las Casas’ Apologetica) may have also been contained in these vessels, sealing their association with Coaybay. Both freshwater and the sea were associated with the ‘place of the ancestors,’ with Atabeira, “Mother of the Waters” presiding over potable rivers and ponds (Stevens-Arroyo 06 221, 224) and several deities inhabiting and activating the sea depths.

Ocular and skeletal human figures were commonly combined with various bat traits as symbols of visitation to the land of the dead. Such combinations of the human and bat attributes could also represent the formerly human soul (goeíza) of the bat (Arévalo in Bercht 97 115). The stylized bat wings we see on Greater Antillean Taíno pottery manifested earlier in the Saladoid Lesser Antilles as a more curvilinear motif wherein the wings of the bat were curled into a triple U-shape rather than the Greater Antillean V-shape. Many adornos feature inwardly curling wings, looking like a scroll rolled up on both ends, with a third circular shape (often smaller than the flanking scrolls) inserted in the center to represent the bat’s body. This differentiation of the body from the
wings may reflect an earlier attempt at working the natural appearance of the creature into a repeatable motif, with less geometric stylization than in the Greater Antilles pottery designed later.

Yet even in the Lesser Antilles, the representation of bat wings reached an advanced state of ‘baroque’ treatment by the mid-first millennium CE. In a co-redundant example from Trinidad [illustration], multiple bat motifs appear on the same adorno. Bat wing scrolls curl across the forehead of an anthropomorphic face mimicking a human hairline. The two downward curls of the wings resolve themselves into the eyes of the anthropomorph. Between the ‘wing-eyes’ of the figure is a nose which comes to a protuberance on both its top and the bottom ends, so that between the ‘wing-eyes’ is the obligatory third shape to evoke a bat. But the anthropomorph’s strange nose bears a striking resemblance to that of Linnaeus’ False Vampire bat (Vampyrum spectrum), a fruit-eater and the largest bat in Trinidad and indeed all the New World, with a wingspan often reaching some three feet (50-60cm).

Bats were not the only winged creatures that referenced the afterlife in the Amerindians’ zooic pantheon. Manuel Arévalo describes owls as heralds of the Lord of Coaybay (Arévalo in Bercht 1997 122). While there may be some controversy about the status of owls as Coaybay/death symbols, due to a similar deathly associations for owls among European colonists, owls were afterlife symbols in many Pre-Columbian cultures. Three species of oculate night birds would have been perceived by Amerindians as such: owls, nightjars and oilbirds. In all three avian families, the nocturnal bird’s face is round, with a hooked beak and enormous, reflective eyes. In the dark of night, those gleaming eyes would be virtually indistinguishable. The oilbird’s habits especially are strikingly
similar to those of bats. It lives in caves during the day and emerges at night to dine on fruit (ffrench 2004 116-17), exactly the behavior described of the nocturnal opía in Pané’s account of Arawak eschatology (Pané 99 17-19). Images of owls and owl-like birds, therefore would reference this opía-like/bat-like after-lifestyle at least in the Lesser Antilles and such symbolism may have been retained throughout the Antilles, even on those islands bereft of caves or oilbirds.

Arévalo gives added dimension to owl iconography, describing the oculate appearance of the owl as resembling the skull-like faces of cadaverous, entranced shamans (Arévalo in Bercht 1997 120). The mechanical, 200-degree rotation of their necks would have also given the impression that they surveyed all existence from some transcendent perch between earth and Coaybay.

**Brides, Mothers, Shamans: Turtles**

The myth of the Turtle Bride is an important key to the Island Arawak’s view of ancestors, caciques, shamans and social fissures. The tale involves an altercation between Bayamanaco and his grandson, the culture hero Deminan Caracaracol. In a hostile response to Deminan’s request of a portion of cazabe (cassava bread), an offended Bayamanaco spits onto the back of Deminan Caracaracol. The cohoba-tinged contents of the spittle have an unusual effect in that Deminan’s back becomes infected and a terrible rash swells up there. Finally, Deminan’s three brothers help him pry the scabby lump loose, which emerges as the Turtle Bride who will become wife to them all (Stevens-Arroyo 06 125). The ambiguous language in which Fray Ramón Pané wrote down
Deminan’s tale complicates our interpretation in that Bayamanaco’s spittle is described as cast from the angry grandfather’s nose, not his mouth (Pané 99 15).

It is possible that a lack of equivalences between Iberian and Arawak language, in which this story was narrated, may have led to mistranslation, but it may also be that the Taino themselves may have had the same word for various forms of ‘spittle.’ There probably were distinct Arawak terms for different kinds of mucus but informants may simply have used an ambiguous (or unintelligible) one to Pané, not unlike our word “mucus.” Thusly Pané’s description of Deminan’s messy encounter is unclear. A similar mistranslation may have occurred in describing the casting of mucus out of one’s nose, since even after all these centuries, in neither English nor Spanish, two of the most hybridized languages on earth, do we have a word for that act of voluntarily shooting snot out of one’s nose by pinching the nostrils and blowing very hard and quickly.

What does all this mucus have to do with turtle iconography on Antillean pottery? Mucus is a key to the turtle’s symbolism. From Deminan’s snot-infected back emerges a turtle, which will become wife and mother. The newness of sea turtles as an Arawak symbol should be noted here, since these people seldom encountered such creatures in their riverine existence back in South America. Thus the sea turtle is an animal with an emergent iconographic status, stemming partially from the beguiling impression it would have made on the Antillean migrants. As it crawled up unto the beach at night, dug a receptacle in the sand into which it would lay dozens of eggs, its eyes trailing a long, thick mucus while in a seemingly-unbreakable egg-laying trance, it would provide a rich analogue for several different aspects of Arawak myth and ritual.
The turtle as a mother and ancestor is supported in Deminan’s myth. The mucus she excretes from both her ovipositor and her glazed-over, tearing eyes references both the inseminating spittle of the Deminan pregnancy cycle and the salivating, nose-running appearance of the shaman in cohoba narcosis. Certainly the fact that both fecund turtle and priapic shaman are in a state of trance, insensate to the physical world all around them, as they trail mucus from their faces is a coincidence of some significance. Sea turtles, as entranced progenitors would be mystical fertility signifiers, appropriate motifs on both shamanic and family heirlooms. They were a favorite rim adornment on larger vessels in the Saladoid through Troumassoid Lesser Antilles with the head and flippers extending as lugs away from the lip of the pot. In some cases, the stylized turtle’s head is lifted somewhat quizzically to face the pot’s user.

**Above, Below, Beyond: Frogs**

Some scholars see the adoption of frog iconography as an attempt by newly arrived South American Amerindians to replace the images of crocodilians and large snakes with those of the only fauna available: the smaller, more “humble” animals of the Antilles (Roe in Bercht 97 124-5). But in Trinidad where caimans and large snakes were still present (since Trinidad is geologically and zoologically an extension South America) frog iconography was already extant by the Saladoid phase. So Peter Roe’s argument, in his article “Just Wasting Away,” that the small frog was overloaded with the iconography of the fierce, “devouring” anaconda and caiman does not consider the emergent importance of the frog in the first island of the Antilles, not as a replacement symbol in

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3 Intoxicated behiques are often depicted not only with glazed eyes and cadaverous bodies, but erect penises, thusly connecting the dead and the living.
an “impoverished” faunal environment but a new icon in its own right: one loaded with several nuanced meanings, few of which belonged to those large, ferocious reptiles and amphibians of the mainland.

In being covered in a layer of slime and laying its eggs, like the sea turtle, in a stream of mucosa, the frogs of the Antilles (most of them nocturnal) reference mythic ancestral fertility and the shamanic Priapism that Roe considers so closely in the same article mentioned above. In singing through the night during the rainy season, like the vocal piper frogs and a chorus of other species, frogs represent the presence of water in the form of precipitation, swelling rivers and thusly the coming of the rains, heart of the agricultural cycle (Arrom in Bercht 97 78). Even their Arawak names, like toa toa, are synonymous with water (Arrom in Bercht 97 76). Equally important is that frogs are liminal in their status as amphibians and highly transformative in their reproduction: seeming to evolve from eggs to “fish;” then to “lizards;” before becoming frogs proper. Some carry their young in egg-sacks on their back, like the pipa pipa, and the sheer multitude of eggs could not have escaped their Amerindian observers as real and symbolic fertility. The camouflage of many species would also add to their transformational, i.e. shamanic, symbolism and their sprout-like emergence from the water (and sometimes the earth) would make them veritable trigonoliths (trigonolitos).

Suffice it to say, that this slimy, nocturnal herald of the rainy season reads like a primer in Island Arawak iconography, with references to transformation, fertility, agriculture (especially that of manioc) and specific episodes in mythology. The story of Deminan’s ‘posterior pregnancy’ resembles the behavior of a frog more than any other creature, with offspring eventually “hatching” pipa pipa-like from his back. And for a
creature who lives on the ground below, the water beyond, and in the trees up above, the frog is connected to all the realms of Arawak cosmology: the living earth, the watery underworld and the starry heavens above, turning like clockwork to announce the comings and goings of the tropical seasons. This creature seems the symbol de jour of the Antillians, appearing on the lids and across the faces of pottery throughout the entire Caribbean, but ubiquitous in sculpture and adornment as well.

**Morning Flight: The Blue-Crowned Motmot and Other Dawn Singers**

Despite their status as signifiers of the upper world, with reptiles and amphibians as those of the underworld (Roe in Bercht 97 138), birds were also seen as spirit guides in the behique’s flight to the Sky World where he might contact spirits that would help him heal sick patients (Boomert in Sued-Badillo 03 160). The broken bird figures at the Tobago Museum all seem to depict a small, slightly flat-headed avian with a bill of medium-length, a species more likely to be a songbird than some fierce raptor or carrion bird. An avian-shaped, Saladoid cohoba snuff bowl from southwestern Tobago seems to be the same kind of bird, though the schematic aesthetic of the Amerindian ceramicist obviously shows little interest in ornithological taxonomy. The avian snuff bowl features a bifurcated tail, each shaft of the tail becoming a tube that fits into a nostril of the shaman when snorting the hallucinogenic powder it once held. In the shape of its head and tail, the avian snuff bowl has a resemblance to several species, most notably, the hummingbird (a species named in some Arawak myths), the swallow (commonly
referenced in Carib songs) and the blue-crowned motmot, a morning-singing bird. The possibility that the ceramic bird effigy could be a generic avian with a double-tail or some species of yet undetermined significance are present but remote, since there is a tendency in Amerindian myths and folklore to name and assign symbolic function to birds with spectacular features. The persistence of the Arawak word “colibri” and the ubiquity of the Maya term “quetzal” attest to this, both species continuing to be as emblematic now as they were in Pre-Columbian times.

Study of the blue-crowned motmot (momotus momota) yielded some intriguing discoveries about its appearance and behavior. Full-length photos of this colorful avian revealed a spectacularly bifurcated tail, comprised of two prominent tail feathers, pruned by the bird itself into racket-shaped swabs at the tips. A comparison of the snuff bowls, presumably owned by shamans from Lovers Retreat, Friendship and other sites in southern Tobago, with images of the blue-crowned motmot seem to stress the bifurcated tail fitting into one’s nose. Since birds obviously have some connection to the cohoba ritual, in that bird-bone cohoba inhaler tubes have been noted by scholars (e.g. Boomert in Sued-Badillo 03 153) and can be observed at the Tobago Museum and elsewhere, then perhaps genetic testing on bone inhalers might shed some light on which species range of birds may have been associated with cohoba.

Another factor that might have affected the selection of the blue-crowned motmot as a shamanic familiar is a diurnal behavior that links it to the myth of Yahubabayael. In that Hispaniolan tale, which probably existed in earlier versions throughout the islands to
the east, a character named Yahubaba is asked by the culture hero Guahayona to go and gather digo, a plant from which is derived a frothy substance used in ritual cleansing.

With some anxiety, Yahubaba leaves the ancestral cave of Cacibajagua to search for digo but never returns. When the sun ‘overtakes him on the road’ Yahubaba is turned into a kind of bird that sings at the morning twilight, ‘like the nightingale’ relates Pané, reaching for a European analogue (Pané 99 7; Arrom in Bercht 97 72). Birds had two major manifestations in Pané’s account of Taino mythology: the species that sang at the morning’s first light, simply called Yahubabayael and a woodpecker species, called Inriri Yahubabayael, important in another myth. While the woodpecker variety has been identified, and still bears the common name Inriri in Puerto Rico today, the variety of songbird remains obscure. Since the species of birds in the Antilles can vary by island, a myth brought from island to island might incorporate the local morning-singing bird. It so happens that the blue-crowned motmot is observed to make its “deep, muffled hoot [“mboot-mboot”]…in the early morning or at dusk” from the ‘deep shadows of the forest undergrowth’ (ffrench 04 47-8). Thus, we have an extraordinary twilight bird that seems to be the Tobago version of Yahubabayael, appearing on cohoba snuff bowls, the use of which is preceded and followed by ritual bathing in the substance most associated with Yahubabayael, digo.

**Conclusion: Armadillos, Anteaters, Opossums and Other Strange Beasts**

It becomes obvious when looking at a certain variety of adornos in the Lesser Antillean museums, that we know very little of the original mythology of the Caribbean peoples before the Conquest. When trying to match up species habitat, behavior and
appearance with their iconographic presence in the artistic record, we are left with little oral or textual history. It is not enough to say that potters who were impressed by a species adorned their ceramics with it. Certainly, novelty had its place in Arawak art but given the mythic significance of the other animals (above) in the ceramic record, surely adornos of the nine-banded armadillo (Dasypus novemcinctus), amazing tamandua anteater (Tamandua tetradactyla) and the Coendou porcupine must have also shared in the mythic election of the Arawaks.

Elongated noses thrust deep into the earth or tree trunks; fantastical body-shapes perhaps ominous or auspicious; enormous claws and bristling quills all draw symbolic attention to these creatures. The vertical leap of startled armadillos and the deceptive or aggressive behavior they and opossums employed when assaulted must have conveyed some allegorical wisdom to the shaman and the layman alike. Many of these animals were introduced to the Antilles by Arawakan settlers so that they might hunt them later. But as admittedly edible armadillos, opossums and agoutis peer out from the rims of clay pots we know not exactly why. Among these land mammals, only the dog has a recorded iconography, that of Opiyel Guobiran, a forest dwelling spirit guide to Coaybay.

We can assume by its virtual absence in the more northern Lesser Antillean pottery that the crocodilian, which still appeared in some Trinidadian and Tobagonian adornos in the Saladoid-Barrancoid collision phase, diminished in importance and eventually dissipated. But was there any further iconographic need for such a creature or did Caribbean potters never even miss the caiman in their rich new faunal iconography? What was the significance of the parrot’s forest canopy screech, its domesticated speech, or its distinctive curled beak that would cause potters to commemorate it in adornos from
Tobago to Martinique? What of marine creatures too, such as fish, squid, eels, manatees, whales and crustaceans? With precious few mythic sources to connect these fascinating Caribbean creatures with their allusions on Amerindian artifacts, we must resort to the seeming polar extremes of hard science and inspired speculation.

Sources
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Rock Art and Ancestors in Pre-Columbian Caribbean Cultures

by

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Abstract

Ethnohistorical accounts of contact period native religion suggest that ancestors played a central role in the individual and collective lives of pre-Columbian Caribbean societies. Ancestors represented a particular class of cemis—supernatural beings and forces—which continued to remain active or influential even after death. Their physical expression within these past cultures, it has been argued, is especially evident in the rock art of the area, with its abundant anthropomorphic facial and full body images. In our review of this topic, we suggest that a more nuanced understanding of the role of ancestors is indicated.

Introduction
Various researchers (López-Baralt 1977; Oliver 1998; Stevens-Arroyo 1988) have pointed to a robust commonality in the religious systems of present-day northeast South American lowland Amerindian cultures and the contact-period Taíno cultures and other groups of the Antilles. Direct parallels between the beliefs of these early historic period peoples and Amerindian groups today are seen in such fundamental religious components as cosmology, mythological themes, and personages portrayed in oral traditions.

Discontinuities are also evident. Roe (1995a,b, 1997) has observed a gradual process that he calls “mythic or iconic substitution” taking place whereby the homeland continental large-scale fauna such as jaguars and monkeys is replaced by newly encountered island animals like manatees and sharks. This substitution process is evident in material cultural representations (ceramics, worked stone figures) that are taken to reflect a divergence from the common or original religious tradition. In this presentation we trace another discontinuity, that of the changing role or function of ancestors. An examination of the ethnohistoric literature and one category of archaeological data—rock art—suggests an expanded role for ancestors in the public social and political spheres as they become one among other means of high status and chiefly legitimization.

Ethnohistoric Sources and Ancestors

While deficiencies and misinterpretations can be found in the chronicler documents, a critical and comparative reading can nonetheless provide details on, and a beginning understanding of the native or Taíno world view. That world view, comprehensively articulated by Stevens-Arroyo (1988), partitions their cosmos into three physical realms that are far from static. Humans, plants, and animals of this world, in addition to natural features such as rocks and mountains possessed souls or spirits, matched by spirit beings and the souls of the dead that resided in the celestial and subterranean realms. A dynamic tension existed between these orders of reality or between the conscious and
unconscious, the seen and unseen. Although the orders of reality were considered separate, intercommunication between humans, supernatural and ancestral spirits could take place. This central concept of dual or intersecting realities carries over into other aspects of Taíno cultural and visual expression, as we shall see later.

These supernatural forces, life-sustaining energies, beings and spirits of the dead were collectively termed *cemís/zemís*. *Cemís* acted for or against individual and society’s interests, and could manifest themselves in a variety of ways and objects including smells, rocks and animals. Their manifestations might, though not always, require some form of more permanent representation made from a number of materials—wood, stone, perishable items and preserved human skeletal remains. These representations were considered to embody the powers of the spirits, rather than merely “standing in” for them, and were also called *cemís* (Alegría 1997:23; Stevens-Arroyo 1988; Oliver 2005:246-248).

Passages from Oviedo and Pané illustrate certain of the *cemís* characteristics just mentioned, as well as suggesting that any medium could be transformed into a *cemí*, including rock art:

And in wood, and of clay, and of gold, and in other materials, when they need to, they sculpt, carve or paint him [the cemí]…Him they call cemí, and he is their God, and to him they pray for rain, or sun, or food, or victory over all their enemies, and all that they desire; and they think the cemi grants these things when prayed to; and he appears to them in fact as a spirit in the night… (Oviedo as cited in López-Baralt 1977:76; translation by Michele H Hayward).

…the zemi is a dead thing, shaped from stone or made of wood (Pané as reconstructed by Arrom 1999:23).

In one log entry, Christopher Columbus is said to identify skeletal remains as those of past
ancestors, and not likely the result of cannibalistic meals or trophy displays (Siegel 1997:106), that would equate with the concept of a cemí.

In one house the sailors also found a man’s skull inside a little basket hanging from a post in the house, and in another village they found another one just like it. The Admiral believed it must have belonged to some important members of one lineage, because those houses were of such a kind that many people live in each one, and they must be related, descendants of the same ancestor (Columbus, Thursday November 29, 1492 as translated by Griswold 1997:170).

Pané reinforces this linkage of ancestors as one form of manifested cemís in the following excerpt:

All or the majority of the people of the Island of Hispaniola have many zemis of various sorts. Some contain the bones of their father and mother and relatives and ancestors; they are made of stone or wood (Pané as reconstructed by Arrom 1999:21).

Although cemís were likely numerous, and available to, or employed by all segments of Taíno societies, a hierarchical ordering of the cemís in both unmanifested and manifested forms is indicated by at least contact period. Stevens-Arroyo (1988) in particular takes Pané’s descriptions of twelve cemís to construct a formal pantheon comprising “…four triads, one masculine and one feminine for each of two opposing and simultaneously complementary orders, that of fruitfulness (culture) and that of its inversion or destruction. The cultural and the anti-cultural worlds were governed by pairs of male and female deities, all attended by sets of twin spirits…” (Boomert 2000:451). This proposed pantheon clearly echoes the duality concept. Regardless of whether Taíno peoples conceived of these or other cemís in a formal scheme, their detailed mention and not others within the Pané document nevertheless suggests a relative ordering or what can also be characterized as task/domain specialization.
One of Pané’s named cemís concerns us here, Maquetaurie Guayaba or Lord of Coaybay, the ruler of the home for the spirits of the dead. The souls of the dead, opías, were different from the souls of the living, goeízas; the former it appears enjoyed a pleasurable life in Coaybay. The opías maintained more than a spiritual or memorialized connection to the living, for they could come back to the present world in human or animal form, but only at night (Pané as reconstructed by Arrom 1999:18-19; García Arévalo 1997:112). It appears that all people upon death went to the island world of Coaybay, although Columbus suggests a specific connection between caciques or chiefs and their ancestors after death:

…they [chiefs] go to a certain valley, which each principal cacique believes is located in his country; they affirm they find their parents and all their ancestors there, and they eat and have women and give themselves to pleasures and comforts (Columbus as translated by Griswold 1997:171).

Taíno societies at contact were divided into chiefdoms headed by paramount and lesser chiefs or caciques. Social segments within societies included: caciques along with other high status individuals who formed the socio-political elite or nitaíno; religious specialists the behiques or shamans, and the majority of the population termed the naboria or commoners. Each grouping had its own sphere of influence and roles in society. The behiques’ sphere primarily involved the physical and spiritual welfare of individuals. They undertook a number of curing, divination and other magico-religious ceremonies that involved the use of tobacco and cohoba (hallucinogenic powder), as well the physical representations of cemís. They had the knowledge and skill to access the supernatural and played a key role in the interpretation of native cosmology. Caciques and the remaining elite also had ritual and ceremonial roles apart from and intersecting with those of the shamans, although theirs seem to have dealt more with the order and well-being of chiefdoms or supra-local polities (Oliver 1998, 2005:241-246, 252-253).
The presumed hierarchical ordering of embodied *cemí* power in objects appears to parallel that of the unembodied *cemís*. Oliver (2005:249-256), for example makes the case that *cemís* were ranked on the basis of perceived power, status and history of intervention in human affairs that reflected and reinforced Taíno social orders. Possession of *cemís* therefore became intertwined with the status of the possessors. Chiefly and shamanistic ownership or handling of *cemís* imparts both a religious and political importance to them that can be manipulated and enhanced. An excerpt from Columbus clearly points to relative and presumably shifting political influence among *caciques* that is partly based on control of *cemís*, but as Oliver notes (2005:257) leaves unclear the function of ancestors, as in does the ancestors in the Columbus passage refer to chiefly or *cemían* ancestors?

The Columbus passage:

Each statue has a name; I think it was father, uncle or both, because they have more than one, and others more than ten, in recollection, as I have said before, of some of their ancestors. I have noted that they revere one more than another, and I have seen them give more devotion and reverence to certain ones over others…and they hold caciques and towns with better *cemís* higher than those with lesser *cemís* (Columbus as quoted in López-Baralt 1977:77; translation by Michele H Hayward)

Rock Art and Ancestors

Petroglyphs and pictographs are widespread and abundant within the Caribbean island arc, with anthropomorphic figures greatly outnumbering zoomorphic and geometric designs. It was this very preponderance of anthropomorphic imagery that prompted Dubelaar (1988) to speculate that this reflected the emphasis placed on ancestors in pre-Columbian Antillean societies. While this rather elemental interpretation has largely been superseded (see Roe 2009, in press, for alternative explanations for the high percentage of anthropomorphic figures), subsequent researchers have nonetheless elaborated plausible arguments that rock art represents *cemís* in embodied form, as well
as reflecting an elevated role for ancestors as sources of influence for socio-political elites and religious specialists.

Oliver (1998, 2005) expressly considers the petroglyphs at the multiple ball court site of Caguana in Puerto Rico, to represent cemís in manifested form and certain ones as the ancestors and descendants of its rulers. Oliver’s iconographic decoding takes into account both the designs and sequential ordering of the surviving petroglyphs that are concentrated along the west edge of Plaza A (22 out of 27). He argues that the petroglyph alignment recreates the Taíno cosmos into the now familiar division of two opposing orders of reality—the primordial or non-living and the ordinary or present—with caciques and their lineages in between.

He identifies Petroglyphs 9 and 10 as the cacique’s ancestor-cemís (Figure 1). Petroglyph 9 projects an old, but fertile, high status female. A vulva is clearly depicted; the intricate headdress and ear spools denote high rank, along with a semicircular design in the middle of the headdress that may illustrate a guaíza or face mask emblem noted by chroniclers as worn only by caciques on the forehead or as part of a necklace; the chest triangular motifs with line incisions suggest protruding rib bones and very old age; the lower portion of the body is fleshy with the frog-like legs attached to a prominent abdomen or navel indicative of procreation and life. The petroglyph imagines a cemified cacica or female chieftess-cemí, in Oliver’s terminology; the ancestress who gave birth to the line of Caguana’s caciques. He next argues that her consort is displayed in the adjacent Petroglyph 10, based on a similar rendering.

The complement to the pair of ancestor-cemís is a pair of descendant-cemís, carved onto the boulders as Petroglyphs 12 and 13 (see Figure 1). Their lack of headdress, simple ear spools and fleshy bodies suggest younger personages with lower status and rank than the ancestral pair. These figures might represent manifest-cemís in charge of the protection of elite children or all living people
who are related to these progenitors. The rulers and elite at Caguana might claim a high status family history, but such societal bonds would also have been recognized and valued by the majority of commoners.

Petroglyph 11 (Figure 2) occupies the central position within the succession rendered as a facial image with a guaîza or facemask emblem below, exclusive to caciques. This location suggests that he or she mediated between the primordial and ordinary worlds in order to insure proper cosmic, socio-political, and religious order. Actual caciques, as the ethnohistoric sources indicate, were expected to do the same through intercommunication with cemís and other supernatural forces. Oliver further argues that the focus of activity at Plaza A involved the performance areítos. These incorporated singing and dancing that acted out past histories or events, including the present and past cacique’s accomplishments. Thus the areítos would have emphasized their successes in maintaining the balance of forces, and as a result the good order and material well being of the people.

Roe’s (1997:154-155) decoding of a pictograph from a cave site on Mona Island off the coast of Puerto Rico specifically links shamans with ancestors (Figure 3). While we maintain that a simple identification of anthropomorphic rock art figures as ancestors is misleading or incomplete, a certain category of figures possibly does. Facial images attached to bodies without appendages detailed, and normally with interior design elements, represent not uncommon motifs throughout the rock art sequence (see Figure 3b). Roe (1991:335-336) and Vega (1976:201) have argued, based on ethnohistoric mention of the Taíno peoples wrapping their dead in hammocks, that these figures expressly represent ancestors with the designs standing in for the hammock’s weave. It is a rather short conceptual leap to identify internal-designed ovoid shapes as shorthand notion for the ancestor motif (see Figure 3c). Roe considers that the skeletalized male pictograph represents a shaman, again
in part based on ethnohistoric descriptions that report shamans needed to fast and purge themselves before being able to communicate with the supernatural. In Roe’s interpretation then the shaman quite literally holds in his hands (see Figure 3d,e, positions 1 and 2) the power or energy of ancestral spirits.

Conclusion

For contact period Taíno groups the world was composed of dual or complementary orders of reality. Humans existed as did a number of spirits conceptualized as supernatural forces associated with natural phenomena or features such as rivers and rain; seminal energies as in the ability to reproduce and sustain humans as well as plants and animals; as particular personified beings; and as ancestral spirits from the realm of the dead. Some, but not all, of these spirits would make themselves manifest in certain ways that might require their transformation into particular physical objects such as wood or stone. Prayers and rituals were directed to these unembodied or embodied spirit-\textit{cemís} petitioning them for health, advice and a good harvest among other desires. The socio-political elite as well as shamans could communicate with cemís, although normally in separate spheres of influence: the public/communal versus the privat/household. The caciques and socio-political elite in part based their authority on control of \textit{cemís}. Ancestors within this system as unmanifested spirits would have been respected, if not feared. Their manifested forms, we agree with Oliver (2005:257), should be confined to human skeletal remains or receptacles containing such remains.

The ethnohistorically described Taíno groups provide a sense of an enhanced role for ancestors. Parallel increased stratification in the economic, social, political and religious realms is inferred from various lines of evidence during the Late Ceramic (600-1500 A.D.) culminating in two-tied societies and complex chiefdoms at contact. Ancestors figure into this complex societal interplay as \textit{caciques} and the socio-political elite extend their influence into the religious sphere in general, and in particular by relying on their living relatives and invoking their dead ones (see Stevens-Arroyo
1988; Siegel 1997; Roe 1997 for further discussion on the role of ancestors and religious ideology as sources of political support).

References


Figure 1 Four fully detailed anthropomorphs, Petroglyphs 9 (upper left), 10 (upper right), 12 (lower left) and 13 (lower right), Plaza A west side, Caguana, Puerto Rico (Roe 1993:Figures 3a, 4, 5b and c, used with permission).

Figure 2 Human-like facial Petroglyph 11, Plaza A west side, Caguana, Puerto Rico (Roe 1993:Figure 5a, used with permission).
Figure 3 Pictograph, Mona Island, Puerto Rico. a – actual (shaman) pictograph; b – rock art ancestral motif; c – shorthand notation for ancestral motif; d and e (positions 1 and 2) – possible inference (Roe 1997:155, Figure 3, used with permission)
Inverted Worlds: Possible Significance of Buried-Face Petroglyphs in Puerto Rico

by

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Abstract
Recent excavations in Puerto Rico have revealed examples of boulders with an engraved face above ground level and another engraved face beneath ground level and facing down. This paper offers an ethnographically informed interpretation for the placement of the buried petroglyph facing down, coupled with the concurrent placement of the second petroglyph above ground on the same boulder. Early Spanish chroniclers’ accounts are used to augment archaeological findings to interpret the possible significance of paired faces on ball court boulders.

Resumen
Excavaciones receientes en Puerto Rico han revelado ejemplos de cantos rodados con un petroglifo de cara situado arriba de la tierra y un otro petroglifo de cara situado debajo de la tierra y orientado al abajo. En esto artículo, consideramos el ethnografía del Taíno para ofrecer unos interpretaciones de las dos caras. Nosotros empleamos las crónicas del los exploradores desde España para interpretar la significación de las caras parejas en petroglifos de bateyes.

Résumé
De récentes fouilles à Puerto Rico ont mis en evidence des exemples de blocs graves avec un visage au-dessus du sol et un autre visage gravé sous sol et orienté vers le bas. Ce document offre une interprétation fondée en ethnographie du placement des pétroglyphes enterré vers le bas, couplé avec le placement simultané de la deuxième pétroglyphes au-dessus du sol sur le même rocher. Les comptes de la début espagnol chroniqueurs sont utilisés pour augmenter les découvertes archéologiques d'interpréter la signification possible de paires visages sur des blocs de batey.
INTRODUCTION

During Phase II archaeological test excavations of Site PO-29, also known as La Jacana, near the proposed Portugues Dam development north of Ponce in southern Puerto Rico, archaeologists found and recorded two boulders with petroglyphs (Espenshade et al. 2006). Boulder 1 was located on the western tip of a boulder alignment of what appears to be the southern edge of a court, not far from the court’s southwestern corner. Boulder 2 was located immediately behind, or south of, Boulder 1 (Figure 1). Pecked, carved, and partly sculpted on Boulder 1 were two face-like motifs. At the time of Boulder 1’s discovery, a round circular face was above ground and pointed in a northwestern direction, whereas a slightly more elaborate heart-shaped face was buried below ground facing in the opposite direction (Figure 2). Instead of being in an upright position, Boulder 2 was found lying on its back, slightly out of line from its original position within the boulder alignment. Facing up from Boulder 2 were the highly weathered remnants of two circular face-like motifs. Judging from surface textural differences on Boulder 2, the lower of the two motifs, now represented merely by a pair of eyes, was probably buried too. Certainly in the case of the three dimensional rough triangle-shaped Boulder 1 it is physically impossible for both face motifs to be visible from above ground surface at the same time; one motif has to point down or sideways for the other to be in full view (Figure 3).

Subsequent discoveries at La Jacana and earlier finds at two other Puerto Rican sites show that the two boulders from La Jacana are not isolated instances. Data recovery excavations during 2007 at La Jacana have revealed additional examples of buried upside-down faces. Next-to the court in the El Bronce site near Ponce, Robinson et al.
Figure 1. Plan View of Boulders 1 and 2, Site PO-29.

Figure 2. Cross-Section View, Boulders 1 and 2, Site PO-29.
Figure 3. Reconstruction of Relationship, Motifs A and B, Boulder 1, Site PO-29.

(1985:Appendix I, 2-3) found “that four of the eleven petroglyph bearing stones…to be modified on two opposing sides…the most interesting thing about this stone [F889] is that the two petroglyphs are not similarly oriented so that, no matter how the stone might have been situated, a face on one side or the other would always have been oriented
sideways.” A pair of faces, one exposed and the other buried, has also been found at Batey Delfin de Yaguez in northwestern Puerto Rico (Rivera Fontan and Silva Pagan 2002:80). As more cases are discovered, it seems more likely that such paired faces were roughly coeval, rather than the result of reuse.

THE ARCHAEOLOGICAL SETTING

Locales with a single or limited number of petroglyph boulders at a terminal point in a row of stones that line a court area include Batey Delfín de Yaguez, El Bronce, Bateyes de Vivi, and at least five peripheral courts at Caguana (probably dating just after AD 1200). Oliver (2005:361-263) calls such boulders “terminal icons.” Courts with numerous icons (i.e., on more than three boulders), notably at Tibes (probably dating to just before AD 1200), Caguana, and La Jacana, each have their petroglyph boulders spread out along at least two of the four walls.

In addition to differences in petroglyph numbers and placement, other attributes seem to distinguish courts that have terminal icons from those that have multiple icons arranged in rows. First, in the currently known archaeological inventory courts with terminal icon boulders appear to outnumber those courts that have multiple icons or icon alignments. Terminal icons occur at the abovementioned seven courts, whereas multiple icons occur within the central plaza-like courts at La Jacana, Caguana, Tibes, and Aibonito. More work and research, however, need to be done at other sites to check this generalization, bearing in mind the limited sampling might give the wrong impression of a limited number of boulders with petroglyphs. Secondly, known courts with terminal icons are smaller than known courts with multiple icons; none of the five peripheral courts at Caguana with terminal icons exceeds 320 m², whereas the prominent central
plaza courts at La Jacana, Caguana, Tibes each exceeds 1,000 m$^2$. Thirdly, terminal icons mostly comprise biomorphic heads with no bodies, whereas the aligned petroglyph boulders at La Jacana and Caguana include full body representations.

It is worth noting as a word of caution that the differences outlined here might be due, at least in part, to differences in recording techniques. Importantly, inspected closely at night with a flashlight or at dawn or dusk in raking sun light, otherwise “invisible” petroglyphs can be recognized. Also, many boulders have only been inspected above-ground and it is indeed likely that there are other motifs buried below or even behind partially exposed boulders.

Whatever motifs that might have been missed, observed differences between courts with terminal petroglyph boulders and those with alignments of multiple boulders suggest certain differences in function. First, the observation that the comparatively fewer sites with multiple icons are also the bigger sites suggests that they could accommodate greater amounts of people and were probably ritually and politically more important centers than the comparatively numerous but smaller sites with terminal icons. Moreover, more time, labor, and skill went into carving the full bodied figures than carving the single faces on the terminal boulders, suggesting greater craft specialization at the few bigger centers.

Based on these physical differences we support Oliver’s (2005:263) suggestion that comparatively small-scale rituals probably occurred within courts with terminal icons, perhaps on the lineage and/or village level, whereas more substantial chiefdom and inter-village level rituals probably occurred at the fewer but bigger regional centers with their multiple icons. In addition to the scale of ritual, the type of ritual also probably
differed. For example, Oliver (2005:278) suggests that the side-stepping areíto dances observed by early Spanish chroniclers within courts probably moved through lateral movement and displacement from one icon to the next in the bigger plazas. Also, the types of areíto dance and associated chants are known to have varied depending on the ritual occasion (ibid. 263); it is indeed possible that the terminal boulders in the smaller courts were flipped to suit the occasion, whereas at the bigger centers specific dances might have focused on whatever stationary boulder was relevant at the time (some of the newly discovered rectangular columnar-shaped boulders against the northern batay wall of La Jacana, however, can be flipped to produce alternative-looking images).

Areíto dances would have been part of ritual behavior among the Taíno Indians and their predecessors. But such rituals would have had been only one component of Taíno religion, getting to know the other components of religion might help us gain a fuller appreciation of the petroglyphs. ‘

Religions world-wide can be better understood once the following three basic components are considered, both individually and in relation to one another: 1) religious belief (also known as religious thought, world-view, cosmology, or theology); 2) religious experience (as enhanced via rhythmic speech, music, chants, body movements, and/or mind-altering substances to facilitate meditation or certain required levels of consciousness); and 3) religious practice (as exemplified through actions, body movements, artifact manipulations, collectively referred to as ritual, or religious ceremony).

Religious beliefs, experiences, and practices can be said to interact in the following circular feed-back fashion: religious beliefs are physically expressed through
rituals (which are culturally situated), these rituals in turn facilitate certain religious experiences, or mental states; and religious experiences can be said to ultimately help formulate beliefs. As will be shown in the following discussion, the production and use of petroglyphs are associated with religious belief, experience, and practice once viewed within its appropriate ethnographic, or cultural, setting, that of the Taíno Indians.

THE ETHNOGRAPHIC SETTING

Statements made by Father Pané (see Griswold 1997:172-173) during the late fifteenth century strongly suggests that Taíno believed in a layered cosmos characterized by the sky, the earth, and the lower world. That such a belief would not have varied significantly across the Caribbean was implied by Bishop Las Casas when he wrote in the early sixteenth century “almost all those peoples had one kind of religion” (Griswold 1997:175).

In terms of their multi-layered cosmos, the Taíno believed that during the day the dead lived in seclusion below the ground, but at night walked about (Pané in Griswold 1997:172). The movement between the lower world and this world often occurred via cave openings (ibid.), but could also happen via certain rocks, trees, or even through animals or artifacts (Las Casas in Griswold 1997:176). Worrisome to the average Taíno was that these nocturnal spirits of the dead sometimes appeared in dreams or as apparitions along trails (Pané in Griswold 1997:173). Even more worrisome was the comparatively rare appearance of these spirit-beings during broad daylight (ibid. 176), usually in the form of counter intuitive behavior exhibited by plants, animals, or objects.

Known as cemís, the spirit beings manifested via animals, plants, or rocks, and in doing so acted as agents or messengers of a supreme being that had both male and female
attributes (e.g., Pané in Griswold 1997:173, Las Casas in Griswold 1997:175). If communicated appropriately with by individuals that possess the proper mental abilities and experience, cemís could help bring rain, sun shine, and fertility in general to the populace (ibid. 174). Among the Taíno Indians, individuals with the correct credentials to communicate with cemí spirits were known as behiques, or shamans. Caciques, or chiefs, were actually particularly accomplished and powerful behiques. Whereas behiques communicated with cemís on behalf of everyday clients, caciques communicated with cemís on behalf of influential people.

Caciques normally consulted with a cemí spirit or object believed to contain the spirit within a special house dedicated to that cemí. Such a house was slightly separate from where most people lived (e.g., Columbus in Griswold 1997:171; Las Casas in Griswold 1997:175), but immediately next-to a “swept clean” plaza, or batey (Las Casas 1965:570). Of relevance to this paper is the placement of the cacique’s special cemí house immediately next-to a court, many of which had boulders with petroglyphs. Also of interest in this regard is that the remains of an unusually large round house have been found immediately next-to the central plaza and its petroglyph alignments at Caguana (Oliver 2005:262).

Prior to communicating with a cemí spirit or a cemí object, a cacique would retreat in the house “for six and seven days without eating anything except certain juices of herbs…during the fast, since their heads were feeble, there came or appeared to them certain shapes or fantasies of what they wanted to know…when they were enfeebled…by that cruel and very harsh and extended fast, for they came within a hairbreath of dying,
they were prepared and worthy, it was said, for the zemi [cemí] to appear before them and to see his face.” (Las Casas in Griswold 1997:179).

“Having made themselves agreeable to the zemis [cemís] with that fast” (Pané in Griswold 1997:175), or surrendering their egos to the cemí spirit by having rid themselves from impure foods and thoughts, caciques were ready to take hallucinatory powder of the cohoba plant. “These powders were put in a round dish” (Las Casas in Griswold 1997:178) also described as “a well-carved table, round in shape” (Columbus in Griswold 1997:171). This cohoba stand was believed to be a cemí in its own right, the plate being its head (ibid.). Las Casas described the cohoba plate being carved from a dark wood. “They had an instrument made of the same wood…constructed the size of small flute…and two-thirds of the way down it separated into two hollow tubes…they placed the those two tubes into both nostrils and the top of the flute, so to speak in the powder…as they inhaled, they took in through their nostrils the dose of powder they had decided to consume” (Las Casas in Griswold 1997:178). Columbus (in Griswold 1997:171) described this instrument as a “forked tube they put into the nose.” A wooden cohoba stand has been found preserved in a Jamaican cave (Bercht et al. 1997:144-145) and a cohoba inhaler carved from manatee bone have been found in the Dominican Republic (Bercht et al. 1997:140).

While inhaling the hallucinatory cohoba powder in this fashion, a cacique would sit on a carved wooden chair known as a duho (Las Casas in Griswold 1997:178), which also represented a cemí in its material form. A carved wooden duho recovered from a wet sink in the Dominican Republic or a carved wooden cohoba stand found in a dry
Jamaican cave are probably prestige objects closely identified with deceased *caciques* (e.g., Beeker et al. 2002).

According to a personal eye-witness account by Pané (in Griswold 1997:174), after inhaling the powder through their nostrils the caciques would “suddenly begin to rave, and at once they say they begin to see that the house is moving, turning things upside down, and that men are walking backwards.” Some years later Las Casas (in Griswold 1997:178) similarly witnessed that during trance experience caciques would go “out of their minds…They spoke as if in gibberish.” Remarkably, scarcely when the altered state of consciousness experience leaves a cacique, “he puts his head down, grasping his legs with his arms, and staying stupefied a while in this state, he lift his head like a somnambulant, and raising his eyes to heaven, first he babbles certain confused things, and then the noble of his court who surround him…give him thanks aloud for having returned after his colloquy with the zemis [cemís], and they ask him what he has seen. And opening his mouth, he raves that the zemi [cemí] has counseled him during that time” (Pané in Griswold 1997:174). Las Casas (in Griswold 1997:178) independently saw how a cacique coming out of a frenzied trance experience “would stay a while with his head turned to one side and his arms placed on his knees, and afterwards he would lift his face toward heaven and speak certain words…He would then give them [the surrounding nobles in his house] an account of his vision, saying that the zemi [cemí] had spoken and assured him of good or adverse times”

Revelations from an emaciated and almost dead cacique that not only visited but successfully returned from the dangerous spirit world normally became public knowledge via broadcasts from the nobles (ibid. 179). A number of ceramic effigy vessels depicting
skeletal figures on a chair in the posture described by Las Casas have been found in the Dominican Republic (Bercht et al. 1997:104, 105, 138, 140). Material depictions of such revelatory moments most probably signify a cacique’s control over chaotic altered mental states experienced in the spirit world inhabited by cemís. Pertinent for understanding the religious experiences that inform petroglyph production, Taíno turned cemís into material items to signify the mental control that caciques and behiques had during conversations with cemís. If a cacique or a behique were successfully advised by a cemí via a tree, the cemí would be carved from a tree (Pané in Griswold 1997:174). Importantly for petroglyph production, if a cacique or a behique found answers from a rock, they carved an image of the cemí from that rock. Often a house and a portion of land would have been specifically set aside to honor a particularly powerful cemí (Las Casas in Griswold 1997:176).

Columbus (in Griswold 1997:171) noted that “the caciques and their people take pride in having better zemís [cemís] than others do.” Substantial portions of first fruits were given as tribute to cemís (Las Casas in Griswold 1997:177). These tribute payments were not necessarily sacrosanct, as Las Casas saw children playing with or eating the produce placed in front of publicly displayed cemís. Nonetheless, cemís associated with particularly powerful caciques accrued considerable prestige and were even feared (Pané in Griswold 1997:174). Accounts of cemís running free are probably descriptions of the trance experiences of caciques and behiques as transmitted via songs from one generation to the next (ibid. 173). One particularly potent cemí was a female carved in stone and attended to by male attendants (ibid. 174). Supplicants believed that treated properly, this cemí can facilitate rain to fall. Competing caciques at times stole
(Columbus in Griswold 1997:171) or even tried to destroy potent cemís from competitors (e.g., Las Casas in Griswold 1997:178), although it is unlikely that comparatively bulky petroglyph boulders could have been carried off or destroyed easily.

THE DUAL TAINO WORLD AND PAIRED PETROGLYPHS

The key to properly understand Taíno art is to realize that most objects are associated with experiences and paraphernalia related to cemí beings; either what these beings appear like in altered states of consciousness of the spirit world or what actual caciques appear like in everyday consciousness. In terms of religious belief the world of the Taíno people was basically a dual one; the dark world of the spirits that existed below ground in the day flipped over to appear above ground at night (Pané in Griswold 1997:172). In terms of religious experience the world was dual too; altered states of consciousness were associated with the world of spirits below ground (ibid.), whereas comparatively sober everyday states of consciousness were associated with normal beings above ground level. Expressed in the words of Pané’s Taíno informant the shift between this world of alert states and the spirit world of altered states was experientially and visually “turning things upside down” (Griswold 1997:174). Ritual objects portrayed this dual nature too; cemí faces resembling “old scowling monkeys” (Las Casas in Griswold 1997:176) are carved onto duho chairs (Bercht et al. 1997:60). By being physically manipulated, some of these ritual objects portray the transformation from this world to the spirit world and back; a ceramic flask from the Dominican Republic appears as an owl when in an upright position but changes into a grimacing human skull when turned upside-down to consume the liquid within (Figure 4 based on Bercht et al. 1997:123). Another example of an interactive art object that embodies transformative
experience is a stone pestle to ground cahoba powder with face of an owl and the legs of a human being (ibid.). The paired but inverted faces found on petroglyph boulders within some ball courts of prehistoric Puerto Rico most likely were also interactive objects, portraying the transformation between levels of consciousness. The ambiguous relationship between different levels of consciousness, expressed as dual worlds in Taíno cosmology, was aptly reflected by things that appeared out of their normal place, such as granite river boulders occurring in an otherwise limestone landscape or vice versa. Rock art was plausibly not incidentally placed on a thin surface, or veil, that divides the chaotic lower world of altered states “within” the mind from the comparatively calmer world “outside” the mind.

Figure 4. Owl Flask Showing Duality of Image (Berecht et al. 1997:123).
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Taino’s linguistic affiliation with mainland Arawak
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Evidence for Inter-Island Transport of Heirlooms?: Luminescence Dating and Petrographic Analysis of Ceramic Inhaling Bowls from Carriacou, West Indies
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Island extinctions and invasions: archaeozoological advance in the French West Indies
S. Grouard, Histoire des sociétés humaines et des peuplements animaux Dept.
Arqueofauna y Adaptación humana en el Caribe colombiano

by

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Resumen
El análisis arqueofaunístico ha ocupado un lugar importante en la interpretación de los procesos de adaptación humana en el Caribe. No obstante, para el caso específico del Caribe colombiano, aunque la preservación del material óseo es por lo general excelente y muchas de las investigaciones arqueológicas han proporcionado importantes evidencias relativas a la utilización y consumo de la fauna, poca ha sido la contribución que los análisis realizados han hecho a la interpretación de fenómenos adaptativos de las poblaciones humanas en el área. En este artículo se discuten las razones de esta situación y se presentan resultados de investigaciones recientes con arqueofauna que buscan contribuir al entendimiento de dichos procesos.

Abstract
The analysis of archeological fauna has occupied an important place in the interpretation of the human adaptation processes in the Caribbean. Notwithstanding, in spite of the fact that the preservation of the osseous material in the Colombian Caribbean is generally excellent and that many of the archeological researches have provided relevant evidences concerning the fauna's use and consummation, these analysis do not have contributed in a considerable way to the interpretation of adaptative phenomena of the human population in this area. This article discusses the reasons of this situation and presents some results of the recent researches with archeological fauna that give some contributions to the comprehension of those processes.

Résumé
L’analyse de faune archéologique a occupé un lieu important dans l’interprétation des processus d’adaptation humaine dans les Caraïbes. Néanmoins, pour le cas spécifique du Caraïbe colombien si bien la préservation du matériel osseux est en général excellente et beaucoup de recherches archéologiques ont fournit des évidences importantes concernant l’utilisation et la consommation de la faune, les analyses effectuées n’ont pas contribué de manière considérable à l’interprétation des phénomènes adaptatifs des populations humaines dans la région. Cet article discute les raisons de cette situation et présente quelques résultats des recherches les plus récentes avec de la faune archéologique visant à contribuer à la compréhension des processus ci-dessus.
Introducción

Los análisis de fauna arqueológica ofrecen un enorme potencial para la interpretación de los procesos evolutivos humanos tanto desde el punto de vista biológico como cultural. No obstante, en el caso del Caribe colombiano, poca o ninguna ha sido la contribución de éstos a la interpretación y evaluación de modelos de adaptación humana. Tras presentar una serie de reflexiones que sustentan esta afirmación, lo que implica de alguna manera perfilar un estado del arte en este campo, se presentan los resultados de algunos estudios zooarqueológicas recientes que buscan contribuir a transformar esta realidad.

“Ahí te mando los huesitos”: Antecedentes, alcances y limitaciones de la zooarqueología en el Caribe colombiano.

Casi dos siglos han transcurrido desde que algunos investigadores europeos -principalmente daneses y suizos-, a mediados del siglo XIX y bajo una orientación ecológica, se interesaron por estudiar muestras de fauna arqueológica, constituyéndose así lo que se ha dado en señalar como los orígenes de la Zooarqueología como disciplina. Desde entonces, muchos han sido los cambios que a nivel teórico, metodológico y técnico ha tenido la zooarqueología hasta consolidarse como una disciplina con enormes potenciales para la interpretación arqueológica y antropológica.

En el contexto latinoamericano, la aproximación zooarqueológica ha ido cambiando en relación con los cambios en la forma de hacer arqueología, la cual ha sido a su vez influenciada por
distintas corrientes teóricas -principalmente norteamericanas- y por factores sociales y políticos particulares a cada uno de los países latinoamericanos. En este sentido, y como lo afirma Politis (2003), no es muy útil hablar de una “Arqueología Latinoamericana”. De igual manera, no existe en nuestro concepto una “zooarqueología latinoamericana”, sino múltiples y variadas formas de aproximarse al estudio de la fauna de los contextos arqueológicos, marcadamente influenciadas por la historia de la práctica arqueológica en cada país y aún por la de cada región dentro de un mismo país. Esto no representa de por sí un problema, el reto está en que la información arqueofaunística recuperada en las investigaciones arqueológicas de los distintos países latinoamericanos logre por su naturaleza (calidad de la muestra, rigurosidad en los análisis primarios y secundarios y alcance de la interpretaciones), tener interlocución por fuera del ámbito latinoamericano, permitiéndonos evaluar y formular modelos propios sobre los procesos de adaptación y de las dinámicas de cambio de los grupos humanos a través del tiempo.

En general, estos estudios han estado concentrados en estas dos áreas geográficas debido tanto a las buenas condiciones naturales para la preservación del material óseo, a pesar de las marcadas diferencias ambientales entre ellas, como a la alta concentración de proyectos de arqueología a lo largo de la historia de la arqueología en el país, especialmente entre las décadas de los 50 y 80’s del siglo pasado (Jaramillo y Oyuela 1994).

Con relación al Altiplano Cundiboyacense, cabe señalar que aunque muestras de fauna para los diferentes períodos de ocupación prehispánico han sido objeto de análisis, la gran mayoría corresponde a sitios tempranos de cazadores recolectores (13,000-5000 AC). Por su parte, las de la costa Caribe, corresponden en su mayoría a sitios pertenecientes al denominado período “formativo”, fundamentalmente, ocupaciones sedentarias o semi-sedentarias de sociedades agrícolas y/o cazadores y recolectores, en algunos casos con énfasis en recolección de moluscos (5000 AC-1000 DC) (Langebaek y Dever 2000, Langebaek 1996; Reichel-Dolmatoff 1955, 1965, 1985) (Figura 1).

Una revisión de los análisis de fauna en estas dos áreas nos muestra que la orientación principal ha sido la documentación de la dieta y/o el apoyo de otro tipo de formulaciones o hipótesis relacionadas con la subsistencia y en algunos casos con la relación hombre-medio ambiente, pero sin que se trate de evaluar modelos de adaptación humana propiamente dichos. En el caso específico que nos compete aquí, la costa Caribe, desde hace más de una década se han señalado los vacíos que el análisis de ecofactos particularmente faunísticos y paleobotánicos han tenido para la interpretación arqueológica en las llamadas tierras bajas del Caribe.
colombiano (Archila, 1993), siendo poco el avance a nivel teórico, metodológico y técnico para subsanar esos vacíos, que se ha logrado en la ultima década.

Figura 1: Mapa de la región Caribe colombiana, indicando ubicación de Tubará y algunos sitios “formativos” (Sobre Mapa Regiones Naturales de Colombia del IGAC (Escala 1:5.000.000), en http://portalninos.igac.gov.co:8080/ninos/contenidos/mapas_escolares.jsp?idMenu=3)

Esta afirmación se sustenta parcialmente al tomar los resultados parciales de un estudio que estamos realizando sobre “Fauna arqueológica del Caribe colombiano” (Ramos 2006), en donde
hemos visto que de 157 reportes arqueológicos de esta zona, una tercera parte (53) tienen algún tipo de información relacionada con arqueofaunas. Sin embargo, el tratamiento dado a esta parte del registro arqueológico ha carecido de una estrategia metodológica adecuada tanto en la recuperación como en el análisis mismo de los restos, lo cual limita enormemente su interpretación.

Teniendo en cuenta que el alcance de las interpretaciones depende de la integridad de la muestra, vemos como en la casi totalidad de estos 53 reportes de fauna no se hace mención alguna a la metodología utilizada para la recuperación de los restos, ni aún conocemos información de primera importancia como lo es el tamaño de las mallas utilizadas en este proceso. Este elemento, como es bien conocido, es crucial para evaluar la validez de la interpretación de distintos aspectos relacionados con la fauna, que van desde las apreciaciones más simples sobre las especies presentes hasta la evaluación y formulación de modelos antropológicos y ecológicos. Aunque estos informes carecen de la información necesaria para evaluar las estrategias metodológicas utilizadas, y en este sentido no podríamos afirmar si fueron o no adecuadas, la naturaleza fragmentaria y muchas veces imprecisa de los datos presentados nos permite inferir que ni las estrategias metodológicas utilizadas, ni el nivel de análisis realizado nos permitiría con la información disponible, aventurarnos a la interpretación de modelos de adaptación humana.

Quizás sintomático sea también el hecho de que la mayor parte de estos 53 casos reportan los restos de fauna como parte de los hallazgos “adicionales” a otras evidencias de cultura material y

Una de las causas principales para que los resultados de estos análisis sigan siendo las “listas de lavandería” consideradas cuestión del pasado en la zooarqueología de otros países latinoamericanos (Pendergast 2004), es el hecho de que las personas encargadas de realizar los análisis de fauna (en sus diferentes niveles), en la mayoría de los casos poco o nada han tenido que ver con la formulación del proyecto de investigación ni con el proceso de investigación mismo. En consecuencia, es común que los investigadores(as) responsables de la investigación arqueológica —como el título de esta sección lo enuncia— “manden los huesitos” a especialistas, quienes descontextualizados del proceso en general, y aunque aportando muy seguramente lo mejor de sus conocimientos, realizan una “científica y cuidadosa lista de especies”.
**Perspectivas recientes en el análisis de arqueofauna en el Caribe colombiano**

Durante los últimos tres años, venimos desarrollando un programa que busca contribuir, entre otros aspectos, al desarrollo de la zooarqueología en el Caribe, mediante la investigación arqueológica con un importante componente conceptual y metodológico relativo a la fauna, complementado además con la investigación osteológica de algunas de las especies recuperadas en los sitios de la costa Caribe, la creación de colecciones óseas de referencia y un componente adicional de “zooarqueología aplicada”, con el que se buscar aportar, desde una perspectiva histórica, al manejo de la fauna actual. Lo anterior requiere, como es de suponer, un trabajo multidisciplinar y concebido a largo plazo, el cual involucra análisis multiescalares (región-sitio) y una escala temporal amplia.

A manera de ejemplo, se tomarán aquí algunos resultados iniciales del análisis de fauna de las excavaciones arqueológicas realizadas en el Municipio de Tubará (Atlántico) (Figura 1), en el marco del proyecto “Economías de Subsistencia y desarrollo de la complejidad social en las comunidades formativas del norte de Colombia” (Ramos y Archila 2001), el cual, dentro de la problemática general de los procesos de adaptación y cambio sociocultural en la costa Caribe colombiana, busca, entre otros aspectos, ahondar en la importancia del análisis de los restos paleobotánicos y faunísticos para la interpretación arqueológica. En este proyecto, usando como estrategia metodológica el reconocimiento regional sistemático complementado con excavaciones arqueológicas a pequeña escala, se escogieron para investigar tres áreas con
contextos ambientales contrastantes (serranía de Piojo, margen del río Magdalena y embalse del Guájaro), con el fin de evaluar los modelos propuestos para la costa Caribe colombiana donde la agricultura es por lo general vista como pre-requisito para el surgimiento de la complejidad social. Si bien la investigación arqueológica de los últimos años nos ha llevado ha replantear algunas de estas propuestas (Oyuela-Caycedo 1991, 1996, 1998, Oyuela-Caycedo y Bonzani 2005, Langebaek 1996, Langebaek y Dever 2000), aun no hemos explorado de una manera rigurosa el papel que formas de economías de subsistencia diferentes de la agricultura jugaron en la adaptación de los grupos humanos del Caribe, no solo durante el “periodo formativo”, sino en etapas anteriores y posteriores a este.

Como parte de la primera fase del mencionado proyecto, además del reconocimiento sistemático de una zona de 20 km² (de 60 en total -20 km² por zona) en el Municipio de Tubará, Departamento del Atlántico, se realizaron cuatro excavaciones de 2m x 1m de lado, las cuales todas contenían restos óseos animales. El número total de fragmentos es de 13.713, su mayoría de los Cortes 3 y 4 (5181 y 6386 respectivamente, es decir el 85% de la muestra).

En general, la muestra de fauna tiene una preservación muy buena y una amplia representación de especies (30 combinando los resultados de los cortes 3 y 4) y elementos de distintos tamaños. La Tabla 1, nos muestra el cálculo del NTF y MNI para el corte 3. En este, con seis

---

1 El análisis de fauna, recientemente concluido, se realizó en el Laboratorio de Antropología Biológica y Zooarqueología de la Universidad de los Andes en Bogotá y en el Laboratorio de Arqueología Ambiental de la Universidad de la Florida en Gainesville.
niveles de excavación, los mamíferos más representados son de tamaño grande y mediano como armadillo (*Dasypus novemcintus*) y ñeque (*Agouti paca*). Con respecto a los reptiles, encontramos fundamentalmente morrocoyo (*Chelonoidis carbonaria*) e iguana (*Iguana iguana*), cuyas proporciones aumentan significativamente a través de la secuencia. Con respecto al morrocoyo, es notoria a su vez la presencia de muchos elementos del esqueleto postcraneal, fundamentalmente huesos largos, la mayoría de ellos con evidencias de haber sido “roídos”. En este corte, se evidencia a su vez, una disminución en el consumo de peces a través de la secuencia, lo que relacionado con el aumento en la utilización del morrocoyo y la iguana y el énfasis en mamíferos de mayor tamaño, parecería estar evidenciando una reorientación en las pautas de subsistencia.

En el Corte 4, con 15 niveles de excavación y un entierro humano múltiple (mínimo 11 individuos en la base del depósito), se observa a través de la secuencia un marcado incremento en el consumo de mamíferos, pero a diferencia del Corte, 3 donde la casi totalidad de los mamíferos son de tamaño grande y mediano, en este corte hay una gran representación de roedores pequeños tipo ratón (*Sigmodon* spp.), de los cuales muchos presentan modificaciones por haber sido sometidos al fuego (Tabla 2). Después de los roedores pequeños, los cuales se encuentran representados a través de la secuencia pero fundamentalmente en los niveles inferiores (15-16), los mamíferos más representados son la guartinaja, el ñeque, el saín, el armadillo, el venado (*Mazama americana*) y el conejo (*Sylvilagus* spp.)

<table>
<thead>
<tr>
<th>Clasificación Taxonómica</th>
<th>Nombre Común</th>
<th>NISP</th>
<th>%</th>
<th>MNI</th>
<th>%</th>
</tr>
</thead>
</table>

9
<table>
<thead>
<tr>
<th>Especie</th>
<th>Clase</th>
<th>NISP</th>
<th>MNI</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Aguti paca</em></td>
<td>Guatinaja</td>
<td>51</td>
<td>3,20</td>
<td>5</td>
<td>6,49</td>
</tr>
<tr>
<td><em>Caranx ruber</em></td>
<td>Jurel</td>
<td>2</td>
<td>0,13</td>
<td>1</td>
<td>1,30</td>
</tr>
<tr>
<td><em>Caranx sp.</em></td>
<td>Jurel</td>
<td>2</td>
<td>0,13</td>
<td>2</td>
<td>2,60</td>
</tr>
<tr>
<td><em>Crocodylus sp.</em></td>
<td>Cocodrilo</td>
<td>2</td>
<td>0,13</td>
<td>1</td>
<td>1,30</td>
</tr>
<tr>
<td><em>Dasypus novemcinctus</em></td>
<td>Armadillo</td>
<td>136</td>
<td>8,54</td>
<td>4</td>
<td>5,19</td>
</tr>
<tr>
<td><em>Didelphis marsupialis</em></td>
<td>Zarigüeya</td>
<td>2</td>
<td>0,13</td>
<td>1</td>
<td>1,30</td>
</tr>
<tr>
<td><em>Elops saurus</em></td>
<td>Ladyfish</td>
<td>2</td>
<td>0,13</td>
<td>2</td>
<td>2,60</td>
</tr>
<tr>
<td><em>Chelonoidis carbonaria</em></td>
<td>Morrocoy</td>
<td>1133</td>
<td>71,17</td>
<td>37</td>
<td>48,05</td>
</tr>
<tr>
<td><em>Iguana iguana</em></td>
<td>Iguana</td>
<td>206</td>
<td>12,94</td>
<td>9</td>
<td>11,69</td>
</tr>
<tr>
<td><em>Mazamà americana</em></td>
<td>Venado de monte</td>
<td>30</td>
<td>1,88</td>
<td>5</td>
<td>6,49</td>
</tr>
<tr>
<td><em>Mugil sp.</em></td>
<td>Lisa</td>
<td>1</td>
<td>0,06</td>
<td>1</td>
<td>1,30</td>
</tr>
<tr>
<td><em>Ortalis sp.</em></td>
<td>Guacharaca</td>
<td>1</td>
<td>0,06</td>
<td>1</td>
<td>1,30</td>
</tr>
<tr>
<td><em>Pecarí tajacu</em></td>
<td>Saino</td>
<td>13</td>
<td>0,82</td>
<td>2</td>
<td>2,60</td>
</tr>
<tr>
<td><em>Penélope sp.</em></td>
<td>Pava</td>
<td>1</td>
<td>0,06</td>
<td>1</td>
<td>1,30</td>
</tr>
<tr>
<td><em>Pseudoplatystomatus fasciatum</em></td>
<td>Bagre rayado</td>
<td>4</td>
<td>0,25</td>
<td>3</td>
<td>3,90</td>
</tr>
<tr>
<td><em>Sylvilagus sp.</em></td>
<td>Conejo</td>
<td>6</td>
<td>0,38</td>
<td>2</td>
<td>2,60</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1592</td>
<td>100</td>
<td>77</td>
<td>100</td>
</tr>
</tbody>
</table>

Tabla 1: Valores de NISP y MNI Corte 3 (Tubará).

En el Corte 4, la presencia de reptiles aumenta a través de la secuencia y es consistente con el patrón observado en el Corte 3. Aquí nuevamente el morrocoyo es la especie más representada seguida por la iguana, sin embargo, la proporción de reptiles es mucho menor que la de los peces especialmente en los niveles más profundos de la excavación. Por lo tanto, en este corte se observa que aunque los peces son la clase más representada a través de la secuencia, hacia el final de la ocupación los reptiles empiezan a ser más utilizados, al igual que los mamíferos de mayor tamaño como el venado y el saínó.
Con respecto a los peces, cabe mencionar que en su mayoría corresponden a especies de tamaño mediano y pequeño, principalmente, bocachico, al menos dos especies de bagre, lisa, corvina y chivo; es importante notar una gran ocurrencia de elementos de peces muy pequeños especialmente en los niveles más profundos de la excavación, lo cual nos lleva a pensar en un cambio en el tipo de especies capturadas y/o cambios en los tamaños de los peces capturados, o de especies y/o individuos pequeños en la primera parte de la ocupación a especies de mayor tamaño hacia el final de la secuencia. Esta información es corroborada por los resultados de los análisis más puntuales que sobre tamaño y edad de los individuos representados se están realizando.

Al contrastar esta información con los resultados del análisis cerámico y la cronología del sitio, los resultados son consecuentes con la idea de que estos sitios representan una ocupación continua, que en el caso del Corte 3, corresponde a una ocupación tardía con una datación del 1620 + 60 DC (Beta 200944) en el nivel 50-60. Este se correspondría en líneas generales con la última parte de la ocupación del Corte 4 donde obtuvimos dos fechas, una del 900 +80 DC (Beta-200942) para el nivel más profundo, correspondiente a la tumba y una del 1130 +70 DC (Beta-2009439) para el nivel 40-50.
<table>
<thead>
<tr>
<th>Clasificación Taxonómica</th>
<th>Nombre Común</th>
<th>NISP</th>
<th>%</th>
<th>MNI</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Aguti paca</em></td>
<td>Guatinaja</td>
<td>39</td>
<td>4,03</td>
<td>14</td>
<td>7,95</td>
</tr>
<tr>
<td><em>Archosargus sp.</em></td>
<td>Mojarra</td>
<td>1</td>
<td>0,10</td>
<td>1</td>
<td>0,57</td>
</tr>
<tr>
<td><em>Caranx ruber</em></td>
<td>Jurel</td>
<td>6</td>
<td>0,62</td>
<td>5</td>
<td>2,84</td>
</tr>
<tr>
<td><em>Caranx sp.</em></td>
<td>Jurel</td>
<td>4</td>
<td>0,41</td>
<td>3</td>
<td>1,70</td>
</tr>
<tr>
<td><em>Dasypus novemcinctus</em></td>
<td>Armadillo</td>
<td>171</td>
<td>17,68</td>
<td>17</td>
<td>9,66</td>
</tr>
<tr>
<td><em>Elops saurus</em></td>
<td>Ladyfish</td>
<td>2</td>
<td>0,21</td>
<td>2</td>
<td>1,14</td>
</tr>
<tr>
<td><em>Gallirallus sp.</em></td>
<td>Rascón</td>
<td>2</td>
<td>0,21</td>
<td>2</td>
<td>1,14</td>
</tr>
<tr>
<td><em>Cheelonoidis carbonaria</em></td>
<td>Morrocoy</td>
<td>136</td>
<td>14,06</td>
<td>21</td>
<td>11,93</td>
</tr>
<tr>
<td><em>Herodias sp.</em></td>
<td>Garza</td>
<td>1</td>
<td>0,10</td>
<td>1</td>
<td>0,57</td>
</tr>
<tr>
<td><em>Iguana iguana</em></td>
<td>Iguana</td>
<td>185</td>
<td>19,13</td>
<td>22</td>
<td>12,50</td>
</tr>
<tr>
<td><em>Mazama americana</em></td>
<td>Venado de monte</td>
<td>33</td>
<td>3,41</td>
<td>11</td>
<td>6,25</td>
</tr>
<tr>
<td><em>Mugil sp.</em></td>
<td>Lisa</td>
<td>7</td>
<td>0,72</td>
<td>3</td>
<td>1,70</td>
</tr>
<tr>
<td><em>Ortalis sp.</em></td>
<td>Guacharaca</td>
<td>6</td>
<td>0,62</td>
<td>5</td>
<td>2,84</td>
</tr>
<tr>
<td><em>Pecarí tajacu</em></td>
<td>Saino</td>
<td>3</td>
<td>0,31</td>
<td>1</td>
<td>0,57</td>
</tr>
<tr>
<td><em>Sigmodon sp.</em></td>
<td>Ratón</td>
<td>308</td>
<td>31,85</td>
<td>36</td>
<td>20,45</td>
</tr>
<tr>
<td><em>Spyraena sp.</em></td>
<td>Barracuda</td>
<td>1</td>
<td>0,10</td>
<td>1</td>
<td>0,57</td>
</tr>
<tr>
<td><em>Pseudoplatystoma fasciatum</em></td>
<td>Bagre rayado</td>
<td>32</td>
<td>3,31</td>
<td>15</td>
<td>8,52</td>
</tr>
<tr>
<td><em>Strongylura sp.</em></td>
<td>Pez aguja</td>
<td>1</td>
<td>0,10</td>
<td>1</td>
<td>0,57</td>
</tr>
<tr>
<td><em>Sylvilagus sp.</em></td>
<td>Conejo</td>
<td>22</td>
<td>2,28</td>
<td>10</td>
<td>5,68</td>
</tr>
<tr>
<td><em>Synbranchus marmoratus</em></td>
<td>Anguila</td>
<td>1</td>
<td>0,10</td>
<td>1</td>
<td>0,57</td>
</tr>
<tr>
<td><em>Tinamus sp.</em></td>
<td>Perdices</td>
<td>2</td>
<td>0,21</td>
<td>2</td>
<td>1,14</td>
</tr>
<tr>
<td><em>Zenaida leptotilia</em></td>
<td>Tortolitas</td>
<td>4</td>
<td>0,41</td>
<td>2</td>
<td>1,14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>967</td>
<td>100</td>
<td>176</td>
<td>100</td>
</tr>
</tbody>
</table>

Tabla 2: Valores de NISP y MNI Corte 4 (Tubará)

Con base en los cambios evidenciados en la utilización de especies a lo largo de los cortes, es posible plantear la existencia de una “transición” o reorientación de los patrones de apropiación de la fauna más o menos hacia mediados de la secuencia de ocupación. Estos cambios podrían estar correlacionados con cambios ambientales, o cambios socioculturales o aun de los dos tipos, hecho que será evaluado al integrar los resultados de los análisis zooarqueológicos con los resultados de los otros componentes de la investigación como son...
los análisis paleobotánicos, análisis de artefactos y en general, la información relativa a los patrones de asentamiento y organización social. Particularmente, en lo relacionado con los análisis de fauna, los cálculos de biomasa para cada una de las especies, la determinación del sexo, el cálculo de las frecuencias relativas por taxa, la estimación de contribución a la dieta, la determinación de la amplitud del nicho ecológico, la riqueza y ubicuidad del conjunto faunístico y de las áreas de captación, entre otros aspectos, aportarán información adicional para evaluar estas propuestas.

Complementariamente al análisis zoológico, se realizó una revisión bibliográfica sobre la ecología de las distintas especies identificadas, la cual incluyó también información relacionada con el estado actual de las poblaciones animales en su hábitat natural y en general sobre su vulnerabilidad como especies (Mojica et al. 2002, Morales et al. 2004, Rengifo et al. 2000, Rodríguez 1998). Con este estudio se busca, a la vez, consolidar un cuerpo de información que permita que los resultados de los análisis zoológicos de las muestras del Atlántico contribuyan a la reconstrucción histórica de la utilización de al menos algunas de estas especies, y de esta manera aportar en el proceso de formulación de planes de conservación y manejo para las mismas.

Conclusiones

Si bien el mejoramiento de la metodología y técnicas para la recuperación y el análisis de los restos óseos de fauna como el establecimiento de buenas colecciones de referencia y la formación
y entrenamiento de especialistas en el campo es muy importante para hacer mejores interpretaciones zooarqueológicas, incorporar efectivamente los estudios de fauna a la problemática arqueológica y antropológica general continúa siendo el reto principal, ojalá desde el diseño mismo de los proyectos. Ignorar estos aspectos implicaría continuar sistematizando y muy seguramente mejorando la calidad de los informes de arqueofaunas, pero alejando la posibilidad de hacer reconstrucciones históricas sólidas.

Consideramos necesario diseñar proyectos de investigación encaminados particularmente a excavar contextos con fauna asociada, para evitar así seguir recuperándolos de manera “accidental”. Sin formular con anterioridad a las excavaciones preguntas de investigación concretas y encaminadas a documentar alguno(s) de los múltiples aspectos con que la fauna de los sitios arqueológicos nos ayuda a reconstruir procesos de adaptación humana, seguiremos contando, pesando y reconstruyendo dietas y medio ambiente, pero estos serán datos desconectados de un panorama más general sobre los procesos históricos y las dinámicas de adaptación de estos grupos.

De la misma manera como nos estamos ajustando a los desarrollos de la arqueología como disciplina, en la zooarqueología del Caribe colombiano debemos enfatizar en un rango más amplio de preguntas de investigación que no sean siempre precedidas bajo la asunción de que los huesos siempre significan carne. Nuestro papel en este sentido debe también extrapolarse a la formación de nuevas generaciones en temas teóricos, incluyendo otras disciplinas como ecología, biología animal, comportamiento animal y geografía animal (Thomas 1996:1).
Merece especial atención el problema asociado con la calidad de las muestras, ya que, después de la claridad en las preguntas de investigación, estas constituyen un segundo aspecto central para las interpretaciones. En este sentido es necesario resaltar la importancia del tamaño de las mallas de recuperación utilizadas en las excavaciones arqueológicas, pues como algunos experimentos en sitios arqueológicos de USA y el Caribe han permitido constatar, el tamaño de las mallas afecta significativamente los cálculos de biomasa así como “la estadística descriptiva referida a la diversidad de la muestra, la equitabilidad, el nivel trófico y los índices de similitud…” (Quitmyer et al. 2004:110). Más concretamente, se afirma que las muestras que proceden de excavaciones donde se utilizó una malla más fina (1/16 pulgada) muestran resultados diferentes en lo referente a los taxones representados y las tallas de los animales, y que por lo tanto no son comparables con los resultados del análisis de otras muestras donde se utilizaron tamaños de malla de diferentes.

Igualmente consideramos importante los estudios de procesos de formación y transformación de los sitios y en particular estudios de tafonomía de vertebrados, los cuales se han ido desarrollando en otros países latinoamericanos, especialmente en Argentina (Politis 2003), y que constituyen una de las herramientas fundamentales para una mejor interpretación del pasado. Para el caso del Caribe colombiano, este constituye, en nuestra opinión, uno de los retos más inmediatos.

De igual manera, importantes líneas de investigación nos esperan en lo concerniente al impacto humano sobre el paisaje y al rol de los animales en otras esferas distintas a la dieta y subsistencia, pero para ello es necesario empezar por reconsiderar la herramientas metodológicas para la recuperación y el análisis de los datos, ya que si no garantizamos la calidad de las muestras, no
podremos, por más claridad conceptual que tengamos, mejorar nuestras interpretaciones sobre el pasado en el Caribe colombiano.

Agradecimientos:

Quisiera agradecer especialmente a Catalina Zorro por su apoyo constante y a María Paula Anzola, Claudia Lorena Ramírez, Alejandro Morris Francisco Zarur y Luis Gonzalo Jaramillo en de la Universidad de los Andes por su colaboración en las distintas etapas de este proceso.

Bibliografía


La Serie Valencioide Revisitada:
Críticas y reevaluaciones a los sistemas clasificatorios y los modelos sociales

by

Eduardo Herrera Malatesta
Instituto Venezolano de Investigaciones Científicas

Resumen
La serie cerámica Valencioide se conoce en la arqueología desde finales de los años ’50 cuando fue definida por Cruxent y Rouse. Sin embargo, desde ese momento muchos sitios arqueológicos nuevos se han ubicado en la región, muchos modelos sociales se han planteado y, sin embargo, no se ha realizado una evaluación crítica de la serie como conjunto estilístico y su relación material y conceptual con los modelos sociales. Cruxent y Rouse desarrollaron un esquema teórico-metodológico muy diferente al que utilizan los arqueólogos en la actualidad, por lo cual es relevante reevaluar esta serie antes de seguir avanzando en la construcción de modelos sociales e interpretaciones que no poseen una conexión explícita y sólida con la evidencia material. En este trabajo se presentan los resultados iniciales de la investigación que está llevando a cabo el autor.

Abstract
The Valencioid ceramic series is know in archaeology since the late ’50 when it was defined by Cruxent and Rouse. However, since that moment many new archaeological sites has been located in the region, also some social models has been formulated and still no one has proposed a critical evaluation of the series as a stylistic unity and its material and conceptual relation with the social models. Cruxent y Rouse developed a theoretical and methodological scheme very different to the ones we use today. This is the reason why it’s very relevant to re-evaluate this series before we keep going on the construction of social models and interpretations that doesn’t have a explicit and solid connection with the material evidence. In this paper it is presented the initial results of the research I’m carrying out about this subject.

Résumé.
La série de poteries Valencioïde a été définie par Cruxent et Rouse à la fin des années 1950. Depuis, de nombreux sites archéologiques ont été découverts dans la région et plusieurs modèles sociaux ont été proposés sans que l’on ait évalué de manière critique la série en tant qu’ensemble stylistique ainsi que ses rapports matériels et conceptuels avec les modèles sociaux. Cruxent y Rouse ont mis au point un modèle théorique et méthodologique très différent de celui utilisé actuellement par les archéologues, d’où l’importance d’une réévaluation de cette série avant de continuer à construire des modèles sociaux et des interprétations qui manquent de liens explicites et solides avec l’évidence matérielle. Ce travail présente les résultats préliminaires de la recherche que mène l’auteur.
El Centro Norte de Venezuela se conoce arqueológicamente desde finales del siglo XIX. Sin embargo, no es hasta los años 30 y 40 del siglo XX que se realizan las primeras excavaciones sistemáticas. Estos trabajos llevados a cabo en la Cuenca del Lago de Valencia por tres arqueólogos norteamericanos, Wendell Bennett en un montículo artificial de tierra en La Mata (1937), Cornelius Osgood en un montículo artificial de tierra en Tocorón (1943) y Alfred Kidder II en la Península de La Cabrera (1944), constituyen la base de las investigaciones arqueológicas en la región hasta el día de hoy.

Posteriormente, a finales de los años 60, Cruxent y Rouse, en su conocido libro Arqueología Cronológica de Venezuela (1982 [1958-59]), definieron a partir de los trabajos de Bennett, Osgood y Kidder II, así como de las investigaciones de Cruxent (1945, 1946a, 1946b, 1947, 1947-48, 1949a, 1949b, 1950, 1955, 1958) en sitios de la Costa Central y las Montañas aledañas a la Cuenca del Lago, una serie cerámica que abarca todo el Centro Norte de Venezuela. La serie Valencioide, ubicada de manera relativa entre el 900 a 1500 d.C., con su sitio cabecero en el yacimiento de La Mata, está constituida por 7 estilos cerámicos ubicados cada uno de ellos en un área geográfica del Centro Norte de Venezuela o sus fronteras con otras áreas (imagen #1).

Los arqueólogos que hemos trabajado en esta región después de Cruxent y Rouse, mantuvimos la clasificación de estos autores intacta y sin modificaciones. Sin embargo, las preguntas de investigación de todos los que hemos trabajado en la región no son las mismas que las de Cruxent y Rouse. Ellos buscaron conocer la historia cultural de la región a partir de ideas de migración, difusión y evolución cultural. Para Cruxent y Rouse, Venezuela, en el periodo tardío (900 a 1500 d.C.), estaba dividida en dos macro-regiones arqueológicas (imagen #2).
que de manera general se pueden explicar de esta manera, 1) El Oriente caracterizado por poblaciones Caribes, cerámica con decoración plástica, consumo de yuca y sociedades tribales; y 2) Occidente caracterizado por poblaciones Arawaks, cerámica con decoración pintada, consumo de maíz y sociedades jerárquicas. El Centro Norte de Venezuela se constituyó, en términos humanos, como producto de las migraciones y/o difusiones humanas desde el Río Orinoco. En un primer momento, alrededor del 200 a.C. por grupos Arawak; y en un segundo momento alrededor del 900 d.C. por grupos Caribes.

Tanto el modelo dicotómico y las migraciones lingüísticas como la clasificación cerámica de Cruxent y Rouse están implícitos en todos los trabajos arqueológicos que se han hecho en la región. Esto no significa un problema, sin embargo, lo que podría significar un problema es que ningún trabajo arqueológico en la zona ha actualizado la clasificación de Cruxent y Rouse. Estos autores trabajaron con una base de datos no mayor a 28 sitios; y hoy en día, los arqueólogos podemos trabajar con una base de datos de, al menos, 60 sitios más (imagen 3).

En mi ponencia presentada en el anterior congreso del IACA en Trinidad en el 2005 (Herrera Malatesta 2007), además de presentar los resultados de mis investigaciones arqueológicas en la Cuenca de Patanemo, Edo. Carabobo, realicé una discusión acerca de los dos modelos sociales construidos para explicar la dinámica del pasado indígena. Por un lado, el modelo cacical propuesto por Sanoja y Vargas (1978) y por otro el modelo de esfera de interacción planteado por Antczak y Antczak (1999). Después de esta ponencia, mi reflexión se ha orientado hacia la consideración de la necesidad de una revisión de toda la data existente para esta región. Es decir, más allá de hacer una revisión de los modelos sociales, lo que realmente es necesario es una actualización de las clasificación cerámica, una revisión exhaustiva y
profunda de la serie Valencioide y el resto de la cultura material asociada. Pues a partir de esto, es mucho más viable criticar o revisar los modelos sociales, debido a que ambos modelos están basados en la clasificación de Cruxent y Rouse y, además, de manera implícita o explícita manejan el modelo dicotómico de la arqueología venezolana.

En mi trabajo en la Cuenca de Patanemo utilicé tanto la clasificación de Cruxent y Rouse, como el modelo de esfera de interacción. Sin embargo, en ese momento no escuché atentamente a Rouse y Cruxent (1963) cuando opinan que las series cerámicas venezolanas son hipótesis de trabajo y no leyes.

Es a partir de todo lo anterior que me estoy replanteando mi percepción de la arqueología del Centro Norte de Venezuela, y las preguntas que, considero, es necesario responder. ¿Existe una variabilidad-homogeneidad espacio-temporal en la estilística cerámica del Centro Norte de Venezuela? ¿Cuáles son las variables que no han sido consideradas para el análisis e interpretación de esta evidencia? Estas preguntas sirven de inicio a la crítica sobre la clasificación de la serie Valencioide. Y desde aquí avanzamos en preguntas que no solo se refieren a la cerámica, sino que involucran todos los modelos teóricos, sociales y estilísticos que de una manera u otra están implícitos en los trabajos de todos los que nos hemos acercado a la arqueología de esta región. ¿Realmente la serie Valencioide representa una unidad cultural homogénea? ¿Realmente podemos vincular a los portadores de esta cerámica con grupos de lengua Caribe?

Esta ponencia es una pequeña muestra de los avances que he hecho en mi trabajo de maestría. De los elementos abordados hasta el momento mostraré aspectos concernientes a los análisis formales y decorativos.
Nuevos Análisis de Viejos materiales

La revisión de la serie Valencioide se está haciendo a partir de una re-evaluación exhaustiva. Es decir, que se está revisando todos los trabajos escritos y publicados para la región, así como toda la data existente en los mismos relacionada con materiales cerámicos, líticos, óseos y malacológicos, y las hipótesis sobre modelos sociales.

En cuanto a la clasificación cerámica, en primer lugar se definieron las variables para el análisis estilístico, que son: formal y decorativa. En segundo lugar, se definieron las dimensiones de cada variable, y se revisó la posibilidad de desarrollarlas en los análisis. En el caso de la variable formal, las dimensiones son: pasta, antiplástico, base, cuerpo, inflexión, borde, labio y boca. En este caso, y debido a la muestra con la que se está trabajando, obtenida principalmente de publicaciones, algunas dimensiones no pueden ser incluidas pues las descripciones en la bibliografía no son homogéneas, es decir, en algunas se describen, otros no explican con detalle y algunos las omiten. El caso de las dimensiones pasta y labio, se encuentra dentro de las vagamente descritas o no descritas. En el caso de la dimensión antiplástico, no es incluida dentro del análisis debido a que, en todas las colecciones de la región se reportan los mismos tipos de antiplástico, que son: cuarzo, arena y mica. De hecho en un trabajo anterior (Herrera Malatesta 2005) trate de observar si existía una relación entre las formas de vasija y el tipo de antiplástico, y el resultado fue que todas las formas de vasija poseen indistintamente todos los tipos de antiplástico, no existe una distinción evidente para los tamaños y las formas con respecto al antiplástico. En relación a la dimensión boca, en pocos trabajos se reportan los diámetros de las bocas, esta dimensión se utilizó de manera
secundaria, en la tipología de las formas de vasija se hace una distinción de tamaños a partir del diámetro de la boca, pero únicamente en las formas en las que se pudo reconstruir este dato.

De esta manera, el resultado es que las únicas dimensiones con las que pude trabajar, y de las que se espera obtener resultados, son: base, cuerpo, inflexión y borde. Luego de esta selección se definieron los atributos de cada una de las dimensiones para así poder definir las clases que, a su vez, definen los tipos de vasijas (imagen 4). En total se definieron 15 tipos de vasija, que engloban todas las vasijas anteriormente reconstruidas para la región; y se definieron tres tipos de tamaños en función del diámetro de la boca (A, B y C), aunque esto no se pudo hacer con todos los tipos de vasija.

Luego de esto, se construyó una tabla para poder observar la distribución de los tipos de vasijas en los sitios arqueológicos y en las áreas que componen la región Centro Norte. En este análisis se pudo observar que existe un conjunto de vasijas similares para toda la región, estos son los tipos 1, 2, 3, 4, 5, 9, 10 y 13. Los tipos 6, 7 y 8 solo se observan en los sitios de la Cuenca del Lago de Valencia y las Islas del Archipiélago de los Roques. Es importante destacar que el tipo 8 es una forma de vasija común en la serie Barrancoide. El tipo de vasija 11 y 14 solo se encuentra en las costas centrales, y son formas que se observan también en sitios arqueológicos Saladoides de las costas del Caribe. El tipo de vasija 15 se encuentra solo en muy pocos sitios de las costas centrales. En cuanto al tipo de vasija 12, solo se ha reportado para algunos sitios de la Cuenca del Lago de Valencia y de las Costas Centrales, este tipo, al igual que el 8, es común en la serie Barrancoide.
La inclusión de tipos de vasija posiblemente procedentes a otras series dentro de esta clasificación se debe a que la descripción de la pasta y la decoración, se acerca más a lo que hasta ahora entendemos como Valencioide que, a las otras series como Barrancoide y Saladoide. Igualmente, estos análisis son preliminares y en el proceso de mantendrán o descartarán.

Este análisis permitió tener una noción de la distribución de las tipos de vasija en la región de estudio, así como agrupar en tipos lo que hasta ahora se conocía como una multiplicidad formal no definida. Sin embargo, este análisis no pareciera aportar grandes elementos a la revisión de los estilos pertenecientes a la serie Valencioide.

En cuanto a la segunda dimensión, la decorativa, se siguió el mismo esquema que en la anterior. Se ubicaron todos los motivos decorativos reportados para la cerámica Valencioide, y se deslindaron sus atributos. Estos atributos fueron diferenciados entre decoración plástica y pintada. La intención de este análisis es llevar la clasificación de lo más simple a lo más complejo. El primer análisis, que será presentado aquí, busca conocer la distribución de las técnicas decorativas en la región para observar cuales son las variaciones entre los sitios.

En la tabla construida se pudo observar que la decoración plástica está presente en todos los sitios arqueológicos de la región, y las técnicas son: incisión, excisión, aplicado, modelado, impresión de canutillo, punteado, perforado y corrugado. Sin embargo, existen elementos interesantes que destacar. El primero de éstos es que la técnica del corrugado solo se observa en los sitios de la Costa Central y en un solo sitio de las Islas del Archipiélago de los Roques, estando totalmente ausente en todos los demás yacimientos. En segundo lugar, técnicas como la excisión y el perforado solo se han reportado para la Cuenca del Lago de Valencia y las
Islas del Archipiélago, y están principalmente relacionadas con las figurinas humanas de arcilla.

El resto de las técnicas, incisión, aplicado, modelado, impresión de canutillo y punteado se observan en todos los sitios arqueológicos de la región, en diferentes combinaciones.

En cuanto a la decoración pintada, la tabla proporcionó la posibilidad de observar la distribución de la presencia de pintura en la región; observándose que los sitios donde se ha reportado presencia de pintura están ubicados en la Costa Central, las Islas del Archipiélago, y las Costas Orientales.

Si bien estos análisis son preliminares y no escl uren la definición de estilos, es sin duda, un paso para la contextualización de las técnicas decorativas, y su diferenciación entre las áreas de la región. El siguiente paso a realizar dentro del análisis decorativo será en función de los motivos y las zonas de decoración.

Comentarios Finales

Para finalizar este reporte, quisiera destacar los vínculos de los análisis realizados. En el caso de los tipos de vasija es importante destacar que, como ya mencioné, se incluyó en la tipología tipos de vasija que se han reportado y definido para otras series, como la Barrancoide y Saladoide. La inclusión de estas formas dentro del ajuar cerámico Valencioides, se debe a que aunque estas vasijas no representan una creación particular, fueron hechas con pastas y antiplásticos locales y decoradas con motivos Valencioides, por lo cual, podría pensarse que representan la apropiación por parte de los alfareros de elementos culturales que eran cercanos
a ellos. Por supuesto, esto no es una conclusión, en cambio una consideración de elementos del análisis.

Algo similar ocurre con las técnicas decorativas. En el caso del corrugado que es un atributo de la cerámica Dabajuroide del Occidente de Venezuela y, particularmente, su distribución en el Centro Norte se da en sitios arqueológicos de las Costa Centrales.

Con estas tablas lo que mejor se pudo observar son los elementos ajenos, o resaltantes de las colecciones reportadas en la bibliografía. Puesto que el resto sigue siendo común y aparentemente homogéneo. Es necesario, continuar los análisis para poder tener acceso al conjunto cerámico base, y observar claramente si la definición de estilos y serie de Cruxent y Rouse es sostenible o necesita una reacomodación.

Otro elemento que será considerado para este trabajo son las relaciones entre la evidencia lingüística y arqueológica, como plateé al inicio, ¿realmente podemos afirmar que los hacedores de la cerámica Valencioide fueron Caribes?

En definitiva, la critica que se esta planteando es necesaria para poder avanzar en la arqueología del Centro Norte de Venezuela, puesto que sin la actualización de las clasificaciones cerámicas y los modelos sociales, seguiremos pensando el pasado sin variar la esencia de nuestra visión.

Imagen #2
Modelo dicotómico en Venezuela
Imagen #1
Ubicación
estilos cerámicos
g geográfica de los
Valencioides
Imagen #3

Sitios arqueológicos conocidos en la actualidad

arqueológicos
actualidad
Imagen #4
Tipología de Formas de Vasija: Ajuar
Bibliografía


Distribucion Espacial de Estructuras y Actividades Productivas en el Conchero N 4 de Karoline (KH-4), Kurra Hill Rass, Nicaragua.

by

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Resumen

En este trabajo ofrecemos información sobre la organización social del espacio en los últimos momentos de ocupación (250-350 cal DC) de una de las "unidades habitacionales" relacionada con el conchero nº 4 del sitio Karoline. El estudio de la distribución y localización en el espacio de las diferentes estructuras como hogares en recortes del conchero, agujeros de poste, etc.; así como la disposición de los diferentes objetos cerámicos y líticos recuperados en las excavaciones arqueológicas, nos permiten plantear una hipotética organización social del espacio en cuanto a la diferenciación funcional de diversas áreas, como por ejemplo: área de cocinado, área de abocado de desechos, área de producción lítica, etc.
1. Introducción.

La recolección intensiva de moluscos con fines alimentarios, a menudo junto a la explotación de otros recursos acuáticos, fue una práctica frecuente en las sociedades prehistóricas asentadas en ámbitos litorales. Las características de los moluscos, con caparazones altamente resistentes a los procesos de diagénesis han propiciado la formación de contextos arqueológicos altamente visibles: los concheros. Las acumulaciones de conchas de origen antrópico, con cronologías diversas y no siempre dando lugar a secuencias temporales ininterrumpidas, han sido documentadas en prácticamente todas las zonas costeras del planeta. Este fenómeno es también recurrente en América Central y la cuenca del Caribe, donde se han documentado arqueológicamente un elevado número de sitios con concheros (Magnus 1974, Stark y Voorhies 1978, Linares y Ranere 1980, Veloz 1991, Sanoja y Vargas 1995).

Por su visibilidad y, sobre todo por sus condiciones de preservación de materiales óseos, desde inicios del s. XX los concheros se convirtieron en un importante foco de atención para arqueólogos que trabajaban en el continente americano, especialmente en lugares con ausencia de sitios monumentales. Este interés conllevó un interesante desarrollo metodológico, del que destaca el llevado a cabo en la órbita de la que se ha denominado Escuela de California que arranca con los trabajos de Max Uhle y Kroeber en los concheros de San Francisco, así como los trabajos llevados a cabo en islas del estado de Washington, cerca de la frontera con Canadá (Stein 1992). Las intervenciones arqueológicas habitualmente han consistido en excavaciones de reducida extensión (muy a menudo pozos de sondeo y trincheras) en el interior del conchero, donde la compleja estratigrafía se resolvía mediante el empleo de niveles arbitrarios y la documentación de los perfiles. Esta metodología se ha fundamentado en la concepción de los concheros como basureros aunque,
exceptualmente, en ellos se puedan documentar enterramientos e incluso, niveles de habitation.


En 2002 y 2003 en el conchero nº 4 del sitio Karoline se realizaron excavaciones en extensión y siguiendo una estrategia estratigráfica. Esta metodología, adaptada a partir de la experiencia adquirida en concheros de Tierra del Fuego (Estévez y Vila 1996; Vila et al. en prensa), ha permitido adquirir una mayor comprensión de la formación del montículo de conchas y de su área adyacente, identificar áreas de actividad y patrones de dispersión de los diferentes materiales que conforman el registro generado. En este trabajo se presentan los datos iniciales de distribuciones y determinación de espacios de actividad, que permiten incrementar notoriamente la comprensión arqueológica de este tipo de sitios.

2. La excavación del conchero nº 4 del sitio Karoline: aspectos generales.

El sitio Karoline se localiza en la llanura al sur de Pearl Lagoon y a 4 Km. del actual litoral, en el municipio de Kukra Hill, en la Región Autónoma del Atlántico Sur de 1 También el conchero de inicios del Holoceno excavado en Monkey Point (sitio Angy) por el nicaragüense J. Espinosa y jamás publicado fue objeto de una intervención similar (Espinosa com. pers. 1997).
Nicaragua (Fig. 1). Aunque aparentemente fue muestreado por R. Magnus en los años 1970s, su documentación exhaustiva y publicación se llevó a cabo como resultado de la campaña de prospecciones arqueológicas realizadas por nosotros en 1999 (Gassiot y Palomar 2006). El sitio alcanza una extensión aproximada de 4,5 Has. y está formado por un mínimo de 13 concheros localizados, en su casi totalidad, en las laderas y parte alta de una pequeña elevación. En su parte central, en un espacio libre de amontonamientos de conchas, durante la mapificación de 2003 se identificó una plataforma construida con bloques de basalto y tierra de casi 600 m$^2$ y 1,5 m de alto (Clemente y Gassiot 2004/5).

El conchero nº 4 se localiza en la ladera norte de la loma de Karoline y tiene una superficie de cerca de 140 m$^2$ y una altura aproximada de 1,6 m. La cuadrícula de la excavación se situó en la parte superior del montículo en contacto con la ladera. Ello permitió cubrir tanto una parte del conchero (un poco más de 12 m$^2$) así como otra del espacio inmediato a éste, donde se presumía que se podría haber localizado el espacio doméstico asociado a su formación.

Los concheros de Karoline están formados por una sucesión de finas capas de conchas y tierra. El taxón malacológico dominante, prácticamente de forma exclusiva, es el bivalvo marino localmente denominado “ají” (*Donax denticulatus* y *Donax estriatus*) (Gassiot 2005), sin embargo la distinción estratigráfica responde a la variabilidad tanto a la proporción de matriz sedimentaria con respecto a conchas, a la composición más o menos húmica de esta matriz, al grado de compactación de las diferentes capas y a las dimensiones y disposición de los propios bivalvos (Clemente *et al.*, en prensa a). Esta estratificación puede ser producto del hecho que el “ají” se recolecta actualmente sobre una base estacional (Nietchman 1973), y marca una acusada diferencia estratigráfica con otros concheros
identificados en la zona, en los que la Polymesoda solida, cuya captación se lleva a cabo a lo largo de todo el año, es el taxón exclusivo (Gassiot 2005, Gassiot y Palomar 2006).

Para hacer manejable en términos de registro la enorme heterogeneidad interna de los depósitos del conchero, se afrontó su exhumación en extensión, buscando siempre una visión en planta del sedimento antes de su levantamiento. Con el fin de simplificar el registro, se decidió: 1.- individualizar todos aquellos depósitos que pudieran tener una significación en términos estructurales (por ejemplo, rellenos de fosas y agujeros de poste) y áreas de actividad (como zonas termoalteradas) y 2.- emprender la excavación del resto del conchero sobre la base del reconocimiento de sus principales fases de formación a partir de la interdigitación en sus bordes con depósitos sedimentarios externos al montículo.

Las actuaciones arqueológicas en Karoline continuaron en 2004 con la mapificación de una gran parte del sitio (Fig.1), la prospección intensiva de algunas áreas cubiertas por una densa vegetación, la limpieza de la cubierta superficial de la plataforma central del sitio y la documentación intensa de otro perfil abierto en otro de los concheros.

Las dataciones radiocarbónicas efectuadas de cuatro muestras procedentes de la excavación del conchero nº 4 y de dos obtenidas en la limpieza del perfil del conchero nº 5 y nº 1 sitúan el sitio entre 400-350 calANE y el 250-350 calNE (Clemente y Gassiot 2004/5, Gassiot 2005). Así mismo, se ha podido apreciar una contemporaneidad entre los dos concheros fechados. Este hecho, también apreciable en otros sitios documentados y datados para este período en las riberas de Pearl Lagoon (como Brown Bank y Sitetaia, (Clemente y Gassiot 2004/5, Gassiot 2005, Gassiot y Palomar 2006) permite plantear que estos asentamientos consistían en pequeñas aldeas formadas por diversas unidades, presumiblemente hasta 10 o 12, cada una de ellas generando su propio basurero.
3. Documentación espacial y comprensión de la última fase del conchero n° 4 de Karoline.

Los datos que aquí se presentan corresponden a la última fase de ocupación del conchero y su espacio adyacente. Su abandono ha sido datado en un hueso de venado (*Odocoleus virginianus*) entre el 250 i 350 calNE\(^2\), y representa el intervalo entre esta fecha y la datación de entre el 50 calANE y 20 calNE\(^3\) de la fase precedente. La disposición de materiales y estructuras en el interior del conchero corresponde, de esta forma, previsiblemente a la totalidad de este rango temporal. Por otra parte, en el exterior la dispersión de objetos arqueológicos parece proceder del momento terminal de la misma, atendiendo a la presumible existencia de actividades de limpieza del lugar y a la ausencia de trazas de reacondicionamiento de un espacio que se mantiene inalterado durante este tiempo. Su excavación permitió detectar tanto dentro como fuera del conchero elementos estructurales que permiten inferir una estructuración voluntaria del espacio relacionado con las actividades que en el lugar se llevaron a cabo. Así mismo, la disposición de los restos, tanto a lo largo del período temporal que abarca esta fase como en el momento del abandono del lugar, permiten dotar de contenido explicativo esta estructuración del espacio (Clemente *et al.* e.p.).

3.1. Estructuras arquitectónicas y acondicionamiento del espacio.

En la última fase de ocupación del conchero se aprecian diversos rasgos que ilustran la preparación de diversos espacios a lo largo del área excavada. En el área externa al conchero el tipo de sedimento, arcillas muy plásticas, en estado muy húmedo de forma prácticamente constante dificultó la identificación de discontinuidades estratigráficas claras.

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\(^2\) KIA-17978: 1735±25, calibración a 2 sigmas mediante INTCAL04.

\(^3\) KIA-17649: 2030±25.
No obstante, durante la excavación se pudieron individualizar tres agujeros de poste que definen una alineación que cruza la cuadrícula de la excavación en sentido sudeste-noroeste hasta enlazar con el conchero (Fig.2). En todos los casos sus diámetros son reducidos y se sitúan en torno a los 9-13 cm. Algunos de estos agujeros contenían algún pequeño guijarro que podría haber servido de cuña de sujeción del poste. Sus dimensiones llevan a plantear que la estructura aérea que debieron sujetar era bastante liviana, incluso en el caso que se tratara de una cubierta. Este último aspecto sin embargo no se puede confirmar dado que, en el caso que así fuera, en la excavación únicamente se habría documentado uno de sus lados. Con todo, la disposición ordenada y coherente de los postes plantea que forman parte de un mismo elemento constructivo. Aunque su presencia no se asocie a un derrumbe de una posible pared, es posible que se vinculen a algún tipo de delimitación del espacio, ya fuera como soportes de un tejado o relacionados con alguna especie de cercado. La revisión de la dispersión de materiales ayudará a resolver este punto.

Paradójicamente, la excavación de lo que normalmente se vincula casi exclusivamente a un basural, el conchero, ha facilitado el registro de un mayor número de elementos estructurales. Estos consisten en agujeros y pequeñas cubetas por un lado y, por el otro, en recortes de tramos del mismo conchero para conseguir otro tipo de superficies a un nivel inferior. La primera clase de rasgos arquitectónicos es la más frecuente. En total se han registrado 14 agujeros excavados en el conchero. Sus plantas mayoritariamente tienden a ser circulares. La mitad de ellos tienen un diámetro prácticamente estándar de 13 cm. En tres casos su diámetro se sitúa en 9 cm. Finalmente el resto tienden a tener formas en planta algo menos regulares (quizás por factores tafonómicos) y sus dimensiones rondan los 20-25 cm. de eje en planta. Una mención al relleno de estos agujeros es también relevante. En algunos casos, este está formado por un sedimento húmico muy identificable en un contexto...
de conchero que ilustra que la putrefacción del poste se produjo en el lugar. En otros el relleno lo componen conchas verticales y sedimento, hecho que indica que el poste sujetado por el agujero fue desplazado del lugar y que el espacio resultante fue rellenado bien bruscamente por el sedimento –conchas -colindante, bien por nuevas aportaciones de conchas como residuos de su consumo alimentario.

La disposición de los agujeros de poste en el conchero es también llamativa. Once de ellos se ubican a menos de 1 m. de distancia de las dos áreas de combustión localizadas en el sector central del límite del conchero (ver infra.). A grosso modo su distribución marca un alineamiento en forma de arco. Es posible que en su conjunto integraran algún tipo de estructura aérea relacionada con los hogares.

El segundo tipo de rasgo arquitectónico consiste en diversos recortes documentados en la superficie del conchero que conllevan la generación de espacios excavados en el montículo. Estos recortes son de diversas dimensiones y en su mayoría, aunque no exclusivamente, se sitúan en el borde del montículo de conchas. En todos los casos estos recortes generan formas angulosas, alterando notoriamente la morfología original de la acumulación de conchas y otros residuos. En el interior de estos recortes, y apoyando directamente en una superficie de conchas correspondiente a un momento precedente de la formación del conchero, se localizan en algunos casos áreas de combustión. Su situación en el conchero parece razonable dada la elevada pluviosidad del lugar y las características muy permeables de su matriz, formada en gran parte por conchas y polvo procedente de su intemperización.

3.2. Áreas de actividad determinadas a través de la distribución espacial de los materiales.
El estudio de la disposición de los restos arqueológicos recuperados por unidades estratigráficas y señalando su ubicación espacial dentro de ellas permite completar una primera visión de las prácticas llevadas a cabo por los pobladores prehistóricos de Karoline durante la última fase de la formación del conchero nº 4. En este trabajo se presentan los datos provenientes del estudio de los objetos líticos así como de la distribución de los restos faunísticos, actualmente en proceso de determinación taxonómica. Las referencias a los artefactos cerámicos serán muy breves y preliminares, puesto que su estudio se encuentra aún en curso y en este mismo congreso se presentan ya unos primeros resultados.

Como era de esperar, la gran mayoría de la fauna procede de los depósitos del conchero. Su excavación proporcionó una ingente cantidad de fragmentos que no se tridimensionaron. Así mismo, con respecto a los restos coordenados, la mayoría también proceden de estos estratos. Por otra parte, en las sus inmediaciones se recuperó la práctica totalidad del resto de la fauna. Este hecho puede tener dos explicaciones. Una primera es tafonómica: las áreas cercanas al conchero reciben parte de los carbonatos procedentes de la disolución en el agua de lluvia de los caparazones de los bivalvos. La segunda puede proceder del hecho que originalmente hubiera una aportación diferencial en este espacio cercano al conchero de restos faunísticos, como mínimo en el momento final de la ocupación. Esta posibilidad viene avalada por el hecho de que la mayoría de estos restos externos al conchero se encuentran en el lado derecho de la alineación de postes localizados en esta parte de la cuadrícula. En consecuencia, es bastante plausible que su distribución sea indicativa de un área de consumo o procesamiento de carne en este sector del espacio excavado. Finalmente, otro indicio que se desprende de la distribución de los restos óseos es que las áreas de hogares permanecieron limpias de este tipo de residuos (hecho coherente
con la poca cantidad de fauna con trazas de cremación) pero que, a su vez, concentraron cierto volumen de ellos en su alrededor más inmediato.

El estudio de la distribución de los restos líticos complementa esta visión. Por motivos de espacio se expondrá brevemente, enfatizando los datos procedentes de la determinación del uso al que fueron sometidos una parte de ellos (Clemente et al en prensa b). En su conjunto, los objetos líticos recuperados, tanto aquellos que fueron usados como instrumentos así como los residuos y rechazos de la producción (Briz et al. 2005), proceden mayoritariamente de fuera del conchero. Las mayores densidades se sitúan en la mitad sur de la cuadrícula de la excavación, así como en un área reducida del límite del conchero. Más allá de esta pauta general, no se aprecia en la distribución de densidades del conjunto de los restos patrones específicos que delimiten espacios, especialmente con relación al alineamiento de postes mencionado anteriormente.

Por lo que respecta a los artefactos líticos para los que se ha podido establecer un uso y determinar su funcionalidad, su distribución espacial aporta indicios que permiten avanzar en la interpretación de la organización de las prácticas sociales alrededor del conchero. Un primer grupo de objetos lo constituyen aquellos que presentan una disposición específica en el espacio. Así, en primer lugar se encuentran los que se sitúan de forma casi exclusiva en el lado izquierdo u occidental de la línea de “agujeros de poste” y, en algunos casos, en el propio conchero⁴. En este grupo se encuentran los artefactos que fueron empleados para moler y para trabajar sobre vegetales blandos. Algunos de estos últimos proceden del conchero pero, en cambio, la práctica totalidad de los fragmentos de manos y metates se recuperaron en el sector sudoeste del área de la excavación. Así mismo, la totalidad de los

⁴La explicación de la presencia de algunos de estos instrumentos en el conchero puede radicar en que se introducen en él al ser descartados, por lo que su ubicación espacial es indicativa de su abandono como basura más que del lugar donde fueron usados como medios de producción.
útiles empleados como perforadores así como la mayoría de los que trabajaron materiales duros proceden también de este sector, alejado del conchero y externo al espacio delimitado por los postes. Por su parte los percutores, núcleos y nódulos de materia prima sin explotar se localizaron prácticamente a partes iguales en el conchero (como material descartado) y en el mismo sector del extremo sudoeste de la cuadrícula. En esta misma área se recuperaron los tres fragmentos para los cuales se determinó un uso sobre materias de dureza blanda y medial.

Un segundo grupo lo conforman aquellos medios de producción líticos cuya distribución, aunque pueda ilustrar áreas discretas, no designa un espacio exclusivo en el exterior del conchero, especialmente con relación a los elementos arquitectónicos señalados. Éste es el caso de los bruñidores, espátulas y otros artefactos empleados en la producción cerámica. Aunque en su mayoría (5) proceden del sudoeste de la cuadrícula, dos fueron recuperados en el espacio posiblemente interior de la línea de postes. La distribución de los instrumentos que trabajaron madera es, incluso, más amplia. Ésta ilustra sendas áreas diferenciadas en la parte occidental de la cuadrícula fuera del conchero, otra en el lado interno de los postes y, finalmente, dos objetos más provienen de las inmediaciones de los hogares centrales del conchero (Fig.2).

4. Conclusiones.

En el presente trabajo se presentan los elementos que permiten avanzar en la comprensión de la disposición en el espacio de las prácticas sociales que llevaron a cabo los pobladores prehistóricos de Karoline durante la fase final de la formación del conchero nº 4 del sitio. Estos datos han podido ser obtenidos gracias a la aplicación de una metodología de excavación en extensión que trasciende de las limitaciones que imponen las excavaciones en
área reducida y mediante niveles arbitrarios que dominan los registros arqueológicos de concheros en la vertiente atlántica de América Central.

La identificación de estructuras asociadas a áreas de actividad en las diferentes superficies del montículo de conchas ilustra que el conchero, además de un amontonamiento de residuos alimenticios y de objetos descartados, fue el soporte de determinadas prácticas sociales. Para ello se emplazaron estructuras de madera alrededor de diferentes áreas de fogones que, a su vez, de disponían en espacios previamente semi-excavados. En consecuencia, el conchero no únicamente se constituye como un espacio de aportación de residuos (y como tal en sí mismo ya informativo de la vida social pretérita), sino también como un área receptora de actividades sociales en sí misma, en este caso relacionadas con el fuego.

En el exterior del conchero también se ha podido establecer hipótesis referentes a la organización del espacio, hecho relevante en un ámbito donde las condiciones de suelo (tanto por su sedimento como por la enorme cantidad de raíces y madrigueras) dificulta la detección de estructuras en ausencia de arquitectura no perecedera. Así, la interpretación de la alineación de pequeños agujeros de poste como elemento perteneciente a algún tipo de espacio de habitación, presumiblemente sin la existencia de elementos de cierre muy marcados, resulta fortalecida por el estudio de la distribución espacial de los objetos exhumados durante la excavación. A este respecto, y con los matices y reservas aducidos más arriba y derivados de operar en algunos casos con muestras reducidas, se pueden establecer los siguientes parámetros:

a). Existe una marcada diferencia entre ambos lados del alineamiento de postes, que sugieren que su costado este podría corresponder al interior de un espacio habitacional.
b). La mayoría de las actividades productivas documentadas en el sitio se llevaron a cabo en el exterior de este espacio. Así, además de las mencionadas para el conchero, fuera del hipotético ámbito de habitación se procesaron vegetales, incluyendo la molienda, se manufacturaron cuentas de collar y se trabajaron otros materiales duros, como minerales y hueso, y se llevó a cabo al menos una parte significativa de la talla lítica. También la mayoría de los artefactos empleados en la producción de cerámica procede de este ámbito.

c). En lo que pudo haber sido el interior del espacio delimitado por los postes el número de actividades productivas que han dejado rastro es significativamente menor tanto en su diversidad como en su intensidad. La excepción se encuentra en el procesamiento o consumo de alimento.

En definitiva, los datos presentados parecen confirmar la hipótesis de que adyacente a los montículos de conchas del sitio Karoline se localizaron espacios habitacionales, como mínimo para el caso de la última fase del conchero nº 4.

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Bibliografía.


Taino’s linguistic affiliation with mainland Arawak

by

Silvia Kouwenberg

Abstract
This paper considers the extent of the similarities and differences between the Taino forms cited in Taylor’s work (in particular 1977:17-22) and cognate forms in modern Lokono. The lexical and morphological evidence—limited though it is—supports the view that Taino and Lokono are closely related dialects of one and the same language. This is all the more remarkable considering the time depth of the geographic separation of Taino and Lokono.

Résumé
Cette contribution considère les ressemblances et les différences entre les mots tainos cités dans l’œuvre de Taylor (en particulier 1977:17-22) et les mots apparenté du lokono moderne. L’évidence des correspondances lexicales et morphologiques, quoique limitée, suggère qu’on peut considérer le taino et le lokono comme des dialectes très proches. Vu le temps écoulé depuis la séparation géographique du taino et du lokono, cette conclusion est remarquable.

Resumen
Esta contribución examina hasta qué punto las palabras taínas citadas en el obre de Taylor (en particular 1977:17-22) se parecen con las palabras aparentadas en el lokono moderno. Las correspondencias lexicales y morfológicas son tales que el taíno y el lokono pueden ser considerados dialectos cercanos. Este es un resultado remarcable, visto el tiempo que el taíno y el lokono están geograficamente distanciados.
1. Introduction

The extant record of Taino, around two hundred words and phrases culled from Spanish and Italian sources of the fifteenth and sixteenth centuries, does not allow for the reconstruction of a full language.[1] Worse still, many of the words designate unidentified flora and fauna or denote proper names—useless for the purpose of studying the relationship between Taino and other documented indigenous languages of the region. Nevertheless, Taylor (1977:18)[2] points out that there are around sixty forms which allow for comparison and which appear to have cognates (i.e., genetically related forms) in languages such as Lokono or “true Arawak” of the Guyanas, Island-Carib of the Lesser Antilles[3] and Guajiro of Colombia.

2. Orality, language change, and language split

It is often claimed that languages which have only a tradition of orality are subject to change to a much greater extent than those with a literary tradition. This is because a tradition of writing is thought to have a conservative influence, acting as a brake on change. In actual fact, all languages, including those with only an oral tradition, are remarkably conservative, as the present example will illustrate. What precipitates change is contact with other languages and their attendant cultures, in particular where those cultures are seen as culturally superior. But where there is a strong desire to affirm one’s identity, even close contact may not result in significant change.

In this context, it is useful to point out that the Taino are unlikely to have been in close contact with cultures which they considered superior to their own, and from which they may have wanted to borrow extensively. A striking contrast is provided by the case of
Island Carib, where Arawaks in contact with Caribs apparently considered Carib culture sufficiently desirable that their language became infused with Carib elements, and that their descendants came to identify themselves as ethnic Caribs (see fn.3).

Previously, it was thought that only basic vocabulary—understood in the sense of Swadesh’s (1955) 200- and 100-word lists of basic vocabulary—is a reliable indicator of a language’s genetic affiliation. We now know that basic vocabulary is not necessarily conservative. For instance, cultural taboo practices may conspire to cause rapid turn-over of many basic vocabulary items, quickly ridding a language of what are supposed to be prime markers of genetic stock. On the other hand, even peripheral vocabulary may be surprisingly stable, in particular, as noted above, where a community of speakers is isolated from what they may consider to be “superior” cultures.[4] In any case, as pointed out by Blench (2006:17), information is rarely complete for any given language phylum; therefore, attempts at reconstruction of genetic affiliations necessarily take place based on partial data.[5]

We shall see that the Taino material, limited though it is, and lacking in “basic” vocabulary items, is sufficiently rich that we can pronounce on its genetic linkages with some degree of certainty. Those Taino words for which the ancestry can be traced display remarkable stability, considering the time depth of the separation from the mainland. The movement of the Taino’s ancestors into the Lesser Antilles is the event which marks the separation between mainland and island populations of Arawak speakers. From that point onwards, the possibility of language divergence exists. This means that at the time of the earliest recordings of Taino words and sentences, in the fifteenth century, island varieties and mainland Arawak had had the opportunity to diverge for well over a thousand years.
We will see that this interval did not result in major divergences of the type which would seriously hinder mutual intelligibility. In fact, modern Lokono forms—despite having had another 500 years in which to change—are so close to their Taino cognates that mutual intelligibility would still have been possible today.

It is customary, in family trees, to represent Taino as sister language alongside Island Carib and Lokono within a Northern Maipuran branch of the Arawakan phylum.[6] But while this accurately represents the population splits that took place, it also, inaccurately, suggests a language split. We will see in the following that no such language split obtains between Lokono and Taino.

3. The spelling of the Taino forms

Taino forms were recorded by “naïve” observers, using the resources of their native language spelling systems, i.e. Spanish, Italian or Catalan of the relevant period. As a result, we see much variation in the recordings, and we cannot always be sure what pronunciation is intended for a given spelling. For instance, the pronoun ‘I’ is encountered variously as ‘daca, dacha, daça,’—spellings which variably suggest a k-like sound as well as an s-like sound. As it turns out, both of these may be right to some extent. Comparing the modern Lokono form ‘dakia,’ we note that the sequence ‘ki’ is pronounced as an affricate—a sound which would not have been known to those attempting to record Taino forms, and could easily have given rise to different attempts to solve this spelling problem. Other variations observed in the spelling are for an s-like or z-like sound (c, s, z, g, x), a k-like sound (c, qu), an h-like sound (g, h).
Another thing to keep in mind is that its observers wrote ‘gua’ to represent the Taino pronunciation ‘wa’. This can be seen in ‘guaiba’ (‘let us leave’), which corresponds to Lokono ‘wa-iiba’ of the same meaning.[7] In the same vein, ‘güe’ in Taino ‘higüera’ corresponds to ‘wi’ in Lokono ‘iwida’ (‘calabash’) (and one should note that initial ‘h’ is optional in Lokono). In other words, it is unlikely that spelling forms containing ‘gua’ and ‘gue’ contained ‘g’ in their pronunciation (Taylor 1954:153).

4. A comparison of Taino and modern Lokono forms

Table 1 lists 23 Taino forms which are very clearly cognate with modern Lokono forms. I will just draw attention to a few systematic differences seen in corresponding forms.

(a) Taino ‘r’ corresponding to Lokono intervocalic ‘d’, which is consistently seen here (1, 5, 15, 23), is indicative of a change in the status of ‘d’ in Taino. Taino shares this property with Island Carib (eg. Island Carib ‘uíra’ ‘calabash’), pointing to a shared innovation, one that took place before migration into the Greater Antilles; note that initial ‘d’ remains unaltered (cf. 9).

(b) There are also several instances where Lokono ‘r’ corresponds to Taino ‘h’ (2, 3, 18), possibly indicating that ‘r’ was similarly subject to historical change—this time not shared with Island Carib, where we find ‘r’ in all these cases. On the other hand, we have Taino ‘cori’ ‘mouse’ corresponding to Lokono ‘kúri’ (8), and several more forms of which the cognate status is not quite so clear, but which also contain intervocalic ‘r’. It appears then, that this change was not systematic.

To put this in perspective, the correspondences noted in (a) and (b) are on the order of the differences in pronunciation of the English word ‘letter’ between Standard British
English, Standard American varieties, and the nonstandard London variety ("cockney"). These are differences which do not seriously hinder communication even if one may be taken aback the first couple of times when confronted with an unfamiliar pronunciation.

(c) Another difference between Taino and Lokono which results from historical change, this time in Lokono, is seen in 11: the ‘b’ in Taino ‘guanábana’ as compared to ‘f’ in Lokono ‘oarafana’ is explained from the fact that Lokono ‘f’ was aspirated pʰ at an earlier stage, with pʰ evidently mistaken by the Spanish observer for ‘b’. The corresponding Island Carib form is recorded as ‘ouallápana’, containing ‘p’.

(d) The difference between the vowels in Taino ‘cori’ and Lokono ‘kuri’ (8) disappears when we consider that Lokono ‘u’ and ‘o’ are not distinct, ‘u’ being a variant of ‘o’. This is also relevant to the forms in 7.

(e) Initial ‘h’ is completely optional in Lokono. Thus, the appearance of initial ‘h’ in the Taino form 15 but not in the corresponding Lokono form is neither here nor there; nor is the variation seen in this regard in 13 of any significance.

Table 1. Taino forms clearly cognate with Lokono[8]

<table>
<thead>
<tr>
<th>Taino</th>
<th>translation</th>
<th>modern Lokono</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. –ariquen ear</td>
<td>-adikke (T), jikehi (B)</td>
<td>forms are identical but for r–d correspondence; ‘qu’ represents ‘k’</td>
<td></td>
</tr>
<tr>
<td>2. -ahi- tooth</td>
<td>-ári (T), ari (B)</td>
<td>forms are identical but for h–r correspondence</td>
<td></td>
</tr>
<tr>
<td>3. bagua, bahaua sea</td>
<td>baráa (T), bará (B)</td>
<td>forms are identical but for h–r correspondence; ‘gu’ represents ‘w’</td>
<td></td>
</tr>
<tr>
<td>4. canoa canoe</td>
<td>kanóa, –kanan (T), kanoa (B)</td>
<td>forms are identical</td>
<td></td>
</tr>
<tr>
<td>5. cara- having skin</td>
<td>kada- (= attributive ka- + uda ‘skin’) (T)</td>
<td>forms are identical but for r–d correspondence</td>
<td></td>
</tr>
<tr>
<td>6. cocuyo Pyrophorus spp.</td>
<td>kokkui (T)</td>
<td>forms are identical</td>
<td></td>
</tr>
<tr>
<td>Taino</td>
<td>translation</td>
<td>modern Lokono</td>
<td>comments</td>
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<tr>
<td>-------</td>
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</tr>
<tr>
<td>7. conuco</td>
<td>garden</td>
<td>kúnnuku (T), konoko ‘forest’ (B)</td>
<td>forms are identical; note that the forest is where “gardens” (subsistence farms) are cut</td>
</tr>
<tr>
<td>8. cori</td>
<td>mouse</td>
<td>kúri (T); cf. shimorokore ‘rat’ (B)</td>
<td>forms are identical (note that o~u alternate freely)</td>
</tr>
<tr>
<td>9. daca, dacha, daça, da-</td>
<td>I, me</td>
<td>dákia, dáí, da- (T), dai, da- (B)</td>
<td>forms are identical; note spelling variation arising from palatalization of k before i</td>
</tr>
<tr>
<td>10. guaiba</td>
<td>let us leave</td>
<td>waiiba (T), wa-üiba [we-leave] (B)</td>
<td>forms are identical; note that ‘gua’ represents ‘wa’</td>
</tr>
<tr>
<td>11. guanábana</td>
<td>Annona muricata L.</td>
<td>oarafana (T); cf. bana ‘leaf’ (B)</td>
<td>clearly cognate; historically, pʰ &gt; f; note instability of r; ‘gua’ represents ‘wa’</td>
</tr>
<tr>
<td>12. haba</td>
<td>(kind of) basket</td>
<td>hábbba (T), haba (B)</td>
<td>forms are identical</td>
</tr>
<tr>
<td>13. hage, haje, aje, axe, ase</td>
<td>sweet potato</td>
<td>hálti, halti (T), halichi (B)</td>
<td>clearly cognate, but “missing” [l] needs to be explained; note that affricatization of t before i leads to different spellings</td>
</tr>
<tr>
<td>14. hatty, hatsi, haxi, hagi</td>
<td>capsicum (cayenne pepper)</td>
<td>háthi (T), hachi (F)</td>
<td>forms are identical; note that affricatization of t before i leads to different spellings</td>
</tr>
<tr>
<td>15. higüera</td>
<td>calabash (Crescentia cujete)</td>
<td>iwida (T), ida (B)</td>
<td>forms are identical but for r~d correspondence; note that initial h is optional</td>
</tr>
<tr>
<td>16. hobo</td>
<td>Spondias mombin L.</td>
<td>hóbo (T), hobo ‘hog plum’ (B)</td>
<td>forms are identical</td>
</tr>
<tr>
<td>17. iguana</td>
<td>iguana</td>
<td>jóana, ioána (T), yuwána (B)</td>
<td>forms are identical; note that ‘gu’ represents ‘w’</td>
</tr>
<tr>
<td>18. máhici, mahiz</td>
<td>maize</td>
<td>márissi (T), marishi (B)</td>
<td>forms are identical but for h~r correspondence; note palatalization of s before i, hence ‘sh’ in Bennett’s spelling</td>
</tr>
<tr>
<td>19. nacan</td>
<td>middle (of a place)</td>
<td>ánnakë (T), nakañ (B)</td>
<td>forms are identical; Bennett’s ‘ň’ symbolizes a velar nasal (ng)</td>
</tr>
<tr>
<td>20. papaya</td>
<td>papaya</td>
<td>papáia (T)</td>
<td>forms are identical</td>
</tr>
<tr>
<td>21. cemí, zemí</td>
<td>spirit-helper, god</td>
<td>sémehe (T) ; cf. related forms semechichi ‘medicine man’(B), semehyu ‘obeah man, witch doctor’ (F)</td>
<td>clearly cognate</td>
</tr>
</tbody>
</table>
In all, keeping in mind the time depth of the separation of the island varieties from mainland Arawak, the fragmentary nature of the record and the spelling issues noted in the preceding, these Taino and Lokono forms are strikingly close. In fact, 13 forms are identical, 6 nearly so (“identical but for…”), the remaining 4 being clearly cognate but involving what appear to be unsystematic differences.

A list of additional forms cited in Taylor’s work with an assessment of their cognate status is provided in Appendix 1. Some forms have no known cognates because either Taino or Lokono borrowed a word from another source (indicated as “not cognate”). The list also includes several forms for which a cognate can be suggested, but which show too many unsystematic differences for comfort; hence, their cognate status is unclear. Finally, there are several forms for which no known cognate exists in Lokono. Sometimes this simply reflects our lack of knowledge of Lokono—a language which is still only partially described, and for which no complete dictionary exists. But there may also be a difficulty with the interpretation of the pronunciation and meaning of the Taino forms. What to think, for instance, of a sentence such as “ocama guaxeri guariquen caona yari,” which comes with the explanation ‘usada por una India de Haiti para decir a su principal o encomendero que mirase una veta o piedra de oro’ (Taylor 1954:154). Despite Taylor’s valiant attempts to make sense of such forms, their interpretation frequently remains too speculative to be

<table>
<thead>
<tr>
<th>Taino</th>
<th>translation</th>
<th>modern Lokono</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. ciba, ziba</td>
<td>stone</td>
<td>-siba (T), shiba (B)</td>
<td>forms are identical; note palatalization of s before i, hence ‘sh’ in Bennett’s spelling</td>
</tr>
<tr>
<td>23. yari</td>
<td>necklace, jewelry</td>
<td>-iédi (T), yedi (B)</td>
<td>clearly cognate; note r~d correspondence, and unexplained vowel difference</td>
</tr>
</tbody>
</table>
useful. In this case, he is able only to identify with some certainty ‘caona yari’ as referring to a gold piece of jewelry (see Table 1). His suggestion that ‘guariquen’ is ‘our ears’ makes little sense in the context of this utterance, and I have not adopted it. He makes no suggestions for the other forms in this utterance.

5. Word formation

Fortunately, several of the Taino words which we are able to interpret are morphologically complex, providing evidence of grammatical subparts which correspond to similar forms in Lokono, as discussed in Taylor (1954, 1960). Thus, judging from the translation ‘let us leave’, the initial ‘gua-’ in Taino ‘guaiba’ corresponds to the ‘wa-’ prefix of Lokono which marks ‘we’. The same prefix is seen in Taino ‘guarocoel’ (our grandfather)–compare Lokono ‘uadukuti’ (and note again the r~d correspondence and the o~u correspondence). Some Taino words contain a ‘da-’ prefix which means ‘I’ or ‘my’, as it does in Lokono. Thus, Taylor quite reasonably suggests that Taino ‘guatiao’ and ‘datiao’, both translated as ‘friend’, are in fact ‘our friend’ and ‘my friend’, containing ‘wa-’ and ‘da-’ prefixes. Note though that there is no known cognate for that part of the word which is assumed to mean friend (-tiao).

Taylor breaks the Taino word ‘mahite’ (toothless) down into ma-ahi-te; initial ‘ma-’ translates more or less as ‘without’, as it does in Lokono ‘mári’ = ma-ari ‘toothless’; ‘ahi’ is ‘tooth’; final ‘–te’ points to the syntactic context in which the word was used.

One final affix to be recognized here is the ending ‘-no’ seen in the word ‘taino,’ which marks a human collective (but note that there is no known cognate for the initial part). Taylor (1954, 1960) surveys several other forms which may be morphologically
complex, but there the analysis becomes more speculative, and I will not consider them here. Attempts at morphological analysis in Granberry & Vescelius (2004:95ff) are also frequently speculative, and this is even more true of their treatment of Taino toponyms (63-79).

In sum, where complex Taino words were recorded, the processes involved in their formation appear to be identical with word formation processes in Lokono.

6. Conclusion
By naming the Greater Antillean population, their culture, and their language, “Taino”—a label which these people did not choose for themselves—we suggest a separateness which, where language is concerned, is clearly unfounded. The Taino vocabulary that is available to us for comparison shows systematic correspondences between Taino and modern Lokono, both lexical and morphological. The more striking differences between Taino and Lokono— involving allophony of ‘d’ in both Taino and Island Carib but not in Lokono, and involving a correspondence between several (but not all) occurrences of Lokono ‘r’ in intervocalic position to Taino ‘h’—do not seriously hamper mutual intelligibility. In all, the resemblances are close enough—despite centuries of geographic separation—that Taino and Lokono can be considered dialects of the same language.

This has obvious implications for the question whether or not the Greater Antilles constituted a separate cultural complex in the Caribbean in other respects. The situation is of course made difficult by the geographic separation caused by the presence of Island Carib between the mainland and the Greater Antilles. Nonetheless, recognizing that mainland
Lokono and the Taino variety of the Greater Antilles are dialects of the same language, they ought to be named the same as well.
Appendix 1. Taino words for which a meaning, hence possibly a cognate relationship (or lack thereof) with related varieties can be established (based mainly on Taylor 1977)\[9\]; the clearly cognate forms of Table 1 are not repeated here.

Table 2. Taino forms for which there is no known cognate in Lokono

<table>
<thead>
<tr>
<th>Taino</th>
<th>translation</th>
<th>modern Lokono (and related varieties)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. aon</td>
<td>dog</td>
<td>pero (B); Island Carib has ánli</td>
</tr>
<tr>
<td>2. anaqui</td>
<td>enemy</td>
<td>Island Carib has ácaní</td>
</tr>
<tr>
<td>3. -arima</td>
<td>anus</td>
<td>Island Carib has árima, áriouma</td>
</tr>
<tr>
<td>4. batea</td>
<td>trough</td>
<td>Island Carib has batáya</td>
</tr>
<tr>
<td>5. bixa, bixa</td>
<td><em>Bixa orellana</em> L.</td>
<td>shirabuli (B)</td>
</tr>
<tr>
<td>6. buhiti,</td>
<td>shaman</td>
<td>Island Carib has bóye</td>
</tr>
<tr>
<td>buhuitihu,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bohiti</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. cabuya</td>
<td>cord, mooring</td>
<td>khayoro (B)</td>
</tr>
<tr>
<td>8. caona</td>
<td>gold, yellow metal</td>
<td>karokuri (B); Island Carib has caouánam</td>
</tr>
<tr>
<td>9. dita</td>
<td>calabash cup, dish, or dipper</td>
<td>Island Carib has rita (T) (note d–r correspondence)</td>
</tr>
<tr>
<td>10. duhu</td>
<td>Indian bench</td>
<td>Guajiro has tulú[10]</td>
</tr>
<tr>
<td>11. guayaba</td>
<td>guava</td>
<td>mariaba (B); Island Carib has coyábou</td>
</tr>
<tr>
<td>12. hicaco</td>
<td>coco plum</td>
<td>Island Carib has icácou (note optionality of initial h)</td>
</tr>
<tr>
<td>13. hupia</td>
<td>specter</td>
<td>Island Carib has ópoyem; note o~u variation</td>
</tr>
<tr>
<td>14. hyen</td>
<td>manioc juice</td>
<td>keheli (B); Island Carib has ínhali</td>
</tr>
<tr>
<td>15. macaná</td>
<td>wooden sword</td>
<td>sappakanne (T)</td>
</tr>
<tr>
<td>16. manati</td>
<td>manatee</td>
<td>kuyumuro (B); Island Carib has manáttoumi (T)</td>
</tr>
<tr>
<td>17. maní</td>
<td>peanut</td>
<td>Island Carib has mánli (T)</td>
</tr>
<tr>
<td>18. hibiz</td>
<td>basketry sifter</td>
<td>manari (B)</td>
</tr>
<tr>
<td>19. nagua</td>
<td>woman’s loincloth</td>
<td>Guajiro has naáwa</td>
</tr>
<tr>
<td>20. nigua</td>
<td>chigoe (<em>Pulex penetrans</em>)</td>
<td>Guajiro has níwa</td>
</tr>
<tr>
<td>21. cigua</td>
<td>sea snail (Fr. burgau)</td>
<td>Island Carib has chíoua</td>
</tr>
<tr>
<td>22. -tiao</td>
<td>(formal) friend</td>
<td>bethechi (B); Island Carib has –táon</td>
</tr>
<tr>
<td>23. xagua, jagua</td>
<td>genipa</td>
<td>Island Carib has cháoua</td>
</tr>
<tr>
<td>24. xaguëye</td>
<td>cave, grotto</td>
<td>babo (B); Island Carib has chaouái</td>
</tr>
<tr>
<td>25. yamoca</td>
<td>two</td>
<td>biama (T, B); ditto for Island Carib</td>
</tr>
</tbody>
</table>
Table 3. Taino forms for which there appears to be a cognate in Lokono, but unsystematic differences make the relationship unclear; Island Carib forms are provided where they may throw light on the historical relationship, for instance where no known cognate exists in Lokono. The source is always Taylor (1977).

<table>
<thead>
<tr>
<th>Taino</th>
<th>translation</th>
<th>modern Lokono (and related varieties)</th>
<th>status of Taino–Lokono relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. yamoncobre</td>
<td>four</td>
<td>biábite, bibiti (T), bibichi (B); Island Carib has biánbouri</td>
<td></td>
</tr>
<tr>
<td>27. -aco, -caco</td>
<td>eye</td>
<td>ka- Attributive, akússi ‘eyes’, kakússi ‘having eyes’ (T); koshi ‘eye’ (B); Island Carib has ácou</td>
<td>cognate, but not identical</td>
</tr>
<tr>
<td>28. arcabuco</td>
<td>woodland</td>
<td>cf. adda ‘tree’ (T); ada ‘tree, timber, wood’; adébero ‘forest’ (B); Island Carib has arábou</td>
<td>relation is unclear; the Taino form is possibly complex, containing an initial part meaning ‘tree’ (note r–d correspondence)</td>
</tr>
<tr>
<td>29. behique</td>
<td>doctor</td>
<td>cf. ibihi ‘medicine’, ibihikin ‘treat with medicine’ (T)</td>
<td>semantic correspondence is not perfect</td>
</tr>
<tr>
<td>30. burén</td>
<td>griddle</td>
<td>büddali (T), bodali (B)</td>
<td>cognate, but l—n difference needs to be explained; note r–d correspondence</td>
</tr>
<tr>
<td>31. cacique, cazique</td>
<td>chief</td>
<td>cf. isi ‘head’, ísika ‘to lead’, attributive prefix ka- (T)</td>
<td>relation unclear; see discussion in Taylor (1954:153, fn.5)</td>
</tr>
<tr>
<td>32. caniba, canima</td>
<td>Carib</td>
<td>kallipina (T)</td>
<td>cognate, but not identical</td>
</tr>
<tr>
<td>33. canocum</td>
<td>three</td>
<td>kabun, kabuin (T), kabúnkhañ (B)</td>
<td>cognate, but not identical</td>
</tr>
<tr>
<td>34. caya, cayo</td>
<td>island</td>
<td>kaíri (T), kairí (B); Island Carib has acáera</td>
<td>relation cannot be clearly established; loss of r may have occurred, but this does not explain the final vowel</td>
</tr>
<tr>
<td>35. daguita</td>
<td>my rope</td>
<td>da- ‘my’, taho ‘rope’ (T)</td>
<td>relationship unclear; note that gu=w</td>
</tr>
<tr>
<td>Taino</td>
<td>translation</td>
<td>modern Lokono (and related varieties)</td>
<td>status of Taino–Lokono relation</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>36. guarocoel</td>
<td>our grandfather</td>
<td>uadukuti (T), wa-dokochi (B); Island Carib has árgouti ‘grandfather’</td>
<td>cognate, but final –l in Taino form cannot be explained; ‘gua’ represents prefix ‘wa’; note r–d correspondence</td>
</tr>
<tr>
<td>37. hequeti</td>
<td>one</td>
<td>ikini-, -ikin ‘single’ (T)</td>
<td>possibly cognate, but relation is somewhat speculative</td>
</tr>
<tr>
<td>38. manaya</td>
<td>stone knife</td>
<td>-mana- ‘sharp edge’ (T)</td>
<td>relation is unclear</td>
</tr>
<tr>
<td>39. mayani</td>
<td>be quiet, not do/say</td>
<td>mani- (T)</td>
<td>relation is unclear</td>
</tr>
<tr>
<td>40. nahe</td>
<td>paddle (n.)</td>
<td>-nahalle (T); Island Carib has nēhene</td>
<td>cognate, but not identical</td>
</tr>
<tr>
<td>41. cimu, zimu</td>
<td>face</td>
<td>ñsibu (T); ñshí, ñshíhi ‘head’, ñshíbo(hü) ‘face’ (B), shi(ishí) ‘head’ (F)</td>
<td>precise relation is unclear; note that m–b correspondence is quite unproblematic</td>
</tr>
<tr>
<td>42. tua, toa, tona</td>
<td>frog</td>
<td>tontonle ‘small ground frog’ (F)</td>
<td>relation unclear; perhaps the modern Lokono form derives from an older unreduplicated form</td>
</tr>
<tr>
<td>43. yagua</td>
<td>spp. of palm</td>
<td>awara (T, B); Island Carib has iaouálla</td>
<td>relation unclear; the palm species referred to is not known</td>
</tr>
</tbody>
</table>

References


Bennett, John P. 1995 *Twenty-eight lessons in Loko (Arawak).* Georgetown, Walter Roth Museum of Anthropology


Footnotes

[1] I wish to acknowledge the very useful comments received on earlier versions of this paper from Philip Allsworth-Jones, Roger Blench, Mily Crevels, Jo-Anne Ferreira, José Oliver, and the encouraging responses from members of the audience at IACA 2007.
[2] Other works of relevance include Taylor (1954.a), (1960), Taylor & Rouse (1955). Taylor made use of the earlier compilation of Taino forms by De Goeje (1939), but appears to have reexamined the original sources.

[3] Although the name suggests otherwise, Island-Carib is in fact an Arawakan language which has undergone some amount of influence from contact with Carib. Island Carib became known as Black Carib in the version in which it was adopted by Africans marooned in St Vincent in 1635. Black Caribs were deported to Central America by the English in 1796-7; their descendants now inhabit coastal villages in Honduras and Belize. Taylor (1977) contains a description of Island Carib. See also Taylor (1951) and (1954.b), Taylor & Hoff (1980), Hoff (1994).

[4] Granberry & Vescelius (2004) argue that Taino was not uniform across the Greater Antilles, and that a distinction should be made between the more prestigious variety of southwestern Hispaniola and various other dialects. Their point is well taken, but dialectal variation does not detract from the main thesis of this paper. Much more controversial is their claim that, in addition, different languages were spoken across the Greater Antilles: different varieties of Macoris in parts of Hispaniola and Cuba, Ciguayo in parts of Hispaniola, and Guanahatabey in western Cuba. Apart from somewhat ambiguous statements about linguistic separateness in Bartolomé de Las Casas’s writings, the linguistic evidence consists of only a few forms, in one case only a single word.

[5] It is unfortunate that glottochronology (the historical method which attempts to calculate the date at which related languages have split) continues to be cited as unproblematic by those outside the field, whereas few historical linguists now accept its premises (Blench 2006:40-42.)
[6] Oliver (1989) distinguishes a separate, Caribbean branch within the Northern Maipuran branch, for which there is clearly good evidence. Rouse (1992) does not make such a distinction.


[8] Modern Lokono forms marked as (B) are taken from Bennett (1994 [1989]), (T) taken from Taylor (1977) (based on De Goeje 1928), (F) from Fanshawe (1949).

[9] Some forms were found scattered throughout other publications by Taylor (see fn.1 for a listing).

[10] Guajiro, a more distantly related Arawakan language, sometimes provides cognates where no Lokono or Island Carib cognates are known to exist; in all likelihood, this is a reflection of the quality of descriptions available for these languages. The source is always Taylor (1977).

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Evidence for Inter-Island Transport of Heirlooms?: Luminescence Dating and Petrographic Analysis of Ceramic Inhaling Bowls from Carriacou, West Indies

by

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¹ University College London, ² North Carolina State University, ³ California State University, ⁴ University of Washington

Abstract
Ceramic snuffing tubes and inhaling bowls used for ingesting psychoactive substances are known from islands throughout the West Indies. One partial inhaling bowl has recently been found at the site of Grand Bay on Carriacou in contexts radiocarbon dated to ca. AD 600-900, complementing two others of unknown provenience from the collection of the Carriacou Historical Society museum. To help determine their antiquity, all three specimens were dated using luminescence (TL and OSL). Surprisingly, the dates had a weighted average of BC 400 ± 189, making them several hundred years earlier than all ¹⁴C assays from the island; however, they do overlap in age with those found on Puerto Rico and Vieques. Petrographic analysis of the specimens suggests that they were not made using local materials. Instead, they appear to have been transported to the island, possibly hundreds of years later as heirlooms.

Résumé

Resumen
Los tubos para inhalar de cerámica y los tazones de inhalar usados para ingerir substancias psicoactivas son conocidos a lo largo de las Antillas. Se ha encontrado una muestra parcial de un tazón de inhalar en el sitio de Grand Bay en Carriacou, localizado en contextos de radiocarbono de 600 a 900 AD. Este tazón complementa otros dos tazones de proveniencia desconocida que se encuentran en la colección del museo de la Sociedad Histórica de Carriacou. Con el fin de determinar su antigüedad,
se realizó una datación de los tres especímenes usando luminiscencia (TL y OSL). Sorprendentemente, las fechas tenían una media ponderada de 430 ± 192, lo cual los hace varios cientos de años más tempranos que todos los ensayos de 14C de la isla. Sin embargo, los tazones coinciden en edad con aquellos especímenes encontrados en Puerto Rico y Vieques. El análisis petrográfico de los especímenes sugiere que no fueron hechos con materiales locales. Por el contrario, es probable que hayan sido transportados a las islas, posiblemente cientos de años después como reliquias de familia.
INTRODUCTION

In the Pre-Columbian Caribbean islands, there was a strong tradition of Amerindians ingesting psychoactive substances, particularly Cohoba. Archaeological remains from this practice include snuffing trays (which take the form of head-plated effigy figures) and tubes (Pané 1999; Las Casas 1999) as well as snuffing or inhaling bowls. Unfortunately, although material remains from paraphernalia have been found throughout islands in the West Indies, they are found rarely compared to other artifact types.

During archaeological excavations at the Ceramic age site of Grand Bay on the island of Carriacou, a single ceramic snuffing bowl fragment was recovered from deposits radiocarbon dated to ca. AD 600-900, joining two others that were held in the Carriacou Historical Society (CHS) Museum collection. With permission from the CHS, we submitted a small portion of all three specimens for luminescence dating at the University of Washington. Interestingly, the weighted average of all three dates was BC 400 ± 189 and none overlapped with known radiocarbon dates from Carriacou, the earliest of which is AD 400.

To examine whether these artifacts were locally produced or imported from elsewhere, all three were analyzed petrographically and compared to nearly 80 other ceramic sherds. Results indicate that the inhaling bowl samples are similar to all of the sherds collected and examined petrographically on Carriacou, but that the percentages of matrix and dense minerals such as hornblende is slightly higher and the paste is darker compared to other Carriacou sherd samples. In addition, the mineralogy and volcanic lithic texture of the inhaling bowl temper is consistent with a volcanic island arc provenance. Since Carriacou is not a recently active volcanic island, in contrast to other nearby islands, there is no apparent source for fresh
pyroclasts like those observed in the sherds, thus ruling out Carriacou as well as Barbados and South America as sources. Luminescence dating and petrographic analysis suggest that the inhaling bowls found on Carriacou may have been brought in from elsewhere, possibly as heirlooms hundreds of years after initial settlement by Amerindians during the Ceramic age.

**RESEARCH BACKGROUND**

The island of Carriacou is located in the southern Lesser Antilles approximately 250 km north of Venezuela and 30 km north of Grenada. The largest island in the Grenadines chain, geologically Carriacou is composed of a mixture of volcanic lava and Miocene-aged fossiliferous limestone. Since 2003, we have excavated at the Grand Bay site, one of the most extensive stratified sites on the island.

**Grand Bay**

The Grand Bay site covers approximately 6000 m² in area and is inter-cut by a series of eroded gulleys. The coastline contains stratified deposits of humic topsoil, midden deposits, and sterile subsoil that stretches for about 130 m; a number of burial and household features are clearly exposed within the profile or on the eroded surface above the profile. A suite of seven AMS radiocarbon dates from charcoal, marine shell, and human bone from Grand Bay suggest that the site was occupied between approximately cal AD 400–1200. These dates, along with those obtained from the nearby site of Sabazan, suggest that Carriacou was first settled by ceramic making peoples during the Terminal Saladoid period sometime between cal AD 400 and 600 and continued up until the historical period, although the possibility of an earlier settlement cannot be ruled out.
Inhaling Bowls in the Caribbean:

Inhaling bowls have been recovered from the islands of the Lesser and Greater Antilles in almost equal numbers: from ten islands of the Lesser Antilles, and two from the Greater Antilles, although the largest number come from two sites in Puerto Rico - Vieques island and the nearby mainland site of Guayanilla. A limited number of inhaling bowls display anthropomorphic or zoomorphic representation. Some carry the remains of paint or staining, or of incised lines around the rim, but the decorative element found on a number of inhaling bowls across the islands is the bulbous protuberance with a central pit which is fashioned on the outer side of the vessel, usually at the junction of the spout and the base.

Inhaling bowls have the longest date span of any of the artefact groups of drug-related material in both the Lesser and Greater Antilles. They range from ca. 500 BC to contact period in the Lesser Antilles and from pre-400 BC to contact period in the Greater Antilles.

Making a comparison with the inhaling bowls known from the mainland, dates of ca. 100 BC-AD 500 have been given to Costa Rican inhaling bowls, the majority of which also have protuberances at the same junction, although on these vessels the protuberances become flattened and are without the central pit. Mexican inhaling bowls have a date range from ca. 1500 BC-AD 300.

Analysis of artefact distribution by context:

Context is defined as the depositional environment of an artifact. If primary it reflects the action that resulted in the artifact placement. Secondary or tertiary (etc) contexts reflect artifact displacement as the result of natural or cultural forces. In this
sample, the context is unknown for the majority of artifacts, but where it is known, such information derives from both excavated and non-excavated deposits.

The majority of inhaling bowls or disconnected spouts has been recovered from middens. In the southern Lesser Antilles, excavations at our midden site at Grand Bay, Carriacou, displays a compositional mixture which included faunal remains, pottery, shell, stone and bead artefacts, several human burials and, among the settlement debris, a 23.05 cm wide chevron incised three pointer stone cemi.

No inhaling bowls have been recovered from caches or from caves. Looking at the categories of ritual or drug-related artefacts which have been recovered from caches and caves across the Caribbean (e.g., vomit spatulas, duhos, head-plated effigy figures and tubes), it can be assumed that these artefacts had been deliberately selected to be secreted away possibly to be placed as offerings, protected or preserved, factors in their ultimate survival. Based on the context of their recovery, therefore, ritual significance or special status can be attributed to these objects and, by extension, to those who were empowered to select and secrete them.

The fact that some drug-related objects are broken and have been either lost or thrown away suggests that the objects are imbued with meaning by their use-context and are not objects of veneration per se. The presence of drug-related artefacts in midden (occupation) deposits suggests they have a close association with a user and his/her movements rather than that they are destined to be used and kept in particular settings. No inhaling bowls have been recovered in direct association with burials. This implies that these artefacts had associations other than with the deceased or burial rituals. If this is the case, and not simply a function of the nature of this sample, such drug related paraphernalia would not be expected to be found in burials.
Given that the majority of inhaling bowls lack provenience, any conclusions about context will be highly provisional. However, they do show some interesting trends. The fact that the majority of inhaling bowls have come from middens, and none have been found in caches or caves, suggests that their use was associated more with the user and his movements or placement than with a particular or fixed ritual setting. This also indicates a more flexible context of use and perhaps even a less elaborate or formal ritual. High concentration of food remains found in middens could indicate that inhaling bowls were related to social functions/ritual feastings.

**RESULTS - Petrographic Analysis**

As noted previously, the mineralogy and volcanic lithic texture of the inhaling bowl temper is consistent with a volcanic island arc provenance. Carriacou is not a recently active volcanic island, and in contrast to other nearby Antillean islands, rock outcrops mostly consist of sedimentary rocks and local volcanic flows/shallow intrusions with no apparent source for fresh pyroclasts like those observed in the sherds. Modern beach sand samples from Carriacou show a significantly higher percentage of lithics (mostly sedimentary carbonate lithics) and a lower percentage of feldspar than the inhaling bowl sherds. Prehistoric beach sand was likely similar in composition to the modern beach sand, so it is unlikely that these beaches were a temper source for any of the sherds, except perhaps a placer example. The amount of feldspar (particularly plagioclase) is anomalously high in both the inhaling bowl sherds and a few other sherds from Carriacou. One possible explanation is that prehistoric potters ground temper from rock outcrops. However, this explanation does not seem very likely given the fact that most of the volcanic lithic fragments exhibit some degree of rounding suggesting transport by water rather than man-made
fragmentation. Furthermore, samples of volcanic rock outcrops collected from Carriacou are more weathered/altered than the volcanic lithic fragments in the inhaling bowl sherds and the other Carriacou sherds.

**Luminescence Dating**

The ages were determined from the TL data for UW1440 and UW1441 and for both TL and OSL for UW1442. The ages, along with other data, are given in Table ???. The TL ages for UW1440 and UW1441 and the OSL age for UW1442 are in statistical agreement at one-sigma, producing a weighted average of BC 400 ± 189, much earlier than the radiocarbon range of AD 600-900 from the context from which the artefacts were recovered. This is also several hundred years earlier than the earliest $^{14}$C age from the island. However, the TL dates do overlap in age with inhaling bowls found in Puerto Rico and Vieques and radiocarbon dates from islands north of Martinique.

**CONCLUSIONS**

The present study involved the direct dating by luminescence of three ceramic inhaling bowl fragments from the island of Carriacou, one of which was recovered from archaeological deposits dating to approximately AD 600-900, and the others found in the CHS Museum, but with no provenience information available. Although the luminescence data are inadequate for dating the samples very precisely, they are robust enough to demonstrate that at least two of these samples, and probably the third, date earlier than the settlement of Carriacou, known from an extensive suite of radiocarbon ages.
Based upon comparison of the sherds to rock and sand samples collected from Carriacou, there is little probability that any of the sherds, including those of the inhaling bowls, are made from tempers indigenous to Carriacou. It is possible that the inhaling bowl tempers were derived from the same source as some of the other Carriacou samples, suggesting that exotic sherds and drug paraphernalia were brought into the island from elsewhere.

Overall, luminescence dating and petrographic analysis suggests that the ceramic inhaling bowls were manufactured prior to the known settlement of ceramic making peoples on Carriacou (ca. AD 400) and brought in from another island or islands, possibly as heirlooms, defined by Lillios (1999:241-242) as those durable and semi-durable objects that are “portable, inherited by kin, either before or after the death of its original owner, and if it has been maintained in circulation (i.e., not buried or destroyed) for a number of generations.” Lillios (1999), in her examination of the role that heirlooms play in chiefdom level societies, noted how they “serve to objectify memories and histories, acting as mnemonics to remind the living of their link to a distant, ancestral past” and that because

not all the living have equal access to that ancestral past, as heirlooms are typically valued objects that are not available or equally accessible to all members of a community, the possession, display, and transmission of heirlooms also differentiate the living and help to reify inherited social differences (Lillios 1999:236).

Heirlooms typically are objects associated with productivity and social reproductivity and can include personal ornaments that are displayed and exchanged at important rituals and may be recognized in the archaeological record based on the following attributes:

(1) they date to an earlier period than other objects in that context;
(2) within a culture area, are conservative in their general form over time; 
(3) as symbols of authority associated with chiefly succession, are often represented in different raw materials; and 
(4) are often items of ornamentation, agricultural implements of highly valued materials, weaponry, textiles, and ceramic or metal vessels used for food production, preparation, or storage.

Based on these criteria, snuffing bowls and other related paraphernalia associated with ingesting Cohoba might be considered as possible objects passed down from generation to generation, although drug paraphernalia are not widely mentioned in the literature as being heirlooms in the Caribbean.

It is quite likely that archaeologists everywhere, however, have handled heirlooms but were unaware of their significance. As Lillios notes, there are many difficulties in trying to identify heirlooms in the archaeological record, in part due to poor temporal resolution and that “the only way an heirloom will be recognized in a prehistoric context is if its antiquity is so great that it can be identified by radiometric dating techniques or if its style clearly dates from an earlier period.” Due to the paucity of ceramic snuffing bowls and tubes found in the southern Lesser Antilles, there are not any identifiable and well-dated stylistic changes yet known; as such, we must rely on direct dating using somewhat less precise analytical methods and mineralogical or geochemical techniques to help determine provenance. Despite some limitations in the present study, the case of ceramic inhaling bowls being possible heirlooms, although typically found in association with domestic refuse, suggests that similar studies on islands throughout the Caribbean may be useful in examining how sociopolitical systems were changing over time, the
emergence of inequality, and the importance that psychoactive substances and related rituals had to ancient Amerindian groups.
Island extinctions and invasions: archaeozoological advance in the French West Indies

BY

S. Grouard

Hstoire des sociétés humaines et des peuplements animaux

Dept.

Abstract

Although island faunas are relatively well studied, there are few clear examples on faunal replacement, over periods of several centuries or a few millennia. This paper brings together results from ten years of zooarchaeological studies in three different Caribbean islands: Saint-Martin, Guadeloupe and Martinique. It presents data on presence (and absence) of terrestrial vertebrates (amphibians, reptiles, birds and non flying mammals), in relation to human activities in insular environments during the Holocene. Examples illustrate mechanisms of biodiversity evolution under human pressure and through several waves of human migration since 3000 years BP. These include natural colonisations, intentional or chance introductions, extinctions or disappearances (often of endemic species) due to human activities (hunting and gathering, but also deforestation and other anthropogenic effects on the environment). Beginning with the large original diversity, there is a partial turnover of the taxa within each human colonisation. Everywhere, human intervention causes an over-saturation of the specific richness curve in regard to the MacArthur and Wilson model, because of the numerous species introduced during each migration; but in parallel, there is extinction of numerous indigenous and endemic species.
Archaeozoological studies bring information on the history of the vertebrate faunas during the last 10000 years and on their relationships with human activities. In the West Indies, this information allows to study the mechanisms of the human impact on the biodiversity at the scale of centuries or decades. Here, we compare the results of three different islands: Guadeloupe, Martinique, and Saint Martin.

**Terrestrial Mammals on the scale of the island: Guadeloupe**

Guadeloupe is an oceanic archipelago, located as far as the Greater Antilles as the South American continent. There is no large mammal naturally present.

On the whole, the mammal biodiversity of the archipelago increased from 4 to 15, which suggests an immigration rate of 1.5 per 1000 years, that is 25 times more than during the Pleistocene (one terrestrial species per 1,5 millions of years)

This very high immigration rate and the contemporaneity of the immigrations strongly suggest that human being is responsible of this faunal turnover.

All species initially present on the island got extinct: large and small rice rats, monk seal, and manatee.

All the present day species result from introduction due to human being, voluntary or not:

- domestic animals (*dog, sheep, pig, cattle, horse…*)

- Small or large game (*porcupine, agouti, red brocket deer, opossum, tattoos, racoon*)

- Local population resulting from feralisation of the domestic species (*mongoose, feral cat*)

- Commensal species introduced as stowaways (mouse, rats)

The early pre-Columbian and the modern European waves of colonisation, and also perhaps the recent pre-Columbian one, provoked introductions of mammal species. Only the last wave of human immigration provoked extensive extinction.
**Martinique**

Martinique is an oceanic island, located south of Guadeloupe. There is no large mammal naturally present.

On the whole, the mammal biodiversity of the archipelago increased from 5 to 15, *large and small rice rats, monk seal, manatee* and perhaps a *porcupine*, all species present during the Precolumbian times, got extinct during the last colonisation (XVI century).

*Dog, agouti, opossum* and another *porcupine* species were introduced by Saladoid Amerindians. All these species, but the dog, got extinct after the XVIe century.

Consequently, all species initially present on the island got extinct and were replaced by european introductions.

Some of these species, like *agouti* and *opossum* were reintroduced recently, as small game.

**Saint Martin**

Saint Martin is an oceanic island, located north of Guadeloupe. There is no large mammal naturally present.

On the whole, the mammal biodiversity of the archipelago increased from 4 to 13, *Hutia* got extinct during the first colonisation on the island. One species of small *rice rats, monk seal, manatee*, got extinct during the last colonisation (XVI centtury).

*Dog, agouti, opossum and paca* were introduced by Saladoid Amerindians. All these species, but the dog, got extinct after the XVIe century.

Some of these species, like *agouti* and *racoon*, were reintroduced recently, as small game.
The other present day species result from human introduction, like domestic animals (*dog, sheep, pig, cattle, horse, mongoose, feral cat*), or commensal species, introduced as stowaways (*mouse, rats*).

**Terrestrial Mammals on a macro regional scale: the Caribbean**

As already seen in Guadeloupe, the patterns are equal in Saint-Martin on the North and Martinique on the South.

In Guadeloupe, the mammal biodiversity of the archipelago increased from 4 to 15, and the whole vertebrate biodiversity increased from 290 to 319, that means 53 introductions of species, 21 extinctions, and 16 endangered…

In Martinique, the mammal biodiversity of the island increased from 5 to 15.

In Saint-Martin, the mammal biodiversity of the island increased from 4 to 13.

The native extinct species were specific or endemic to each island.

Then, it appears an apparent drastic increase of biodiversity on each island. However, invasive species are the same inside each island (mostly domestic animals from Old World). Then, the effect at the macro regional scale is that it occurred a drastic decrease of biodiversity for the whole Caribbean archipelago.

**Terrestrial Mammals on the macro regional scale: comparisons**

The pattern of the mammal species turnover is the same for all the studied islands.

Differences between islands are:

- The native extinct species were specific to each island
- timing of the first human impact is shifted toward more recent dates from the South to the North for the Caribbean, according to the human waves of migration
- However, invasive species are the same inside each of the two insular systems and even between them.
- Though it increased the biodiversity of each island, human being drastically decreased the global biodiversity of the whole Caribbean area.

**Terrestrial Vertebrates of Guadeloupe**

For the Mammals, the number of present-day species is 15, which corresponds to 100% of the extinct endemic species and 100% of immigrant species during the Holocene.

For the Birds, the number of present-day species is 237, which corresponds to 31% of the extinct endemic species and 9% of immigrant species.

For the Amphibians and Reptiles, the number of present-day species is 32, which corresponds to 32% of the extinct endemic species and 31% of immigrant species.

The impact of human colorizations was largely deeper for the terrestrial vertebrates (mammals and reptiles), than for birds…

**Terrestrial Vertebrates**

It appears that the human impact has been much stronger for mammal than for birds, reptiles and amphibians: only cerca 30% for the Guadeloupe of the non mammal vertebrates got extinct. In Guadeloupe, most of them lived in narrow biotope in the forest and have been over hunted for meat (*lesser Indies iguana*), feather (*parrot*) or defence (*snakes*).

Among the non mammal invasive species, there are game (such as the recent introduction of *agoutis*) or cage birds (*African waxbills, new species of parrots…*), stowaways (*geckos, frogs*) and open field birds which took advantage from deforestation (like *cattle egret* in the Guadeloupe).

**Conclusions**

Examples from each island illustrated mechanisms of biodiversity evolution under human pressure and through several waves of human migration, beginning 3000 BP. These include natural
colonisations, intentional or chance introductions, extinctions or disappearances (often of endemic species) due to human activities (hunting and gathering, but also deforestation and other anthropogenic effects on the environment).

Beginning with the large original diversity, there is a partial turnover of the taxa within each human movement of human population through the Caribbean. Everywhere, human intervention causes an over-saturation of the specific richness curve in regard to the MacArthur & Wilson model, because of the numerous species introduced during each migration; but in parallel, there is extinction of numerous indigenous and endemic species.

At the micro-regional scale, these results allow documentation of fluctuations in species abundance, and they provide the basis for reintroductions of exterminated or scarce taxa in these regions. These observations contribute to understand the modalities of how human beings impact fragilize insular animal communities at the scale of several centuries. Consequently, they can be used for informing initiatives of sustainable use of present day island environments.

These archaeozoological approaches must be developed in the future, because they allow:

- To detect the unknown species, those which became historically extinct
- To evidence the different components of the human impact, according to different kinds of societies, ecosystems and species
- To access the increase of present day extinctions/invasions with references to the past.
- To shield light on the continental area biodiversity history, this has slightly different pattern from the island ones.
New approaches in Caribbean Archaeology

Analysis of Pre-Columbian Jade from Saladoid Sites, Antigua, West Indies.
Reg. Murphy, George E. Harlow and Christy de Mille, Nelson’s Dockyard Museum, American Museum of Natural History, University of Calgary

The SIMARC Program on St. Maarten: Involving Caribbean Youth in Archaeology and Heritage Research
Joy-Ann van Arneman, Shamira Richardson and Kippy Groh, St. Maarten Archaeological Center (SIMARC)

Kelley Scudder, University of South Florida

La cerámica en la costa caribe de Nicaragua entre el 250 y el 350 cal.d.c.: una perspectiva a través del sitio karoline (kukra hill, raas-nicaragua).
Ermengol Gassiot Ballbè, Ignacio Clemente Conte, Toledo Murray, Institució Milà i Fontanals-CSIC, Institut National de Recherches Archéologiques Préventives, INRA, Universitat Autònoma de Barcelona
Analysis of Pre-Columbian Jade from Saladoid Sites, Antigua, West Indies.

by

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Abstract
Mineralogical analysis of beads, pendants and other exotic stones and rocks recover at Saladoid sites on Antigua identified several greenstone specimens as jadeite. Jadeite is unique for its chemical composition varies between each source. As a result jadeite can be sourced to its place of origin. Analysis by Dr. George Harlow of the American Museum of Natural History, New York, identified samples of jadeite from the Elliott and Royall sites as south of the Montagua Fault Zone in Guatemala. This unexpected result throws a new light on the long held Amazonian connection for this raw material and raises many questions regarding long distance trade and exchange networks in pre-Columbian times. This paper presents the results of our current research, the sourcing of Saladoid jadeite.
Introduction

This paper discusses the recent results from a characterization and provenancing study of jadeite axes from the island of Antigua. It is part of an ongoing investigation into the Early Ceramic Age lapidary industry and semi-precious stone use on the island.

Background

Antigua is located in the Leeward Island group of the Lesser Antilles about 400 km southeast of Puerto Rico. It is approximately 280 km² and is unique in the Lesser Antilles in its diverse geological mix of volcanic formations, sedimentary rocks, and emergent Oligocene limestone (Martin-Kay 1959; Weiss 1994).

The island has numerous sources of clay, high quality flint, various colours of jasper, and other rocks and minerals (Martin-Kaye 1959) that were attractive and essential resources to the pre-Columbian people (Murphy et al. 1999). Analysis of rocks and mineral samples from Antigua in 1999 have sourced most of archaeological lapidary and lithic materials recovered at the Royall’s and Elliott’s Saladoid sites, to the island, as reported elsewhere (de Mille 2005; Knippenberg 2006; Murphy 1999).

In all, 642 specimens including raw materials were identified using a variety and combination of mineralogical techniques in the Geology and Geophysics Labs at the University of Calgary including Scanning Electron Microscope and Laser Raman. Destructive tests on selected specimens included X-ray diffraction (XRD) (Murphy et al. 2000). Several exotic or non-local stones that did not originate in Antigua were
identified. These rare finds were identified by the mineralogists as nephrite, amethyst, turquoise, serpentine and jadeite jade. Interestingly, these exotic material types are represented only as finished artifacts. The recovery and identification of ornamental lapidary minerals and stones is not unique to Antigua and has been reported on all islands with Saladoid-Huecoid sites. Previous research by Cody, and others elsewhere in the region recognized that these exotic artifacts did not originate in the Antilles and this raises many questions regarding long distance exchange, craft specialization, and the social-cultural implications (Cody 1991; Chanlette 1983; de Mille and Varney 2001:43-53; Murphy 1999; Murphy et al 2000; Watters 1997:88 - 99; Watters and Scaglion 1994). But continued speculation into the origin of exotics without geological provenancing studies cannot productively address any of these issues. For the initial attempts to source exotics from Antiguan sites, it was decided to focus on the jadeite, which because of its unique composition and variability within the different sources, can be traced to its area of origin.

**Jadeite Axes**

Unlike the other semi-precious stones examined from the Saladoid sites of Royall’s and Elliott’s on Antigua, jadeite jade (petrologically–jadeitite) specimens are primarily recovered in the form of axes (Figure 1). Axes have been recovered as complete, nearly complete and broken specimens. They are generally small (5-8 cm) in length and are highly polished laterally to a smooth glassy finish. Several have sharp or pointed distal ends and a rounded, sharp cutting edge. They range in color from a light green with white speckles and darker bands of green, to a dark glossy green color. On
several of the complete specimens, there are smooth but unpolished sections that could have facilitated hafting. It is also common to find highly polished jadeite flakes fragments from the sharpened cutting edge and the pointed portion of the back or hafted end. Although it has been speculated, no sources of jadeite have been confirmed in the Caribbean. The long held assumption, based on historical accounts, is that the non-regional exotics, like jade would have been brought to the islands from the South American Saladoid homeland (Boomert 2000:431 – 433).

**Analysis (Jadeite)**

Comparison of (jade) jadeitite from the dozen known sources worldwide reveals mineralogies that are unique to each source area (Harlow 1993, 1994, Harlow and Sorensen 2005, Sisson et al. 2005). Consequently, evaluation of the mineralogy of the Antiguan jadeite jades was considered important to assessing a possible geological source. Because of the potential necessity for destructive analytical techniques, a sub-sample of ten artifacts was selected (Figure 2). Analysis by Dr. George E. Harlow at the American Museum of Natural History, New York consisted of a mineralogical and textural examination of the polished surfaces on a number of jade fragments by scanning electron microscopy (SEM) with chemical fingerprinting with energy dispersive spectroscopy (EDS), chemical analysis by electron microprobe analysis, and X-ray microdiffraction (Harlow et al. 2006). These data established that Antiguan Saladoid jade axes have a strong similarity with samples retrieved from the south side of the Motagua Fault Zone (MFZ), Guatemala, but not with any sources outside of Guatemala (Figure 3). Although there are some differences, they can be attributed to the natural
variation that exists in the jadeite samples from any one regional source. A unique similarity was the "textural setting of quartz, a phase absent from jadeite from most sources worldwide. Quartz exists either as a secondary matrix phase around corroded jadeite grains or as inclusions in jadeite associated with smaller omphacite regions. In comparison with jadeite from 12 described occurrences worldwide, only jadeite from south of the Motagua Fault Zone in Guatemala regularly contain the appropriate assemblage including white mica and quartz" (Harlow et al. 2006:319).

On a cautionary note, it cannot be ruled out that there is some other, unknown, jadeite jade (jadeitite) source exists in the Americas. However, given the mineralogical differences between the currently known sources of jadeite around the world, and the variation among them, we will work with the standing evidence which indicates that Guatemala, geologically, was the source of the Antiguan jadeite jade axes.

Discussion

The unexpected presence of Guatemalan jadeite jade at Saladoid sites on Antigua presents several issues and challenges long held assumptions in Caribbean archaeogy. It also shows the important contribution that advanced mineralogical and petrographic studies can make in identifying and sourcing the archaeological lapidary specimens.

Following the initial publication of the sourcing of Antiguan jadeite artifacts to Guatemala (Harlow et al. 2006), several questions have been presented. First of all, how did it get there? Did it arrive via the Greater Antilles or from South America? Why was
it brought there? Is it evidence of direct contact with Central America? These issues are well beyond the scope of this paper and cannot be addressed on the basis of the small Antiguan sample. In addition, the jadeite sourcing must be interpreted within the broader regional anthropological and archaeological context.

From the current standpoint of Caribbean archaeology, the usual assumption is that non-regional exotics would have been imported from the South American Saladoid homeland (Boomert 2000; Watters 1997). Research by Knippenberg, Cody, Watters, Boomert and others provide a wealth of information on the extent and complexity of pre-Columbian exchange, trade and social importance of exotic lapidary items. There is also abundant historical accounts and documentation on the use and importance of lapidary items, with specific mention of the high status of green coloured stones throughout the Lesser Antilles (Du Tertre 1667; Hulme 1992) and coastal regions of northern South America (Raleigh 1949). Further to this Boomert, Lathrap and others have documented and presented information on the tradition of long distance trading along the rivers and coastline of South America, by Arawakan speaking people of the region. Within the Lesser Antilles, there were well established traditions of exchange or trade of stone axes manufactured from tephrite; a greenstone from St. Martin, and flint from Long Island Antigua (Knippenberg 2006; Watters 1997). Both of these materials were widely dispersed throughout the Lesser Antilles.

In direct context with the jadeite axes are large discs and beads made from the conch shell and significant quantities of beads (Figure 4) and other ornaments made from the Atlantic Thorny Oyster, *Spondylus americanus*. Interestingly, shell discs and beads were also reportedly valued in South America, as was the Thorny Oyster.
Conclusion

In conclusion, mineralogical analysis of Antiguan Saladoid jade axes at the American Museum of Natural History established that the Antiguan samples have a strong similarity with jadeitite samples retrieved from the south side of the Motagua Fault Zone (MFZ), Guatemala and not with any other source outside of Guatemala. Although there are some differences, they can be attributed to the natural variation that exists in the jadeite samples from any one regional source. Jadeites and other exotic materials are by no means unique to Antigua but from the Antiguan experience, this line of research can be further advanced through the application of mineralogical analyses to other collections in the region.

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The SIMARC Program on St. Maarten: Involving Caribbean Youth in Archaeology and Heritage Research

by

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Abstract
After the initial presentations of the Bonaire “grassroots” Caribbean youth stimulation programs at the 2003 and 2005 IACA Congresses, it is now time for the students of the SIMARC program on St. Maarten to discuss their views of what SIMARC has achieved and what are the potentials for Youth and Archaeology of the Greater Caribbean.
INTRODUCTION

SIMARC stands for the St. Maarten Archaeological Center, which is a cooperative youth stimulation project between the St. Maarten and the Netherlands Antilles Governments, with additional financial support from various organizations which will be mentioned later.

The key focuses of SIMARC are to make St. Maarten youth aware of their cultural heritage, learn the basic principles of archaeology, conduct fieldwork research projects, and then have the youth communicate that information to the broader St. Maarten community. We are representing SIMARC and we’re here to talk some about what we as a group have accomplished, as well as some plans we have for future endeavors.

SIMARC, which was established in 2005 and officially opened by Commissioner Roy Marlin in November of 2005, is St. Maarten’s first archaeological centre and it is a non-profit foundation. The SIMARC center is a full capacity archaeological facility with analysis and conservation laboratory space, a lecture hall, artifact and equipment storage, artifact display and an office with a library. Our group consists of about 20 high school students from 5 different schools. Dr. Jay Haviser is the president of SIMARC, the other board members include; Ms. Elsje Bosch, the secretary, and Mr. Paul Ellinger, the treasurer, and our teaching assistant is Ms. Anita Broer.

Weekly, on Monday afternoons, we have classes, where Dr. Haviser gives us lectures covering method and theory in Archaeology, Time/Space concepts, as well as, the relationships of material culture in our daily lives and how to use it to interpret past cultures. During these meetings, we also discuss our current projects as well as those planned for the future. We use our well equipped facilities and our
wide range of tools to clean, catalogue and store the artifacts we have recovered during our fieldwork. Before ending the class, we review the progresses made thus far and everyone is given a chance to contribute ideas for improvement.

**SIMARC PROJECTS 2005-2007**

Among the projects we’ve worked on is the Emilio Wilson Estate Project. Emilio Wilson Estate was named after the late Emilio Wilson an important resident of St. Maarten. Our local government knew the site area was once a sugar plantation and associated slave village, but was facing a dilemma in that land developers were seeking permits to develop it. Many locals boldly protested this and government was obliged to intervene. Government then requested that SIMARC determine whether the location held enough historical value to deny the request for a permit to develop the land. We surveyed the lands and conducted some limited test excavations, dedicated to the cause of finding archaeological evidence at the site.

After having dug 143, 50cm by 50cm, test pits and spending many hours toiling in the hot sun - though, truth be told, we did have some help from local workers - we gathered, recorded and analyzed the many found artifacts. Among these artifacts were: historical ceramics, building materials and personal items from the 18th to 19th centuries.

We concluded, with the help of some historical documents research and analysis of our findings, that the land did hold a great historical value, and was in fact a sugar plantation complex housing both enslaved Africans and the European owners. A report containing our findings and recommendations was compiled and presented to the local government who in turn decided not to issue the development permit. We had taken Archaeology to the forefront of social action for heritage conservation!!
Coming to the close of 2005, we as a group were discussing the projects we had completed during the year and those we still wanted to do. Two of our members suggested that we put together a time capsule; thus preserving a few of our own artifacts for later discovery. The idea was embraced by the group and everyone put their minds at work to contribute ideas as to what we could put into this time capsule.

Items included; many photographs (both hard-copy and digital) of the island now, restaurant menus containing prices, (we wanted to compare prices of now to future prices) an Antillean flag (keeping in mind that the Netherlands Antilles will no longer exist by then), a full police uniform (which will no doubt have evolved over the time), modern electronics including an iPod, a cell phone, a few CDs (to compare how these items have developed, and how music tastes have changed), along with some other trinkets we thought that though now considered modern, would in twenty years be considered ancient.

And so it was that on January 1st, 2006 we met on the boardwalk located in our country’s capital (Phillipsburg) and we buried our SIMARC time capsule, pledging to meet again in 20 years (January 2026) to unearth the capsule and look back on times past. The project was well promoted and we had the full support of our local government, in fact, two prominent commissioners were present at the burial. It also gives us all a good reason to try to be on St. Maarten in 20 years!

Another one of our projects was the Excavations of a 19th century Dutch Catholic priest in Philipsburg. The project took place during the summer vacation and we as students volunteered our time to assist Dr. Jay in the recovering of the remains of the priest, Father Jordanus Onderwater.
SIMARC was requested to recover the remains of the priest to rebury him on the church grounds. Seeing as it was a priest, the study began as a Catholic religion study but quickly evolved to one of wider religions, when buried with the priest were found some African-Creole religious artifacts. Along with this, we dug up buttons, a crucifix and rosary beads. The recovered remains were fully intact and we were able to identify several disabilities and facial deformities which the priest had. The entire project was very well promoted in the community and sparked lots of interest among the public. Reports and presentations were made and Dr. Havisier will be making a formal presentation later on in this conference.

On May 10-11, 2006 we traveled to the islands of Saba and St. Eustatius to observe their archaeological sites, heritage programs, and to conduct research on those islands. Besides touring the island of Saba, we also visited their well preserved churches, the Harry L. Johnson Museum and met the islands governor. On St. Eustatius, Dr. Grant Gilmore, of SECAR, gave us a tour of the many archaeology and heritage sites on the island, like the Dutch Reformed Church, Jewish Synagogue, Fort Oranje, Fort de Windt, English Quarter, Fair Play, Lower town and a prehistoric site at Smoke Alley.

From May 14’15, 2007, we traveled, as a group, to the island of St. Christopher, commonly known as St. Kitts, to investigate how their country deals with heritage and archaeological sites. During our two-days on the island we saw very many archaeological and heritage sites, including the National Museum in the capital city of Basseterre. Some of the more important sites we visited were; a prehistoric rock art sites at Bloody River and Wingfield Estate, a 19th century Leper Colony at Charles Fort, Old Plantation houses like Otteley’s, the Black Rocks geological site, the St. Kitts monkey research center, and most importantly the Brimstone Hill Fortress National Park. The trip gave us the opportunity to view how Kittitians maintain their heritage sites, and an insight into how we can improve our own on St. Maarten. Our major project for the school year 2006-2007 was the Fort Amsterdam Revitalization
Project. The fort is located on hotel-owned property and has sat there slowly deteriorating since the 1980’s, until SIMARC came on the scene. We worked hard, week after week, clearing brush, unearthing bastion floors that had not been seen for decades, and mapping the south bastion of the fort never yet mapped. It was very exciting to watch what was once covered with brush and thorns exposed and displayed.

It was hard work and we did enlist the help of some local workers to speed the clearing process. Once the brush was cleared, there was still the work of sweeping and clearing the dirt and debris from the bastion floor. The floor was unique in that there were tracks laid out in it that had never before been mapped or mentioned.

During the mapping process we sharpened our math and calculation skills. It took a few mistakes and redoes but we got it done and successfully mapped the bastion floor. Displayed you can see a sample of the many artifacts we found at Fort Amsterdam, in both excavations and surface collections. Among the large quantities of Spanish and Dutch ceramics, were two interesting finding, being blue glass bead (similar to those found in St. Eustatius)) and a kaolin clay pipe with the words “Ben Nevis” on the side, curiously the same name of the mountain in Scotland where John Philips, who rebuilt the this fort in 1737, was born!

SIMARC wants to revitalize the Fort Amsterdam Peninsula into a simple, low maintenance, Heritage Park, for both tourists and local community appreciation of monuments. There are vast research potentials still available at this site; and more extensive excavation campaigns should be considered, as well as more historical documents research. We have now completed Phase 1 of the Heritage Park plan, by clearing bush, stabilizing the ruins, and delineating walking trails with benches and information signs. Later Phases for the Heritage Park include an information center at the old radio
building, restoration of the signal mast, and boat access via the sea. SIMARC wishes to use this project to make the public aware of the value of monuments in general and Fort Amsterdam in particular with we the youth as their voice.

It would be a shame for SIMARC to spend so much time working with other islands and neglect to pay attention to our home town. SIMARC also had the privilege of visiting many different historical sites on St. Maarten itself. These sites include: the Foga Salt Ruins, Sentry Hill, and an old plantation house in Madame Estate.

The Foga salt ruins played a big role in St. Maarten history, because it was the sight where salt was processed for use and excess water pumped away. Salt is no longer a part of St. Maarten’s economy and now the government is planning to make the ruins available for tourists to visit. Sentry hill is the highest peak at Emilio Wilson Estate, and we had the privilege of climbing to the top to see the extraordinary view, and even investigated a small cave at the top.

The plantation house at Madame Estate was in past times used as a residence but was suspiciously burnt down. We surveyed the ruins and mapped the important aspects of the site.

**SIMARC COMMUNITY SERVICE**

SIMARC is also there for elementary schools and local organizations, even having University of St. Martin courses there, and also regular lectures for various local civic organizations. SIMARC has also been visited by dignitaries, such as Dutch Ministers and even Queen Beatrix who visited on the 10th of November in 2006. We also provide storage for important artifact collections and offer forensic services to the Police Department of St. Maarten. SIMARC also cooperates with other St. Maarten
government departments. In addition to the assistance for ROB-VROM, there is cooperation with the Department of Culture and Education.

SIMARC also cooperates, when requested, with our sister islands in the Netherlands Antilles. We students at SIMARC hope to spread the deep feeling of love for our Country and its heritage to others of our generation and the ones to come. For the youth are the future!

For us that’s what SIMARC is all about. By doing projects in our community a deep pride in our heritage and culture was instilled in us. With every activity, we felt a stronger tie to our country. And this every country needs, especially in the Caribbean; young people who are interested in and appreciative of their heritage. How else do we expect to halt the brain drain that has been plaguing our islands? I will be the first to say that this is not the only cause of the problem. But I think projects like SIMARC are one step in the right direction.

As was previously mentioned, SIMARC students are introduced to a basic theory in archaeology. We don’t keep this wealth of information to ourselves. We write newspaper articles, we go on radio stations and we make ourselves heard in our community. We’re youth but we have a voice and SIMARC has helped to mobilize this voice so that we can share with other youth in St. Maarten, and further in the Caribbean, the pride we have in our heritage.

**WORDS OF APPRECIATION**

Finally, none of the projects we took on would be possible without funding and support. That’s why we have to take this time out to thank and recognize those who have supported us in the past and
continue to do so. Our list of sponsors include: St. Maarten Government, Netherlands Antilles Government, ROB-VROM urban planning office, Divi Little Bay Resort, AMFO, Prins Bernhard Cultuurfonds, Sky is the Limit Foundation, Catholic Church St. Maarten, Nature Foundation, St. Maarten Heritage Foundation and many private sector donations. The high schools involved with the SIMARC program thus far are: St. Maarten Academy (Academic & PSVE), Caribbean International Academy, Learning Unlimited, Milton Peters College, and St. Dominic High School.

And of course we want to give a special thank you to the people who have worked with us closest and taught us the most during our SIMARC experience: Dr. Jay Haviser and Ms. Anita Broer. Thanks for investing your time and efforts into our lives!
Figure 1. The 2006-2007 SIMARC students during a research fieldtrip to St. Kitts.

Figure 2. Placing the SIMARC Time Capsule with St. Maarten government officials on January 1st 2006.
Figure 3. SIMARC students conducting test excavations at a slave village on Emilio Wilson Estate, St. Maarten

Figure 4. SIMARC students uncovering and mapping historic features at Fort Amsterdam, St. Maarten
Figure 5. Excavations at a 19th century Dutch Priest Burial, St. Maarten.

Figure 6. Students cleaning and analyzing artifacts at the SIMARC center.
Figure 7. A visit to SIMARC by Queen Beatrix of the Netherlands in 2006.

Figure 8. SIMARC is also focusing on education for elementary school children.

by

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Abstract
This paper addresses the findings of a recent study conducted on the island of Nevis. This study examined the identification, codification and omission of cultural resources and archaeological sites relative to their association with historically and contemporary marginalized communities. In order to develop a holistic approach to the management of cultural resources, inclusive of previously economically marginalized members of the community, interviews were conducted to determine the extent to which sites identified as ‘significant’ by the community correlated with sites of significance as identified by archaeologists, government officials, ngos and outside agencies. These findings provide a venue in which agencies governing archaeological sites can incorporate and embrace the complex nature of the relationship between cultural resources and ideologies of the past and seek to include those who have been historically silenced in the identification of sites of significance.
This study explores the identification, codification and omission of cultural resources and archaeological sites relative to their association with historically and contemporarily marginalized communities. Also addressed are the ways in which governments, non-governmental organizations and associated agencies can ensure the inclusion of these communities in the cultural resource management process.

For those of you who are unfamiliar with this region, Nevis is a small, volcanic island, located in the West Indies. It is a mere seven (7) miles long and five (5) miles wide. On a busy day only about ten thousand people inhabit this island, the majority of whom are of African Caribbean Descent. The initial course of this study was to determine if there was any correlation between the inclusion and exclusion of members of various communities on this island, relative to the identification and preservation of specific types of historic and archaeological sites. First I identified which historic and archaeological sites had been officially recognized or sanctioned. What I mean by sanctioned are those that have been officially recognized by government agencies, non-governmental agencies, and other agencies such as tourism industries, nationally and internationally. Along with those that have been identified by archaeologists.

Until recently the Nevis Historical and Conservation Society, the agency responsible for the identification and conservation of the island’s natural and cultural resources, focused most of its efforts on a handful of sites: The Museum of Nevis History which until recently was known as the “Birthplace of Alexander Hamilton”, The Horatio Nelson
Museum, along with an 18th Century Spa, known as the Bath Resort, which has recently been refurbished and turned into government offices and the Cottle church. This church was known to be the first church on the island where slaves could worship alongside the free population (1824). Until recently, aside from this site, little attention had been paid to sites representative of African Caribbean lifeways.

The Nevis Tourism Authority places a great deal of emphasis on sites that I would classify as innocuous; such as Downtown Charlestown, The Museum of Nevis History and numerous plantation sites. However, discussions of these sites are limited to the architecture and history of Great Houses, histories of plantation owners, foliage and sugar mills. Rarely are the histories of those who actually constructed the sites, those of African Caribbean descent, addressed. The degree of inclusion or exclusion of specific types of sites by archaeologists has been difficult to ascertain. Many archaeologists, such as Marco Meniketti, and South Hampton Archaeologists, Elaine Morris, and Roger Leech have really worked to ensure that their findings have been readily available and well documented. Unfortunately, a lot of pseudo archaeology has also taken place on Nevis over the past several years. Individuals and outside agencies that have lacked in appropriate credentials have conducted numerous excavations and surveys on the island. The artifacts and research materials from these projects have long since disappeared.

This is, for the most part, due to the lack of structured procedures or oversight for those conducting archaeological research on the island or for those development projects that destroy sites before they are even identified. Furthermore, an examination of the
government regulations showed that their Environmental Impact Assessments really didn’t include mandates governing cultural resource management initiatives.

Initially, I was told by many of the Ex Pats living on the island that Nevisians were not interested in saving any of the sites that would remind them of their past. Rather, that they wanted to simply erase their past. This was obviously not the case. At a public development meeting, sponsored by the Nevis Historical and Conservation Society, in which several African Caribbean sites were set for demolition, more than sixty-five (65) Nevisians showed up to protest the destruction of these sites. It seems that no one expected this kind of reaction. The developers ended up returning all of the sites identified to the government and are absorbing the cost of the survey, excavation and conservation of these sites.

So what other sites are considered to be of significance by the people of Nevis? I began interviewing people throughout each Parish to determine which sites were of importance to them and the findings were quite interesting. The following are just the preliminary results of these interviews. Here is a very simplistic graph showing some of the sites that are seen as significant, as a reflection of the heritage of Nevis, by Nevisians and warranting the attention of archaeologists, governmental and non-governmental agencies. As you can see, these vary greatly from those sites deemed as significant by other agencies. Interestingly, more often than not, Nevisians emphasized the importance of archaeological sites and tended to minimize the importance of designated heritage sites, as shown here.
Actually, these get somewhat complicated. This is a comparison of responses from Nevisians and Foreign born participants. Here we’re looking specifically, at responses from all participants regarding African Caribbean life way sites, including the Waset community, an African Caribbean Centrist group, consisting of Nevisians and Foreign born residents. The analysis of this data gets quite complex regarding specific sites so I won’t go into this at this time. I should also note that recently there has been a strong movement by the Nevis Historical and Conservation Society towards the inclusion of African Caribbean sites as protected sites of heritage including the Slave Market Site and the area believed to be the port of entry during the height of the slave trade.

I firmly believe that archaeological sites have intrinsic value unto themselves. But we have to ask ourselves. “What can be done to ensure that the interests of the communities in which we work, are included in the identification and preservation of archaeological resources ?” As a result of the findings of my initial research I was asked by the Nevis Historical and Conservation Society to conduct a workshop for their board members to show them various ways in which they could include previously marginalized members of the community in their efforts. Simple measures were recommended, such as conducting their meetings, not at places like the Four Seasons but rather, by taking their monthly meetings to various Parishes, inviting speakers from within those communities, instead of focusing on foreign authors, speakers, etc.
I should also note, that during this time the final development of the National Trust document was completed and will now include additional members from within the community and will also include a representative from the University of the West Indies to ensure a more holistic approach to cultural resource management initiatives on the island.

Oftentimes, we’re only on the ground for a few short weeks. How do we ensure that the communities in which we work become a part of this process? In Nevis, as in other islands in which we have worked, the development of guidelines, protocol and procedures for archaeological researchers, fieldschools and development related projects has provided a venue, whereby we can ensure the inclusion of those members of the community that have been historically marginalized. Also, we recently submitted a request to government to ensure that all Environmental Impact Assessments include a more comprehensive cultural resource management component. These mandates include on-site educational and training initiatives of employees and volunteers from governing agencies and NGOs, and community outreach meetings.

I’ve had to fill out these applications myself and they are somewhat time consuming. This is a very brief overview of the permitting process in Nevis for Archaeological Research Permits. The actual form is quite comprehensive. As daunting as this may seem, these procedures have helped me to better organize my own work and to incorporate more resources from within the communities in which I work. They also caused me to actually file reports in an almost-on-time manner. I believe that these
processes actually make it easier for archaeologists to navigate within the communities in which we work. This process also allows officials to screen out pseudo archaeologists who really don’t have the knowledge, skills or abilities to conduct excavations. So, with permits and protocol in place where do we go from here?

I’m currently working with other individuals on the development of Central Caribbean Educational Center focusing on heritage and cultural resource management initiatives, interpretive training, archival research, etc. We found that most countries can’t afford to send their personnel off to four or five year educational programs, nor can they afford the one to two week, intensive training programs for national trusts, governmental agencies and volunteers, that we conduct. These are not the most cost effective approaches that we can take to this type of training. So we’re working on the development of a center where we can conduct year round workshops for cultural resource management affiliated agencies that will provide a cost effective and more efficient means of training individuals within the Caribbean on cultural resource management initiatives. We keep finding these incredibly talented people throughout the Caribbean, with a world of knowledge who can assist us in providing cross training through such a program. We know of stone cutters on one island, really good archivists on another and archaeological field techs on various islands. What we’re trying to do is pull these resources together, bringing communities into the management of their own cultural resources.
La cerámica en la costa caribe de Nicaragua entre el 250 y el 350 cal.d.c.: una perspectiva a través del sitio karoline (kukra hill, raas-nicaragua).

by

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Resumen
En este trabajo describimos las formas y decoraciones de las vasijas cerámicas recuperadas en los últimos momentos de ocupación de una de las unidades habitacionales (nº 4) del sitio Karoline, Kukra Hill RAAS, Nicaragua, y las contextualizamos con conjuntos cerámicos procedentes de otros sitios de cronología similar en el área. Describimos también las técnicas de manufactura, pastas y cocciones y las relacionamos con los instrumentos utilizados en estas actividades. El análisis funcional de los artefactos líticos del sitio nos ha permitido identificar instrumentos que intervinieron en la manufactura de la cerámica, que nos están indicando que al menos una parte de la cerámica que se consumió en el conchero nº 4 (KH-4) de Karoline se manufacturó in situ.
Introducción.

A pesar de la realización en las últimas décadas de algunos trabajos de investigación arqueológica (Begley 2002, Healy 1978, Magnus 1974, Matilló 1993), las representaciones de la historia de las poblaciones noreste de Honduras y este de Nicaragua se ha fundamentado esencialmente en los relatos que nos han legado viajeros y naturalistas entre los siglos XVII y principios del XX (Roach 1991, Romero 1995, Squier 1891). Estas fuentes relatan un territorio con una baja tasa de población, escasamente antropizado por unas gentes sin instituciones políticas supra-comunitarias, con una reducida práctica de actividades agrícolas, dependientes para su subsistencia de los recursos silvestres y una acusada movilidad. Durante la primera mitad del siglo pasado algunos autores plantearon que estas visiones guardaban escasa correspondencia con, al menos, algunas de las sociedades prehistóricas que habitaron la zona (Steward 1948, Strong 1948). No obstante, en las imágenes que recientemente desde el campo de las ciencias sociales nos hemos formulado de este pasado tienden a primar estas fuentes históricas (Magnus 1978, Nietchsmann 1973, Romero 1995). Este hecho contribuye a reproducir los modelos explicativos de la diversidad humana donde se entiende el bosque tropical como un medio limitador para las comunidades precapitalistas, donde sus poblaciones se habrían mantenido, a lo largo de la segunda mitad del Holoceno en una indefinida frontera entre la caza y la recolección y una agricultura de rozas no excedentaria. En el caso de Nicaragua se ha llegado a plantear que estas comunidades prácticamente no habrían llevado a cabo prácticas alfareras (Romero 1995).

2- Estudios arqueológicos en la costa atlántica de Nicaragua. Antecedentes.
La historia de la investigación arqueológica en la Costa Atlántica de Nicaragua es, más breve y fragmentaria que la del noreste de Honduras, debido a la acentuada inestabilidad política en Nicaragua a lo largo del siglo XX, así como a las condiciones del territorio de la costa atlántica. Como excepción cabe citar los trabajos llevados a cabo durante los años 1970s (Magnus 1974 y 1978, Matilló 1990) después de las excavaciones realizadas por el investigador J. Espinosa en un conchero de inicios del holoceno Monkey Point¹.

A partir de 1998 la investigación arqueológica en la Costa Atlántica de Nicaragua ha cobrado un nuevo impulso a raíz de los proyectos desarrollados conjuntamente por la Universidad Nacional Autónoma de Nicaragua y la Universitat Autònoma de Barcelona, y posteriormente, el Consejo Superior de Investigaciones Científicas de España. A lo largo de diversas campañas de prospección y excavación arqueológica estas investigaciones han permitido documentar 21 nuevos sitios en la franja de llanura litoral situada entre la mitad sur de la Laguna de Perlas y la mitad norte de la Bahía de Bluefields (Clemente y Gassiot 2004-2005, Gassiot y Palomar 2006). Estos sitios se definen en su mayoría como asentamientos cercanos al litoral que contienen más de 80 concheros, vestigios de una explotación intensiva de moluscos, básicamente de los bivalvos Polymesoda solida y Donax striatus / Donax denticulatus (Gassiot 2005). Complementan este registro la identificación de diversas áreas con materiales líticos en superficie, una concentración de monolitos y el asentamiento con arquitectura monumental cercano a Kukra Hill denominado El Cascal de Flor de Pino (Gassiot et al. 2003).

La realización de pequeños sondeos en algunos de estos concheros, de algunas excavaciones de área limitada en una de las plataformas en El Cascal de Flor de Pino y la excavación en extensión del conchero número 4 del sitio Karoline han permitido disponer de una secuencia arqueológica que cubre casi 2500 años basada en 17 dataciones de C-14 (Clemente y Gassiot 2004-2005, Gassiot 2005, Gassiot y Palomar 2006). Sobre esta base se han definido tentativamente tres períodos:

- **Período 1 (1400 – 800 calANE).** En él se inscriben los sitios de Coconut’s Beach y Long Magrote, ambos formados por un único conchero y situados en puntos muy bajos adyacentes al litoral de la Laguna de Perlas. Por sus características, estos sitios parecen ser el resultado del procesado del bivalvo *Polymesoda solida* en puntos cercanos al lugar de su recolección y, presumiblemente, no albergan contextos de habitación, ni se registra material arqueológico alguno.

- **Período 2 (800/700 calANE – 450 calNE).** Lo conforman los sitios de El Cascal de Flor de Pino y los asentamientos de Karoline, Brown Bank y Sitetaia. Todos ellos presentan indicios de la existencia de diversas unidades de habitación que coexistieron en un mismo momento, tal y como certifican las dataciones coetáneas de diversos de los citados concheros, que llevan a pensar que conformaron aldeas. También en Karoline y, especialmente, en El Cascal de Flor de Pino hay evidencias de arquitectura sobre plataformas o montículos de tierra y piedras. Entre los artefactos recuperados destaca el hallazgo de cerámica policroma, análoga a la descrita para el Complejo Siteia por Magnus (1974), así como *manos* y *metates* y herramientas líticas talladas.

- **Período 3 (700 – 1000 calNE).** Los sitios más recientes se localizan en la Bahía de Bluefields (Kukra Point, Pilly Point, entre otros) y en la Laguna de Perlas (Rocky
Point). Reproducen del período anterior el asentamiento en puntos elevados sobre el litoral y, para el caso de Kukra Point, parecen responder también a la existencia de poblados. No se documentan en ellos vestigios arquitectónicos y la cerámica muestra variaciones destacables, con la desaparición de la pintura, la aparición de una decoración incisa que tiende a reproducir un patrón “textil”, ciertos cambios morfológicos en los recipientes y la aparición de un mayor número de formas.

3- El sitio Karoline, una aldea de entre el 400 calANE y 350 calNE.

El sitio Karoline fue identificado en 1999 (Gassiot y Palomar 2006). Se localiza a unos 4 Km. en línea recta del mar en las coordenadas geográficas UTM: Latitud 1355723, Longitud 205399. El área en que se encuentra emplazado el grupo Karoline comprende una pequeña elevación de 11 m. de altura s.n.m.. Karoline, es uno de los sitios identificados como “aldea” litoral, compuesto por 13 unidades habitacionales. Cada una de estas viviendas contaría en sus inmediaciones con su área de acumulación de desechos, reflejada en forma de conchero (Clemente et al. en prensa). En el registro arqueológico hemos podido documentar una intensa explotación de los recursos acuáticos, con una gran variedad de taxones consumidos, caza de animales salvajes y, para las últimas fases de ocupación, una agricultura basada en maíz, frijoles y calabazas.

Entre las estructuras de hábitat del sitio, llama la atención un gran montículo central, construido con tierra y piedras, en el que, durante una primera limpieza realizada en uno de los laterales en el 2004, tan solo se registraron fragmentos de cerámica y lítica tallada semejante a la documentada en el resto del sitio.

La unidad habitacional en la que hemos realizado excavaciones arqueológicas en extensión es la nº 4 El área excavada es de 50 m² y abarca tanto zona del conchero, al norte
de la excavación, como el área adyacente al sur donde debería encontrarse la zona de hábitat.

4. La cerámica prehistórica de la Costa Caribe de Nicaragua a la luz del conjunto procedente del conchero nº 4 de Karoline.

Diferentes autores han mencionado objetos cerámicos en contextos arqueológicos en la zona (Magnus 1974, Matilló 1993). Su presencia supone otro elemento que contrasta con la información etnográfica para varios grupos étnicos de la Costa Caribe de Nicaragua, en los que el uso y producción de cerámica apenas está atestiguada (Nietschmann 1973). Su estudio, sin embargo, se ha limitado a breves anotaciones tipológicas a partir de la descripción del tratamiento de la superficie de los tiestos recuperados. Con todo, las investigaciones recientes ilustran que los conjuntos cerámicos procedentes de los diferentes contextos para los que se disponen dataciones absolutas presentan una marcada variabilidad tanto en su manufactura como en su morfología (Gassiot y Palomar 2006, Magnus 1974). En primer lugar, se desconoce la existencia de este tipo de materiales en contextos anteriores al 800 calAC. Así, los primeros recipientes cerámicos recuperados proceden de sitios adscritos al Período 2. El cambio más marcado, sin embargo, se observa en torno al 350-450 calDC y coincide con la desocupación de los asentamientos de Karoline y El Cascal de Flor de Pino.

Las excavaciones en el conchero nº 4 de Karoline, han proporcionado la muestra de cerámica mejor conocida procedente del período inmediatamente al umbral del 350 y el 450 calD, sobre todo en su última fase de ocupación. Los recipientes recuperados en las dos fases de excavación en este conchero (la más reciente con una cronología posterior al

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2 Véase otro trabajo, I. Clemente et al., presentado en este mismo congreso sobre las distribuciones espaciales de estructuras y actividades productivas llevadas a cabo en el conchero nº 4 de Karoline.
cambio de era y una fecha de abandono entre el 250 y 350 calDC y la precedente fechada en torno al 50 calAC-20 calDC) presentan cierta variabilidad. Sin embargo, en su conjunto, en el sitio de Karoline se han documentado patrones que difieren notablemente de los que se encontrarán en la misma área en épocas posteriores y que, por el contrario, mantienen notorias similitudes con los constatados en los otros sitios del Período 2 (El Cascal de Flor de Pino, Brown Bank y Sitetaia). Por esta razón y por atender las limitaciones de espacio, su exposición se realiza aquí de forma conjunta.

En el plano tecnológico las pastas son relativamente variadas. Referente a su composición, los desgrasantes son diversos, tanto por los materiales empleados (minerales, vegetales...) como por sus dimensiones y su frecuencia. Por otra parte, las cocciones tienden a ser pobres y poco homogéneas, presumiblemente de corta duración. En general, evidencian contextos predominantemente reductores aunque la existencia de superficies a menudo, o al menos en las partes oxidadas, ilustra la realización de la cocción en ambientes relativamente abiertos. En todos los casos el modelado se ha realizado a mano y, en muchos casos, se constata un uso de “churros” o tiras delgadas de barro para levantar el cuerpo o incorporar parte del recipiente, como los bordes. Las superficies están, a su vez, bastante regularizadas y el empleo del bruñido, a veces muy intenso, es bastante recurrente.

La diversidad morfológica es igualmente notoria. Sin embargo, es también evidente la reiteración de formas carenadas y globulares con borde saliente y cuellos poco desarrollados, dando lugar a ollas abiertas y poco profundas. También aparecen recurrentemente recipientes carenados con borde entrante y sin cuello. En ambos casos, se aprecia cierta estandarización de los diámetros en los recipientes grandes, que tiende a situarse en torno a los 38-40 cm. Platos o comales, boles hemisféricos o tecomates y vasos
de diferentes dimensiones complementan los ajuares. En las diferentes categorías morfológicas el uso de engobe es frecuente.

En los diferentes sitios conocidos para este período, los recipientes decorados son bastante escasos. Dentro de éstos, son usuales las impresiones en la carena o en torno a la circunferencia máxima de los cuerpos globulares. En ocasiones este tipo de decoración se lleva a cabo sobre cordones sobreelevados. Otra clase de decoración frecuente es la presencia de incisiones horizontales en los bordes de ollas y comales fundamentalmente. En menor medida se documenta también el uso de la pintura, ya sea mediante un baño monocromo granate o rojo oscuro o con una policromía de rojo, naranja y negro sobre un fondo blanco. En ambos casos la pintura se aplica sobre superficies con engobe. Completan los conjuntos de cerámica decorada algunos fragmentos con aplicaciones (mamelones y algunos elementos de prensión), así como soportes cónicos y hemisféricos de recipientes trípodes.

Es interesante mencionar brevemente las características de la alfarería recuperada en los sitios con una cronología del Período 3. Las pastas tienden a ser más depuradas con una cocción más homogénea, muchas veces oxidante en su práctica totalidad (Gassiot y Palomar 2006, Magnus 1974). La variabilidad morfológica de los recipientes es aparentemente mayor, aumentando la proporción de fragmentos decorados.

5- Los instrumentos líticos utilizados en la manufactura de cerámica en KH-4.

Desde el campo de la traceología, los trabajos dedicados al estudio de los instrumentos utilizados en la producción cerámica resultan ya un número importante (Semenov 1957/64/81, Korobkova 2001, Maigrot 2003, Godon y Lepère 2006). El análisis macro y microscópico de las superficies de los restos líticos del conchero nº 4 (KH-4) nos
ha permitido determinar la función de los instrumentos de trabajo líticos manufacturados y utilizados en este sitio (Clemente et al. en prensa). En las superficies del 11% (N=12) de esos instrumentos se observaron rastros de uso atribuibles a la manufactura de cerámica (Ibáñez 2001, Astruc 2001). Estos instrumentos se utilizaron en diversos momentos de la producción cerámica y sirvieron para raspar y alisar las juntas de los diversos “churros” de arcilla utilizados para decorar los bordes y superficies externas de las vasijas y para bruñir las paredes de los recipientes.

Para ello, utilizaron tanto instrumentos tallados como otros sin modificar. Los instrumentos tallados son todos de sílex y se utilizaron tanto en acciones transversales (N=4), de raspado alisado, como en acciones longitudinales de corte o incisión (N=3), antes de la cocción del recipiente.

Los tres instrumentos utilizados en una acción longitudinal presentan filos rectos, no muy largos y con un ángulo de abrupto a muy abrupto (50, 70 y 80 grados respectivamente). Estos ángulos tan abruptos nos hacen presuponer, por un lado, que la pasta de arcilla se encontraba en estado fresco y que los instrumentos no fueron concebidos para cortar sino que tan solo para penetrar en la arcilla de forma que los surcos realizados decoraran las vasijas. La decoración incisa de los productos cerámicos se realizó antes de la cocción de las mismas y probablemente en algún momento del proceso de secado, pues el grado de redondeamiento del filo de uno de estos instrumentos es bastante acentuado. Los filos de los instrumentos de sílex utilizados en una acción transversal también presentan ángulos abruptos y sirvieron para unir las diversas partes de arcilla durante la manufactura de las vasijas, dejando las paredes lisas y regulares, además de poder alcanzar el grosor deseado.
Otro tipo de instrumento relacionado con el utillaje de alfarería en Karoline es una especie de “espátula”. Ésta consiste en una pequeña piedra (24x15x7 mm.) de una roca metamórfica indeterminada, de color rojizo³ y con una forma prácticamente trapezoidal. Esta “espátula” presenta dos zonas activas, la cara plana dorsal y uno de los laterales. En KH-4 se ha documentado uno de estos instrumentos completo y dos fragmentos que podrían ser parte de otro instrumento. Éstos últimos son de la misma materia prima que el primero. Estos instrumentos tienen muchas similitudes morfológicas con los recuperados en los niveles del periodo clásico en K’Axob-Belice (López et al, 2001 y 2002); sin embargo, aquí son fragmentos de cerámica los utilizados como espátulas en la producción alfarera. Estas debieron tener algún sistema de enmangue que permitiera girar el ángulo de trabajo y alcanzar las zonas más complicadas de las paredes internas de las vasijas. Probablemente, fueron utilizadas después de orear y antes de cocer las vasijas en el espatulado de las superficies.

Finalmente, otro tipo de instrumento son los “bruñidores” utilizados para dar un aspecto de acabado liso y lustroso de las paredes externas, normalmente utilizado sobre barro seco, justo antes de cocer. En varias zonas de Nicaragua ceramistas actuales seleccionan cantos rodados concretos para estas actividades. De hecho, son usados durante mucho tiempo e incluso heredadas de generación en generación. Estos son los tipos de instrumentos más apreciados por las/los ceramistas actuales incluso en otras áreas geográficas (Rodríguez et al. 2006). En KH-4 hemos documentado dos instrumentos de estas características. Uno de ellos es un canto de basalto (100x72x38 mm.) que presenta rastros en una de sus caras así como en dos de los laterales, con claras estrías que nos

³ En un principio, recién extraída de la excavación y recubierta de sedimento arcilloso, confundida con un fragmento de cerámica modificado.
indicán el movimiento realizado con el instrumento. El segundo instrumento es un canto rodado (58x46x28 mm.), de superficie muy fina por el pulimento, de una materia prima silícea indeterminada y que ha sido utilizado en dos actividades productivas distintas: en dos de sus laterales presenta rastros de haber sido usado como percutor sobre algún elemento duro, posiblemente otras rocas y, por otro, en una de sus caras presenta un área con un brillo que se asemejan a los producidos y reconocidos arqueológicamente por otros/as autores/as al trabajar cerámica con sílex (Ibáñez 2001).

**Conclusiones.**

La decoración cerámica no debe emplearse acríticamente para definir unidades sociales e históricas. Sin embargo, deja de ser llamativa la correspondencia entre el cambio entre ambos patrones, el abandono de yacimientos en torno al 350/450 calDC y la aparición de nuevos asentamientos. Por otra parte, los datos disponibles para la costa norte de Honduras ilustran también un abandono de la decoración cromática a favor de la incisión, aunque allí las fechas del cambio son algo más tardías y las características técnicas de los recipientes claramente distintas (pastas más compactas y oxidadas, fundamentalmente) (Healy 1993). Igualmente, parece relevante la mayor similitud de algunos conjuntos cerámicos del nordeste de Honduras con la documentada para este período en el atlántico de Nicaragua. Así lo ilustra la revisión de la cerámica procedente del asentamiento con grandes montículos de Wanquibila. (Strong 1933). La similitud de las pastas cerámicas de este yacimiento con la de los recipientes de El Cascal de Flor de Pino, Karoline, Sitetaia y Brown Bank en Nicaragua es notoria. En Wanquibila aparecen fragmentos con pintura rojo oscuro y, en cambio, no se documentan ni las decoraciones...
incisas que en el Caribe de Nicaragua son tardías ni los policromos propios del centro y oeste de Honduras.

Por otra parte, el estudio de los instrumentos líticos de Karoline ha evidenciado que, al menos una parte de la cerámica utilizada en el sitio, fue producida localmente. Por una parte, este dato ilustra que la similitud formal y tecnológica de las cerámicas de las costas atlánticas de Honduras y Nicaragua en esta época responde a unos parámetros tecnológicos similares. Mientras que por otra, indica que la disparidad de asentamientos en el sector central de la Costa Caribe de Nicaragua no responde a una especialización de los sitios entre pequeñas aldeas productoras de alimentos en el litoral y grandes asentamientos con arquitectura monumental orientados a una producción de algunos medios de producción (entre ellos la cerámica), como podría ser El Cascal de Flor de Pino.

En este trabajo hemos visto como en todos los yacimientos de este área del caribe en las fechas que tratamos coexiste una cerámica similar en formas, pastas y decoraciones (Clemente y Gassiot 2004-5, Gassiot y Palomar 2006), que coincide, a un nivel regional más amplio, con la cerámica documentada para estas cronologías del periodo formativo y pre-clásico con otros yacimientos del litoral hondureño. Cabría esperar que esta similitud fuera consecuencia de un probable intercambio con estos territorios localizados más al oeste. A su vez, también habría sido posible que un sitio importante como centro neurálgico de esta sociedad, como es el papel que pudo jugar El Cascal de Flor de Pino en esta región geográfica, hubiera servido como centro de producción y distribución de estos bienes de consumo cerámicos. Sin embargo, tras los análisis aplicados a una de las viviendas de una aldea satélite litoral (KH-4 de Karoline) hemos podido comprobar que la producción cerámica, por lo menos de una buena parte del material consumido, pudo
llevarse a cabo en cada una de las unidades habitacionales. El alto porcentaje (11%) del instrumental de trabajo lítico de KH-4 presenta rastros de uso atribuibles a este proceso productivo, reflejando además una variabilidad en el utillaje utilizado, en cuanto a formas y materias primas, que representan diversas etapas o momentos en la producción cerámica. Por lo tanto, pensamos que podría haber existido una transmisión de conocimientos o tradiciones en la manufactura cerámica a nivel regional, pero que la producción de buena parte de ella pudo haber sido local, presentando variabilidades, incluso dentro de una misma aldea, según quién las hubiera manufacturado.

**Bibliografía**


Una Estrategia de conservacion preventiva: Aplicada en el Área de Colecciones y la Sala de Exhibición J. M. Cruxent del Centro de Antropología del IVIC.
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The Preservation of Heritage at Argyle, St Vincent and the Grenadines, as plans for the International Airport are brought on-stream.
Kathy Martin, St Vincent and the Grenadines National Trust

Supplementary sources of archaeological data for Montserrat.
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La cerámica en la costa caribe de Nicaragua entre el 250 y el 350 cal.d.c.: una perspectiva a través del sitio karoline (kukra hill, raas-nicaragua).
Ermengol Gassiot Ballbè, Ignacio Clemente Conte, Toledo Mur: Universitat Autònoma de Barcelona, Institució Milà i Fontanals, Institute National de Recherches Archéologiques Préventives,
Una Estrategia de conservacion preventiva: 
Aplicada en el Área de Colecciones y la Sala de Exhibición J. M. Cruxent del Centro de Antropología del IVIC.

by

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Resumen
El Centro de Antropología del Instituto Venezolano de Investigaciones Científicas (IVIC) en Venezuela, ha sido el custodio desde mediados del siglo XX, de colecciones arqueológicas, paleontológicas y etnográficas provenientes de diferentes regiones del territorio nacional. Las mismas fueron desatendidas durante mucho tiempo, favoreciendo el deterioro de los objetos. Debido a esto, presentamos un programa de conservación dirigido a la sistematización del registro y catalogación de éstas colecciones, el control ambiental, la modernización del sistema de almacenaje y la exhibición de las mismas. Con esto esperamos lograr, que se minorice o anule los factores de riesgos que amenazan la preservación de las colecciones y que a su vez sean objetos de interés para la investigación y divulgación.

Abstract
The Anthropology Centre of the Venezuelan Institute for Scientific Research (IVIC) in Venezuela, has been the custodian since the mid-twentieth century, archaeological collections, ethnographic and paleontological from different regions of the country. They were neglected for a long time, favoring the deterioration of objects. Because of this, we present a conservation program aimed at the systematic registration and documentation of these collections, climate control, modernization of the system for storage and display them. With this we hope to achieve, which is minorice or annul the risk factors that threaten the preservation of collections and that in turn are objects of interest for research and outreach.
Introducción

La conservación preventiva es definida por la Sociedad Colombiana de Restauradores de Bienes Muebles “como el conjunto de estrategias y medidas de orden técnico, político y administrativo que, orientadas al manejo del entorno en el cual se hallan inmersos los objetos, contribuyen a retardar o prevenir el deterioro de estos, preservando su integridad…” (Matiz y Ovalle, 2006: 55). Estas estrategias ha tenido su mayor gestión en los últimos 20 años, donde se le ha dado mayor importancia y valor a los objetos muebles e inmuebles, sobre todo en materia arqueológica y etnográfica. Sin embargo, todavía existen deficiencias a la hora de elaborar un plan de conservación, ya que la mayoría de estos planes sólo son dirigidos a las colecciones que se consideran realmente importantes dentro de las instituciones, y es algo inevitable cuando éstas instituciones tienen presupuestos ajustados. “Sin embargo, es vital que todas las colecciones estén correctamente almacenadas para que, incluso si no son objeto de un tratamiento de conservación, por lo menos se mantengan a salvo de un mayor deterioro” (Gardiner, 1994: 54).

En Venezuela, la conservación de los bienes muebles e inmuebles no escapa a la realidad mundial, marcada por la falta de recursos económicos y humanos, estructuras adecuados para la preservación de colecciones y la concientización acerca de la importancia de estos materiales.

Desde mediados del siglo XX el Centro de Antropología del Instituto Venezolano de Investigaciones Científicas (IVIC) ubicado en el Municipio Los Salías, Edo. Miranda – Venezuela, cuenta con dos espacios destinados a almacenar y exhibir las manifestaciones culturales que testimonian la existencia de sociedades pasadas y presentes; éstas son el
Área de Colecciones y Sala de Exhibición J. M. Cruxent. Allí se encuentran colecciones arqueológicas, paleontológicas y etnográficas provenientes de diferentes regiones del territorio nacional, algunas de las cuales fueron obtenidas durante las primeras décadas de la arqueología sistemática venezolana y sirvieron de base a numerosas investigaciones sobre las sociedades aborígenes y criollas de nuestro país y posteriormente se han incluido las colecciones de investigaciones más recientes.

Estas colecciones han sufrido durante años daños, debido a las inadecuadas condiciones de almacenamiento, temperatura y humedad incorrecta o variable, presencia de agentes contaminantes y suciedad, los cuales son factores que favorecen el biodeterioro de los objetos.

Debido a esto, el Centro de Antropología a partir de febrero del 2006, puso en marcha un proyecto de conservación preventiva para el Área de Colecciones y la Sala de Exhibición J. M. Cruxent, donde el objetivo principal es la reorganización, conservación y puesta en funcionamiento de las mismas. Se constituyeron los parámetros para la reorganización, el control ambiental, la modernización del sistema de almacenaje, el establecimiento de los lineamientos para la unificación y sistematización del registro, la catalogación de las colecciones, y la exhibición de las mismas.

**El Área de Colecciones:** (Figura 1)

El Área de Colecciones, es el espacio en el cual se albergan los diferentes tipos de cultura material, este debe tener un espacio físicamente seguro y de fácil acceso al personal encargado. Las condiciones de esta área deben asegurar un verdadero control sobre las posibles causas de deterioro de los objetos. Debe ofrecer técnicamente unas condiciones
adecuadas con relación al espacio físico, al mobiliario, a la disposición de los objetos, a las condiciones ambientales y al mantenimiento. Para lograr esto, se empezó por reorganizar los materiales, de la siguiente manera:

- Se reagruparon los materiales dispersos pertenecientes a una misma colección, estas se distribuyeron por sitio de estudio e investigador.
- Paulatinamente se han ido reemplazando e identificando las cajas y gavetas que se encuentran deterioradas, aplastadas, decoloradas y húmedas, lo que perjudicaba el buen estado del material.
- Se realizan limpiezas constantes para eliminar la mayor cantidad de polvo, con el fin de evitar la generación de hongos y demás bacterias contaminantes, que pueden afectar tanto a las colecciones como al personal que labora en el área.

Control Ambiental:

La conservación es uno de los puntos más importantes dentro del plan preventivo, por lo tanto lo que se quiere es asegurar la perdurabilidad de las colecciones, ya que las mismas están expuestas a numerosos riesgos. A través del tiempo todas las colecciones sufren un proceso de degeneración y deterioro propios de su naturaleza, en esto influye también el entorno en que se hallan, el trato que reciben y el uso que se les da.

Venezuela, es una país de clima tropical donde la humedad relativa y las temperaturas diurnas y nocturnas presentan variaciones permanentes, el control de estos elementos son de vital importancia.

El medio ambiente del Área de Colecciones, está determinado principalmente por la humedad relativa y la temperatura. Estos factores inciden directamente en la cultura
material almacenada allí. Por lo tanto, para disminuir o reducir al mínimo los efectos de los diferentes factores que atentan contra la conservación y estabilidad de los objetos, se debe mantener una atmósfera climática relativamente estable a través de equipos técnicos que permitan su control y medición. Para lograr esto se adquirieron tres deshumificadores, dos termohigrómetros, cristales de sílice gel y el continuo mantenimiento del aire acondicionado. De este modo, es posible el registro de las condiciones ambientales para detectar las variaciones que comprometan la conservación de las colecciones.

La humedad relativa óptima para piezas líticas, las cerámicas, el vidrio, los metales, los materiales etnográficos y restos óseos, está en un rango de 50 – 60 %. Por otra parte, la temperatura óptima para los mismos materiales debe oscilar entre los 18 y los 22 ºC. (Dirección General Sectorial De Museos, 1993-1994: 59-60). A través de las lecturas generadas por estos equipos de medición y control, hemos podido mantener óptimos los valores de humedad y temperatura y una vez al año se hacen fumigaciones para el control de plagas.

**Modernización del Sistema de Almacenaje:**

La modernización de esta área consistió en:

- La adquisición de dos archi-moviles que van a lo largo del área (Figura 2), para sustituir las estanterías, ahorrar espacio y por lo tanto obtener una mejor forma de almacenar las colecciones.

- Adquisición de cajas de plástico (archi-comodos) y así sustituir las cajas de cartón, ya que la vida útil de las cajas de plástico es mayor y por lo tanto disminuye la contaminación de los materiales.
• Se adquirió una maquina industrial selladora de bolsas para materiales como los etnográficos.
• Actualización de la infraestructura – pintura, sellado e impermeabilización del área de colecciones.

Registro y Catalogación de las Colecciones:

La documentación, es indispensable en los procedimientos de conservación, ya que es un mecanismo para el control, protección, seguridad y mantenimiento de las colecciones y es la base para la gestión e investigación de las de las mismas. “Para que el proceso de documentación sea efectivo se requiere de una serie de instrumentos, preferiblemente sistematizados, que permitan identificar, organizar, cuantificar, localizar y conservar toda la información acerca de la historia y contenido de la colección” (Matiz y Ovalle, 2006: 76). De acuerdo a esto:
• Se establecieron los lineamientos para la unificación de terminologías, sistematización del registro y catalogación de las colecciones, diseñando las fichas para estas labores, ya que es un requisito básico para la cuantificación e identificación de cada uno de los objetos de las colecciones y evitar incongruencias. Todas las fichas se encuentran en físico y digital. (Figuras 3).
• Se realizó la ficha de evaluación continua de las condiciones ambientales del área de colecciones.
• Se realizó la asignación de un número de catálogo IVIC para los materiales, el cual es un código alfanumérico que incluye tipo de colección (arqueológica, paleontológica y
etnográfica) y área. Esto con el fin de tener una secuencia de números de catálogo propios de los materiales custodiados por el IVIC.

- Se están elaborando los catálogos de las colecciones ya registradas, lo cual facilita la revisión y búsqueda del material y disminuye su deterioro por manipulación, además se ordenan los datos específicos de los objetos.

- Se está realizando la cuantitativa del material y la base fotográfica de los mismos.

- Como documentación complementaria, se están recuperando y reuniendo los datos que poseen los investigadores sobre sus colecciones y trabajos publicados productos de estas investigaciones.

- Se creó el logo del área de colecciones.

- Se elaboraron las etiquetas para identificar las cajas y los materiales registrados y catalogados.

- Elaboración de la base de datos del Centro de Antropología del IVIC.

- Los materiales registrados y catalogados se guardan en bolsas y cajas de plástico con su respectiva etiqueta de identificación. En algunos casos, se encuentran materiales que por su naturaleza delicada ameritan mayor protección y estos se resguardan con plástico burbuja y anime.

**La Sala de Exhibición José María Cruxent:**

Una Sala de Exhibición, esta definida por el Código de Ética Profesional de los Museos ICOM como “una institución permanente, sin fines lucrativos, al servicio de la sociedad y de su desarrollo, abierta al público y que efectúa investigaciones sobre los testimonios materiales del ser humano y de su medio ambiente, los cuales adquiere,
conserva, comunica y exhibe para fines de estudio, educación y deleite” (Matiz y Ovalle, 2006: 24).

Esta sala (Figura 4) al igual que el área de colecciones, como mencionamos anteriormente, se dedica a la conservación y puesta en valor de las manifestaciones culturales que testimonian la existencia de sociedades pasadas y presentes. La conservación preventiva incluye, no solo el control ambiental y el correcto almacenaje de las colecciones, sino el sistema óptimo de exhibir las mismas. Debido a esto, esta sala también está siendo objeto de remodelación desde febrero del 2007. Se comenzó por las labores de actualización de las vitrinas, esto debido a que los investigadores del Centro de Antropología, tienen el deber de exponer sus trabajos recientes, en el área que les corresponda. También se renovó la planta física, donde se incluyó pintura y cambio de alfombra; el acondicionamiento ambiental que contempló la adquisición de dos deshumificadores y el continuo mantenimiento del aire acondicionado. Por último el acondicionamiento informático donde se incluye la adquisición de dos computadoras y equipo para proyección de películas. Estos cambios hechos y recursos obtenidos, ofrecen una nueva dinámica dentro de la sala y por ende una nueva relación con el público que la visita, generando y manteniendo el interés del público en ella, ya que es de gran importancia atraer nuevas y más amplias audiencias en todos los niveles educativos y sociales. En general lo que se quiere lograr, es que este espacio sea el más adecuado para la exhibición de las colecciones y se alcance el objetivo de fortalecer las relaciones y mecanismos para la difusión, transmisión, intercambio y distribución de la información educativa hacia el público, de manera didáctica e interactiva.
Conclusión

En una estrategia de conservación preventiva, lo importante es establecer las prioridades de conservación y los programas para el mantenimiento continuo de los mismos. Esto está estrechamente relacionado con el conservador, el cual debe tener la habilidad para conseguir los medios adecuados para conservar estas colecciones para el futuro y demostrar la relevancia de las mismas en la sociedad. También debe demostrar cómo, si el objetivo de preservar las colecciones a través de medidas preventivas no se cumple, éstas se perderán irremediablemente para siempre (Rose, 1992).

En nuestro caso, podemos decir, que con el desarrollo de ésta estrategia de conservación preventiva, queremos minorizar o anular los factores de riesgos que amenazan la preservación de las colecciones. De igual manera, este plan de trabajo, implica un gran paso para el Centro de Antropología, ya que esta iniciativa, podría constituir una de los primeros intentos a nivel nacional, por sistematizar, organizar y conservar este tipo de áreas, que tiene como fin último la consulta e investigación.

Figura 1
Figura 2

PLANO DEL ÁREA DE COLECCIONES CON LOS ARCHIMOVILES

MÓDULOS

VISTA ISOMÉTRICA

MÓDULOS

FACHADA VISTA LATERAL Y FRONTAL

Antes
Después

Figura 3

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DIBUJO (dimensiones y diámetro) - IMÁGEN (número)
Vitrina de Etnología - Yanomamis
Bibliografía


The Preservation of Heritage at Argyle, St Vincent and the Grenadines, as plans for the International Airport are brought on-stream.

by

Kathy Martin,
St Vincent and the Grenadines National Trust

Abstract

Argyle is believed to have been settled for almost 2000 years. The development of the International Airport there is a highly desirable but highly intrusive engineering project and certainly the largest ever undertaken in the country. This presentation sets out the approach of the National Trust as it attempts to preserve as much of the tangible evidence of those 2000 years of human occupation as it can.

The known prehistoric archaeological resources at Argyle include a rock art site and some five or six habitation sites. The habitation sites include Saladoid, Troumassoid, Suazoid and Cayoid ceramics. Efforts to preserve this heritage began with education and awareness exercises. They then progressed to more difficult issues involving choices to bury or dig, replicate, relocate or entomb.

Résumé

Argyle aurait été réglée depuis près de 2000 ans. Le développement de l’aéroport international, il est très souhaitable, mais hautement intrusif projet d'ingénierie et certainement le plus grand jamais entrepris dans le pays. Cette présentation expose l'approche du National Trust comme il tente de préserver autant de preuves tangibles de ces 2000 ans d'occupation humaine que possible.

Le connu ressources archéologiques préhistoriques d'Argyle inclure un site d'art rupestre et quelque cinq ou six sites d'habitation. Les sites d'habitation comprennent Saladoid, Troumassoid, Suazoid et Cayoid céramique. Les efforts visant à préserver ce patrimoine a commencé avec l'éducation et de sensibilisation des exercices. Ils ont ensuite progressé à un plus grand nombre de questions difficiles impliquant des choix d'enterrer ou creuser, reproduire, déplacer ou entomb.

Resumen

Argyle se cree que ha sido reiterada durante casi 2000 años. El desarrollo del aeropuerto internacional hay una muy deseable pero muy intrusivo proyecto de ingeniería y, desde luego, la más grande jamás emprendido en el país. Esta presentación se establece el enfoque de la National Trust, ya que los intentos de preservar la mayor cantidad de pruebas tangibles de los 2000 años de ocupación humana como puede.

Los conocidos recursos arqueológicos prehistóricos en Argyle incluir un sitio de arte rupestre y unos cinco o seis sitios de habitación. La habitación incluyen sitios saladoide, Troumassoid, Suazoid y Cayoid cerámica. Los esfuerzos por preservar este patrimonio se inició con la
educación y la conciencia ejercicios. A continuación avanzó más difícil a las cuestiones que afectan a las opciones o para enterrar a cavar, reproducir, trasladar o entomb.
Throughout the Caribbean there is a growing conflict of interest between modern day development and the preservation of archaeological sites. It is this issue which I want to address from the perspective of a Non Government Organisation. The case I am going to lay before you is that of the St. Vincent and the Grenadines National Trust working in heritage conservation at the site of a planned International Airport development at Argyle.

Question: What do International Airports and Amerindian Peoples have in common?
Answer: They both like flat land

Witness the Pearls ceramic type at Pearls airport in Grenada; this is perhaps the best example. Therein lies the dilemma which has brought me to the podium.

St Vincent has flat land. It is confined to the floors of narrow valleys. Each valley tends to be separated from the next by a steep sided ridge of higher land often where a lava flow has solidified. Because St Vincent was formed recently in geological time the topography remains dramatic today. The slightly more subdued Windward coast at Argyle was selected for the airport. To get sufficient land for a runway of 2743 metres required to service Boeing 747s, the area chosen traversed several valleys. This means that the process of building a flat runway on this land must involve cut and fill processes which will endanger archaeological sites; sites which have not been declared heritage sites and afforded legal protection.

I want now to turn to the people problem. Some hundred and twenty householders live in Argyle. Negotiations to purchase their properties are complete and most are currently building homes elsewhere to which they will move. Problem solved! The National Trust
however saw it differently. We had just completed some Geographic Information System (GIS) work to create a map and site register of the villages of our prehistoric householders. This had involved collecting and collating information scattered in a wide variety of publications and private jottings, the most important and comprehensive of which were the map records of non-vocational archaeologist, the late Dr. Earle Kirby. Global Positioning Satellite (GPS) readings for each site were taken and some 25 additional sites added by a University of Calgary team headed by Dr. Richard Callaghan. Iosif Moravetz did the data entry for the GIS layer. This work was funded by a grant from the US Ambassador’s Fund for Cultural Preservation.

Concurrent with making this Site Inventory was the setting up of a site designation system by Moravetz. It is basically a grid system. For St. Vincent, the block designations were determined for all known sites. For management purposes the common name has also been listed along with the four-letter code and number.

Reference to this map in our newly created Site Inventory indicated several Amerindian sites lay in the general area of Argyle. One was a rock art site. We submitted this information to the International Airport Development Company (IADC). A morning seminar was set up to discuss the importance of the heritage sites and possible development scenarios. It was attended by members of the Trust Board of Directors, the amateur archaeology subcommittee, the Chairperson and Chief Engineer of the IADC, the Head of the Cuban airport design team and archaeologists from Calgary University. Then we had to wait for the decision on the final alignment of the airport.
When it came some four sites, including the rock art, fell within the planned perimeter fence. We decided the low lying sites were not a problem. The information they held would simply be buried for a future generation to find. The difficulty came with sites which fell
within areas which had to be cut lower and the ground compacted. There were five of these, four ceramic; Escape (KuCe 5), Argyle (KuCe 6), Argyle 1 (JtCe1), Argyle 2 (JtCe 2) and the rock art site.

A house-holder at Escape had reported finding some whole pottery when he dug the foundations of his house. Between May 4th and May 31st 2001, a team from the University of Calgary conducted a site survey and a coring program at Escape. Soil samples were removed every 15 cm in the 2.6 m core and processed for the recovery of phytoliths (Moravetz 2003). The presence of palm phytoliths in these samples suggest the people who made Saladoid pottery used palms for food, shelter and/or clothing. A test excavation on an area 1x2 metres which the University of Calgary carried out in the garden of

Figure 1. Large Modified Saladoid adorno from Escape (KuCe5)

Figure 2. ZIC shard from Argyle 2 (JtCe 2)
the Escape house in 2003 yielded over 4000 artefacts. It appeared to be a site occupied over a long time period by peoples producing Insular Saladoid, Modified Saladoid and Troumassoid pottery. The next question concerned the extent of the site. To help determine this magnetic resonance testing was tried but the nature of the volcanic landscape with large quantities of magnetite rendered this technique useless. In 2006 a ground penetrating radar survey was performed and areas of anomalies were identified between 0.5-1.5 metres below the surface. Clearly this is a site we need to know more about before it is obliterated.

A program of salvage archaeology has been planned. The first stage involved convincing the stakeholders, particularly the IADC, the Government and the funding bodies that it would be worth while. Now the plan is to scrape the Escape site and the nearby sites, layer by layer, at one end of the runway while the main levelling work commences at the other end. To do this the Trust is seeking to coordinate archaeological expertise, the loan of equipment and operators, some bilingual interpreters, a team of volunteer fieldworkers and the use of acquired housing which has not yet been demolished for an operations base and site museum store.

The fifth site is the rock art site inventoried in our records as Yambou 1. This is a spread of petroglyphs across a section of tall rock face which is at the end of a lava flow. The Yambou Gorge opens out to the sea coast plain at this point. Some 7 petroglyphs were recorded here by Kirby in 1969. The site has also been documented by Olsen 1971, the Bullens 1972, Dubelaar 1995, Marquet-Jonson and anonymously in the 1959 edition of ‘Bajan’ magazine. The engravings depict a stylised rayed head and a series of round
anthropomorphic heads one of which is a more elaborate head-hand image. The IADC eventually became so convinced of the heritage worth of these engravings that a photograph of one figure appeared in their publicity calendar for 2007 together with a statement of intent to try to preserve it.

As a first step towards petroglyph conservation the National Trust negotiated with the Government Ministry of Culture to bring a museum modeller, Eric Pélissier, from Guadeloupe to do reconnaissance work. He was subsequently commissioned to replicate the petroglyphs. This work was funded by the IADC. The site had suffered some construction damage when a Catholic shrine was also positioned on the same rocks in recent times. The removal of cement veneers and algal growth, using polyvinyl alcohol, restored the definition of the engravings. A silicon elastomer membrane was applied to the engraved panels and from this Pélissier manufactured a mould of the petroglyphs in three sections. This mould has been used in the first instance to construct a model which proves to be an excellent way of making an inventory of this petroglyph. Never before have the details been so clearly seen and recorded. The model has been hung, with appropriate signage, against a mural of the Argyle rock face painted by professional artist Jean Claude Adenin in the National Trust headquarters where it forms part of our educational outreach programme. A second model will probably hang as a frieze in the airport lounge. It has been suggested that oblique lighting be used to enhance the shapes encased by the shallow lines of the engravings so that the travelling public will benefit from a clear image of this aspect of Vincentian heritage.
The next step is to ascertain what to do with the rocks themselves if leaving them in situ is no longer an option. Various ideas have been discussed but detailed examination is still at the initial phase.

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Supplementary sources of archaeological data for Montserrat.

by

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Abstract
The primary episodes of archaeological research on Montserrat are projects conducted since the late 1970s by Watters and Petersen at prehistoric sites and by Pulsipher and colleagues at historic ones. However, another group of field projects, for the most part vaguely known, minimally disseminated, and variable in quality, serves to supplement the database and contributes to an enhanced understanding of the island’s archaeology. This paper creates a record of these secondary projects, for which data have been compiled from such widely scattered sources as museum collections, typescript reports, hand-written notes, and records of oral discussions. We ensure that these obscure projects will be known in the future by making available in single article a record of their occurrences.
Introduction

The primary purpose of this paper is to present data on a set of field projects that supplement our archaeological knowledge of Montserrat. These field projects for the most part have the similar attributes of being poorly known, minimally disseminated, and variable in quality. The author began recording information about the projects in 1978-79, when he initially conducted field research on Montserrat, as part of his dissertation project (Watters, 1980). In the files of the Montserrat National Trust (MNT), we found records that provided leads to projects that had been completed before 1978, and by using those records we were able to identify other sources of data and to track down additional information. Since the dissertation research, further information has been compiled from a variety of sources. It seems prudent to record in a single publication the information obtained about the earlier episodes of fieldwork, especially in view of the recent volcanic activity on Montserrat that has impacted prehistoric and historic sites (Watters and Norton, 2007).

Coverage in this paper is restricted to what we regard as “supplementary” or “secondary” field projects. It excludes the two “primary episodes” of field research conducted since the 1970s, both of which have been reported and published. They include projects conducted by Dave Watters, Jim Petersen, and colleagues primarily on prehistoric sites, and projects on historic sites undertaken by Lydia Pulsipher, Conrad “Mac” Goodwin, and their colleagues. Instead, this paper focuses on fieldwork performed by various people in different capacities, including Peace Corps volunteers, Montserratians, expatriates living on Montserrat, vacationing archaeologists, plantation owners, and persons from other Caribbean islands. In some cases their efforts provide
the only data we have about particular sites; in other cases their work supplements other
fieldwork. In most instances, results of the projects have not been published; but in all
cases, these individuals have contributed to our archaeological knowledge of this island.

S. W. Howes collection from Trants (MS-G1)

Of all of the secondary projects, the S. W. Howes collection is the best known
because Watters and Scaglion (1994) published on its impressive array of stone beads
and pendants. Seymour Wylde Howes, the owner of Trants Estate, gathered more than
1,000 artifacts from the surface of the hoed plantation fields during first quarter of the
twentieth century. In 1924, he sold his collection to the Museum of the American Indian
(MAI), Heye Foundation, in New York City; subsequently, these Montserrat items were
taken over by the National Museum of the American Indian, Smithsonian Institution,
when that organization incorporated the MAI collections. Besides the 502 beads and
pendants, the Howes collection (catalog #12/6865-7122) included 162 groundstone, 90
shell, and 246 pottery items (Watters and Scaglion, 1994: Table 1). Harrington (1924)
published the first article about artifacts in the Howes collection. Watters and Petersen
studied the Howes collection in two research visits to the MAI, in 1985 and 1991. The
MAI obtained other artifacts from Montserrat, in the DeBooy collection (7/3425; n = 1),
the Huckerby collection (8/6060-6072; n = 27), and a “Purchased” collection (17/5076-
5082; n = 7). It exchanged 18 of its artifacts from Montserrat with University Museum,
University of Pennsylvania (catalog 32-1-286 to 303) in 1932.

Peace Corps archaeologists
Two Peace Corps volunteers, Liz Zabawski Gundy and Bob Bell, both having had undergraduate courses in archaeology, served with the MNT on the island in the early 1980s. Zabawski Gundy’s (1984) major project was reconstructing the Bransby Point gun battery in 1983, including the mounting of several cannon found buried beneath the site. In 1984, Bell did a salvage dig of three units at the Dagenham Beach prehistoric site (MS-A2) in the capital of Plymouth, a site discovered by Cathy Watters in January 1979 but where permission for archaeological testing was denied (Watters, 1980:235, 264). Bell (1985) produced a credible excavation and artifact analysis report for the MNT, and the skeletons he excavated later were analyzed and reported by Mann (1987a). Bell also excavated a single burial (MS-G10) north of the Trants estate in 1984, which Mann (1987b) identified as a young adult Negroid male. Zabawski Gundy and Bell also surveyed prehistoric and historic sites and added their records to the MNT site files.

Vacationing archaeologists

We have identified two instances when professional archaeologists vacationing on Montserrat became involved in fieldwork. An important project occurred in 1964 when Walter Kenyon of the Royal Ontario Museum in Toronto, Canada, collected artifacts exposed during construction at the golf course in Belham valley. Kenyon acquired 396 artifacts, all being pottery except one shell implement, that eventually were accessioned into the ROM collections along with color slides of the salvage project. Petersen and Watters studied these materials almost thirty years later, and Petersen identified 302 ceramic vessels in the collection. Noting the abundance of white-on-red and zoned-incised-crosshatch sherds, Petersen confirmed that the Saladoid ceramic series was
present at the Belham valley site (MS-A46), thereby making it the third Saladoid site on Montserrat (joining Trants, MS-G1, and Radio Antilles, MS-A1). Since the Belham valley has the greatest extent of relatively flat land on Montserrat and is watered by the only permanently flowing river, it would appear to be an ideal site for a major prehistoric settlement. In 1995, Watters used copies of Kenyon’s slides to approximate the location where he had collected the artifacts in 1964.

The second project involving a vacationing archaeologist took place on February 28, 1970, when Colin Platt of Southampton University, England did a test excavation (to a depth of two and half feet) along the border of fairway 1 on the northern side of the golf course. Platt’s (1970) two-page typescript in the MNT files discloses that he recovered Amerindian and historic artifacts.

Expatriate residents

A good example of the contributions of expatriates is the work of Canadian Don Farnsworth, who resided at Spanish Point village on the east side of Montserrat. We later named this the Farnsworth site (MS-G11). He discovered it in 1977 while hiking on the northern slope of the Tar River valley, further south on the east coast, and over the years Farnsworth collected many sherds there. In 1990 he approached Watters and Petersen, then working at the Trants site, about having a look at these materials. The collection included some quite large sherds and the ceramics were attributed to the post-Saladoid. Thus, it came as a bit of a shock in 1995 when Watters was shown another group of sherds, supposedly from the same site, collected by Brian Coombes, an Englishman who had visited Montserrat a number of times and was then renting the Tar River Estate.
Among his finds were a number of white-on-red sherds appearing to be of the Saladoid ceramic series.

A key to resolving this matter would have been investigating whether Farnsworth and Coombes really did collect at the same site, the Farnsworth site (MS-G11). In 1990 and 1995 Farnsworth took Watters, Petersen, and Bob Bartone to the site he discovered. Watters made arrangements with Coombes to travel to the area where he had obtained his artifacts, in order to compare the two locations, but Coombes sustained an injury during a cycling accident and had to leave Montserrat in 1995. Thus, it remains up in the air whether the Saladoid and post-Saladoid ceramics came from the same site or the two collections came from two different sites on the slopes of that valley. This issue will never be resolved satisfactorily because Tar River was the location of the initial extrusive volcanic activity (pyroclastic flows) in 1995 and its original slopes are now completely destroyed. It is not known what happened to the collections made by Farnsworth and Coombes.

A more troubling example of involvement by a resident expatriate is the work of an American, Walter Connell, one time head of the MNT Museum, at the Trants site. Connell would arrive on site with a helper, sometimes with a group, who dug pits while Connell screened (using very large mesh), and the artifacts he picked out were deposited in the Museum collections. The artifacts have little provenience data and are of limited scientific value, although the MNT files contain some 4 by 6 inch index cards on which Connell recorded some basic information about fieldwork (general location, participants, dates, finds). To his credit, Connell accepted donations made by others to the Museum,
which included materials from various locations that otherwise most likely would have been discarded, and he thus secured some interesting artifacts for posterity.

Montserratians

Montserratians have been generous with sharing information about artifacts that have turned up in their garden plots and guiding us to locations of interest. In 1995, Daniel James showed us his plot having surface artifacts in the Belham valley near the south side of the bridge, further upstream from where Kenyon had worked. We surface collected a small sample from the James site (MS-A47). It is now covered by volcanic mudflows (lahars) descending the Belham Valley.

In 2000, James and Annette Lee, former residents of Long Ground who chose to move to the northeastern slope of the Centre Hills because of the volcano, showed us their garden plot in which James had observed chert items on the surface. We surface collected at this upland location and recovered only chert artifacts, some of fairly large size, suggesting this might have been a non-ceramic site, perhaps Archaic, and if so it is the first one known for Montserrat. The artifacts were photographed and left in the care of the MNT since we were departing the island soon thereafter.

On July 7, 1979, Percy Arthurton and Cedric Osborne showed us a small, shallow cave (not much deeper than a rockshelter) known locally as Mermaid Hole. Its existence was noted in the course of a conversation about the lack of petroglyphs on Montserrat, when they mentioned that carved rocks were known at Mermaid Hole. We observed and photographed a number of straight grooves, some of which crisscrossed one another, carved into rocks at the entrance, but this group of carvings did not resemble prehistoric
petroglyphs we had observed elsewhere in the Lesser Antilles. The cave was located in the midst of a grassy area in the vicinity of Broderick’s estate, on the west slope of the Soufriere Hills volcano, in a sector now impacted by recent volcanic deposits.

Caribbean nationals

We know of at least two instances when archaeologists from other islands in the Caribbean visited Montserrat to conduct research. When we arrived for the dissertation project in 1978, we discovered that Henri Petitjean Roget from Guadeloupe had preceded us by a few months, when he arrived to see collections in the museum and to survey areas of the coastline. He left the artifacts he discovered and a note with the MNT, which we saw six months or so later. In 1992, Desmond Nicholson of Antigua conducted a short session for school students at the request of the MNT. Under Nicholson’s guidance, the group dug a few shallow test pits at the Trants site, to provide the Montserratian children with a chance to participate in field archaeology.

Miscellaneous

There is a set of reports that do not fit the categories established above. They were prepared in connection with the Environmental Impact Assessment (EIA) of the Blackburne (later Bramble) Airport Development Project in 1995, under the auspices of the Overseas Development Administration. They are restricted distribution reports, so it worth noting their existence. Watters (1995a, 1995b) prepared two and Watters and Petersen (1996a) a third interim report on archaeological findings made during the airport project. Those findings are summarized in articles by Watters and Petersen (1995b) and
Petersen, Bartone, and Watters (1995) in the proceedings of the Guadeloupe IACA.

David Miles and Julian Munby of the Oxford Archaeological Unit (1995) assessed the buildings of the historic estates of Montserrat, with special attention to Trants Estate (MS-G3), and also tested the historic-era cemetery (MS-G14) associated with Farm Estate. Pyroclastic flows subsequently buried Farm Estate including its cemetery. The plan to build a new airport facility and create a longer runway was abandoned after the Blackburne (Bramble) airport was destroyed by pyroclastic flows.

Conclusions

The episodes of secondary fieldwork recorded in this report are known to only a few persons who have been involved with research on Montserrat. The results of these projects supplement our knowledge of the island’s archaeology, and will be useful to scholars and interested parties in general. Although for the most part unpublished, the results of the work are available in records maintained in the Montserrat National Trust. The records are variable in quality and quantity, but texts, maps, profiles, drawings, photographs, and similar materials have been preserved for future researchers. It is prudent to record in a single publication the basic information that has been compiled over the years about these vaguely known episodes of fieldwork.

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La cerámica en la costa caribe de Nicaragua entre el 250 y el 350 cal.d.c.: una perspectiva a través del sitio karoline (kukra hill, raas-nicaragua).

by

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Resumem

En este trabajo describimos las formas y decoraciones de las vasijas cerámicas recuperadas en los últimos momentos de ocupación de una de las unidades habitacionales (nº 4) del sitio Karoline, Kukra Hill RAAS, Nicaragua, y las contextualizamos con conjuntos cerámicos procedentes de otros sitios de cronología similar en el área. Describimos también las técnicas de manufactura, pastas y cocciones y las relacionamos con los instrumentos utilizados en estas actividades. El análisis funcional de los artefactos líticos del sitio nos ha permitido identificar instrumentos que intervinieron en la manufactura de la cerámica, que nos están indicando que al menos una parte de la cerámica que se consumió en el conchero nº 4 (KH-4) de Karoline se manufacturó in situ.
Introducción.

A pesar de la realización en las últimas décadas de algunos trabajos de investigación arqueológica (Begley 2002, Healy 1978, Magnus 1974, Matilló 1993), las representaciones de la historia de las poblaciones noreste de Honduras y este de Nicaragua se ha fundamentado esencialmente en los relatos que nos han legado viajeros y naturalistas entre los siglos XVII y principios del XX (Roach 1991, Romero 1995, Squier 1891). Estas fuentes relatan un territorio con una baja tasa de población, escasamente antropizado por unas gentes sin instituciones políticas supra-comunitarias, con una reducida práctica de actividades agrícolas, dependientes para su subsistencia de los recursos silvestres y una acusada movilidad. Durante la primera mitad del siglo pasado algunos autores plantearon que estas visiones guardaban escasa correspondencia con, al menos, algunas de las sociedades prehistóricas que habitaron la zona (Steward 1948, Strong 1948). No obstante, en las imágenes que recientemente desde el campo de las ciencias sociales nos hemos formulado de este pasado tienden a primar estas fuentes históricas (Magnus 1978, Nietchsmann 1973, Romero 1995). Este hecho contribuye a reproducir los modelos explicativos de la diversidad humana donde se entiende el bosque tropical como un medio limitador para las comunidades precapitalistas, donde sus poblaciones se habrían mantenido, a lo largo de la segunda mitad del Holoceno en una indefinida frontera entre la caza y la recolección y una agricultura de rozas no excedentaria. En el caso de Nicaragua se ha llegado a plantear que estas comunidades prácticamente no habrían llevado a cabo prácticas alfareras (Romero 1995).

2- Estudios arqueológicos en la costa atlántica de Nicaragua. Antecedentes.
La historia de la investigación arqueológica en la Costa Atlántica de Nicaragua es, más breve y fragmentaria que la del noreste de Honduras, debido a la acentuada inestabilidad política en Nicaragua a lo largo del siglo XX, así como a las condiciones del territorio de la costa atlántica. Como excepción cabe citar los trabajos llevados a cabo durante los años 1970s (Magnus 1974 y 1978, Matilló 1990) después de las excavaciones realizadas por el investigador J. Espinosa en un conchero de inicios del holoceno Monkey Point\textsuperscript{1}.

A partir de 1998 la investigación arqueológica en la Costa Atlántica de Nicaragua ha cobrado un nuevo impulso a raíz de los proyectos desarrollados conjuntamente por la Universidad Nacional Autónoma de Nicaragua y la Universitat Autònoma de Barcelona, y posteriormente, el Consejo Superior de Investigaciones Científicas de España. A lo largo de diversas campañas de prospección y excavación arqueológica estas investigaciones han permitido documentar 21 nuevos sitios en la franja de llanura litoral situada entre la mitad sur de la Laguna de Perlas y la mitad norte de la Bahía de Bluefields (Clemente y Gassiot 2004-2005, Gassiot y Palomar 2006). Estos sitios se definen en su mayoría como asentamientos cercanos al litoral que contienen más de 80 concheros, vestigios de una explotación intensiva de moluscos, básicamente de los bivalvos Polymesoda solida y Donax striatus / Donax denticulatus (Gassiot 2005). Complementan este registro la identificación de diversas áreas con materiales líticos en superficie, una concentración de monolitos y el asentamiento con arquitectura monumental cercano a Kukra Hill denominado El Cascal de Flor de Pino (Gassiot et al. 2003).

\textsuperscript{1} Lastimosamente estos trabajos nunca han sido publicados. Una reseña de los mismos puede encontrarse en Veloz (1991).
La realización de pequeños sondeos en algunos de estos concheros, de algunas excavaciones de área limitada en una de las plataformas en El Cascal de Flor de Pino y la excavación en extensión del conchero número 4 del sitio Karoline han permitido disponer de una secuencia arqueológica que cubre casi 2500 años basada en 17 dataciones de C-14 (Clemente y Gassiot 2004-2005, Gassiot 2005, Gassiot y Palomar 2006). Sobre esta base se han definido tentativamente tres períodos:

- **Período 1 (1400 – 800 calANE).** En él se inscriben los sitios de Coconut’s Beach y Long Magrote, ambos formados por un único conchero y situados en puntos muy bajos adyacentes al litoral de la Laguna de Perlas. Por sus características, estos sitios parecen ser el resultado del procesado del bivalvo *Polymesoda solida* en puntos cercanos al lugar de su recolección y, presumiblemente, no albergan contextos de habitación, ni se registra material arqueológico alguno.

- **Período 2 (800/700 calANE – 450 calNE).** Lo conforman los sitios de El Cascal de Flor de Pino y los asentamientos de Karoline, Brown Bank y Sitetaia. Todos ellos presentan indicios de la existencia de diversas unidades de habitación que coexistieron en un mismo momento, tal y como certifican las dataciones coetáneas de diversos de los citados concheros, que llevan a pensar que conformaron aldeas. También en Karoline y, especialmente, en El Cascal de Flor de Pino hay evidencias de arquitectura sobre plataformas o montículos de tierra y piedras. Entre los artefactos recuperados destaca el hallazgo de cerámica policroma, análoga a la descrita para el Complejo Siteia por Magnus (1974), así como *manos y metates* y herramientas líticas talladas.

- **Período 3 (700 – 1000 calNE).** Los sitios más recientes se localizan en la Bahía de Bluefields (Kukra Point, Pilly Point, entre otros) y en la Laguna de Perlas (Rocky
Point). Reproducen del período anterior el asentamiento en puntos elevados sobre el litoral y, para el caso de Kukra Point, parecen responder también a la existencia de poblados. No se documentan en ellos vestigios arquitectónicos y la cerámica muestra variaciones destacables, con la desaparición de la pintura, la aparición de una decoración incisa que tiende a reproducir un patrón “textil”, ciertos cambios morfológicos en los recipientes y la aparición de un mayor número de formas.

3- El sitio Karoline, una aldea de entre el 400 calANE y 350 calNE.

El sitio Karoline fue identificado en 1999 (Gassiot y Palomar 2006). Se localiza a unos 4 Km. en línea recta del mar en las coordenadas geográficas UTM: Latitud 1355723, Longitud 205399. El área en que se encuentra emplazado el grupo Karoline comprende una pequeña elevación de 11 m. de altura s.n.m. Karoline, es uno de los sitios identificados como “aldea” litoral, compuesto por 13 unidades habitacionales. Cada una de estas viviendas contaría en sus inmediaciones con su área de acumulación de desechos, reflejada en forma de conchero (Clemente et al. en prensa). En el registro arqueológico hemos podido documentar una intensa explotación de los recursos acuáticos, con una gran variedad de taxones consumidos, caza de animales salvajes y, para las últimas fases de ocupación, una agricultura basada en maíz, frijoles y calabazas.

Entre las estructuras de hábitat del sitio, llama la atención un gran montículo central, construido con tierra y piedras, en el que, durante una primera limpieza realizada en uno de los laterales en el 2004, tan solo se registraron fragmentos de cerámica y lítica tallada semejante a la documentada en el resto del sitio.

La unidad habitacional en la que hemos realizado excavaciones arqueológicas en extensión es la nº 4 El área excavada es de 50 m² y abarca tanto zona del conchero, al norte
de la excavación, como el área adyacente al sur donde debería encontrarse la zona de hábitat².

4. La cerámica prehistórica de la Costa Caribe de Nicaragua a la luz del conjunto procedente del conchero nº 4 de Karoline.

Diferentes autores han mencionado objetos cerámicos en contextos arqueológicos en la zona (Magnus 1974, Matilló 1993). Su presencia supone otro elemento que contrasta con la información etnográfica para varios grupos étnicos de la Costa Caribe de Nicaragua, en los que el uso y producción de cerámica apenas está atestiguada (Nietschmann 1973). Su estudio, sin embargo, se ha limitado a breves anotaciones tipológicas a partir de la descripción del tratamiento de la superficie de los tiestos recuperados. Con todo, las investigaciones recientes ilustran que los conjuntos cerámicos procedentes de los diferentes contextos para los que se disponen dataciones absolutas presentan una marcada variabilidad tanto en su manufactura como en su morfología (Gassiot y Palomar 2006, Magnus 1974). En primer lugar, se desconoce la existencia de este tipo de materiales en contextos anteriores al 800 calAC. Así, los primeros recipientes cerámicos recuperados proceden de sitios adscritos al Período 2. El cambio más marcado, sin embargo, se observa en torno al 350-450 calDC y coincide con la desocupación de los asentamientos de Karoline y El Cascal de Flor de Pino.

Las excavaciones en el conchero nº 4 de Karoline, han proporcionado la muestra de cerámica mejor conocida procedente del período inmediatamente al umbral del 350 y el 450 calD, sobre todo en su última fase de ocupación. Los recipientes recuperados en las dos fases de excavación en este conchero (la más reciente con una cronología posterior al

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² Véase otro trabajo, I. Clemente et al., presentado en este mismo congreso sobre las distribuciones espaciales de estructuras y actividades productivas llevadas a cabo en el conchero nº 4 de Karoline.
cambio de era y una fecha de abandono entre el 250 y 350 calDC y la precedente fechada en torno al 50 calAC-20 calDC) presentan cierta variabilidad. Sin embargo, en su conjunto, en el sitio de Karoline se han documentado patrones que difieren notablemente de los que se encontrarán en la misma área en épocas posteriores y que, por el contrario, mantienen notorias similitudes con los constatados en los otros sitios del Período 2 (El Cascal de Flor de Pino, Brown Bank y Sitetaia). Por esta razón y por atender las limitaciones de espacio, su exposición se realiza aquí de forma conjunta.

En el plano tecnológico las pastas son relativamente variadas. Referente a su composición, los desgrasantes son diversos, tanto por los materiales empleados (minerales, vegetales...) como por sus dimensiones y su frecuencia. Por otra parte, las cocciones tienden a ser pobres y poco homogéneas, presumiblemente de corta duración. En general, evidencian contextos predominantemente reductores aunque la existencia de superficies a menudo, o al menos en las partes oxidadas, ilustra la realización de la cocción en ambientes relativamente abiertos. En todos los casos el modelado se ha realizado a mano y, en muchos casos, se constata un uso de “churros” o tiras delgadas de barro para levantar el cuerpo o incorporar parte del recipiente, como los bordes. Las superficies están, a su vez, bastante regularizadas y el empleo del bruñido, a veces muy intenso, es bastante recurrente.

La diversidad morfológica es igualmente notoria. Sin embargo, es también evidente la reiteración de formas carenadas y globulares con borde saliente y cuellos poco desarrollados, dando lugar a ollas abiertas y poco profundas. También aparecen recurrentemente recipientes carenados con borde entrante y sin cuello. En ambos casos, se aprecia cierta estandarización de los diámetros en los recipientes grandes, que tiende a situarse en torno a los 38-40 cm. Platos o comales, boles hemisféricos o tecmotes y vasos
de diferentes dimensiones complementan los ajuares. En las diferentes categorías morfológicas el uso de engobe es frecuente.

En los diferentes sitios conocidos para este período, los recipientes decorados son bastante escasos. Dentro de éstos, son usuales las impresiones en la carena o en torno a la circunferencia máxima de los cuerpos globulares. En ocasiones este tipo de decoración se lleva a cabo sobre cordones sobre elevados. Otra clase de decoración frecuente es la presencia de incisiones horizontales en los bordes de ollas y comales fundamentalmente. En menor medida se documenta también el uso de la pintura, ya sea mediante un baño monocromo granate o rojo oscuro o con una policromía de rojo, naranja y negro sobre un fondo blanco. En ambos casos la pintura se aplica sobre superficies con engobe. Completan los conjuntos de cerámica decorada algunos fragmentos con aplicaciones (mamelones y algunos elementos de prensión), así como soportes cónicos y hemisféricos de recipientes trípodes.

Es interesante mencionar brevemente las características de la alfarería recuperada en los sitios con una cronología del Período 3. Las pastas tienden a ser más depuradas con una cocción más homogénea, muchas veces oxidante en su práctica totalidad (Gassiot y Palomar 2006, Magnus 1974). La variabilidad morfológica de los recipientes es aparentemente mayor, aumentando la proporción de fragmentos decorados.

**5- Los instrumentos líticos utilizados en la manufactura de cerámica en KH-4.**

Desde el campo de la traceología, los trabajos dedicados al estudio de los instrumentos utilizados en la producción cerámica resultan ya un número importante (Semenov 1957/64/81, Korobkova 2001, Maigrot 2003, Godon y Lepère 2006). El análisis macro y microscópico de las superficies de los restos líticos del conchero nº 4 (KH-4) nos
ha permitido determinar la función de los instrumentos de trabajo líticos manufacturados y utilizados en este sitio (Clemente et al. en prensa). En las superficies del 11% (N=12) de esos instrumentos se observaron rastros de uso atribuibles a la manufactura de cerámica (Ibáñez 2001, Astruc 2001). Estos instrumentos se utilizaron en diversos momentos de la producción cerámica y sirvieron para raspar y alisar las juntas de los diversos “churros” de arcilla utilizados para decorar los bordes y superficies externas de las vasijas y para bruñir las paredes de los recipientes.

Para ello, utilizaron tanto instrumentos tallados como otros sin modificar. Los instrumentos tallados son todos de sílex y se utilizaron tanto en acciones transversales (N=4), de raspado alisado, como en acciones longitudinales de corte o incisión (N=3), antes de la cocción del recipiente.

Los tres instrumentos utilizados en una acción longitudinal presentan filos rectos, no muy largos y con un ángulo de abrupto a muy abrupto (50, 70 y 80 grados respectivamente). Estos ángulos tan abruptos nos hacen presuponer, por un lado, que la pasta de arcilla se encontraba en estado fresco y que los instrumentos no fueron concebidos para cortar sino que tan solo para penetrar en la arcilla de forma que los surcos realizados decoraran las vasijas. La decoración incisa de los productos cerámicos se realizó antes de la cocción de las mismas y probablemente en algún momento del proceso de secado, pues el grado de redondeamiento del filo de uno de estos instrumentos es bastante acentuado. Los filos de los instrumentos de sílex utilizados en una acción transversal también presentan ángulos abruptos y sirvieron para unir las diversas partes de arcilla durante la manufactura de las vasijas, dejando las paredes lisas y regulares, además de poder alcanzar el grosor deseado
Otro tipo de instrumento relacionado con el utillaje de alfarería en Karoline es una especie de “espátula”. Ésta consiste en una pequeña piedra (24x15x7 mm.) de una roca metamórfica indeterminada, de color rojizo³ y con una forma prácticamente trapezoidal. Esta “espátula” presenta dos zonas activas, la cara plana dorsal y uno de los laterales. En KH-4 se ha documentado uno de estos instrumentos completo y dos fragmentos que podrían ser parte de otro instrumento. Éstos últimos son de la misma materia prima que el primero. Estos instrumentos tienen muchas similitudes morfológicas con los recuperados en los niveles del periodo clásico en K’Axob-Belice (López et al, 2001 y 2002); sin embargo, aquí son fragmentos de cerámica los utilizados como espátulas en la producción alfarera. Estas debieron tener algún sistema de enmangue que permitiera girar el ángulo de trabajo y alcanzar las zonas más complicadas de las paredes internas de las vasijas. Probablemente, fueron utilizadas después de orear y antes de cocer las vasijas en el espatifulado de las superficies.

Finalmente, otro tipo de instrumento son los “bruñidores” utilizados para dar un aspecto de acabado liso y lustroso de las paredes externas, normalmente utilizado sobre barro seco, justo antes de cocer. En varias zonas de Nicaragua ceramistas actuales seleccionan cantos rodados concretos para estas actividades. De hecho, son usados durante mucho tiempo e incluso heredadas de generación en generación. Estos son los tipos de instrumentos más apreciados por las/los ceramistas actuales incluso en otras áreas geográficas (Rodríguez et al. 2006). En KH-4 hemos documentado dos instrumentos de estas características. Uno de ellos es un canto de basalto (100x72x38 mm.) que presenta rastros en una de sus caras así como en dos de los laterales, con claras estrías que nos

³ En un principio, recién extraída de la excavación y recubierta de sedimento arcilloso, confundida con un fragmento de cerámica modificado.
indican el movimiento realizado con el instrumento. El segundo instrumento es un canto
rodado (58x46x28 mm.), de superficie muy fina por el pulimento, de una materia prima
silícica indeterminada y que ha sido utilizado en dos actividades productivas distintas: en
dos de sus laterales presenta rastros de haber sido usado como percutor sobre algún
elemento duro, posiblemente otras rocas y, por otro, en una de sus caras presenta un área
con un brillo que se asemejan a los producidos y reconocidos arqueológicamente por
otros/as autores/as al trabajar cerámica con sílex ( Ibáñez 2001).

**Conclusiones.**

La decoración cerámica no debe emplearse acríticamente para definir unidades
sociales e históricas. Sin embargo, deja de ser llamativa la correspondencia entre el cambio
entre ambos patrones, el abandono de yacimientos en torno al 350/450 calDC y la
aparición de nuevos asentamientos. Por otra parte, los datos disponibles para la costa norte
de Honduras ilustran también un abandono de la decoración cromática a favor de la
incisión, aunque allí las fechas del cambio son algo más tardías y las características
técnicas de los recipientes claramente distintas (pastas más compactas y oxidadas,
fundamentalmente) (Healy 1993). Igualmente, parece relevante la mayor similitud de
algunos conjuntos cerámicos del nordeste de Honduras con la documentada para este
período en el atlántico de Nicaragua. Así lo ilustra la revisión de la cerámica procedente
del asentamiento con grandes montículos de Wanquibila. (Strong 1933). La similitud de las
pastas cerámicas de este yacimiento con la de los recipientes de El Cascal de Flor de Pino,
Karoline, Sitetaia y Brown Bank en Nicaragua es notoria. En Wanquibila aparecen
fragmentos con pintura rojo oscuro y, en cambio, no se documentan ni las decoraciones
incisas que en el Caribe de Nicaragua son tardías ni los polícromos propios del centro y oeste de Honduras.

Por otra parte, el estudio de los instrumentos líticos de Karoline ha evidenciado que, al menos una parte de la cerámica utilizada en el sitio, fue producida localmente. Por una parte, este dato ilustra que la similitud formal y tecnológica de las cerámicas de las costas atlánticas de Honduras y Nicaragua en esta época responde a unos parámetros tecnológicos similares. Mientras que por otra, indica que la disparidad de asentamientos en el sector central de la Costa Caribe de Nicaragua no responde a una especialización de los sitios entre pequeñas aldeas productoras de alimentos en el litoral y grandes asentamientos con arquitectura monumental orientados a una producción de algunos medios de producción (entre ellos la cerámica), como podría ser El Cascal de Flor de Pino.

En este trabajo hemos visto como en todos los yacimientos de este área del caribe en las fechas que tratamos coexiste una cerámica similar en formas, pastas y decoraciones (Clemente y Gassiot 2004-5, Gassiot y Palomar 2006), que coincide, a un nivel regional más amplio, con la cerámica documentada para estas cronologías del periodo formativo y pre-clásico con otros yacimientos del litoral hondureño. Cabría esperar que esta similitud fuera consecuencia de un probable intercambio con estos territorios localizados más al oeste. A su vez, también habría sido posible que un sitio importante como centro neurálgico de esta sociedad, como es el papel que pudo jugar El Cascal de Flor de Pino en esta región geográfica, hubiera servido como centro de producción y distribución de estos bienes de consumo cerámicos. Sin embargo, tras los análisis aplicados a una de las viviendas de una aldea satélite litoral (KH-4 de Karoline) hemos podido comprobar que la producción cerámica, por lo menos de una buena parte del material consumido, pudo
llevarse a cabo en cada una de las unidades habitacionales. El alto porcentaje (11%) del instrumental de trabajo lítico de KH-4 presenta rastros de uso atribuibles a este proceso productivo, reflejando además una variabilidad en el utillaje utilizado, en cuanto a formas y materias primas, que representan diversas etapas o momentos en la producción cerámica. Por lo tanto, pensamos que podría haber existido una transmisión de conocimientos o tradiciones en la manufactura cerámica a nivel regional, pero que la producción de buena parte de ella pudo haber sido local, presentando variabilidades, incluso dentro de una misma aldea, según quién las hubiera manufacturado.

**Bibliografía**


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