

Caribbean Archaeology

At the Florida Museum of Natural History

Middle Caicos Earthwatch Report, 1999

BEFORE COLUMBUS: CAONABO'S HOMELAND

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Bambarra, Middle Caicos, Turks and Caicos Islands, B.W.I.

16 Earthwatch Volunteers

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Highlights

It
was
an



Bill Rogers.

unusually hot day at MC-32. Bill Rogers slowly rose to his feet and took a long pull on his bottle of water. For the past week he diligently, carefully removed centimeter after centimeter of soil. He had found lots of things, but nothing to compare with the finds Frank Caruso was making in the unit just next to his. Every time Frank stepped into the unit there seemed to be something incredible, such as large fragments of an imported bowl. He had even one-upped Doris Sweet, who meticulously exposed the backside of a clay adorno only to have Frank replace her and remove it triumphantly from the surrounding matrix. But Bill

persisted. Returning to his labors he carefully scraped the soil from beside a concentration of shells. Suddenly there was a spark, a flash of light, the sun reflecting from a perfect oval with a long slit across its center. At that instant he revealed a beautiful piece of oyster shell inlay. It was a death eye, which would have been set in the eyehole of a wooden statue to represent a being from the world of the dead. Whose eye was it? Corocote? Opiyelguobiran? Maquetaurie Guayaba? We will never know for sure.

Another surprising discovery was a previously unrecorded Taino site on Pelican Cay. Always looking for adventure, a group of intrepid volunteers made their way across the tombola to the cay where Pete Sinelli discovered several pieces of prehistoric pottery. We made several repeat visits and undertook test excavations the last day (more below).

For four weeks two teams of Earthwatch volunteers, my staff assistants, myself, and the people of Bambarra shared a most remarkable experience. Although our schoolhouse dormitory was primitive, it was quite comfortable. Living in a small community, eating peas and rice and rice and peas, walking miles to work and back, the rhythm of the day propelling us back ever deeper into the past. Almost 50 tons of earth (as estimated by Ralph Pax) passed from trowel to dustpan to bucket to screen and then back into the ground. Mixed in with this soil was an amazing collection of material remains.



June Taylor and Doris Sweet at the Vera Hamilton Primary School, which served as our dormitory and field station.

Objectives

The major objective of this project was to study how four contemporaneous prehistoric Lucayan Taino villages interacted with each other. The plan was to excavate three of these village sites (MC-6, MC-32, and MC-36). The fourth site, MC-12, has been destroyed by road and house construction. New excavations at

MC-12 are not planned, and field notes and artifacts from previous excavations at MC-12 will allow us to make comparisons with this site.

This research has developed out of the PI's interests in social organization and the development of complex societies. In 1989, Keegan and Morgan Machlachlan (a social anthropologist at the University of South Carolina) proposed that the Tainos practiced matrilineal kinship and avunculocal residence. They concluded that the pairing of settlements in the Bahamas and Turks and Caicos, and the two plaza sites on Middle Caicos (MC-6 and MC-12), reflected the development of chiefdoms as constrained by avunculocal residence patterns. Their paper was awarded the Morton H. Fried Prize by the American Anthropological Society for the best paper on general anthropology published in the *American Anthropologist* that year. The research being conducted on Middle Caicos reflects the PI's efforts to refine and further develop these arguments, especially as they relate to the question of what happens as a community grows too large and then fissions into smaller units?

The best example of such growth and division comes from the north coast of Middle Caicos where three sites, MC-12 and MC-32 near the present-day community of Bambarra and site MC-36 near present-day Conch Bar, appear to reflect this process. MC-12 was occupied first. The oldest radiocarbon date for the site is cal AD 1040. Two other radiocarbon dates of cal AD 1230-1256 and 1282, and the presence of both Meillacan and Chican potteries, indicate that the site was occupied continuously for a long time. MC-32 is located about one mile to the east of MC-12 and contains only Chican pottery, including a bat-head adorno recovered from the deepest part of the deposit. A radiocarbon date from the deepest part of the site yielded a date of cal AD 1284. It is likely that MC-32 was a smaller sister village of MC-12 forming a settlement pair. In contrast, MC-36, which is radiocarbon dated to the same date as MC-32 (cal AD 1280) is about six miles away. One explanation for these circumstances is that following an extended period of population growth at MC-12 the community split three ways. Some members of the community remained at MC-12, a second group moved nearby to MC-32 where they maintained their alliance with MC-12, but a third group moved a considerable distance to the west where they established MC-36.

The excavations planned for MC-32 and MC-36 will focus on recovering local and imported pottery, shell jewelry and tools, stone artifacts, and food remains. The analysis of these materials will reveal the degree to which these villages shared a material culture. By material culture I mean the objects that reflect their way of life. For example, was the locally made pottery all made in the same ways (e.g., same clay sources, same kinds and quantities of aplastic inclusions)? Were the same shaped vessels used? Were these decorated in similar ways? Is there evidence that the pots were exchanged between villages? The same questions can be asked of imported pottery and other materials (hard stone) as well.

In what ways are the materials in these villages similar and in what ways are they different?

Although we will ask similar questions of the material remains excavated at MC-6. Before outlining specific objectives for MC-6 let me describe it in better detail.

MC-6 was first reported by Theodoor de Booy in 1912. It was the focus of Shaun Sullivan's research in the late 1970s and early 1980s (Sullivan 1981). I worked with Sullivan there in 1978 and 1982, and



Aerial photo of MC-6 taken in 1978.

made a brief visit to the site in 1993. MC-6 is located on the south coast of Middle Caicos on the first permanently dry land above a 6-km wide salina. The salina, a seasonally flooded mud flat, is today only 25 cm above sea level. Recent geological studies indicate that sea level was up to 50 cm higher in 1492, which means that canoes could have been paddled right up to the site when it was occupied. The one radiocarbon date for the site is AD 1437 \pm 70. Sullivan collected almost 30,000 potsherds from the surface of the site. About 90% of the sherds are locally made shell-tempered Palmetto ware. The remainder are predominantly in the Chican style, which post-date AD 1200 on the north coast of Hispaniola.

MC-6 has a two-plaza community plan that is typical of Classic Taino settlements in the Greater Antilles. The site measures 270 meters long by 70 meters wide, the margins of which are defined by midden ridges that are punctuated by pit features with low limerock walls. Sullivan interpreted these features as semi-pit houses. However, because these features are less than 5 meters in diameter it is unlikely they were used as houses. A more likely interpretation is that they were storage structures and that houses were located nearby. Our excavations at these structures should help to distinguish their function(s).

The midden deposits (which are trash accumulations) are arranged around the two plazas. The western plaza, called Plaza 1, is larger and contains the pit features, while the eastern plaza, Plaza 2, is smaller and less distinctive. A road that leads to

Armstrong Pond originates from the edge of Plaza 1 at the center of which is a level court (more about the court in a moment).

The quality of the artifacts found on the two plazas varies in ways that reflect the hierarchical organization of Taino society. Plaza 1 has far more imported potsherds and jewelry than does Plaza 2. A further distinction can be made between the north and south sides of Plaza 1. There is a structure located at the end of the court at the conjunction of the two plazas. This structure has been interpreted as the cacique's house due to its larger size and two-chamber floor plan. Moreover, despite its central location, an embankment of materials physically connects the house to the south side of the plaza. Artifacts from the south side are superior in quality to those on the north. The community plan and distribution of artifacts reflects the division of the community into elite and commoner lineages.

Sullivan concluded that MC-6 was a gateway community through which goods from the Bahamas were exported to the Greater Antilles. It is possible that the site was founded by entrepreneurs from Hispaniola who sought to control trade through the southern Bahamas. Among the items exported were cotton balls, parrot feathers, and marine animals (e.g., fishes, conchs, turtles, etc.). The main contribution from MC-6 was solar-distilled salt. MC-6 is situated to control access to Armstrong Pond. The site is connected to the pond by an aboriginal road, along which there is a two-chambered structure. Armstrong Pond is important because it produces substantial quantities of crystalline salt during the summer months. To gain a sense of how much salt could be harvested, Sullivan had his 16-person crew collect salt for 15 minutes during the height of the dry season in July 1977. Their labors produced 120 gallons of salt, weighing more than half of a ton (542 kg). Crystalline salt is an important nutritional supplement in tropical agrarian diets, and for the Tainos it must have been of crucial importance for preserving ("salting") fish and other meats for storage and transportation to inland communities in Hispaniola.

The stone-lined court is a remarkable piece of engineering. The court is virtually flat exhibiting only 10 cm of grade despite 500 years of weathering. The northern and southern margins of the court are flanked by double rows of undressed limestone that are incorporated into earthen ridges. These ridges appear to be the by-product of leveling the court. The long east-west axis measures about 31 meters. Where the stones stop at the eastern and western ends, the court is about 15 meters wide. Those edge markers, combined with the discovery of a stone at the center of the court with a ball-size depression, led Sullivan to propose initially that this was a ball court. A ball game, more akin to soccer than the Mesoamerican game, was played throughout the Classic Taino world as a means for divining the future and making important decisions. One Spaniard noted that his life hung in the balance over the outcome of a game played in Hispaniola shortly after contact.

When first discovered it was assumed that the rows of single stones were parallel, but a detailed topographic map showed that the double rows of stones bow proportionately along their course. At its widest the court measures 19 meters; at either end it is about 15 meters wide. The rest of the settlement is organized around the structure of the court. Sullivan found that when a transit was centered over the central stone and then pointed at a house mound on the periphery of the plaza, by turning the transit in the exact opposite direction (180 degrees) the line usually intersected a complimentary house mound on the other side of the plaza. Two structures were precisely reciprocal in a special sense. Both have prominent high points on the side toward the plaza. When the transit was centered on the mid-point of one of the structural prominences and flipped it precisely bisected the prominence of the reciprocal structure. The prominences are composed primarily of stone and were not structurally integral to the houses to which they are attached. Their original function is not clear, but they do seem to have been used for some manner of sight alignments.



Palmetto ware and import sherds at MC-6.

Although rituals, games, and dances were likely played out on this court, the court also served as a direct link to the supernatural both as a calendar that recorded the passage of seasons and as an observatory that identified the location of important astrological events. The main alignment through the center of the court conforms to the rising and setting sun on the summer solstice, an event that Sullivan observed firsthand in 1981.

Sullivan also discovered a number of other alignments with the rising and setting of stars that are significant in Native American astronomical calendars. Of special note are alignments with the rising and setting positions of Betelgeuse, one of the principal stars in the constellation Orion, which according to Professor Antonio Stevens-Arroyo (1989) has a central place in Taino mythology. Sullivan also identified alignments with the rising positions of Altair,

Procyon, and Vega, and the setting position of Fomalhaut. Although the significance of these stars has not been investigated, they are components of other pre-Columbian observatories.

MC-6 has the only known ball court/observatory in the Bahama archipelago. Combined with the large quantity of pottery and other materials imported from the Greater Antilles, the Classic Taino plan of the community, and the cacique's house at the end of the main plaza, MC-6 is a unique and extremely important location for the study of pre-Columbian cultural development in the northern West Indies. It also may be the site from which Caonabo, the most powerful of the Taino caciques at the time of European contact, launched his rise to power.

Caonabo

On Christmas morning 1492, the Santa María ran aground and sank in the vicinity of present-day Cap Haïtien, in the Taino province of Marien, which was ruled by a cacique named Guacanagarí. On learning of the wreck Guacanagarí wept openly and he sent weeping relations to console Columbus throughout the night. Afraid to risk the Niña in salvaging the Santa María, Columbus enlisted Guacanagarí's assistance. The Tainos recovered everything, including planks and nails, and assembled the materials on the beach. They were so thorough that not a single "agujeta" (lace-end or needle) was misplaced.

Columbus took the sinking of the Santa María as a sign from God that he should build a fort in this location. Guacanagarí gave Columbus two large houses to use, and, with the assistance of his people, the Spaniards began construction of a fort, tower, and moat in the cacique's village using the timbers and other materials salvaged from the Santa María. Because the Niña could not accommodate all of the sailors, thirty-nine men were left at La Navidad with instructions to exchange and trade for gold.

When Columbus returned to La Navidad with the Grand Fleet on November 28, 1493, he learned that all of the Christians were dead and that La Navidad had been burned to the ground. Recent evidence of the conflagration has come from the work of archaeologist Kathleen Deagan of the Florida Museum of Natural History. In addition to a handful of objects of European origin and the bones of Old World rats and pigs, research at the archaeological site believed to be La Navidad has uncovered mineral-encrusted potsherds that could only have formed at temperatures greater than 1400°C. Thus, the inferno was so intense the wattle-and-daub structures must have acted like kilns.

History records that the Spaniards were killed because they abused the local people. Yet, if such local violations were the cause, then the local leader, Guacanagarí, should have ordered the killing. In the end, Columbus did not blame Guacanagarí. In fact, they remained close friends, and Guacanagarí contributed warriors to the army that Columbus fielded against the Taino villages in the Vega Real. Blame for the destruction of La Navidad

fell instead upon Caonabo, the principal cacique (matunherí) for this region and the ruler to whom Guacanagarí owed fealty. It is clear from these events that Guacanagarí tried to use the Spanish to advance his status and position. Had Caonabo allowed Guacanagarí to harbor a well-armed garrison of Europeans his own survival would have been threatened. His only recourse was to eliminate the threat. Columbus's sons Ferdinand wrote that when Caonabo was captured he admitted to killing twenty of the men at La Navidad. Caonabo was sent to Spain to stand trial, and was never heard from again.

Caonabo is of special interest to us because Las Casas reported that he was a Lucayan, stating specifically that he came from an island in the Bahama archipelago. In 1492, Caonabo was viewed by the Spanish as the principal Taino cacique. Perhaps the only Taino leader worthy of the title guamiquina, which meant "lord, supreme ruler of all things, and chiefest of all divinities." He ruled the cacicazgo of Maguana in central Hispaniola, and was allied through marriage with Behechchio, the ruler of Jaraguá. Between them they controlled most of Hispaniola including the gold fields and richest agricultural lands.

But how was it possible that a man from the Bahamas became the most important leader of the Tainos in Hispaniola? If Las Casas was correct, Caonabo could only have achieved such status if his mother was from a chiefly family in Hispaniola, who was married to a very powerful cacique in the Lucayan islands. Then, when Caonabo reached adolescence he left his parent's village in the Bahamas and went to live with his uncle, a cacique in the Maguana province. He must have had tremendous personal leadership qualities that made him the consummate entrepreneur and positioned him to succeed his uncle as cacique. Moreover, his reputation suggests that he successfully expanded the territory and power of his cacicazgo. Looking back to the Bahamas, the only settlement that is of sufficient size and importance to have launched such a career is MC-6, the ceremonial/trading center on Middle Caicos.

Volunteer Tasks and Accomplishments

Volunteers were involved in all aspects of the research. They undertook most of the work at the sites carefully excavating the buried deposits. Volunteers worked in small teams of excavators and screeners, although we tried to let the volunteers do most of the excavating. The sites were excavated using shovels, trowels, finer digging tools (including dental picks and wooden ice cream spoons), and brushes to carefully expose artifacts for removal. All of the soil was sieved through ¼-inch mesh screens to ensure the recovery of very small artifacts, and a sample from each level was sieved through window-mesh screen to recover very small animal bones and other objects. Samples were taken for the analysis of plant and animal remains preserved in the site, as well as for the analysis of changes in soil due to human occupation. Volunteers also used a builder's level to accurately measure the depths of

objects. Some also helped with the mapping of deposits. Volunteers excavated almost 50 TONS of soil during the 4 weeks of the project!

About two days per team were spent washing, sorting, weighing, and recording the shells, pottery, and other objects recovered. Because Palmetto ware pottery is so fragile, pottery was brushed to remove the dirt. Sherds (broken pieces of pottery) that could be glued back together were noted in the field and were crossmended in the lab. As a result, we recreated large sections of several large vessels to produce some of the largest Palmetto ware bowl fragments ever recovered. Photographs were taken of the better quality artifacts. Volunteers helped with all aspects of the analysis.



Frank Caruso holding his crossmended pot.

The majority of the work focused on site MC-32 on the north coast near Bambarra. The cost and limited availability of transportation made it impossible to work at MC-36. Nevertheless, the decision to focus on MC-32 paid off. Excavations were also initiated at MC-6 on the south coast. In 1993, it took only 6 hours to cut a modest trail to MC-6. When we began the task on this trip we soon found that an entirely new trail had to be cut. It took five days to complete the new trail. Unfortunately, the new trail wasn't completed until after Team 1 had departed. We were, however, able to collect a large sample of artifacts from MC-6 during Team 3. Finally, during Team 3 Pete Sinelli ventured alone across the tombola to Pelican Cay, which is located just off the coast from Bambarra landing. Pete discovered that the cay is an archaeological site. It was assigned the number MC-39. Volunteers conducted test excavations at the site on the final day of the project. What follows is a description of the results at each of the sites.

MC-32

MC-32 is located on the north coast about 1 km northeast of Bambarra landing. The site is situated between the beach and Farm Creek Pond. The pond is today closed to the sea, but as recently as 50 years ago there was an outlet near the site. The pond afforded a protected area for beaching canoes and the large number of conchs on the margin of the pond indicates that the inhabitants of the site cleaned some of their catch in the pond.

The site was discovered in 1976 by Dr. Shaun Sullivan. Sullivan conducted test excavations at the site and he described his finds in his Ph.D. dissertation (Sullivan 1981). A comparison of the animal

remains in the site with those from MC-6 and the Pine Cay site was published by Wing and Scudder (1983). In 1993, with funding from the National Geographic Society, Keegan undertook test excavations at the site. The results of those tests were used to locate the units that were excavated during this project.



Team 1 excavating MC-32.

For this project an area on the north side of the site was selected for excavation because test units in this area contained the densest and deepest deposits. A total of five adjacent 2 by 2 meter units were excavated. The entire two weeks of Team 1 were devoted to this site as were three days of Team 3. Three were completed to bedrock and two had to be stopped about 20 cm above bedrock due to a lack of time. All of the units were back-filled at the end of the project.

The site appears to have been a large village that was first occupied in the 13th century (based on one radiocarbon date taken in 1993). Charcoal samples collected during this project will allow us to get additional radiocarbon dates for the site. The present excavations encountered a dense deposit of pottery, marine mollusks, animal bones, and other artifacts. The pottery was very fragmented, but many of the larger pieces were crossmended to form large sections of bowls. Especially noteworthy was a large fragment (about 40%) of a shallow bowl that was excavated and crossmended by Frank Caruso. We know that the bowl was imported from the Greater Antilles because it contained igneous rock temper, which does not occur in the Bahama archipelago.

Also of note are large fragments of locally made Palmetto ware bowls, and griddles on which they would have baked cassava bread. Some of the Palmetto ware sherds were decorated, a feature that is rarely found on Palmetto ware. One large bowl fragment showed that the bottom of the bowl had been molded in a woven basket, the middle section of the bowl was made from large coils of clay and temper that had been smoothed in a way that left

three ridges, and the upper part of the bowl to the rim was a very flat, smooth surface. This vessel and other large fragments are giving us our first clues to the shape and size of their pottery vessels. These large, thick open bowls were probably used for cooking a stew called "pepper pot." Pepper pot is a mixture of manioc juice, vegetables, meats, and chili peppers that is left simmering on a fire. It is eaten by dipping cassava bread into the pot.

During the excavation we recovered a large sample of animal bones and mollusk shells. These will help us to reconstruct the diets of the people who lived at the site, their impacts on the surrounding environment, and any changes in resource use through time. These studies will contribute to a larger study of resource use in the northern West Indies that is showing that even small populations can dramatically alter their local environment. Codakia clam shells were abundant in the site. Complete shells were saved and will be used to determine whether there is a seasonal component to the collection of these mollusks. We also found the top of a human skull that had the forehead flattened, as is the recognized practice of the Tainos.

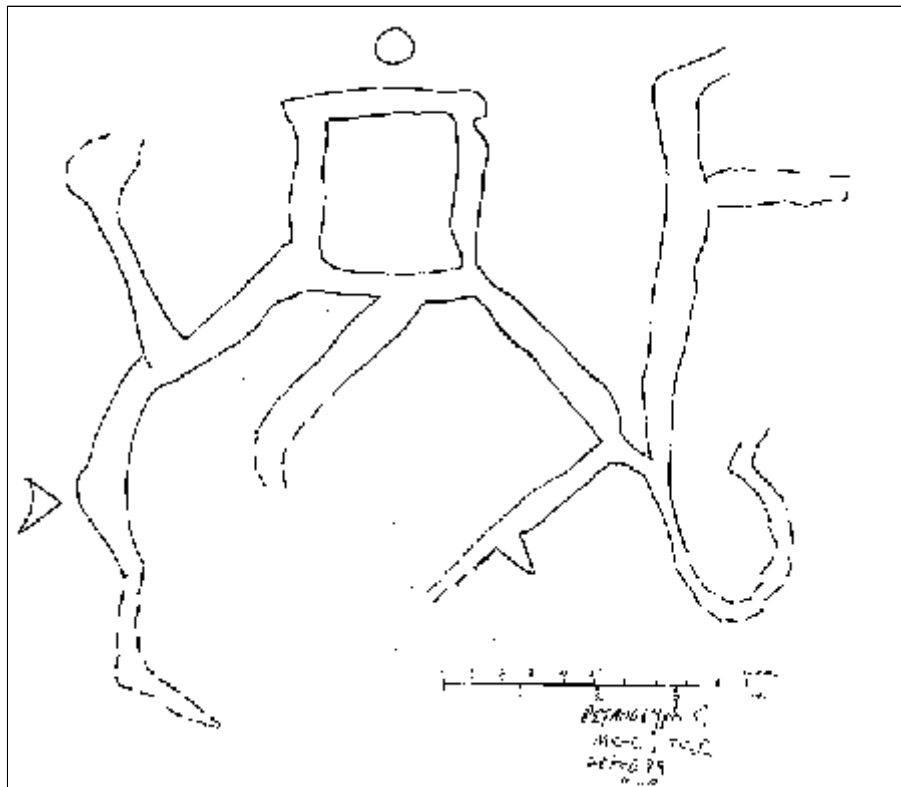
Another surprising discovery was the high incidence of jewelry. We know from the Spanish chroniclers that the Tainos wore a variety of beads, pendants, and bangles and that representations of their spirits (called cemís) were fashioned in wood, stone, shell, and cotton. These artifacts are not commonly found in archaeological excavations. At all three sites we recovered a wide variety of these items.

MC-6

The hardest part of working at MC-6 was getting to and from the site. The site was a 3.5 mile walk from Bambarra through the bush, along Armstrong Pond, and then back through the bush. Cactus, loose rocks, and saplings cut knee high made footing difficult along the narrow winding trail.

Nevertheless, we managed to accomplish a great deal at this enormous site. A total of 6, 2-by-2-meter units were excavated, all but one to bedrock, to the west of Sullivan's structure 2. Structure 2 is about midway along the south side of Plaza 1. It is due south of the center stone in the middle of the plaza's stone-lined court. The units were placed in this area because Sullivan noted that the highest quality materials were distributed along this south midden ridge. Presently there is only one radiocarbon date for the site (AD 1430 +/- 70). Charcoal samples collected during this project will be used to get additional dates for the site.

Shortly after the excavations were started I noticed that one of the larger rocks appeared to have a petroglyph carved on it. There appear to be small pecked holes and some abrasion of the surface to create a bat or frog shape on the rock. It is possible that this is a totem, which identified the occupants of this area as belonging to a particular lineage. The petroglyph may be a clue to the meaning of



Possible petroglyph from MC-6. Drawing by Brian Riggs

the structures. If Plaza 1 is indeed the precinct of a cacique and other elites, the small structures may be houses that were occupied by the wives and children of the cacique. Taino caciques had many wives from arranged marriages that served to cement alliances between the cacique's lineage and those of his allies. It was just this situation that made it possible for Caonabo to move from Middle Caicos into a leadership role in Hispaniola.

Excavating the ridge at MC-6 was an exercise in rock removal. Thank god for Ralph Floyd who hoisted about 5 tons of rock from the excavation units. Progress was slowed by having to work around the rocks, but the results were definitely worth it. A wide variety of imported and Palmetto ware pottery was recovered, as were animal bones, conch shell tools, and jewelry. As at MC-32, there was a variety of shell inlay, which would have been inserted into wood or stone statues. Stone beads and one made from a non-local species of land snail are evidence for trade with the Greater Antilles.

With regard to the pottery, an unusual tan-color paste Palmetto ware was recovered from both MC-6 and MC-32. We are testing the pottery to determine whether it was made from the lighter color marl that is found on the salina. The first fine-mesh bone samples were also collected. Of special interest in the bone sample was the relatively high frequency of bird bones and the complete absence of any mammals except dogs. Two shark's teeth show evidence of use. One has a hole drilled in the top for attachment to a handle or for suspension as a pendant. A second tooth appears to have been used as a drill. We also found a few large bones that may be

from humans. To date, very few human remains have been found outside of caves during excavations in the Bahama archipelago.

Pete Sinelli and Dennis Kendrick also excavated a 1-by-1 meter test unit next to what Sullivan identified as the cacique's house. This area had far less elaborate materials than did the units near structure 2; however, the excavation was also much smaller in size. Of note in this area is clear evidence that the ridge surrounding Plaza 1 was purposely constructed and is not simply the product of refuse disposal. Large rocks were repeatedly brought to the ridge to augment its



Ralph Floyd and Warren Stortroen in the excavation units at MC-6.

height, and sand from the nearby salina was brought in as fill. The large number of conch hoes at the site were likely used to loosen the soil which was then transported to the site in baskets. The hoes may also have been used in raking salt on Armstrong Pond.

MC-6 is the size of three football fields so much remains to be done here. Future excavations will sample the north ridge as well as Plaza 2. To date, no excavations have been conducted on Plaza 2. The results thus far will help to frame new questions concerning the occupational history of the site and the relations between this site and sites on Hispaniola.

Pelican Cay-MC-39

The archaeological site on Pelican Cay was an exciting new find. Pelican Cay is connected to the mainland by a sand spit (called a tombola) that is chest deep at high tide and ankle deep at low tide. The cay is smaller than a football field with a dense scatter of pottery and shells along the southeast side. It rises about 20 feet out of the water and is likely completely awash during big storms. Despite this small size and vulnerability, the cay seems to have been extensively used. Strombus tools suggest that the land was cleared, perhaps for a house and house gardens, and griddle fragments indicate that cassava bread was baked at the site. Both of these finds point toward a more permanent type of habitation. In one area Dennis Kendrick noted a very flat area with little refuse, which may have been the location of a house.

What is most surprising about the site is the high percentage of imported pottery. Imports occurred in much greater frequency than did Palmetto ware, and several of the imports were decorated in

Meillacan designs. A small handle was also found. In addition, a surprising number of olive shell beads, a button, and other ornaments, including the worked mouth part of a porcupine fish, were recovered from the test excavations. The most impressive of these was a piece of conch that was cut to look like teeth. These "teeth" would have been set in the mouth of a wooden statue. Clearly, Pelican Cay was an important site, and as with most archaeological unknowns, it probably filled some ceremonial function.

Discussion

The next step in the project is to complete the analysis of the materials collected and to compare our findings from the two main sites MC-32 and MC-6. Such comparisons will include pottery, animal bones, tools and other implements.

A preliminary petrographic study of the constituents of pottery from the north coast of Hispaniola has already been completed by Ann Cordell of the Ceramic Technology Laboratory at the Florida Museum of Natural History. Using her study as a baseline it will be possible to determine where the imported pottery came from. We can also look at similarities and differences between imported pottery at MC-6 and MC-32 to determine the degree to which these sites shared similar sources. It is expected that MC-32 was getting its imported pots through MC-6 and that MC-6 was the main port of entry for exchange goods. These data should indicate whether this hypothesis is likely or not. In addition, we will begin looking at the locally made Palmetto ware to determine how similar the pottery at these two sites is. It is possible that local wares were made at MC-32 and were then traded to MC-6. Both studies will help to determine how close the ties between these settlements were.

The pottery is also being studied to get information on vessel size and shape, which will help us to better understand culinary habits. In addition, many of the clay griddles and some of the larger bowls were made by molding the clay in baskets. These baskets were probably burned when the pots were fired, but they have left their imprints. By studying the imprints we garner information about weaving and basket making which otherwise would be unavailable because the baskets themselves do not survive.

The analysis of animal bones is part of our larger study of human impacts on islands. A traditional view has held that Native Americans are by nature more conservation oriented and were therefore better stewards of their environment. Our work, and that of others, suggests that they did not specifically practice conservation and that any apparent conservation efforts reflect the smaller size of their populations. It is clear that the biggest and best resources were heavily exploited when humans first arrived on an island and that a number of local species were driven to extinction (especially birds). The Tainos also had a huge impact on the availability of near shore resources. It was only because they did not venture into deeper waters that breeding stocks were

unaffected and that near-shore resources rebounded. Animal bones from both sites reflect intensive use of near-shore resources and a broad-spectrum use of fish species, including groupers, snappers, grunts, parrotfishes, wrasses, porcupine fish, barracuda, bonefish, etc. The presence of fishing net weights at MC-32 suggests that nets were being used for fishing. In addition, a variety of birds and iguanas were also consumed. Iguanas and some of the birds are today locally extinct. Also, a single dog's tooth attests to the presence of dogs at the site. We collected the first window-mesh faunal samples from MC-6 so we are now in a position to determine which very small fishes were taken. We can also look at the relative quality of the diets at MC-32 and MC-6.

Virtually all of the conch (*Strombus gigas*) shell pieces found at MC-6 had been used as tools. Most *Strombus* tools in the Bahamas are "expedient" tools. In other words, a tool shape was broken from the complete shell and then used with little or no additional modification. When the task was completed, the tool would be discarded. In other parts of the West Indies shell tools have ground work edges, and were likely used for longer periods of time. Thus, although we find pieces of conch that have the shape of the better-prepared tools, they lack the extra effort that would prove that they were tools. At MC-6 most of the *Strombus* pieces had been broken into about six shapes. These shapes have been named picks, tips, hammers, hoes, gouges, and nippers. Although they do not have prepared work edges, the fact that they conform to these shapes suggests that most were in fact tools. In addition, many of these showed evidence of having been used. This is a really exciting discovery because it will allow us to more accurately interpret *Strombus* shell objects from other sites. The reason that mostly tools were found is because conch shell is heavy relative to the weight of the meat. Thus, the shells would have been discarded on the beach, as is done today, and only the meat would be carried to the site. Only those shells that were to be used to make tools would have been carried to the village. In fact, the tools may even have been fashioned, or at least roughed out, on the beach.

The excavations in 1999 were just the beginning of a long-term project. Middle Caicos provides a unique opportunity to examine the relationships between settlements on a small island as well as connections across substantial water gaps to the Greater Antilles. The quantity and quality of the materials recovered indicate that these sites will provide solid evidence regarding the relationship between the Taino heartland and the Bahamian frontier, as well as important clues to the social dynamics that likely led to a Middle Caicos boy (Caonabo) returning home to become the paramount chief of Hispaniola.

Publications

This was the first phase of a planned, long-term project on Middle Caicos. The new information contributes greatly to our understanding of the prehistory in the area and will be used as a

comparative data set for other projects that have already been completed. Most notably, the data will be used in Betsy Carlson's Ph.D. dissertation, which will be completed during the summer of 1999. A brief report on the project will be published in Times of the Islands, a magazine devoted to the Turks and Caicos Islands.

Other Accomplishments and Benefits

The project had an enormous impact on the local community. The project funds brought much needed employment to many of the island's residents. In addition, information about the prehistory of the islands and the importance of resource conservation was imparted.

Acknowledgements

There were only three weeks left until Team 1 was scheduled to arrive on Middle Caicos, yet the doors had not been put back on the schoolhouse, the outhouse was infested with termites, and the electricity was not turned on. Brian Riggs, Manager of the Turks and Caicos National Museum sprung into action as only Brian can. Materials were ordered from Providenciales and North Caicos, and Marcus and Headley Forbes were hired to make the necessary repairs. When Betsy Carlson and I arrived, the schoolhouse was in great shape, but still no electricity. Around 5:30 that night, January 3rd, Clinton Higgs of the Providenciales Power Company (PPC) arrived and connected the circuits. We were in business. Many thanks to Brian, Marcus, Headley, and Clinton for their heroic efforts in getting the school ready and for their contributions while we were on Middle Caicos. Also, PPC turned on the power for no charge. Their assistance is gratefully acknowledged. Thanks to Avis and Ianthe Forbes for the delicious meals they fixed for us every night. Evan and Doreen Hall made certain the cooler in their store was well stocked and generously threw a party for us after Team 3. Fresh vegetables came from Eunice and her husband's farm. Dale, Mike, and Mickey Witt of Blue Horizon Resort helped with communications and good cheer. The Turks and Caicos National Museum provided support and laboratory facilities on Grand Turk. Ann Clegg, Michael Dion, and Bob Gezon also made important contributions to the project.