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William K. Hayes

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Vincent J. Voegeli

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A NEW PROJECTILE POINT TYPE FROM BARKER'S POINT SHELL MIDDEN (SS-37), SAN SALVADOR, BAHAMAS

Jeffrey P. Blick
Department of Government and Sociology, Georgia College and State University, 320 North Wayne Street, Milledgeville, Georgia 31061 USA

ABSTRACT

In May 2002, a single find consisting of a pentagonal shell object was discovered at Barker's Point. Barker's Point consists of a pre-Columbian shell midden of queen conch (*Strombus gigas*), many of which are found today loose on the beach with some embedded in the beach rock matrix near the shoreline on the western shoreline of the site. This type of site has previously been identified throughout the Bahamas as a "conch-processing station" or "procurement area," characterized by the presence of "Indian-opened conch." The pentagonal shell object has subsequently been hypothesized to be a Lucayan shell projectile point, made of queen conch, similar to other shell points and dart tips found throughout the Caribbean, Bahamas, and San Salvador. The putative shell projectile point is a previously unknown stemless pentagonal form (perhaps a perform), with straight edges, a straight to slightly concave basal edge, with an irregular to flattened or rhomboid (slightly convexo-concave) cross section, and with a basal notch on the reverse. Microscopic analysis of the object with a high intensity binocular microscope indicates that manufacturing technique and use wear are not apparent due to wave attrition. Metric attributes of the object were taken with a Helios needle nose dial caliper and indicate that the object is highly symmetrical, an unlikely characteristic for a randomly broken shell. Documentary analysis of Columbus's *Diario* reveals that Columbus rowed by the Barker's Point shell midden in October of 1492, recording a few villages on the northwestern corner of the island. Radiometric dating of a shell sample from an embedded conch at Barker's Point yielded a radiocarbon age of 1028 ± 34 B.P. (AA-51432, uncalibrated, 1-sigma), which calibrates to 502 ± 34 B.P. or A.D. 1448 ± 34 years. The calibrated date range using the Marine Reservoir Correction Database yields A.D. 1410-1493 for the midden sample, which is assumed to be contemporaneous with the shell projectile point based on loose association. A new radiometric date on the shell object itself has yielded a radiocarbon age of 1054 ± 37 B.P. (UGAMS00836, uncalibrated, 1-sigma), which calibrates to 512 ± 37 B.P. or A.D. 1438 ± 37 years. The calibrated date range using the Marine Reservoir Correction Database yields A.D. 1397-1479 for the shell object. The results of this research suggest that Columbus could have seen shell projectile tips mounted on Lucayan spears, rather than fish teeth or stingray spines as others have suggested. The projectile point described herein is formally designated the Barker's Point Pentagonal projectile point.

INTRODUCTION

The Barker's Point shell midden site (SS-37) is located on the northwestern corner of San Salvador Island in the Commonwealth of the Bahamas. The site is located at approximately 24° 07.20' N, 74° 30.43' W according to the online nautical chart provided by MarinePlanner.com (2005; Figure 1). Site elevation was recorded as ca. 2 m (6 feet) above sea mean level. The archaeological deposits at Barker's Point shell midden consist of a number of queen conch (*Strombus gigas*) shells scattered along the surface of the site on both the western and northern shorelines of the site, although shells are much less numerous on the northern coast than along the western shore. It should be noted for the record that the vast majority, if not all, of these queen conch shells bear the telltale sign of having been opened at some point in the past based on the presence of a rounded hole near the

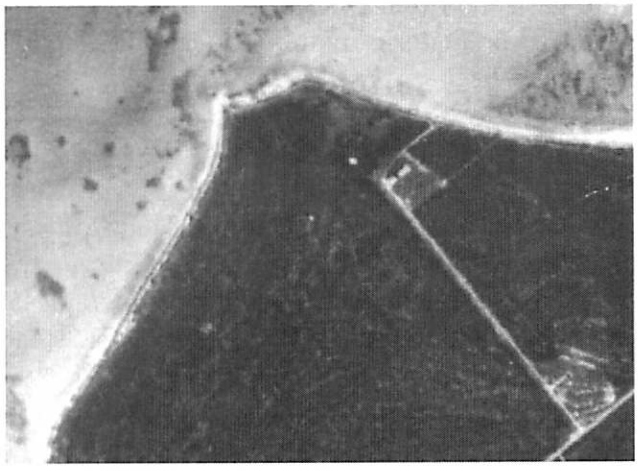

Figure 1. Location of Barker's Point on the northwestern corner of San Salvador (aerial photograph provided courtesy of Dr. John Winter). The shell midden is primarily located on the western coastline of the site.

apex of the shell. The scatter of loose queen conch shells stretches for approximately 100 m south from the Point at Barker's Point (marked by a buoy in the sand) along the western shoreline. Also along the western shore, one may observe a fair number of queen conch and other shells embedded in the beach rock (a.k.a. calcrete) matrix and loose in the tidal interface zone, where a number of queen conchs have eroded out of the beach rock. The quantity of conchs observed on the beach on the western side of the site appeared to be slightly less in May 2005 than it was when first visited by the author in May 2002, perhaps due to tourists or other souvenir seekers visiting the island.

VEGETATION, TOPOGRAPHY AND SOILS

Although the Barker's Point shell midden site is a coastal site primarily restricted to the beach and rocky shoreline, some archaeological evidence of the midden continuing a small distance inland requires us to describe the terrestrial vegetation, topography, and soils at the site.

Vegetation was described by Winter (1982) as composed of thatch palm, sea grape, and shrub. The area near the site has been reported as disturbed (Winter, 1982); therefore, it is apparent that the vegetation near the site today is secondary vegetation (Sealey, 1990). In fact, a house and access roads are obvious at Barker's Point today. Just inland from the coast, the vegetation at Barker's Point presently is best classified as coppice or a mix of coppice and shrub vegetation, "where dwarf varieties of the coppice plants are common" (Sealey, 1990:9). Sealey (1990:9) further goes on to describe this type of vegetation as composed of "densely packed trees, bushes, vines, ferns, grasses, and air plants, often very difficult to penetrate...." This description closely matches the vegetation observed on the inland portion of Barker's Point today.

Topography at the site is relatively flat, with the exception of a few low, small sand mounds here and there. This flat or gently rolling topography is typical of coastal whitelands (see below). The land at the site falls off abruptly to the west, where beach rock outcroppings drop some 2 m or so to the ocean surface, whereas the northern edge of the site experiences a more gradual transition from a grass and railroad vine-covered access area (where the modern house is located) to a gently sloping beach.

Soils at the site were originally described by Winter (1982) as banana whitelands or beach dunes. These sandy soils are technically classified as sedimentary soils or whiteland soils and are based on Holocene (last ca. 3000-5000 years) marine calcareous sands with an upper layer typically gray or grayish-brown in color and usually about 30 cm in depth (Sealey, 1994). "Sedimentary soil is really just a mixture of sand and humus found wherever there are sand dunes" (Sealey, 1990:4). According to Sealey (1994:88), "This soil is commonly found as a narrow discontinuous strip along the coastline... The landscape is coastal and varies from short, steeply sloping sand dunes to gently rolling, almost flat, land."

PREVIOUS ARCHAEOLOGICAL WORK AT BARKER'S POINT

According to the information available to the author, John Winter's single test pit in 1981 is the first record of work performed at Barker's Point on the nearby Barker's Point site (SS-15). (Note: the Barker's Point site [SS-15] and the Barker's Point shell midden site [SS-37] are recognized and recorded as two separate archaeological sites in relative proximity to one another; Blick, 2004.) According to the site form for the Barker's Point site (SS-15), a minimum amount of material was recovered, amounting to what appears to be a single potsherd, various pieces of coral, and a number of small gray limestone rocks, which were recovered down to a depth of about 50 cm below the surface (Winter, 1982).

The following item of information has been difficult to verify, but there have been reports of a radiocarbon date on shell from the shell midden at Barker's Point (SS-37). This date has been reported to be modern or contaminated (Don Gerace, 2002, pers. comm.), thus resulting in some interpretations of the shell midden as being modern in age. A radiometric assay to be reported later in this article will demonstrate the pre-Columbian age of the shell midden.

In May of 2002, Blick (2002) recovered what he believed to be a pre-Columbian shell projectile point from the beach surface on the northern coast of Barker's Point in an area where a few queen conchs were observed, also on the surface. The radiocarbon ages of a conch from the shell midden on the western side of the site and the putative shell projectile point from the northern side of the site will be discussed shortly.

In the winter of 2003-2004, Drs. Don Gerace and John Winter performed additional work at the Barker's Point site (SS-15), including a site relocation project and a small archaeological testing program, as well as a substantial effort to clear the Barker's Point site with a bush hog for further testing in May 2004. A number of test pits were excavated and screened by Winter and Gerace, yielding several bags of artifacts, including numerous fire-cracked rocks (FCR), some gastropod (e.g., *Cerion*) shells, at least one piece of prehistoric pottery, and other minor artifacts.

In May of 2004, Blick and a team of 11 students from the College of the Bahamas (Nassau, Bahamas), Georgia College and State University, University of Georgia, and Augusta State University (Georgia, USA) performed a series of systematic shovel testing programs at both the inland Barker's Point site (SS-15) and also along the northern and western coastlines of the Barker's Point shell midden site (SS-37). The work at SS-15 is described in greater detail in the report by Blick (2004).

Of relevance to the present article, however, are some of the findings that resulted from the shovel testing program conducted on the western and northern shorelines of Barker's Point in proximity to the shell midden. To determine the potential nature and extent of the Barker's Point shell midden (SS-37), two 100 m transects were run along the beachfronts on the northern and western coasts at the Point. One transect (Transect X) was run in an easterly direction from the Point along the north coast and another transect (Transect Y) was run in a southerly direction from the Point along the western coast (Blick, 2004). As it turned out, no artifacts were found in any of the shovel tests along either of the transects, with the exception of the second shovel test on Transect X (Shovel Test X2). Shovel Test X2 was located 25 m WNW (300°) from the NW corner of the porch of the beachfront house at Barker's Point. At a depth of 67 cm, two large queen conch fragments were recovered that were reminiscent of the conchs found in the midden along the western coast of the midden site. This suggests that the Barker's Point shell midden (SS-37) may have a small inland component buried by perhaps 50-100 cm of recent dune deposits (Blick, 2004).

THE SHELL OBJECT: A PUTATIVE LUCAYAN PROJECTILE POINT

On 12 May 2002, at about 1530 h in the afternoon, the author encountered a single, loose shell object (Figure 2) as a find on the beach on the northern coast of Barker's Point, in proximity

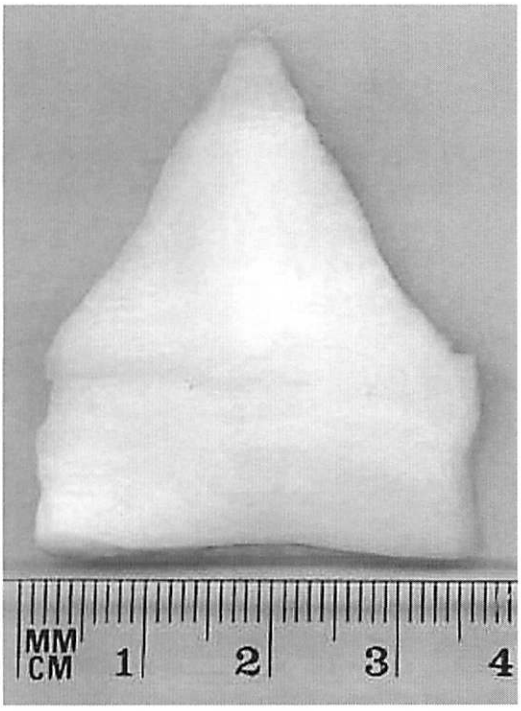

Figure 2. Photograph of the shell object from Barker's Point, believed by the author to be a pre-Columbian projectile point (or projectile point blank). Obverse view. Object is 42.30 mm long, 34.85 mm wide, and weighs 13.95 g.

to previously-opened queen conch shells, known by some as "Indian-opened conch" (Keegan, 1992:72). The author's first impression of the find, and one that continues to the present, was that the find represented a pre-Columbian projectile point utilized by the Lucayans of the island of San Salvador prior to the arrival of Columbus. The find was located about 100 m east of the coral outcropping at Barker's Point. Although not recorded as an archaeological site at the time, Barker's Point had long been known as a conch midden site, though the age of the deposits had been questioned. The nature of the site today is perhaps more clear than it was just several years ago. It is now apparent that the site is indeed a pre-Columbian shell midden of queen conch (*S. gigas*), many of which lie loosely upon the sand on the western shoreline of the site and a few of which may also be found on the northern coast of the site. A number of queen conchs and other shells are embedded in the beach rock matrix of the site on the western shore. In the words of well-known Caribbean archaeologist William F. Keegan of the University of Florida, this type of site is called a "conch-processing station," or "procurement area," which he notes is characterized by the presence of "Indian-opened conch" (Keegan, 1992:71, 72).

As an aside, there has been some disagreement regarding the nature of "Indian-opened" vs. recently-opened conch. There are scholars, such as Keegan, who suggest that Indian-opened conch is characterized by a rounded hole near the apex of the conch (Figure 3); the rounded hole would have been made by using the spire of one conch to puncture the apex of another. The rounded hole, which typically occurs near the third whorl or segment below the apex, is the aperture through which the meat of the conch could be extracted with the aid of some sort of implement or blade. On the other hand, there are other researchers, such as Don Gerace, who have observed that the rounded hole near the apex of the conch is still made by Bahamians today by opening modern conchs using the "ancient" technique described above (Gerace, pers. comm., 2002); thus, the rounded hole cannot be taken as an indicator of the age of the opened conch. The author has observed that many modern conch piles on the lakeshores around San Salvador have conchs which exhibit a linear hole near the apex, the hole having been made with a machete blade, according to the locals. Although this debate has significant implications for the age of opened conchs and the archaeology of the Bahamas and the Greater Caribbean, it will be shown that radiometric dating has contributed much to explain the age of "Indian-opened" conchs, at least in regard to the deposits at Barker's Point.

The primary morphological feature of the shell object upon gross examination is its almost perfect symmetry. The object possesses three pairs of symmetrical sides: the tip to left shoulder (30.45 mm) and the tip to right shoulder (30.05 mm), left shoulder to left ear (16.15 mm) and right shoulder to right ear (16.65 mm), and shoulder width (34.85 mm) and basal width (34.90). These measurements are within 0.4 mm, 0.5 mm, and 0.5 mm of each other, respectively,

*Figure 3. Prehistorically-opened queen conch (*Strombus gigas*) on the surface at the Barker's Point shell midden site (SS-37; photo courtesy Rachel Pinner). Notice round hole near apex of conch.*

an extremely fine level of accuracy unlikely to be due to patterns of random breakage.

From an archaeological perspective, the main morphological feature of the shell object is that it resembles stemless, stone pentagonal projectile points from another part of the world, namely the Jack's Reef Pentagonal projectile point, which is common in eastern North America (Ritchie, 1971; Justice, 1987; Figure 4). The object's blade edge is straight, the basal edge shape is straight to slightly concave, it has a basal notch (perhaps for hafting) on the reverse side only, and the cross section of the object is irregular to flattened or rhomboid (slightly convexo-concave). It is this latter morphological attribute, the cross section, that is perhaps the main feature of the object that is problematical in regard to its interpretation as a projectile point, as projectile points are typically lensatic in cross section (Justice, 1987), at least those made of stone. The material of manufacture of the shell object is obviously queen conch (*S. gigas*), even to the point of visibly retaining some of the slight concavity and convolutions of the outer lip of the conch. While the following may or may not have been significant in the mind of the maker of the object, the "tip" of the putative projectile point was oriented toward the apex of the conch shell

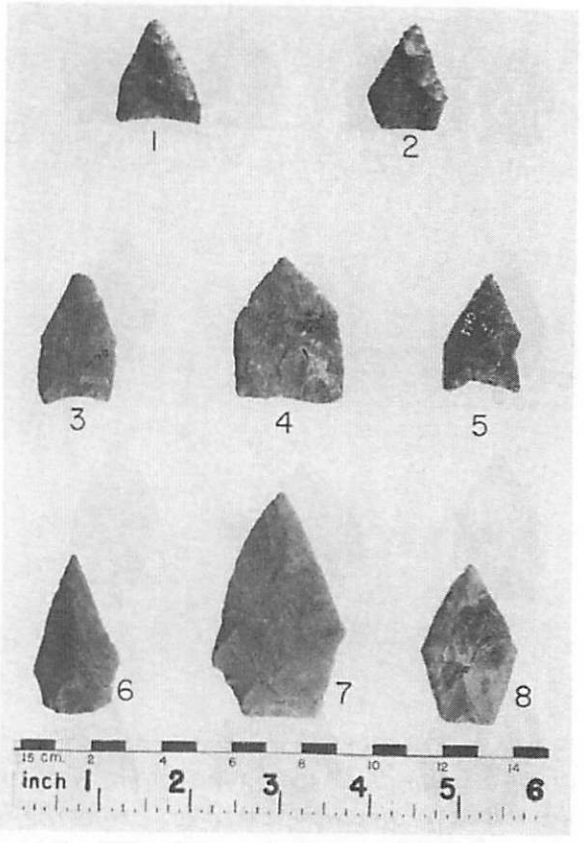

Plate 12—Jack's Reef Pentagonal Points
1, Wickham site, Brewerton, Oswego County, N. Y.; 2, 4, 6, 7, Onondaga County, N. Y.; 3, Clifton Park, Saratoga County, N. Y.; 5, 8, Van Orden site, Greene County, N. Y. 5, 8, collection of Carl S. Sundler; others N. Y. State Museum collection. Material: 7, 8, Deepkill flint; others of Onondaga flint.

Figure 4. Jack's Reef Pentagonal projectile points from New York State, USA (photo courtesy New York State Museum; from Ritchie 1971). Compare Figure 2 with Item 4 above.

(indigenous perceptions of natural objects often include concepts of front, back, top, bottom, handedness, and directionality; e.g., Kroeber, 1961).

The manufacturing technique used to fabricate the object is not entirely clear. The object was examined with a Meiji Model FL180 Fiber-Lite High Intensity Illuminator binocular microscope and revealed that flaking (as one might find on a stone tool) was not apparent (there appears to be some slight attrition of the object due to wave action—it was, after all, found on a beach). Keegan (1995) reported that conch shell tools in the Caribbean were cut to shape with chert imported from the Greater Antilles. If this indeed was the manufacturing technique used to

create the shell object, it might explain the very straight sides, blade, and basal edges reported above. In addition, there appears to be no use wear evident on the object, once again likely due to the slight attrition of the object in the surf. The weight of the object is approximately 13.95 g, as weighed on an Ohaus Model 1010-10 Precision Balance with 0.01 g accuracy, designed especially for weighing very small quantities.

The main metric attributes of the shell object were taken according to the standard measurements for stone projectile points illustrated in Justice (1987:240, Figure 54). General measurements indicate that the object is 42.30 mm long (maximum length), 34.85 mm wide (shoulder width), 34.90 mm wide at the base (basal width), and 6.40 mm thick at the center or 7.45 mm thick at the thickest point. All measurements were taken with a Helios needle nose dial caliper with an accuracy of 0.05 mm. Other metric attributes are provided in Table 1.

OTHER SIMILAR OBJECTS FROM THE CARIBBEAN AND BAHAMAS, AND THE ROLE OF POINTS AND SPEARS IN THE LUCAYAN CULTURE

According to a review of the literature and communications with about a half dozen experts in Caribbean archaeology, there are indeed other similar objects from the Caribbean and Bahamas, although their instance appears to be very rare in the archaeological record. Irving Rouse and Birgit Faber Morse reported incised shell three-pointers from the Indian Creek site on the island of Antigua in the Lesser Antilles (Rouse & Morse, 1999:35, Figure 19). It should be noted, however, that these shell objects are incised and appear to have functioned in a significantly different manner in the culture (three-pointers apparently carried a mythico-religious meaning for the Taíno people of the Greater Caribbean; e.g., Rouse, 1992). The shell object, if indeed it is a projectile point, is a mundane object related to the earthly (or should we rather say maritime) pursuit of animals for food or for use as protection in warfare. Dr. Irving Rouse, when contacted by e-mail to comment upon a photograph of the Barker's Point shell object, replied, "If the artifact has a thin cross section...I cannot imagine what would have been its purpose" (Rouse, letter dated 6 June 2002). William Keegan of the University of Florida commented that he had not seen anything like the Barker's Point shell object, although Mary Jane Berman, who has worked on San Salvador for approximately 20 yr now, responded that she has indeed seen objects similar to the one reported here, although not quite as well formed (Mary Jane Berman, pers. comm., 2002).

From San Salvador, we have at least one published article which illustrates a shell dart point recovered from the Pigeon Creek site (Rose, 1987:335, Figure 4). The dart point from Pigeon Creek is reportedly 2.5 cm in length and can no longer be located in the repository collections at the Gerace Research Center, and is therefore not available for further study, at least at the present time (Gerace, pers. comm., 2002). The late Dr. Charles A. Hoffman, in his path-breaking doctoral dissertation on his excavation at the Palmetto Grove site (Hoffman, 1967), described and detailed for the first time (in the Bahamas, at least) an abundance of newly recognized and classified shell tools, making the argument that, in the absence of native stone, the Lucayans of San Salvador would have turned to shell for the source of their tools. While Hoffman's work was a major early contribution to the archaeology of the Bahamas, he reported no shell objects similar in morphology to the one reported herein from the Barker's Point site. More recent work by Jones O'Day & Keegan (2001) has also reported on a wide variety of shell tools throughout the Caribbean, again, however, with no report of a "projectile point"-like shell object. Shell projectile points are reported in prehistoric North America from Virginia (Rountree, 1989) to California (Jones, 1988), but appear to be curiously less common in the Greater Caribbean and Bahamas.

We have a fair amount of ethnographic information regarding the use of spears and spear tips in the cultures of the Bahamas, Greater Caribbean, and South America that can be brought to bear on the object at hand. In his *Diario* describing his voyage to America in 1492,

Columbus wrote the following: "*ellos no traen armas ni las cognoscen porque les amostre espadas y las tomavan por el filo y se cortava con ignorançia. no tienen algun fierro: sus azagayas son vnas varas sin fierro y algunas dellas tienen al cabo vn diente de peçe y otras de otras cosas,*" i.e., "They do not carry arms nor are they acquainted with them, because I showed them swords and they took them by the edge and through ignorance cut themselves. They have no iron. Their javelins are shafts without iron and some of them have at the end a fish tooth and others of other things" (Columbus, October 12, 1492, translated by Dunn & Kelley, 1989:66, 67; some punctuation and spelling changed by the author for ease of reading; see also Fuson, 1987, for a slightly different translation).

While Carib tribes of the Lesser Antilles and the Taíno peoples of the Greater Antilles, e.g., Puerto Rico, had bows and arrows (Fuson, 1987:123; Rouse, 1992), it appears that bows and arrows were absent in the Bahamas or that Columbus either did not see or record their use. In fact, Taíno archers in Puerto Rico, the Caribs, and indigenous Brazilian archers were known for their skill and deadly accuracy with the bow and arrow, the latter launching them by foot (Hemming, 1978). In the lack of ethnohistoric evidence, it appears that the Lucayans of the Bahamas used "*azagayas*," javelins or spears, either as weapons or as hunting and fishing implements. While records for shell projectile points in the Caribbean are scarce, there are examples of bone and shell objects being used as projectile points and barbs on lances or spears (Rouse & Cruxent, 1963; Rouse, 1992:64, Figure 18) in the Caribbean.

Turning to the cultures of South America for ethnographic comparison (the Taíno and the Lucayans both have South American origins, so the comparison is not quite the stretch it first appears), we find that spears and spear tips played major roles in the hunting and warfare of societies such as the well-known Yanomamö, Warao, Makuna, and Motilon, to name just a few. For example, the Yanomamö of Venezuela/Brazil used arrow points in both war and hunting (Biella *et al.*, 1997). The Warao of Brazil used a suite of arrowheads, including some made of wood, palm wood, stingray spine, etc. (Wilbert, 1972). Uses for spears or lances would have included warfare, hunting terrestrial mammals (although many of these were small), and spear fishing. Spear fishing has been observed ethnographically among the Makuna of Colombia, the Motilon of Venezuela, and also among modern Amazonian peoples of both indigenous and criollo origins (Jimeno Santoyo, 1987; Schultes, 1988). Use of projectile implements (e.g., spears and lances) was reportedly one of the main fishing techniques utilized by the prehistoric peoples of the Caribbean (Wing & Reitz, 1982). And of course, spears have played a major role in the warfare and public spectacle of the Yanomamö (Lizot 1985; Chagnon, 1997). It is these cultural contexts and uses that are proposed for the shell object (the putative shell projectile point) from Barker's Point.

RADIOMETRIC DATES FROM THE SHELL MIDDEN AND THE SHELL PROJECTILE POINT

Due to the fact that the date for the Barker's Point shell midden was unproven (earlier attempts to date the deposit reportedly resulted in either modern or contaminated dates; Don Gerace, 2002, pers. comm.), it became necessary to submit a sample to a laboratory to resolve the question surrounding the age and nature of the Barker's Point shell midden. In August of 2002, the author returned to San Salvador and, in the presence of Don Gerace, removed a portion of a queen conch shell embedded in the beach rock at the Barker's Point shell midden site (SS-37), wrapped the sample in aluminum foil to avoid contamination of the sample, and later shipped the sample to the NSF-Arizona Accelerator Mass Spectrometry Laboratory at the University of Arizona in Tucson. The radiocarbon age of the shell was reported by the lab as 1028 ± 34 B.P. (sample no. AA-51432, uncalibrated, 1-sigma). Upon calibration, the sample date was 502 ± 34 B.P. or A.D. 1448 ± 34. The calibrated date ranges were 540-457 B.P. (A.D. 1410-1493) using the intercept method (Stuiver *et al.*, 1998) and the Marine Reservoir Correction Database

(http://depts.washington.edu/qil/marine) for samples containing 100% marine carbon (e.g., shell). Using the probability method, a date range of A.D. 1398-1510 was obtained (Stuiver *et al.*, 1998). All calibrations and ranges reported above were at the 1-sigma error range. Based upon the radiocarbon age, calibrations, and ranges for the shell sample from the midden, it is now clear that the midden site is of pre-Columbian age (or at least contains deposits that are of pre-Columbian age). The ranges provided also suggest the possibility that the Barker's Point shell midden site (SS-37) was utilized just before or up until the time of the arrival of Columbus (or perhaps a little later).

A radiometric date from the shell object itself was obtained in early May 2005 from the University of Georgia Center for Applied Isotope Studies (CAIS) in Athens, Georgia. The projectile point was submitted by the author in person to Dr. Doug Dvoracek, who then removed a small portion (about 15 mg) of material from the base of the object for submission for AMS dating in CAIS's accelerator. The radiocarbon age of the shell projectile point was reported as 1054 ± 37 B.P. (sample no. UGAMS00836, uncalibrated, 1-sigma). The calibrated date of the sample was 512 ± 37 B.P. or A.D. 1438 ± 37 (within 10 yr of the midden sample). The calibrated date ranges were 553-471 B.P. (A.D. 1397-1479), using the intercept method (Stuiver *et al.*, 1998) and the Marine Reservoir Correction Database (http://depts.washington.edu/qil/marine) for samples containing 100% marine carbon. Using the probability method, a date range of A.D. 1380-1491 was obtained (Stuiver *et al.*, 1998). All calibrations and ranges reported above were at the 1-sigma error range. Based on the information provided above, the calibrated date and ranges indicate the pre-Columbian age of the shell object and strengthen the case that the conch was killed (and likely utilized) in pre-Columbian times.

The interpretation of the shell object reported herein as a pre-Columbian projectile point has met with some resistance. At this point, it seems only fair to raise some of the objections to the interpretation of the object as a pre-Columbian projectile point. First, some have countered that the object is simply a piece of randomly broken shell. To counter this argument, it has already been demonstrated that the object possesses three pairs of symmetrical sides: 1) tip to left shoulder and tip to right shoulder, 2) left shoulder to left ear and right shoulder to right ear, 3) and shoulder width and basal width. These measurements (reported in more detail above and in Table 1) are similar at an extremely fine level of accuracy, which seems highly unlikely to be due to patterns of random breakage. To test the "random breakage" hypothesis, then University of Georgia student Tiffany Bowman proceeded to collect and break a number of conch shells and was unable to produce a piece of shell with symmetrical sides. These facts would appear to nullify the random breakage hypothesis.

A second objection that has been raised is that the object could be of modern manufacture but made of ancient material. The likelihood of this seems to go against Occam's Razor. Furthermore, if the object was made recently, who made it, what was it made for, and why was it left at the site? The "recently manufactured" hypothesis seems to raise more questions than answers and requires many more assumptions than the pre-Columbian hypothesis.

Some, including myself, have raised a third objection, that there appear to be very few objects of this kind from San Salvador and the Greater Caribbean. This argument is based on the apparent "rarity" of the object. But it should be noted that there are some similar objects, the most similar of which is from San Salvador itself (Rose 1987:335, Figure 4).

Finally, and perhaps the most damaging of the objections, is that the morphology of the object is not quite right: its cross section is wrong, the object is not sharp enough, etc. These objections based on "morphological" grounds are serious; however the morphology of the object might represent an early stage of manufacture (a blank or perform) and/or that the object's sharpness might have been affected by attrition in the ocean and on the beach at Barker's Point. The morphological objections raise a simple question, and that is: what else could the object be? The association (albeit loose) of the object with the

Table 1. Barker's Point pentagonal projectile point metric attributes (following Justice 1987:240, Figure 54).

Metric Attribute	Measurement	Comment
Maximum Length (ml)	42.30 mm*	
Blade Length (bl)	25.60 mm (vert. meas.)*	30.45 mm (diag. meas.)
Shoulder Width (sw)	34.85 mm	
Maximum Thickness (mt)	6.40/7.45 mm	center/thickest point
Neck Width (nw)	N/A	no neck
Basal Width (bw)	34.90 mm	
Stem/Haft Length (sl)	16.70 mm*	
Depth of Basal Concavity (dc)	.15 mm	
Tip to Left Shoulder	30.45 mm**	see comment for bl
Tip to Right Shoulder	30.05 mm**	
Left Shoulder to Left Ear	16.15 mm***	
Right Shoulder to Right Ear	16.65 mm***	
Width of Basal Notch	4.75 mm	reverse side only
Height of Basal Notch	7.85 mm	reverse side only
Left Ear to Edge of Basal Notch (facing viewer)	14.15 mm	reverse side only
Right Ear to Edge of Basal Notch (facing viewer)	16.50 mm	reverse side only
Weight	13.95 g	

pre-Columbian shell midden at Barker's Point (now demonstrably shown to be of pre-Columbian age) and the pre-Columbian age of the shell object itself both provide supporting evidence for the simplest explanation of all, the explanation that best fits Occam's Razor, that the object is a pre-Columbian object used in or around the midden site in pre-Columbian times. The obvious use for such an object in a maritime context would be for spearing fish (or perhaps more generally, as Columbus suggested in his *Diario*, as the tip of a javelin or spear).

CONCLUSIONS

As it turns out, historical evidence seems to indicate that Columbus actually sailed past Barker's Point on his longboat survey of the island on Sunday, 14 October 1492. Columbus wrote in his *Diario*, "*En amaneçiendo mande adreçer el batel dla nao y las barcas dlas caravelas y fue al luengo dla Isla en el camino del nornordeste p[ar]a ver la otra p[ar]te qu era de la p[ar]te del leste que avia. Y tambien p[ar]a ver las poblaçiones y vide luego dos o tres,*" i.e., "As soon as it dawned I ordered the ship's boat and the launches of the caravels made ready and went north-northeast along the island in order to see what there was in the other part which was the eastern part. And also to see the villages and soon I saw two or three" (Columbus, 14 October 1492, translated by Dunn & Kelley, 1989:72, 73; some punctuation and spelling changed by the author for ease of reading; see also Fuson, 1987). Keegan (1992:187, 188, Map 8.2) noted that "'two or three' Lucayan settlements...were observed during the longboat survey." If historical reconstructions are correct, Keegan's (1992) Map 8.2 shows that Columbus's longboat survey took him past Rocky Point, the Palmetto Grove site, Barker's Point, and into Graham's Harbour toward Cut Cay, where Columbus could easily have seen two or three contemporary Lucayan settlements. Some of the Indians even swam out to Columbus's boats and brought the sailors water and other things (Dunn & Kelley, 1989:72-75).

It is clear from entries in his *Diario* that Columbus saw a functioning and vital culture on San Salvador in that fateful October of 1492. Columbus made observations about Lucayan houses, material culture, and the plants and animals of the island. Being a military man on a mission for the King and Queen of Spain, Columbus also made observations about the bellicosity (or lack of it) of the people and their weapons (or lack of them). Naturally, Columbus

noted the javelins or spears of the Lucayans and their lack of iron (as described above). In this regard, one scholar has interpreted Columbus's comments on the spears in the following manner: "I submit that Columbus may have observed spears armed not with...fish teeth, but with...stingray spines, a respected weapon of the people of Central America, and one would presume, of the West Indies" (Campbell, 1998:11).

The interpretation that is presented here, as supported by the current archaeological evidence, is that Columbus did not, in fact, see spears tipped with stingray spines, but rather that he saw spears tipped with worked shell projectile points like the newly-christened Barker's Point Pentagonal projectile point, which closely resembles, in size and shape, a fish or shark's tooth. The calibrated radiometric dates and their ranges reported herein suggest that the Barker's Point shell midden was utilized just before or up until the time of Columbus's arrival. Therefore Columbus could have seen and described such worked shell projectile points during his brief two-and-a-half day encounter with the people of San Salvador between 12-14 October 1492.

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