Jamaican Taíno 'Shellsmithing' Techniques Explored: A Study in Method[1]

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Introduction

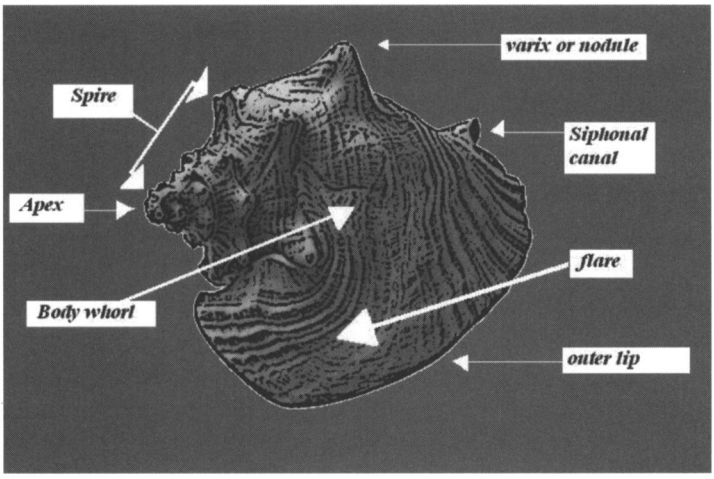
Jamaica was inhabited by two separate groups of pre-Columbian people. The Ostionoid, or as James Lee called them, the Redware people arrived approximately A.D 650 ± 120[2], settling several known sites on the southwestern coast and on the central northern coast of the island as well. Then a later migration of Meillacan Ostionoid pottery-making people presumably from central Hispaniola arrived, approximately 1073 B.P[3] ± 95 or A.D 948 (Allsworth-Jones, 2008, p. 99). These were the Taíno. They successfully settled most of the coastal areas of the island as well as many inland sites.

Both cultures were technologically Ceramic Age peoples, who used the durable materials around them to fabricate and develop their material world, the hardwood trees, natural fibres, a large variety of stones, both igneous and sedimentary, and the shells collected primarily as food, which they used secondarily in their industrial and decorative arts. However, it is the indigenous use of shells and corals which fascinated me. Having been a practicing goldsmith, I understood the skill required in turning natural raw materials into naturally fabricated things of beauty, but pre-Columbian peoples were far superior in skill and ingenuity in their use of the seashell, compared to present-day manufacturers of shell craft items. From a careful study of certain worked artefacts (presented below) it appears that the Jamaican Taínos' understanding of the natural symmetry and internal structure of various gastropod shells (Figure 1) was advanced and equal to the skill of Mesoamerican (Mayan) craftsmanship (Schele & Miller, 1992, plates 27, 59, 85, 113, 121), or Aztec, or indeed the Classic Taíno craftsmanship as seen on the other Greater Antillean islands of Hispaniola, Eastern Cuba and Puerto Rico (Bercht *et al.*, 1998, plates 25, 26, 34, 85, 102).

Though these cultures used Gastropod shells to make fantastic works of wearable art, their artisans relied on incision techniques and carvings on the surface of the shell to convey their ideas visually. The Jamaican Taíno, however, seemed to prefer the use of the natural internal structure of the shells' columellas to translate and communicate ideas and imagery. Thus in my estimation their

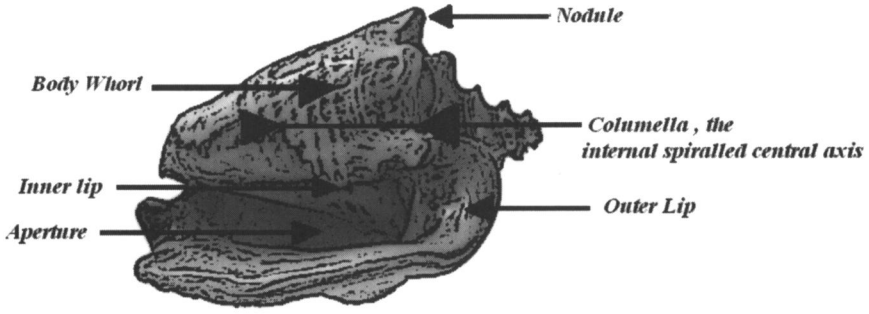
understanding of the shells' true decorative ability was far superior to the other previously named cultures.

Figure 1: Structure of a gastropod shell (Author's illustration).



The most often used univalve shells were classified as the true conchs (Dance, 1992, pp. 57–64). The term 'conch' is used to designate a number of shell varieties, even those that do not belong to the true conch shell gastropod family as do the *Strombus gigas* (Queen conch), the *Strombus gallus* (Rooster Tail conch), *Strombus raninus* (Hawk Wing conch) and the *Strombus pugilis* (West Indian Fighting conch), which are common Caribbean varieties of the sea snails. Living in warm shallow waters, feeding on eel grasses and scavenging through coral sands, they often move into deeper waters as they reach the end of their reproductive maturity, although never to depths of more than 70 feet. At this depth their shells, which consist primarily of calcium carbonate bonded by a protein called conchiolin, start to thicken and lose their customary rippled appearance, as in the case of the Queen conch (*Strombus gigas*). This rippling can be found on the larger outer lip or flare of the *Strombus gigas* shell (Figure 2). However as this shell ages the rippled surface starts to attain a flattened appearance. In some cases this flattening is minimal and in others the flattening is complete, leaving a smooth sloping surface. The snail can live for 20 to 40 years. This longevity also influences the amount of horizontal rippling or ridges present on the body whorl, which continues to the outermost rim of the lip as well as to the thickness of the outer lip. The *Melongena melongena* or West Indian Crown conchs are also a variety of sea snail, and are not considered true members of the conch family though colloquially they are called by that name. They belong to the *Melongena*

Figure 2: Structure of a Gastropod Shell(underside) (Author's illustration).



family of molluscs, however, their life spans and diets are similar to the true conch. Their shells as well as the shells of the true conch and several other mollusc species[4] are commonly encountered on the surface of Taíno archaeological sites across the island and were used in a vast assortment of ornamentations, as well as in Taíno utilitarian tool kits, both ceremonial and secular.

Techniques Used in the Manufacture of Shell Ornaments, Ceremonial Objects and Tools

When admiring shell works of art one wonders what tools were used or how long it might have taken to complete a single piece. The skill required was remarkable considering the fact that the primary tool kit came from the same materials as the ones that were employed in their manufacture. Often found on archaeological sites across the island are grinding stones, polishing stones, hammer stones, anvil stones, a variety of picks, plus an array of small micro and the larger macro (chert or flint) blades. But there are other tools that were likely employed by the Jamaican Taíno which may not be easily located or readily identified as tools either because they are made of vegetable fibres which are perishable, or because of their nondescript appearance, such as wood or twine in the first instance, and sand in the second. However simple these items may seem in appearance their effectiveness in performing certain prescribed tasks as described below invites discussion about the versatility of the Jamaican Taíno technological ingenuity. And in some cases these same techniques have remained unchanged in the modern shell ornamental industry and goldsmithing in general (Untracht 1982, pp. 560–564).

The best way to explore the 'shellsmithing' technology of the Taíno is to examine specific artefacts and the techniques used in their fabrication. First on the

list of objects to be examined is a finely crafted shell pendant (Figure 3 a–c) found at the Booby North Point Taíno site (Figure 4), a site that was investigated and named by the author on the 15th of January 1997.

Figure 3: An elegantly crafted pendant shown from three angles. North Booby Point, Jamaica (Author's photograph).

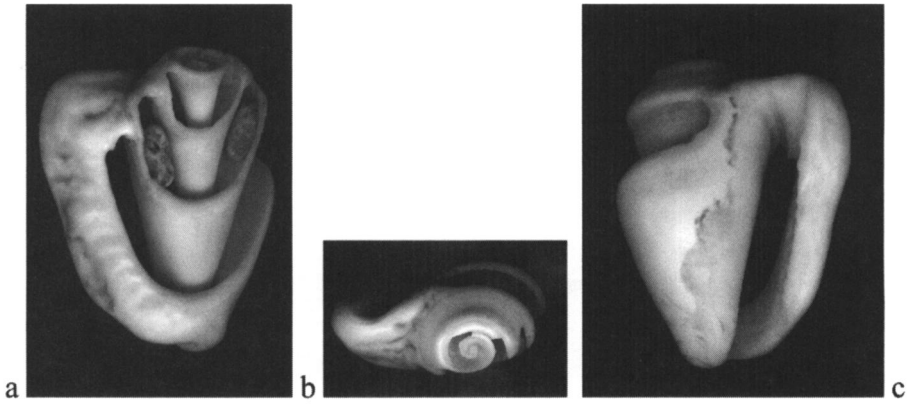
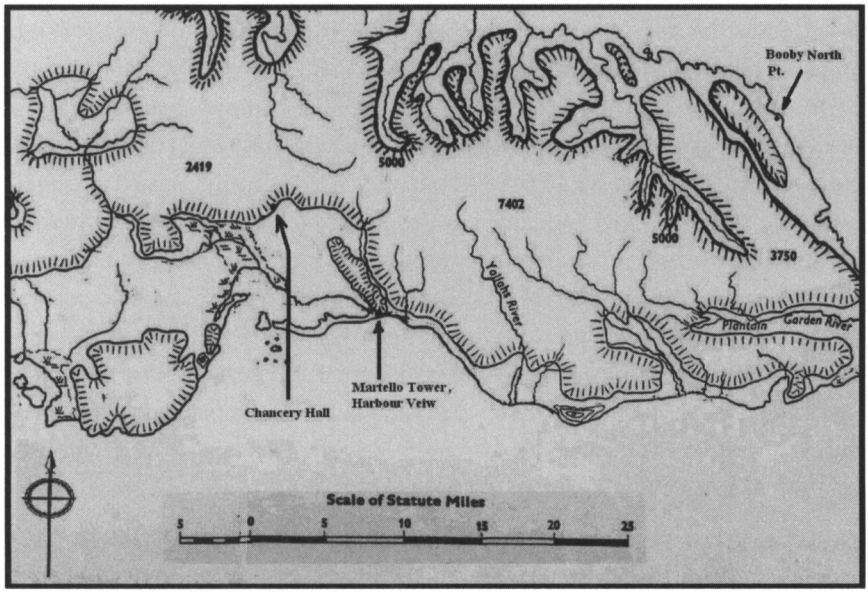
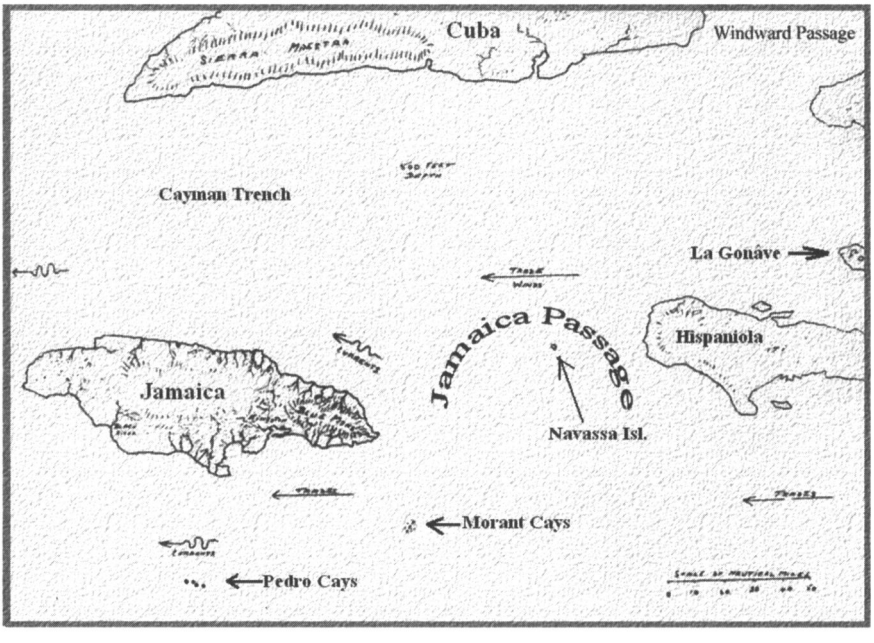


Figure 4: Map of Eastern Jamaica showing the location of the Taíno sites mentioned above. Redrawn from S.A.G. Taylor, *The Western Design: An account of Cromwell's expedition to the Caribbean,* map no.1.



On recognizing that the artefact was pre-Columbian, the site was revisited, and found to contain a further one hundred and forty-five shell, stone, and coral artefacts, which were in peril of being washed out to sea. This ornament (Figure 3) was constructed from a mature Hawks Wing conch shell (*Strombus raninus*), which is more often found in the waters of Hispaniola. So it is not unreasonable to assume that these Booby North Point Taíno fished regularly near or in the Morant Cays or as far away as Navassa Island[5] (Figure 5), which is located only a few miles from Hispaniola. This is still the practice of fishermen from the parishes of Portland and St. Thomas today. Both parishes are located at the easternmost point of the island.

Figure 5: Map of the island of Jamaica in relation to her neighbours. Redrawn and redigitized from D.J.R. Walker, *Columbus and the golden world of the Island Arawaks.* Map no.7, p. 235.



To make this object, after the extraction of the highly nutritious snail that inhabited the shell, the pre-Columbian craftsperson first started his or her work by burying the shell in an ant mound in a shaded location. This technique of ant

cleaning is commonly used by modern ornamental shell collectors to remove the remaining fragments of the snail. Since harsh chemical treatments can damage the value of the shell, ants are an efficient non-corrosive way of cleaning the shell. I have even experimented with the use of ants, when preparing soup bones for use in my own experimental jewellery, and other researchers have explored the use of ants in the cleaning of skeletal remains (Crawford & Atkinson, 1975, p. 8). After this process was completed to the artisan's satisfaction, he or she then commenced with the conversion of the raw shell to wearable art by removing the spire (Figure 3a), either with a sharp and precise blow from a small hammer stone or with a sharpened stone or shell chisel, such as the one shown in Figure 6. The shell was held in place using a grooved anvil stone similar to the one that was found on the same site (Figure 7) by one of my two field assistants, Ms. Claire Woods.

Figure 6: Damaged stone chisel found at Chancery Hall, St. Andrew (Author's photograph).

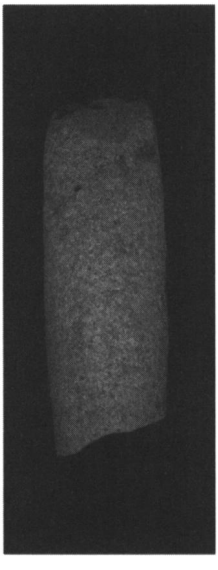


Figure 7: Anvil stone found at North Booby Point (Author's photograph).

Next, the outer body whorl was removed, leaving the inner columella encasing exposed. The columella is made up of several circular internal chambers that increase in number as the snail increased in size, and it runs linearly from the spire to the siphonal canal opening. In order to reveal its inner beauty, these chambers must be individually exposed. The craftsperson would then use a small

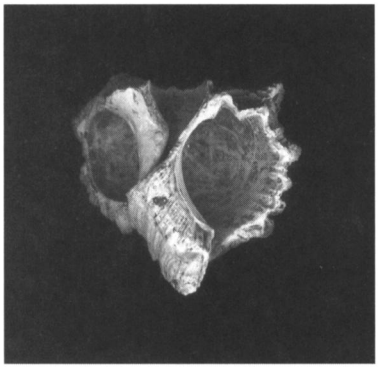
pointed stone or chisel (Figure 6), likely derived from a hard crystalline igneous rock i.e., quartzite or serpentine. This small implement was used to peck or groove around the first outer section of the columella, thus creating a continuous incised line or small stippled pits. These incisions helped to facilitate the removal of the section with sharp precise blows from the small chisel when struck by a small hammer stone. This would also have created less damage to the other underlying columella segments of the shell (see Figure 2). They then moved on to repeat the same process to expose the next section.

This was continued until all the required sections of the columella were exposed, and then the Taíno craftsperson inserted two small elliptical stones of approximately the same size (as in Plate 3, COLOUR PLATES, p. v), each placed on the opposite sides of the U-shape located at the centre of the other two decorative openings. This well-chosen placement had the practical function of helping to guide the suspension string or twine that was used to hang the shell pendant when worn around the neck as a decorative ornament. However, there would have been another purpose for the placement of these stones: I suspect they represented a hidden symbolism when combined with the complete design as a whole. This may have been associated with abstract thoughts and ideas as well as representations of real images, both perceived and intangible.

There was likely a religious meaning connected with the choice of the shape and design of the objects being made for ornamental or utilitarian purposes, as the chief craftsperson of the village often would have been a member of the shamanic caste and female. Taíno religion was based on the existence of the spirit world that was believed to have had constant interaction with the material world. Both coexisted in harmony and sometimes disharmony; this meant that the vast majority of ornaments were made to display one's affiliation with a certain protective spirit, for example the owl. Several owl-shaped pendants were found at the Chancery Hall Taíno site (Figure 8). They all were made from murex shells simply altered to look like the night raptor, a harbinger and protector of the dead (Arévalo, 1998, pp.112–125). These facts were mentioned in ethno-historical accounts recorded by Fray Ramon Pané (see Pané, 1999; Keegan, 2007) and Las Casas (Ostaprowicz, 1998).

The earlier reference to the gender of these Taíno artisans was verified by local natives who told Bartholomew Columbus about a group of female woodcarvers who lived on the island of La Gonâve (Ostaprowicz, 1998, p. 66). This island is located off the western coast of present-day Haiti as shown on the map featured in figure 5. However, in pre-Columbian times the island was called

Figure 8: Murex Shell, altered to depict the image of an owl (Author's photograph).



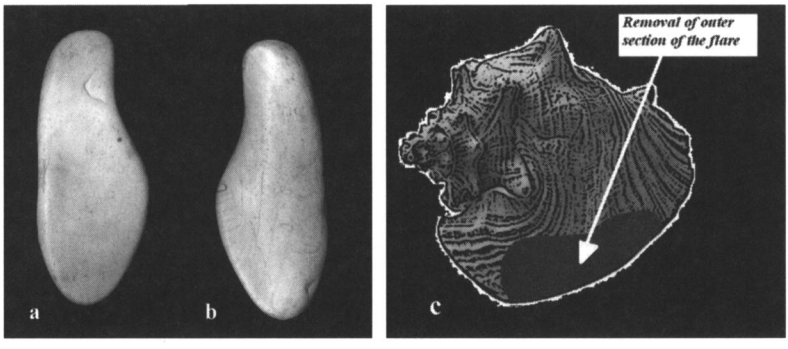
Guanabo[6] (Coll y Toste, 1972). This special guild of craftswomen apparently made all the ceremonial trays, *duhos* [7] of polished black woods, basins and other wood carved containers (Ostaprowicz, 1998, p. 65). These instances, however, do not preclude Taíno men from participating in the creative crafts, but many historians and archaeologists have explored the dynamics of the matrilineal nature of Taíno society, noting how women controlled both lineage and the objects that were associated with status and the caciques' authority to rule (see for e.g. Keegan, 1999, pp. 111–117).

The final step in making the shell pendant discussed above would be to smoothen it with the use of a small elongated ovoid shaped stone with a mildly gritted surface texture, possibly selected from a nearby riverbed. A small stone found at Chancery Hall, fits this description. It was approximately one inch long and a millimetre wide. One side of the stone showed extensive flattening and smoothing from its continuous use as a sanding tool. The stone would be frequently dampened with water, to allow for an evenly distributed amount of friction, while the piece was being sanded. The longer the stone was used, the smoother and less gritty the surface would become, allowing the slow polishing of the shell. This technique is still used today when sanding precious metals, but instead of a stone, we use various grit sandpapers, though some jewellers will use only one grade grit sandpaper with water to achieve the same outcome. As use lessens the grit, it is possible to polish the jewellery piece to a fine matte finish.

Other techniques of shell fabrication were available to pre-Columbian peoples on Jamaica as well. The second item to be examined would have required more skilled tools than previously recognized on any archaeological site primarily because of the perishable nature of the materials being used, but they were likely

employed by these Ceramic Age artisans in question. The tongue compressor featured in figures 9a and 9b, is an artefact that was used by the Taíno in their cohoba[8] purification ceremonies in a similar way in which the vomiting sticks of Hispaniola and Puerto Rico were utilised (Allegriá, 1998, p.24 and cat. 14, p.28). It was used by placing the broadest section of the compressor on the tongue and thrusting it to the back of the throat. This caused the user to regurgitate or vomit out any undigested food from the stomach. This was necessary before the Taíno religious practitioner could inhale the cohoba hallucinogen and enter a transcendental trance-like state.

Figure 9 a, b, and c: A highly polished tongue compressor; provenance unknown (Author's photograph and illustration).



This tongue compressor was cut from the outer lip or flare of a *Strombus gigas* (Figure 9c) with a saw, not the type commonly known today but one that was constructed with fibre twine tied to a small bow (Figure 10) or twine tied between two hand sticks (Figure 11). Either variety would have been easy to manoeuvre around corners and curves. The bow variety, however, was limited by its ability to be easily manoeuvred unless the individual was properly seated. The bow saw often requires the user to be seated upright and straight with the item placed directly at eye level when being cut. This arrangement would have been highly unlikely since the only known chair recorded as having been used among the Taíno was the caciques' *duho* (Ostaprowicz, 1998, pp. 56–67), which either had a curved seat with a high back or was a low ornately decorated stool. On the other hand, all the craftsperson needed in order to use the dual-stick variety (Figure 11) was a good seat on the ground or a low stool, or a stone with some hardened clay to

fasten the shell in place. She (or he) could also use both feet as a vice-grip while seated on the ground and holding the shell in place.

Figure 10: Example of a bow saw made from curved wood and twine (Author's drawing).

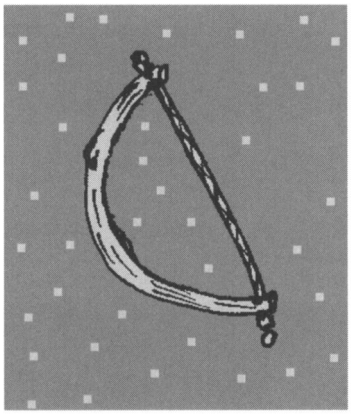
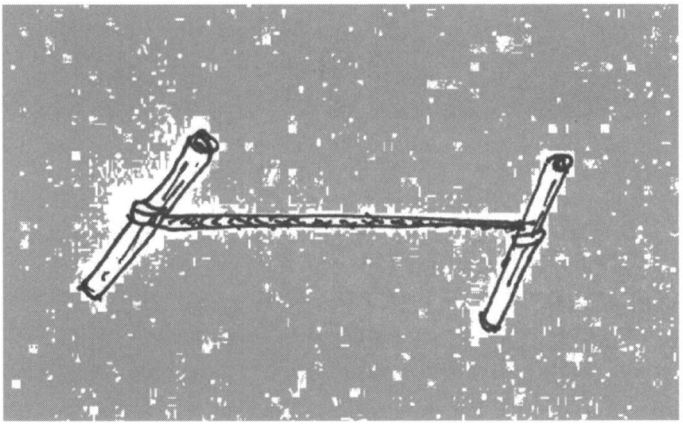


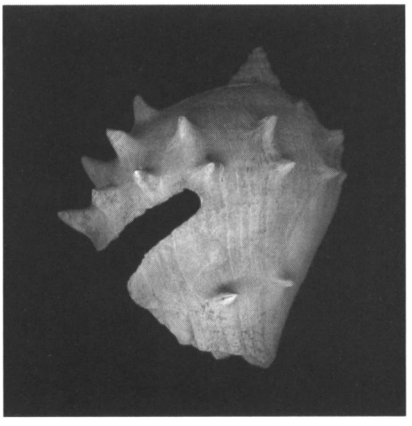
Figure 11: An example of the dual stick handsaw (Author's drawing).



The fibre twine could have been obtained easily from any non-siliceous plant, i.e., soft grasses, the Agave leaf or any cave-hanging liana vine. The woody surface of these plants would be striped off, leaving the soft fibre, which was scraped and stripped down further to the width and thickness that the artisan may have required, then sun dried. At the Chancery Hall site (Figure 4) a juvenile conch shell was discovered which had a long grooved notch chipped into the shell, with a rounded posterior end (Figure 12). This showed signs of having been retouched on

the inside of the curvilinear notch, making it sharp enough for stripping non-siliceous fibres.

Figure 12: A juvenile conch shell altered to strip twine. (Chancery Hall, St. Andrew, Jamaica (Author's photograph).



It appears likely that the alterations to the shell shown in figure 12 were done by a specific Pre-Columbian artisan primarily for the purpose of striping fibres to a prescribed width. It can not be inferred, however, that this tool was definitely used for making twine for a dual stick saw, but the technology of twine stripping is strongly suggested by this tool's discovery and analysis. As is done today in jewellery making, several different sized saw blades are used, from blades that measure only one-eighth of a millimetre in thickness to several centimetres. Each size serves a different purpose from cutting to rasping small edges. In the Taíno case, the fibre twine was attached to the bow or sticks. A vegetable resin was likely applied to the twine and a layer of sand was rubbed over the resin-soaked twine and left to harden again. Now it was ready to be employed in the making of the tongue compressor. The shape desired was marked out on the shell flare with a piece of charcoal, and now the slow deliberate cutting could begin. As the twine lost its sandy grit, more fine-grained sand was drizzled onto the area being cut. With this continuing action the blank tongue compressor could have been cut within a few days of continuous work.

This technique was also used on the paddle-shaped artefact (Figure 13), which I suggest could have been used by women when cooking and shaping cassava bread on their clay cooking griddle. The 'blank' for this artefact is

illustrated in figure 14, as it would have appeared prior to its removal from the *Strombus gigas* shell.

Figure 13: A paddle shaped artefact. Martello Tower site, Harbour View, Jamaica (Author's photograph).

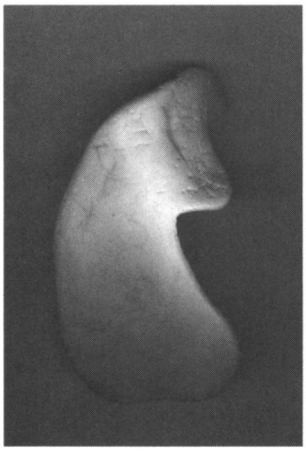
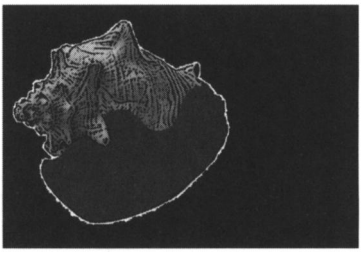


Figure 14: Paddle shaped artefact before it was cut from Queen conch shell (Author's illustration).



Other cutting methods were also utilized by the Taíno, particularly when cutting small objects, like the circular clamshell beads shown in figures 15a and 15b. These beads would have required a sharp pointed awl (Figure 16) in order to make them. This example was found at the Chancery Hall Taíno site,[9] along with the beads shown in figure 15. To extract the circular shape of the bead, the awl would have been used to lightly engrave a circular line on the shell surface, until the groove grew deeper and deeper, then the artist would lightly tap away the remaining shell which surrounded the deeply engraved circle using a small chisel or hammer stone.

The same awl, when turned on its side, could have been used to sand the rough edges off the blank bead, because in this case, the awl seemed to have come from a gritty silicon-based stone. It has a rough enough surface to be used in small sanding work, and it is also quite similar in shape to small rasping tools used by modern jewellers to smooth and round the edges of disks. With a small amount of fine-grained sand the awl was used to drill the centre hole by holding the bead on a fingertip used as support for the convex side of the shell and rotating the awl back and forth on the bead's concave side. This process by my reckoning would have been the most effective way to make the beads in question, since a similar method

of polishing small hand-held jewellery items is used universally by jewellers today, even though when we drill small objects we use an electric drill quite similar in type to a dentist's flexible shaft drill. When drilling small domed objects, the modern jeweller will place them on a wooden surface that has a pre-cut notch to support the dome and they are best drilled from the same direction as in the pre-Columbian case. However, this method is not strictly adhered to by modern jewellers. On realizing that modern tools would not have been available to my pre-Columbian forebears, I imagined the process using a prehistoric awl, which I then experimentally replicated with a sharpened nail and discovered that though not identical in result, it was possible to make a bead in this manner.

Figures 15a and b: Shell beads from Chancery Hall, St. Andrew, Jamaica (Author's photograph).

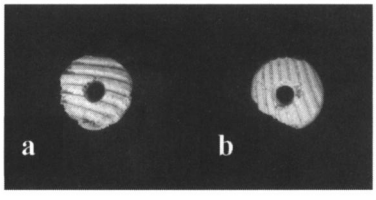
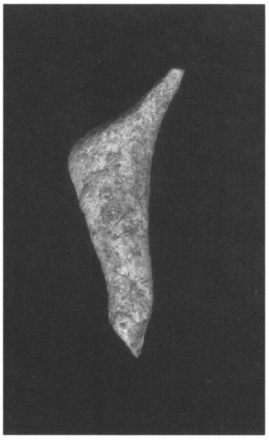


Figure16: A quartzite awl from Chancery Hall, St. Andrew, Jamaica (Author's photograph).



The construction of the handled snuff holder/tray featured in figures 17a and 17b was fabricated using a very simple procedure. This artefact has been labelled as a snuff holder/tray by me because of its strong visual similarity to more elabourately carved wooden ethnographic examples which have been both studied and observed in use in the Amazon delta (McEwan 2001, pp. 192–195), a region whose cultural practises are not very dissimilar to those of the Jamaican Taíno. The artefact was made after all other parts of the Queen conch *(Strombus gigas)* had been removed for the creation of other ceremonial or utilitarian items (Figure 18). What would then be left is the columella and the bottom half of the body whorl and inner lip. Since in this instance the columella was not needed it too was

removed, leaving behind a slightly curved triangular-shaped dish, which used the siphonal canal, inner lip and lower aperture for the tapered handle.

Figures 17a and 17b: A large conch shell handled cohoba snuff holder/tray. North Booby Point, Portland, Jamaica (Author's photograph).

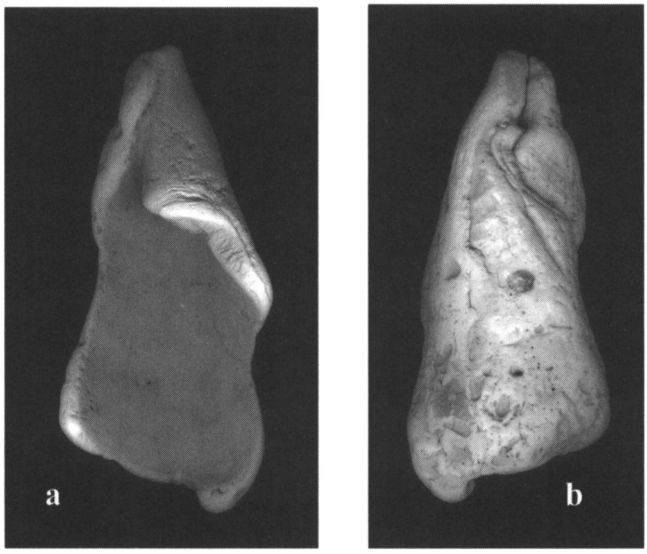
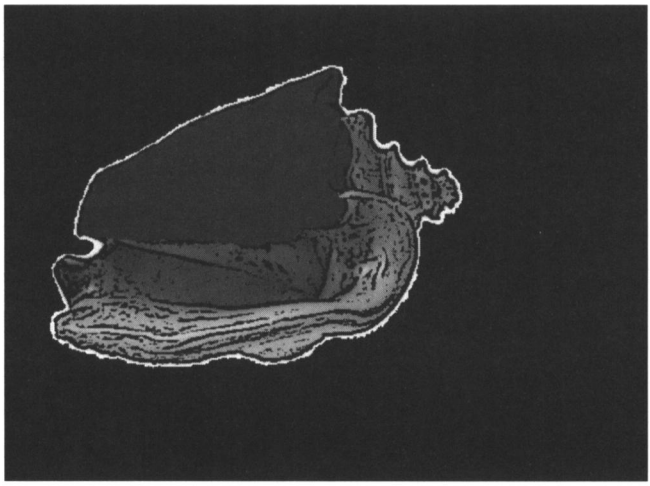


Figure 18: Snuff holder/tray before it has been removed from the shell (Author's illustration).

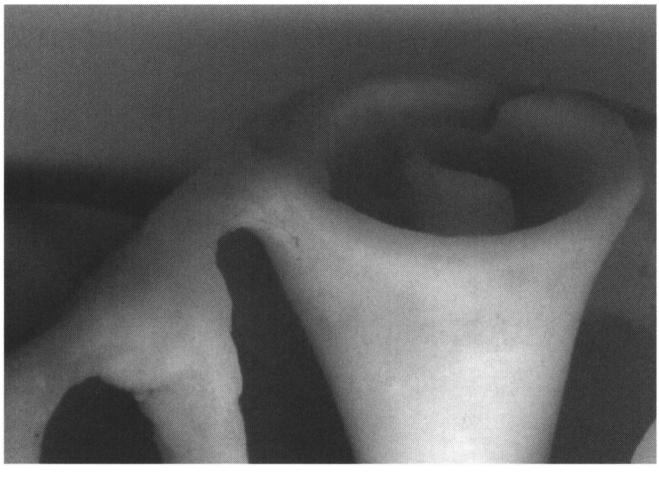


A Brief Examination of Tool-wear Markings on the Booby North Point Pendant

In order to offer a full analysis of the methods used by the pre-Columbian Jamaicans, we can examine a single artefact in detail to understand their technological techniques. This is, however, not a suggestion that these same methods might not have survived into the post-Columbian era. But for this examination, the elegantly crafted pre-Columbian pendant found at Booby North Point featured above in figures 3a to 3c was chosen. This artefact was magnified to 5X magnification, revealing very distinctive traces of tool wear markings, which supported the previously discussed theories of its manufacture. These will now be described briefly through the use of figures 19–21.

Around the vicinity of the removed apex (Figure 19), the rounded rim can be observed clearly in this close up of the area. On the columella entrance a notched or stepped feature was created to recess the area. This also shows rounded smoothing, indicative of the artisan's use of a small sanding tool.

Figure 19: Close-up of the removed spire opening (Author's photograph).



The uppermost point of the apex was removed, (Figure 3b above) revealing the spire belt which shows evidence of having been polished in a clockwise motion, leaving it perfectly rounded along the entire belt's contour and edges. Three grooves were filed or notched, which included a centrally located groove that was separated by a small bridge-like area of unremoved shell material from the exposed coil-shaped area on the exposed upper inner columella. The two outer notches on either side of the spire belt are the continuing corners of the uppermost

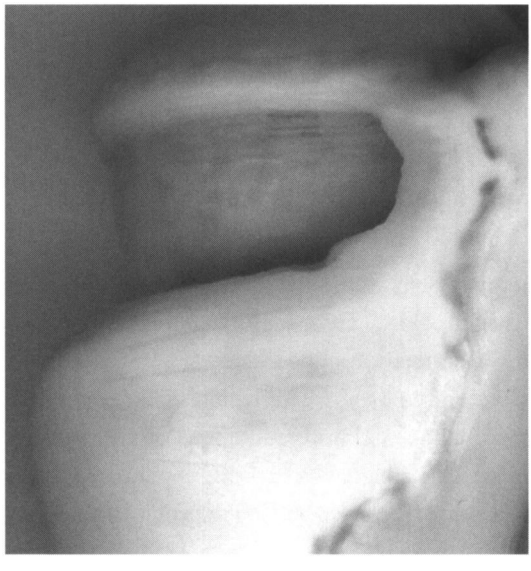
U-shaped decorative feature located on the columella, shown partially in Plate 3, (p.v,) which is described below.

The two oblong stones (COLOUR PLATE 3, p. v) were placed securely in the natural curvature of the shell and were likely hammered lightly into place, however there are a few small unaltered chips on the edge of the shell beside the stone on the left side, which may be interpreted as evidence of remaining hammer marks. This suggests that the sanding of the shell occurred subsequent to the stones' placement.

The frontal U-shaped areas both show an inward curving which resulted from the shell being sanded in a continuous upward direction (starting from the base, i.e., the siphonal canal opening towards the removed apex). The unidirectional sanding technique is still used today by goldsmiths, primarily to create a smooth polished matte surface. However, it also can be noticed that in the same location on the shell many small chips are observable. These are the result of the chipping method used to remove that section of the columella.

At the back of the shell (Figure 20) several other features are observed, namely translucent thinning near the left hand corner of the horizontal U-shaped opening. This is a result of aggressive sanding or polishing methods. A chip is also present, possibly caused by the area's loss of material stability, leading to a piece of the shell falling off during sanding. This loss of stability is also evident in the

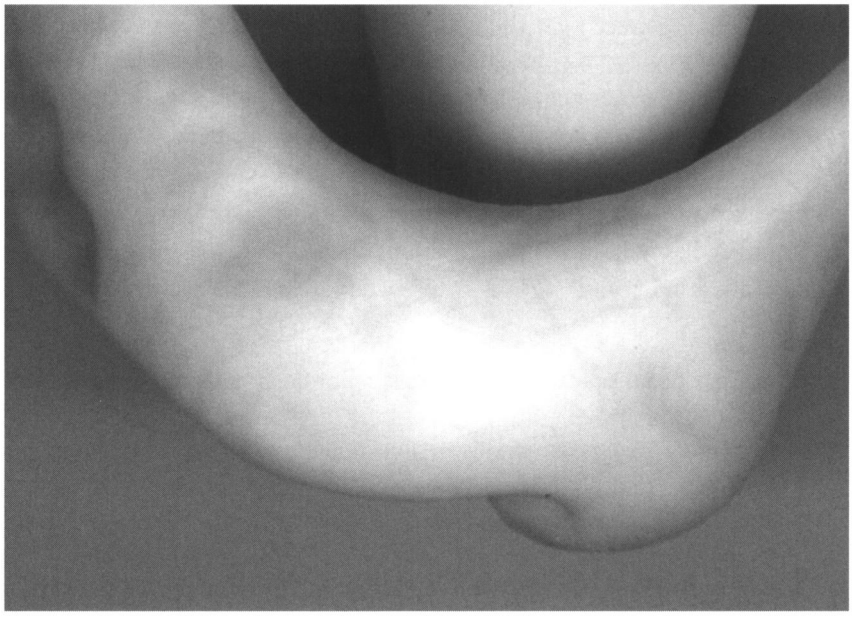
Figure 20: Close-up of the decorative feature at the back of the shell pendant (Author's photograph).



formation of faint radial fractures, which can be seen just below the outermost curve of the shell's body whorl nearest to the right side of the horizontal U-shape. However these small imperfections were not major enough to cause any dramatic damage or to change the overall durability of the shell pendant.

Finally the base of the shell pendant (Figure 21) shows some of the most conclusive evidence of the skill and competence exhibited by the shellsmiths of Booby North Point. Here, at the base, the shell has perfect symmetry and the polishing is flawless.

Figure 21: Superior polishing skills of the artisan, seen near the siphonal canal opening at the back (Author's photograph).



Conclusion

This is a brief overview of a study which is still ongoing, and which should lead to a fuller comprehension of pre-Columbian shell-working techniques and the tools used in Jamaica's pre-Columbian societies. Much of the shell from Jamaican Taíno sites has been counted and categorized; the time has come for them to be studied in conjunction with, and more specifically, alongside all areas of archaeological and ethnographical research, as has been done for ceramics.

Although other attempts have been made to identify various shell tools and their uses (e.g. Álvarez, 2007, pp. 226–242) or even how some were made, much more needs to be done here in the Caribbean. The interpretive work on the Craig Mound shell artefact cache found at Spiro, Oklahoma in the southeastern United States (Phillips & Brown, 1978), which was looted by commercial artefact profiteers in the 1930s, offers suggestive comparisons for the Caribbean region. At that site, a comprehensive attempt was made not only to collect rubbings and drawings of the fragmented and scattered artefacts, but also to classify the various styles of artefacts. This resulted in the identification of the possible existence of workshops, schools and individual artists with their artistic peculiarities. This research has led to a deeper understanding of the artistic dynamic behind the Southern Cult complex, which existed among the Mississippian culture of the southern United States, colloquially called the Mound Builders.

Thus I am suggesting that a multi-disciplinary approach like the one used at the Craig Mound site be applied here in the Caribbean. There should also be much more consistent and comprehensive attention in reports to potential information on the techniques of manufacturing, and to ornamental use patterns, as well as to how these patterns may have changed over time, along with a study of iconographic similarities or dissimilarities between various cultures and tribal groups in Jamaica and the wider Caribbean Diaspora. The questions that must be asked now are:

- Did the Taíno have specific workshops for the production of the shell artefacts and utensils?
- Were they located on a particular location on a site?
- Was this art form practiced exclusively by a separate class of artisans?
- How were the ornaments worn?
- How were these ornaments divided among the population, in other words which items were worn by which socio-political group or social class?

As my final comment I believe my paper is only the start of a wonderful adventure in the study of prehistoric shellsmithing.

NOTES

1. It is my pleasure to acknowledge Sharon Tulloch for providing regular transportation to the Chancery Hall Taíno site, and Claire Woods for helping me explore both the Chancery Hall site and the Booby North Point site. I especially thank Diane Crooks for showing me the shell artefact shown in figure 3, and for her willingness to show me where it came from; this led to the discovery of the hitherto unknown Booby

North Point site. I would also like to thank Mr. Ivor Connolly of the Dept. of History and Archaeology at the UWI (Mona) for providing me with specific information that has helped me to classify and catalogue the artefacts more efficiently. And finally I wish to thank both Dr. Sabrina Rampersad and Dr. James Robertson for their reviews of this paper.

2. The date referred to is the recognised date for the arrival of the Ostionoid ceramic peoples locally called the Redware people, based on radiocarbon dates derived from Little River, St Ann and Alligator Pond (Bottom Bay), Manchester (see the discussion in Atkinson, 2006, p. 3).

3. This date is based on carbon dating samples taken from the White Marl (Meillacan) site.

4. Some of the other varieties of shells which were used by the Jamaican Taíno to make ornaments and tools were the West Indian Murex (*Murex brevifrons*), Bent-Beak Murex (*Murex recurvirostris*), Trumpet Triton (*Charonia variegata*), Angular Triton (*Cymatium femorale*), Atlantic Partridge Tun, the Flame Helmet (*Cassis flammea*), the King Helmet (*Cassis tuberosa*), the Netted Olive (*Oliva reticularis*), Caribbean Olive (*Oliva scripta*), the Mouse Cone (*Conus mus*) and the West Indian Top shell (*Cittarium pica*), to name just a few. The bivalve shells used were a variety of Oysters, Cockles, Venus's, Clams, Tellins, *Strigillas* and members of the *Glycymeris* family (see Sutty, 1990).

5. Navassa Island was called Nabaca by the Hispaniola Taíno.

6. Las Casas noted that the island located off the western coast of Haiti, was subordinate to the Caciquedom of Xaragua. This Caciquedom was ruled by Behechio and later by his sister Anacaona, the wife of Caonabo. The island was called Guanabo by the Indians. In a dictionary of indigenous words compiled by Dr. Cayetano Coll y Toste, a pre-eminent Puerto Rican historian, he noted that in modern times this word was corrupted to *Gonaive*. Gonaive, however, was a likely attempt to convert a Taíno word into a word more compatible with the syntax of the French language, which was subsequently spoken in Haiti after the island was split by the two rival powers of France and Spain.

7. Ceremonial throne-like seats used by a Taíno cacique, they are made primarily from hard woods, i.e., lignum vitae or mahogany.

8. Cohoba was made from the seeds of the *Anadenanthera peregrine* or *Piptadenia peregrine* trees. The seeds were ground with crushed shell or sometimes tobacco to enhance its hallucinogenic properties.

9. Specifically found on Lot no. 380, located on Lord Nelson Drive, Kingston, Jamaica.

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Golding-Frankson: p .58

Plate 3: Two of the columella openings with inserted ovoid stone (Author's photograph)

White: p.76

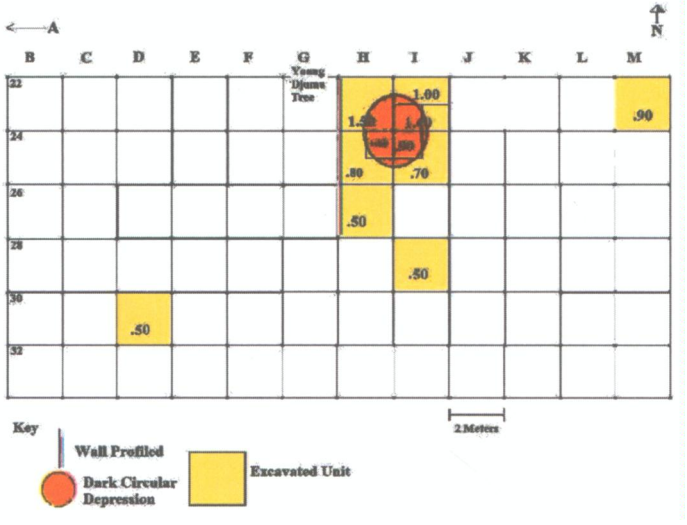

Plate 4: KMK2 grid placed at periphery of mound. numbers in unit are the final excavated depth.