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ARH 4991 ART HISTORY THESIS

**Calusa Indian Shell 'Plummets,'
Aesthetic Objects or Utilitarian Tools?**



Figure 1 A shell plummet surface collected on Boca Chica Key. 7.2 cm long by 2.7 cm diameter. Wt. .5-.75 oz..
Photo: Aleta Burgé. Islamorada Public Library

Clink, clink, clink. Seated on what remained of the trunk of a fallen palm tree, near an opalescent water bay, a light breeze causes the palm fronds in the protective umbrella-like tropical tree shelter above the dark skinned man to rustle in the morning breeze. He is covered with fish oil and red ochre powder on his arms and legs, providing additional protection against the sun and swarming insects. Rhythmically, striking the conch shell in front of him repeatedly, causes pieces of it to fall away, blending in with the gravel on the ground. Ultimately, he is left with the interior center column of the shell, the *columella*. Shaping the form

and smoothing the surface as he works, an object of simple beauty emerges, one that will adorn its wearer on special occasions. He polishes the surface of the *columella* with a sharkskin moistened with seawater, until the glossy surface of the object glistens in the sun. Someone important will wear this object with pleasure and pride.

The image of a Calusa Indian craftsman fashioning a plummet is only conjecture-but one based on investigation. The object the artisan is creating is commonly referred to as a sinker, pendant, or most often a "plummet," because of its similarity in form to modern day plumb-bobs used as fishing tools. The actual function of these ancient artifacts remains unclear, but the teardrop shaped objects have caused much speculation as to their possible use and/or meaning for the Pre-Columbian Indians of South Florida who made them. They have been discovered on land surfaces, shell middens, and ancient burials.

Most researchers who have investigated the subject, including Clarence Moore and John Reiger, are convinced that plummets are aesthetic objects, probably worn as pendants. But researchers Karen Walker and Lewis Larsen disagree, convinced that these objects were part of a specialized fishing technology. Others have proposed that they were used as part of a tool-net for catching birds. Still others suggested that they were used as bolas for hunting, as atlatl-weights, or as weights in the weaving process. Even more possibilities have been suggested such as: plummets, being the obvious, and plumb-bobs for leveling purposes in the process of the construction of buildings.

There are contradictions to many of these hypotheses- many of the plummets are highly refined, requiring too much of an investment in time to produce, to be a mere fishing sinker. Also, the grooves on the plummets appear to be too shallow to hold the heavy cord required for such a demanding task. Many plummets are made of what was once considered imported rare and precious materials in Florida, such as quartz. Plummet shaped objects have been found in Northern Florida, as well as outside of the state, especially in Hopewell and Adena cultural sites

in Ohio. Those plummets were created from various materials, some decorated to resemble characteristics found in nature, such as the bill of a duck. Most compelling for the argument for plummets being special objects, is that they have been found in what is believed to be ancient burials of elite individuals,

As a South American native priest is quoted as stating, "You can look at a tree and see a tree, or you can look at a tree and see a snake." ... "By such imaginative leaps, human beings can transform shells-or any common natural object into ritual objects, symbols, or metaphors" (Safer and Gill: 13). Researchers with inquiring natures have offered a variety of solutions to the question of the intended purpose(s) of plummets: as charm stones, such as those in California; as ritual objects, such as stones for locating water or a lost object or person, or as talismans. When searching for the solution to the enigma of the purpose of plummets for early people, one must consider that the element that remains constant when describing a plummet is the form- a tear-drop shape separated from a spherical knob on top by a groove. *Webster's New World Dictionary of the American Language* defines "plummet" as: "a lead weight...hung at the end of a line...(and) used to determine how deep water is or whether a wall, etc. is vertical." Goggin's description follows: "Plummets have a tear-shaped or pear-shaped form, but vary widely in proportion. They may vary from long, tapering, tear-shaped specimens to squat, globular, almost spherical forms. Almost every conceivable shape between the two is recognizable, including a top or plumb-bob shape which might be considered as the mean of the two extremes in form." (Marquardt: 206).

The Use of Shell as a Material for Plummets in Southwest Florida

The use of shell as the predominant material for the fabrication of plummets in the Caloosahatchee cultural area can be explained by the ready availability of large gastropods and the lack of other suitable materials. The use of shell, traditionally associated with light and power, has been associated with ritual objects in Native



Figure 2 Plummets of varied materials and shapes, including crystal and hard stone from the National Museum of the American Indian.. (Dubin p.157)

American culture. The resemblance of certain shell columella to the finished form of plummets, as well as the workability of shell as a material, may have all contributed to a preference of shell

as a material of choice for plummet making in the area. The early twentieth century archaeologist Clarence Moore observed, "Florida may be called the home of the shell in this country, for no other state has such an extent of sub-tropical sea coast where shells abound, and in no other state is such a need created throughout the absence of stone" (Moore: 380). There are no naturally-occurring hard stones in Florida that would have been suitable for the production of plummets. Limestone was sometimes utilized for the purpose, the resulting object that was crude in appearance and lacking in detail.

"Many artifacts and decorative motifs, such as celts, pendants, and certain designs produced in shell are identical in form to items produced in other materials, including stone and precious metal. It is therefore possible to conclude that in the absence of critical raw materials, the indigenous people of Florida developed methods to work shell in order to keep pace with technologies occurring elsewhere" (Purdy: 11).

Fulfilling the need for alternative materials for plummet creation, were the Conch (*Pleuroplaca gigantea* and *Strombus*) and Lightning Whelk (*Busycon contrarium*), the most common materials used for locally made plummets by the Calusa Indians. Imported materials included quartz, hematite, and stone. Why the Calusa made their plummets of shell seems obvious when one discovers the plenitude of shell middens in the Calusa culture area. "*Busycon* snails, once numerous on the shady bottom of the bays of the region, were especially important as a food source. A single adult specimen can produce nearly two pounds of meat, and some sites contain millions of individual shells, many with a hole knocked in the end, presumably to cut the muscle that attached to the shell, thus allowing the meat to be extracted. " (Melanich 1994: 317)

Yet, this presents a theoretical problem. As author Jane Fearer Safer notes: "the value of any material diminishes with its availability. Economists' theories about why a particular item should be valued rarely go beyond scarcity" (Safer). In Hopewellian Culture, shell may have been more valued at sites at which it was rare. The Calusa traded with members of, and may have been influenced by, the Hopewellian tradition, and may have been aware of the shell's rarity, using it to their economic advantage in trading with individuals outside of their environment. "Economic theory cannot help us understand why a scarce shell should be highly valued by one people and not at all by another. The question of why one scarce item is preferable to another ... (leads)... us out of the realm of economics entirely and into the area of cultural values and symbolic significance" (Safer and Gill: 72).

But this explanation seems incomplete. Shell may have been a readily available resource, yet once the material of a shell was made into a plummet, its value may have increased immensely because of the time and work invested in the object and the symbolism then attached to it.

In order to understand the possible mindset of the Calusa Indians who produced these objects, it is helpful to investigate the use and meaning of shell in North American and distant cultures:

An interesting legend in which a shell gorget is the subject was related by Agent of Indian Affairs John Johnston, in the year 1819. "The *Shawanoes* had been established about 65 years in Ohio, having come from Florida, and the adjacent country. They formerly resided on the "*Suwaney*" river, near the sea, where Black-Hoof, a chief, then 85 years old, was born, who remembered to have bathed in the saltwater when a youth. He thinks that the stream was doubtless named from the nation, "*Shawanoe*," which I write from the lips of the natives *Sa-wan-wa ki*, the last word denoting "people." "I spoke of this portion of history to a delegation of Shawnees at Washington, in the spring of 1854; and three of them, who had known the chief, and often heard him speak of the incidents, agreed in relating the following particulars:"

'When Black-Hoof was a boy, the people in their wandering came to a river, at a place that had the appearance of having once been a settlement. A woman with them, blind with age, said that this should be their ancient seat; and, if it were so, near the bank, at a point where she described, there was a spring of water. It was found; and close by, where she directed them to dig, they found a jar, in which was a piece of a sea-conch, that had been fashioned to wear as an ornament for the neck. She said, that when she was a little girl, and the nation was about to move away from there, the young people were called together to see those things buried, that afterwards, should they ever return, they might make sure of the spot of their old residence. They were told that they had left that place before; and once when they came back the trees had grown up on it to be large; that they had left it again, at another time, and at their return the trees were only small. She told them moreover, that the hillocks they were of nothing but ashes, which the people had been accustomed to throw together from their fires, and on examination her statement was found to be correct.'

"Black-hoof, *Ka-te We-ku-sa*, and the shell gorget, which my informants had all seen, and in his lifetime gave it to a Seneca brave. "White-Pole" *Wa-pah Ku-ne-taa*, who died in Ohio, they said was also present, when the nation crossed the *Sa-wan"-wa Thi-pi*." (True 1944: 59)

While it is not known whether the Shawnees emigrated to and/or from Florida, it is possible that there are fragments of truth in the legend. It is documented that some Indians from

Florida emigrated north to other parts of North America just as some of the Calusa are documented as having emigrated south to Havana, Cuba, the last of their culture. According to legend, the Florida Indians chose an ornament made of conch shell to testify to their former habitation in Florida, perhaps a symbolic choice of materials as well.

Another reason the Southwest Florida Indians may have chosen certain shells for the manufacture of plummets, is because of its reflective surface quality. John Reiger, a historian who has written extensively about plummets, elaborates: "As we have seen, minerals that reflect light, like quartz, had special meaning for many Indian peoples. "Light was life, light was mind, light was knowledge, and light was greatest being: and semantically concepts such as brightness, transparency, visiblenss, and whiteness were also life, mind, knowledge and greatest being."(Miller) "Therefore all objects displaying these qualities were associated with the cognitive and social aspects of life, that is the well-being, harmony, and purposefulness of mind, knowledge, and greatest being...Examples are shell and those minerals with crystalline, pearly, or metallic luster, which made them revered for power. They gave their owners to be successful in every endeavor and to divine the future." (Reiger)

Perhaps influencing the use of shell as a material for the manufacture of plummets is the natural transition of a shell columella, in its similarity in form to that of a finished plummet. John Goggin explains, "Each of these artifacts was made from a piece removed from a shell, not from a shell from which pieces have been removed. In other words, the complete shell in this group functioned as a core. One of the most common of these sources of material was the *Strombus* shell. Its heavy lip and outer body whorl provided a ready source of dense and tough material for many of the plugs from which this category of (objects) was made." (Goggin: 25-26).

Another characteristic influencing the choice of shell as a material for the manufacture of plummets may have something to do with the relationship of pearls and shell. The Calusa Indians were adept pearl divers.(Fontaneda) Like many other Florida Indians, they were almost obsessive about pearls, (encouraged by the Spaniards)wearing them and trading them for imported goods. The appearance of the pearl, its soft white luster, its spherical form resembling the knob on a plummet, and the fact that it came from the sea, may in some way be related to the choice of shell as a material for the manufacture of plummets.



Figure 3 Shell artifacts from Belle Glade.

Florida Plummets of Non-Shell Materials

Perhaps shell was not originally the most desirable material from which to fashion plummets, but it was the one most readily available. Regarding Key Marco, once the domain of the Calusa, Clarence Moore writes about some of Cushing's finds: "...stone Plummets and net weights were among the few remains recovered." (Purdy 1991: 48) Also found were "two interesting pendants from M. representing duck's heads -one of a "hard stone not found in Florida, the other of limestone..." (Moore) (See Fig. 2).



Figure 4 Stone plummets described by Moore.

Regarding finds at Chokoloskee Key, an area once under the domination of the Calusa culture, Clarence Moore states: "...A number of pendants, etc., were obtained from persons inhabiting the key. Among these was a carefully wrought pendant of lime-rock... and unusual pendants of stone..." (Moore: 302)

There is a description of a plummet form pendant found at a site on Upper Matecumbe Key, Monroe County, thought to have been made by the Calusa or Matecumbe Indians. "This object is a fairly elaborately worked piece of limestone with some smoothed and some rough surfaces." (Shetron, 41)

From the Deptford Culture Group at Crystal River, Citrus County, were discovered "A...great number of so-called pendant ornaments, ...found with burials and throughout the mound." "They comprise perhaps the greatest find of these interesting [ornaments] or ceremonial objects ever made. They are of stone, crystal



Figure 5 Metal plummets described by Goggin including one of gold (on the left).

quartz, shell, and copper, and range from small, almost globular forms to cylindrical. All are provided with encircling grooves at one or both ends for suspension by cords or thongs. It is believed that this widely distributed type was worn suspended from the neck and that it served the wearer as a talisman or charm..." (Shetrone, 455) About still more plummets found at Crystal River site: "We found in the cemetery and mound near Crystal River, Florida, in place on a skeleton, a number of stone pendants associated with others made of copper. We believe these pendants from the Keys served some ornamental or ceremonial purpose-perhaps they were charmstones. It is true, ...that many of the stone pendants of the Keys

are crude, but much of the stone of that locality is not of a character conducive to good workmanship." (Moore: 458) Reporting another burial Moore found at Crystal River: "on the base of the mound, in the southern slope, he reported, "was the skeleton of an adult, lying full length on the back. Extending across the pelvis, sagging down somewhat, was a row of (39) pendants of stone... (and) three of copper..." (Moore 1903: 399)

"At a sand mound on Murphy Island, ten miles south of Palatka in Putnam County, like the mound on Crystal River on the west coast, (there were) specimens suggesting an affinity or contact with the Ohio Hopewell Culture. Among these objects were triple tubes of copper, a large copper crescent-shaped ornament, and shell, stone and crystal pendants or plummets." ...

"The sand mounds of the Ocklawaha River, in Central Florida, examined by Moore yielded many additional plummets and pendants..." (Shetrone 461)

William Sears concluded that the plummets found at the Fort Center site were "without exception... made from stone and shell materials alien to the Ocheechee Basin." The mineral types included granite, crystalline quartz, granodiorite, gneiss, diorite, rhyolite-granite, and quartz crystal. Because no debitage from the making of the lithic plummets was found on site, they could not have been utilitarian, everyday artifacts" ... concluded Sears.

Regarding excavation taking place at Belle Glade, and Big Mound in Palm Beach County, about artifacts that were not found in burials: "Of the Belle Glade artifacts: there are seven pendants or plummets, including two fragments. They are made of travertine, limestone, sandstone, and oolite. One is a quartz crystal, not found in Florida.workmanship varies from virtually perfect to very crude. " (Shetrone: 36)

After the arrival of the first Spaniards in the early sixteenth century, Florida Indians continued their creative work, sometimes refashioning European-introduced metal (gold and silver ornaments and coins) into objects that expressed their own ideas and beliefs "in their traditional forms of non-traditional materials in gold, bronze, lead, and copper."

Materials Used to Create Plummets Outside of the Florida Area

Plummets are found outside of Florida, in a variety of materials. Historian John Reiger suggests: "A characteristic of "plummets" may be the result of religious ideas traveling vast distances in North America... Indians north of Florida used various materials to create plummets: these included mica, obsidian, magnetite, hematite, galena, and copper, and are the same minerals used for fashioning the artifacts, including plummets, found with so many burials from the Midwest to the lower Gulf Coast." (Reiger: 231-233)

The Cherokee of the Appalachian area, manufactured plummets of minerals that reflect light, believing they had spiritual potency because of their connection to the human eye.

...Quartz-crystal plummets were probably the most potent of all plummets, powerful enough for the Cherokee to view them as "dangerous"-only persons trained from childhood could handle them without harmful effects." (Reiger 1990: 232-234)

In the lower Mississippi River area, at a Late Archaic site called Poverty Point, in Louisiana, there is a group of six mounds. "Although nothing was found in any of the mounds, objects from the surface of the surrounding fields are of considerable interest... Among the profusion of flint flakes and points, stone celts, and broken pieces of aboriginal clay hearths are only a few scattered "plummets" or pendants, ornaments, mostly of hematite, which have been picked up from the surface"(Shetrone: 379) "Eighty percent of the plummets are made of non-local hematite, with most of the rest of non -local magnetite. ...Of the remaining specimens, some were made of shiny, imported materials like galena and quartzite, while others were crafted of clay, hardly the best material for a sinker or bola, as suggested by one researcher (Bullen)." (Rieger: 1990)



Figure 6 California phallic"charmstone."

"...sometimes Hopewell burial mounds in Ohio contained "exfoliated" and "ground" pieces of hematite as well as the red ocher powder itself. Incidentally, some of these mounds also contained shiny mica and native copper, "crystals," of quartz and galena, pink and white quartzite pebbles, and marine shell from the Gulf Coast that document trading contacts with Florida. (Hothem: 1989)" (Reiger: 1990) "Sprinkled on the dead as part of the burial ceremony of pre-contact peoples in

much of the eastern United States, including Florida, red ocher seems to have been (believed) capable of bringing "new life" to the deceased (Berger)... "Ocher very effectively repels vermin and prevents animal skins from decaying." (White) That a material with sacred properties would be the chosen raw material for plummets across huge portions of what is now the United States is further evidence that these artifacts are probably spiritually charged objects." (Reiger 1990: 235)

A product of the Western Archaic tradition of the Windmill Culture of the Sacramento Valley of California, artifacts known as "charmstones," resembling plummets, many of phallic form, made of stone, are said by the Indians to be "medicine or sorcery stones." (Reiger 1990: 229)

The existence of "plummet" shaped artifacts in a variety of materials in different geographical areas points not only to the exchange of ideas throughout a vast multi-cultural area, but also to the persistence of the design.

The size of plummets generally ranges from 1.2 cm to 7.7 cm long and from 1.2 to 3 cm wide, although they have been found as long as 14.8 cm.

Little information is available regarding the weight of shell plummets, but a 6.5 cm. shell

plummet weighed by the author weighed between .5 oz and .75 oz., acceptable for a neck pendant, but somewhat heavy for ear pendants.

The form is what makes a "plummet" a "plummet." Although various materials were used in creating the forms, the shape has remained, although there are variations within the basic three-part 'knob-groove-cylinder' design. John Goggin's description of a plummet: " the 'sinkers' have a tear-shaped or pear-shaped form, but vary widely in proportions...They may vary from long, tapering, tear-shaped specimens to squat, globular, almost spherical forms. Almost every conceivable shape which might be considered as the mean of the Reiger adds, Note that the more squat and globular sinkers are usually made of stone, while those made of columellas of gastropod shells are more likely to be cylindrical. (Reiger: 206) "Some resemble the shape of a bear canine tooth...one has a knob resembling in general the shape of the upper end of a bowling pin." ... All have some sort of a spherical knob on top, separated from the main tapering form by a single groove (some have one on each end) for suspending from a cord. The groove defining the "head of a plummet is...often deep enough for light usage like that given to a pendant-charm. The majority of these are without decoration." (Gilliland)



Figure 7 Sketches of plummet shown in Fig 1 showing flatness.

An interesting feature, one that contributes to the theory that plummets were worn as bodily ornamentation, is the existence of flattening on one side that is a characteristic of many plummets, allowing an otherwise cylindrical form to lie flat against the body. Reiger uses this as a clue to arrive at the conclusion that plummets were worn as ornaments, and that the flatness on one side prevented the plummet from twisting unduly when worn. (Reiger: 230) However, a reconstructed specimen on display at the Monroe County Public Library, at Islamorada, was made by a local resident named Mr. Taylor, who disagreed with this theory, fashioning a plummet after one in the library's collection that displayed flattening on one side. It is his opinion that the flattening is a natural characteristic of the lip of the conch shell from which it was made. The replica is evidence of this. He performed no additional work in order to flatten the side of the plummet, but instead incorporated the existing feature into the form. Whether the

Florida Indians intentionally included this feature, or it was merely circumstantial is a subject one can only speculate about.

The archaeological settings of ancient Florida art are clearly and briefly set out by Purdy: "The Florida Peninsula was occupied as early as what archaeologists designate as the Paleo-Indian Period (ca 9500-8000 BC), a late glacial era characterized by a big-game hunting way of life. This was followed by a long Archaic period (8000-4000 BC), in which post -Pleistocene hunters, fishers, and food collectors subsisted on the natural resources of Florida's semitropical environment. It was in this Archaic-period context, especially from 5000 BC onward, that the first works of art were fashioned in Florida..."(Gordon Willey) (Purdy: X)

In the past, dating shell artifacts has been difficult, if not impossible. With radiocarbon technology, it is now possible to obtain a date within a range, although..."for the period between 4000 BC and 3000 BC, the hard evidence consists of a single radiocarbon date (3675 BC) from a midden on Useppa Island." (Milanich et al. 1984: 270). "Further, this date was obtained from shell and such dates are controversial. Sears argues ... " such dates are influenced by the calcium carbonate content of the water in which the shellfish lived." There is also a date for Marco Island at the 3000 BC range, and Horr's Island 2800 BC....Evidence of Archaic occupation in South Fla. (McGoun65) Walker obtained radiocarbon dates of 5700 BC at Useppa Island.(Walker)

Context

The Glades region and related cultures include all of South Florida East and South of Okeechobee and Caloosahatchee (the Caloosahatchee region is immediately west of the Okeechobee Basin and the Belle Glade culture), including the Florida Keys. During the post-500 BC period the southwest Florida coast from Charlotte Harbor to just south of Estero Bay south of Fort Myers was perhaps the most productive marine region in the state. "Fed by nutrients brought to the coast by the Peace, Myakka, and Caloosahatchee rivers, the shallow, grassy subtropical waters of the region afforded its Pre-Columbian inhabitants a rich larder of shellfish and fish. The estuary and bay systems of Charlotte harbor, Pine Island sound, and San Carlos and Estero bays with their numerous barrier and inshore islands, many rimmed with mangrove forests, supported a vast marine food chain that could be systematically harvested by the Caloosahatchee people... During the Pre-Columbian period



Figure 8 Major sites, 500BC to AD 800.

the Caloosahatchee River could have functioned as a canoe highway connecting the cultures of the basin with those of the coast. Throughout their histories, the cultures of these two adjacent regions must have been in continual, close contact with one another." (Marquardt 311)

"The archaeological remains of the Pre-Columbian Caloosahatchee people—a complex array of sites and different settings and exhibiting different processes of formation, challenge archaeologists. Were the sites occupied at the same time? Do sites represent long occupations? When did the construction of shell-works begin? Does the construction of large platform mounds reflect a complex form of social and/or political organization? Do different sites containing different patterns of faunal remains reflect different patterns of subsistence at a single point of time, or at different times, or both? What effects have sea-level fluctuations had on the patterning of sites and subsistence?" (Marquardt: 314) The answers to these questions may provide information that also provides insight to Calusa Indian Culture.

Shell Middens

A kitchen midden or shell midden is a shell mound, usually near a bay, where empty shells were discarded by aboriginals. Because it was their place of work and food preparation (their kitchen), village middens contain artifacts (usually small bits of charcoal, fish and animal bone, broken pottery, shell tools, and post holes) valuable to archaeologists. "(Perry: 51) Shell middens...may be hundreds of feet deep and wide, made up mainly of shells that a people discarded after eating the soft animals inside. "Shell middens also provide information by preserving physical evidence and cultural artifacts. The calcium carbonate (lime) content of the shells neutralizes acid in soil and inhibits decay of organic materials, especially bone. Thus, the model midden contains animal bones, stone tools, and pieces of pottery. .. the kinds of shell, bone and stone tools found in middens offer clues to early methods of hunting, fishing, and food preparation." (Safer: 21-23)

"The size of the shell heaps and the numbers of individual mollusks within them are staggering, as is the number of sites along the coast...In the Caloosahatchee region surveys have noted shell mounds, middens, or both on almost every island. "Some islands, such as Cayo Costa, North Captiva, Sanibel, and Pine Island, have extensive, multiple sites. Other smaller keys seem to be one large site, such as Cabbage Key, Josslyn Island, Demere Key, and Mound Key." (Cushing, 1897) "Still more sites are distributed around Charlotte harbor (eg. Big Mound Key) and along the shorelines of Charlotte and Lee counties." (Marquardt: 312)

"A surprising feature is that little evidence of progressive evolution exists within the area (of the mound-builders), with the resulting archaeological query as to where the development

took place. The artists of the Mound-builders presumably had little in the way of precedent to guide or to hamper them. For the most part they went directly to nature for their inspiration...

The layout of mounds around a rectangular court seen in Middle America, is existent in the layout of Key Marco, although the rectangular court in this case is of water." (Stone)

Plummets in Burials

Describing a burial Moore found at Crystal River: "on the base of the mound, in the southern slope," he reported, "was the skeleton of an adult, lying full length on the back. Extending across the pelvis, sagging down somewhat, was a row of (39) pendants of stone... (and) three of copper..." (Moore 1903: 399) And its owner could have worn it around his or her neck, as the high status burials in the Jones mound near Tampa Bay prove, (Bullen) from the waist, as Clarence Moore discovered at Crystal River, Fl. (Moore 1903), possibly the ear-lobe (Milanich: 1996), or as will be shown shortly, from the forehead if he or she possessed the power of a "headman." Reiger: 235)

A description of discoveries at the Jones Burial Mound near Tampa Bay (Bullen, 1952).

"Of the 150 adult men and women at Jones Mound, "twenty burials"-including both males and females-"were supplied with pendants..., made either of stone or of shell," and these "pendants were located at necks or chests and so, presumably, were suspended from the neck in life." (Bullen 1952: 49) "While some of these artifacts have the typical shapes of stone and shell



Figure 9 Stone duck head plummet.

plummets (1952: Figs. 17 and 18) others are anomorphic,

representing a deer's head, bird's head, or duck's bill" (1952: Figs 15 and 16)." They may be further circumstantial objects, for the Shoveler duck is a classic example of the "anomalous animal," a bird that "moves from what is viewed as a normal habitat (the sky and trees) into an abnormal one (lakes) (Milanich 1994:187). Of all ducks, this species might have seemed the most anomalous because of its odd, oversized bill, and its habit of swimming with the bill held at an angle in the water, as if

communicating with the Underworld." (Reiger: 237) The Calusa Indians had special categories for animals that they considered to behave abnormally, such as: caterpillars that turn into butterflies, and dogs that are fed by people (unlike the natural wolf and coyote, who hunt for their food).

Stirling commented regarding the Belle Glade site: that "only the burials in the top of the mound contained intentionally included cultural remains." Nevertheless, Willey was able to compare the artifacts from the habitation midden to those from the burial mound and make

tentative suggestions about relative time or functional differences between the two structures. Among the outstanding mounds examined on the Florida West coast was " a sand tumulus located on Crystal River, in Citrus County. At this site, near the mouth of the stream, there is an immense shell heap, 28 feet in height, with a level, platform-like top, 100 by 50 feet in size. A graded way leads from the surrounding surface to the elevated plateau. From the burial mound, which was 10 feet in height, there were taken some 225 burials, disposed variously in flexed and extended positions and including some forty so-called burials. Pottery-ware bearing representations of the human hand and face, a number of interesting pottery vessels and pipes, and great numbers of so-called pendant ornaments, were found with burials and throughout the mound (Fig. 290). (Shetrone)

It is significant that a deposit of plummets or pendants comprising similar materials and forms was taken from the Great Seip Mound of the Ohio Hopewell Culture explored by the Ohio State Museum in 1925-28. ...The significance of the remarkable resemblance between the objects found in these widely separated mounds remains to be determined.

Select Sites

Three sites, each of a different type, are described. One, Key Marco, is a wetland site. Crystal River is a dry land site, on which mounds were constructed. The Jones burial site is comprised of a sand burial mound, along a stream, and Matecumbe Key is a key from which artifacts have been surface collected. For a list of sites that that can be visited, read I. Mac. Perry's "Indian Mounds You Can Visit."

Key Marco has yielded more unique material as a site than any other, perhaps because of the preservation of materials that usually deteriorate quickly. Archaeologists have hoped to find another site with as much cultural material, but haven't. Gilliland's book "The Material Culture of Key Marco" is essentially an inventory of Cushing's finds from Key Marco. "The Calusa Indians are shown to be one of the most advanced artistic cultures of the U.S. , Byron Voegelin, writing of Cushing's discovery said " Gathered together in one spot were great quantities of utensils, tools, fishing equipment, ornaments, weapons, and many examples of ceremonial paraphernalia. The find has never been duplicated, nor is it likely to be." (Perry: 130) Thirty nine plummets were found at the site." ...

The early people of the Crystal River Site were members of the Deptford Culture group, ca 200 BC, then the Santa Rosa Swift Creek culture beginning at about 100 AD, also Weeden Island I and Weeden Island II, then Safety Harbor Periods. There are six mounds at the complex, which is now a Florida State Park. At the Burial Mound, C.B Moore in the early 1900's discovered many artifacts, including rock crystal plummets, which were imports from

Hopewellian culture regions. It is estimated that there are as many as 1000 burials at the Crystal River Site, abandoned before the Europeans came to Florida in the 1500's.

On the East bank of Pembroke Creek, near Tampa, is the Jones Mound. This was a sand burial mound seventy feet wide and three feet high containing 174 burials.

Matecumbe Key, in the Florida keys, is a rocky island or key. It was a seasonal home for some of the Calusa Indians, who fished, and often salvaged treasure from ships wrecked on their way to Europe. The Keys are believed to have been the final refuge of the Calusa in Florida, before the last of them escaped to Cuba.

Historical Evidence

"The Florida Indians did not survive, and that is another problem. There is no continuity with the past". (Purdy: 1) The most descriptive account of the way of life of the Calusa Indians is the *Memoirs of Escalante de Fontaneda*. Fontaneda was shipwrecked off the Florida Keys when he was only 13 years old, on his way from Cartagena to Spain to be educated. He was taken captive by the Calusa Indians sometime between 1545-1551, living with them for 13 years afterward. Fontaneda was not a trained writer or illustrator, so his recollections are not as complete as they might have been. His memoir was related to a writer from his memory after he had returned to Spain, so many details were probably forgotten or embellished. Yet, this is the most descriptive account of Calusa Indian life available today. "The area under the Calusa culture's dominance cannot be known definitively, but Fontaneda paints an expansive picture of Calusa influence. He said that Carlos (the chief or Cacique) held sway over at least fifty towns ranging from Tampa Bay to the Keys and inland to lake Ocheechobee.. Not everyone accepts Fontaneda's belief that the coastal people controlled the basin, but taken in conjunction with the archaeological evidence for greater population on the coast, and the Spanish accounts of Calusa power, the case for coastal supremacy seems persuasive." (McGoun: 23)

Some Spanish sources cite the Calusa influence as even more expansive. Juan Fernandez de Olivera is quoted as saying that Calusa influence reached up the Atlantic coast almost to St. Augustine in 1612.(Goggin and Sturtevant 1964: 187) (Laudonniere:71-74) speaks of an alliance between the Calusa and the Cape Canaveral Indians.

Father Rogel, a Catholic priest, also spent time with the Calusa, told this story about their beliefs about the soul: they (the Calusa) believed that each man has three souls; one is the pupil of the eye, another one the shadow that each one makes, and the other one is the image one sees in a mirror in clear water, and when a man dies, they say that two of the souls leave the body, and the third one which is the pupil of the eye, always remains in the body. (Milanich and Proctor 1978: 5).

Early Catholic missionaries to the Apalachee Indians of northwest Florida found that despite all their exhortations to the contrary, high-ranking Indians continued to wear quartz crystal plummets and call on them for spiritual help. A number of these artifacts were found in the San Luis Mission near present day Tallahassee. (Hann: 234)

John Goggin provides an observation by John Sparke, who accompanied John Hawkins on his voyage to Florida in the mid 1560's: "the function of these objects as pendants appears to be substantiated by Sparke's report...of Timucua Indians (on the lower St. John's River) wearing pieces of 'unicorn' horn



Figure 10 Detail of Fig. 12, bride possibly wearing plummet necklace.



Figure 11 Detail of Fig. 10 showing metal plummets hanging from waist girdles.

around their necks. The spiral convolutions of a conch shell columella somewhat resemble narwhal (*Monodon monoceros*) horn, which was one thought to be the horn of the fabled unicorn... (Goggin 1949: np)." (Reiger: 236) What was actually observed of course, was not unicorn horn, but probably a conch shell columella left in its spiral state.

Another historical document related to Florida Indian Culture, is based on the illustrations by Jacques le Moyne, who visited the Timucua Indians in 1564, documenting the Indians, their costumes, ceremonies, and daily life. The original drawings and watercolors were used as references for engravings published by Theodore de Bry in 1590. The caption for one illustration reads as follows: "A description of King Saturnia Receiving His Bride: A dance is performed before them by young girls, dressed for the occasion...Below the navel they

wear a broad girdle with something like a purse hanging down in front of them," and "all around this girdle are hung little balls of gold and silver that dangle down upon their thighs and tinkle when they dance." As they dance, they chant the praises of the king and his bride, raising and lowering their heads in unison." (Lorant 1946:11)

The Timucua's habitation area is in northeast Florida and the Calusa's habitation is in southwest Florida.

However, although there are certain cultural variations within the various Indian groups in Florida, there



Figure 12 Chief Saturnia Receiving His Bride, by de Bry, 1590.

seems to have been cross-cultural exchanges of ideas as well. Since Sparke remarked that the elite Timucuan refused to stop consulting their crystal plummets, we now know that some of the Indians on the West coast of Florida (Crystal River) and some on the east have crystal plummets in common. It may be that the Timucuan, who during this time period terminated their 'skirts' with pendants of gold and silver, they may have at one time wore pendants of shell instead, before they had access to precious metals. It also stands to reason, that since there were burials found at Crystal River and Jones Mound that contained plummets at thigh or knee length level, this may have been a traditional Florida Indian ornamentation. As John Reiger asks, "Would not the plummets of stone and shell, particularly the latter, also have dangled and tinkled with a pleasing effect.?" (Reiger)

In the notes of The Memoirs of *Escalante de Fontaneda*, there is mention of seed pearls, freshwater pearls, as well as conch pearls harvested by the Florida Indians. In Tocobaga (Tampa) the Indians traded their pearls from oysters and conchs, and Indians also salvaged gold and silver from sunken flotillas. Trade with Havana, Cuba was established at the time. (True: 35)

Stylistic Tendencies

The plummet form was described earlier, two main shapes consisting of a knob on top separated from the main body, a tapered cylinder, or egg-like variation, by a groove. It is not known whether the form is based on the abstraction of a natural form, is based on ease of workmanship or material, or simply a traditional form inherited from the Hopewell Cultural tradition. The question of a flat back being inherent in the material used (*strombus*), or the result of planning, remains.

There are similarities in form between the stone and shell plummets." As examples, the teardrop plummet and the expanding-center plummet forms are represented in both shell and stone" and "overall the similarity of the stone and shell plummets is remarkable." (Reiger: 236)

Stylistic Tendencies of Plummets From Areas Other Than Florida

Author William McGoun, in his book, *Prehistoric Peoples of South Florida*, writes, "All prehistoric human development in South Florida can be considered of a single tradition, in that a tradition is defined as a long-lasting manifestation of certain core cultural features: (Willey and Phillips (1958:37) refer to persistent configurations in single technologies or other systems of related forms. In this case the core is simply adaptation to the Florida environment." (Purdy: 7-8) Although the basic forms of plummets outside the Caloosahatchee cultural area and Florida in general remains the same, the materials of which plummets from other cultures are made varies.



Figure 13 Male and female ivory shaman figures from the Bering Sea area. The male's necklace features a bird figure.

Plummets found in Hopewell and Adena sites are usually made of hard stones including crystal, hematite, and magnetite as the most common materials. Often emulating or decorated with a natural feature, such as a bird's head, (especially a duck's bill), phallic symbols, a fish's head, a bear-claw, deer's -head etc , this characteristic is more often associated with Hopewellian plummets than in the generally undecorated Florida plummets. "However, there are recurring themes in the motifs and art forms of the Southeast that provide clues to the belief systems of the native peoples. Important among these are the sun and the moon, the cardinal points, gods of the underworld (fish and frogs), gods of the sky (eagles, and falcons), the forked eye, the long nosed-god mask, the hand-and-eye symbol, and more..." (Purdy: 8)

Much of the same can be said about the California charmstones- they are almost exclusively made of hard stone, often exhibit phallicism in their design, and it is documented that Indians believed they have power, or *Manitou* to influence the user's relationship with nature. They are also associated with elite burials. Although there are many similarities between charmstones and Eastern plummets, it is generally accepted that there is no cultural connection between the two. (Reiger: 230)

Since the Calusa are now an extinct people and culture, we may never know what the plummets represent, but, as Jane Safer states "An analogy between the shape of a shell and some other natural phenomena is often the basis for its symbolic importance." (Safer: 140)

An example of this is the motif that appears frequently on plummets outside of Florida, the bird head motif, one associated with Hopewellian traditional symbolism. "Vision imagery is frequently linked to bird symbolism. Bird heads adorned shamanic garments so that the shaman could see clearly all souls in all worlds. South of the Bering Strait, Yup'ik Eskimos depicted birds as messengers between realms-earth to sea and human to non-human." (Sherr: 95) The knob on the top of plummets could easily be interpreted as a bird head, or the lower tapered cylindrical part as a bird beak. On those plummets that have been inscribed with bird's designs, it is usually the head and the beak or bill that is emphasized.

Phallic symbols are another motif that appears frequently throughout the world in many different cultures Although the Florida plummets are not obviously phallic symbols, they could be abstractions of the idea.

Another possible design inspiration for the form of the Florida plummets is the female fertility symbol. These are also found throughout the world. The knob could be interpreted as a head, and the swollen, center portion as a characteristic of a pregnant female figure.

The importance of the polished surface of shell as a material may be an important clue in the meaning of the plummets. Not only is the glistening, reflective surface associated with light or lightning, but the material of shell may be important symbolically as well. John Reiger suggests, "To Pre-Columbian Indians, horse-conch shells would have been literally "pregnant with symbolism." For one thing, the columella is longer, thicker, straighter, and more symmetrical (Luer) than other shells, and the aperture, or opening, is orange-red with an animal inside that is the color of ocher, a symbol of "new-life."

"From earliest times..., shells have had a worldwide association with females and fertility: "As the snail comes out of its shell, so man comes out of his mother's womb." (Safer) "Could it be that the horse-conch was preferred over other gastropods as the source of plummets because its columella was the biggest, straightest, and most symbolically potent, and because the animal inside suggested a human baby, the result of a successful sexual union?" (Reiger: 236)

It has been suggested that plummets represent the caterpillar that eats green corn, an image that originated in more northern Indian cultures. But the Calusa were a non-agrarian society, so that is unlikely. It may represent an abstracted human figure, as many female fertility symbols do in cultures throughout the world.

Arguments For Plummets as Utilitarian Objects

Karen Walker, has a different idea, one based on her research about the Calusa Indian fishing technology and the Calusa Environment. She concludes that "plummets" were part of a sophisticated specialized net fishing technology. Her research is supported by the historical writing of Lopez de Vasco, stating in 1570, that "in Charlotte Harbor there was a "great fishery of mullet (*licias*), where they (the Indians) catch fish in nets as in Spain." (1894, cited by Goggin and Sturtevant 1964 :185) The cordage collection excavated from the muck of the Key Marco site includes net (probably of palm fiber) fragments with float pegs (Gilliland 1975: Plate 101) made of cypress, *Taxodium* sp. (Lee, Newsom, personal communication 1988), attached along the top margin, acting as a cork line." Pierced arc shells, (*Noetia ponderosa*), at the bottom supply a "lead line." (Gilliland 1975: Plate 141)...the region of the Calusa, Charlotte Harbor is characterized by shallow, calm waters due to a large

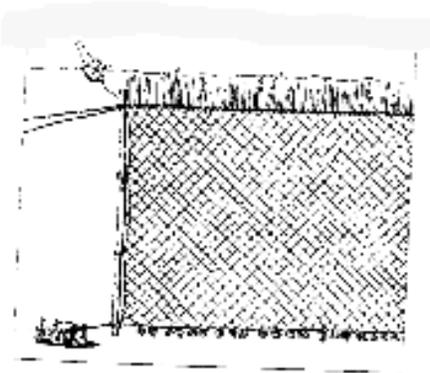


Figure 14 Fishing apparatus as suggested by Karen Walker.

meadow area enclosed by a protected barrier island chain, while the Ten Thousand Islands region is characterized by relatively deeper, faster waters due to the many constricted channels

that cut among the islands. Furthermore, many of the sites have nearly direct access to the open Gulf.

It has been shown that the length (and presumably the weight) of shell columella fishing sinkers is significantly greater in the Ten thousand Islands region than in Charlotte Harbor and have suggested that it is because of the environmental differences just cited above. (Walker, 1991). In other words, deeper, faster-moving waters require larger and heavier fishing sinkers. (Walker: 178) But it could be that the conchs in the islands just grew bigger!

Lewis Larson, state archaeologist of Georgia, agrees with Walker that plummets may well have had a technological function in this sustenance activity (fishing). (Larson 1980:116-117).

A hole for attachment of a line would have more efficiently withstood the physical wear and tear that would have been required of plummets functioning as "sinkers." The groove for attachment that is existent on most plummets, is too shallow for the attached cord to withstand the forces of currents and tides over a period of time.

John Reiger agrees: "The groove defining the "head of a plummet is...often deep enough for light usage like that given to a pendant-charm. And its owner could have worn it around his or her neck, as the high status burials in the Jones mound near Tampa Bay prove (Bullen), or from the waist, as Clarence Moore discovered at Crystal River, Florida. (Moore: 1903), possibly the ear-lobe (Milanich 1996), or as will be shown shortly, from the forehead if he or she possessed the power of a 'headman'." (Reiger: 235)

Clarence Moore relates his experience at Chokoloskee Key: "At our former visit to Chokoloskee Key, we made the acquaintance of Mr. C.G. Mc Kinney, then living there. Mr. McKinney had for a long period paid close attention to aboriginal objects found on the Key. We were informed by him that, of the very many objects known as 'sinkers' found on the key, none had been met with near the water, and that he was firmly convinced that these so-called 'sinkers' had a use other than one pertaining to the taking of fish." (Moore: 312)

The plummets I have seen are lacking the specific wear one would expect to see on objects of that shape that had been subjected to the forces of water and currents.

Finally, John Reiger argues: "Another reason for doubting the fishing-sinker argument for plummets is the fact that Cushing found many fishing weights in situ at Key Marco, some with cordage still attached (fig. 4). In every case, the native Americans made fishing weights from *Mercenaria* clam shells, punctured *Busycon* whelks... and crudely torn-out columellae attached to notched *Mercenaria* and pierced *Arca* shells,. Gilliland seems to imply that all of the non-plummet shell weights ere used in net fishing rather than in individual hook and line angling. But in his own report Cushing notes that: sinkers made from the short thick columella of turbinella... (lamp shells-) are not not shaped and polished like the highly finished plummet-

shaped pendants we secured in great numbers, but with the whorls merely battered off- seemed to have been used with hooks and lines (Cushing 1897:39) (Reiger: 232).

"If shell and stone plummets were part of the Florida Indians' fishing equipment, as Walker and Larson argue, then how is it that Cushing found none with the artifacts pertaining to fishing? What Cushing did discover was that the Indians had a uniform tendency to weight their nets and individual fishing lines with pierced or notched whole or fragmentary shells, or with the unfinished collumellae roughly broken out of the shells." (Reiger: 232-233)

Irving Eyster, a South Florida archaeologist, suggests that plummets of shell, or stone, may have been used as weights, in association with the atlatl or spear thrower... But "unlike atlatl weights which are rather heavy and bisymmetrical, plummets are light in weight and lack the bisymmetry, except in the case of the very rare double grooved form. (Goggin, 1951: Fig 9) Although the bola hypothesis is more plausible than the atlatl-weight theory, there is still no evidence, historical or archaeological, to support it. (Reiger: 233)

Contemporary casting nets have weights tied in the edges of the net. Loose hanging plummets would not only knock against each other, perhaps fracturing during the process, but they would be extremely noisy, and perhaps become entangled in the net itself. (Reiger 1999: 236)

Some researchers are convinced that plummets had more than one function in their "use life." John Reiger suggests that a plummet which functioned as a "lucky plummet," used as a sinker by a fisherman, who caught an usually great amount of fish, may have attributed his success to the plummet, then later it became a "lucky charm." (Reiger 1999: 230)

This theory seems plausible, yet, why would a craftsperson invest so much time in the object to use it as a utilitarian object and then later convert it to an aesthetic object? This explanation should hold true mostly for crude, unrefined specimens of plummets.

Other explanations speculate as to the function of plummets including: diving weights, weaving tools, etc.... These seem unlikely. However, it is possible that the inspiration and function of plummets originated as a reaction to something that those of us who are interested in this question have never even considered.

Conclusion

Empirical evidence indicates that plummets could have been worn as body pendants since they are of a portable size, are a wearable weight, possess a knob with a groove below for hanging from a cord suspended from the body, and many have a flattened back, allowing them to lie comfortably against the body.

Although there is a concentration of shell plummets in the Southwest Florida

Caloosahatchee Culture area, Reiger noted that Goggin, in an unpublished manuscript, stated that he believed that plummets are "more common in the Calusa subarea."

(Reiger: 233) Plummets are found throughout Florida and the Southeastern United States, as well as California, where they are commonly referred to as "charmstones." Many of the plummets discovered in South Florida were surface collected, and not found within their cultural context. Plummets have also been found in the burials of what are thought to be elite individuals, such as those at Crystal River and Jones Mound. Quite a few plummets have been found in middens, but those artifacts are generally not found near water, with the exception of those at the Key Marco site. Plummets of other materials, especially quartz, hematite, and magnetite have been found in Adena and Hopewell sites. Although those plummets are of the same general form as the Calusa plummets, they are often decorated with designs associated with nature, especially certain animals. " The fact that plummets of the same general form in varied materials are found in distant geographic areas adds to the evidence that the plummet was an important or special object to the Calusa Indians.

Style

All plummets exhibit an abstract form. "There is a "modern tendency" to assume that the more work that goes into the creation of an artifact, the more precious it has to have been to its maker. But what seems crude (unworked) to us might have seemed attractive to the Native Americans." (Reiger) Cushing commented that it was possible to classify artifacts that were utilitarian objects, but that with decorative items, that was impossible because each was unique. (Purdy: 48) John Goggin comments on the style of plummets found on Matecumbe Key : "The aesthetics of Matecumbe craftsmanship are, in some respects, close to those of our own artists. In spite of the crudity of the actual material expression the "conceptual" structure behind the object is similar to that of Mondrian, Brancusi, and Albers. It is an art of strict abstraction, love of the qualities of the material, and of a functional form in which design-decoration is restricted by the requirements of use... there is no use of representational iconography; rather interest is concentrated on the description of regular and irregular geometric figures..."

(Goggin: 77-78) "Many of us are conditioned to think of art only in terms of stereotypical Western categories-painting, sculpture, drawing, printmaking-and of the "artist" as an exotic, free-willed, and colorful person who creates "art" under the control of an enigmatic and maybe even uncontrollable inspiration-such a person is a "fine artist." Anyone else who might fashion made-to-order images or objects for pay is relegated to a lower, "commercial" status and is certainly not an "artist." We in the West have come to accept the idea of the inspired, free spirited individual as the sole legitimate creator of art, and "art for art's sake" ...This is a

comparatively recent concept and one that definitely has not been valid throughout the span of world history. Art historians agree that the art of the past was not created by what we call artists, but by individuals we would call craftspeople. (Willey)

Purdy explains, "While it is true that all material objects represent ideas that have been objectified it is not possible to identify precisely what the maker had in mind when an item was produced. Residues of past cultures are seldom found in context." (Purdy :7)

"Ornament among all primitive people is hard to separate in its simplicity from the ideas of fetishism, talismans, amulets, and religion generally." (Peabody 1901: 137)

"The artist, then, was really a shamanic technician, one who could manipulate material elements that often contained great supernatural power." (O'Conner 1995:10)

"It is impossible, therefore, to separate "artistry" from the other major elements contained in these pendant-charms: status and power. As status makers, these objects probably were worn or possessed by elite individuals as many burials indicate. The fact that some were made of exotic materials that traveled over long distances, and took years to arrive, making them all the more precious, and their rarity, and thus their value, further increased when they accompanied their owners into the grave for continued use in the spirit world. (Austin 1993: 304-305)

Analysis based on analogies with other Pre-literate people that may share certain beliefs: phallicism, the existence of spirituality in inanimate objects, and the power of amulets to relieve anxiety by bring predictability to ones' life. In the end, we can never know the individual history of every plummet...

Symbolism

Analyzing the form of plummets is difficult because it is an organic shape that varies in proportion, thus can resemble many different forms in nature. Some Florida plummets are of a shape that resemble the phallic pendants of the California and Southeastern cultural areas of the United States. Still others tend to resemble the bird head pendants found in the Hopewell cultures of the Southeastern United States. Some seem to represent small human figures such as those from the Bering Sea area, and goddess figures from the Mediterranean.

It is known that throughout Native American cultural groups in North America, there is a mythology related to light, this may also factor in the choice of material that can be polished to a high gloss for the making of plummets, related somehow to the mythology of the Calusa.

The possibilities seem endless, but because the Calusa culture is known only through those artifacts found within their context, and a few historical accounts of their culture (Fontaneda and Rogel), it is impossible to reach a definitive conclusion about the symbolism of the shell plummet. Through comparison with surrounding cultures about whom more is known,

one can still only speculate about the meaning of these mysterious objects. But it is likely that the plummet symbolizes some idea or object that was important in the survival of the Calusa.

Historical Particularism

Thanks to Father Rogel and Escalante de Fontaneda, among a few other individuals, we do know something about the daily life and ceremonies of the Florida Indians. The original watercolors by le Moyne, engraved by de Bry, of the Timucuan Indians give us at least a bit of a picture of their life, customs, and dress. When similar objects are found in the Calusa Cultural area, that historical information may be helpful in interpreting what the artifacts were used for, even though they are not from the same group of people.

The illustrations by de Bry showing metal pendants terminating dancers' skirts seem to indicate a style that might have been worn in earlier times, with plummets in place of gold pendants. However, one must take into account that the early explorers of Florida were trying to finance their expeditions to the New World with money from the Old World. To do this they were not beyond exaggerating the richness and eccentricity of the Native Americans in order to gain financing, so these works should be viewed taking that into consideration.

Plummets as Fishing Artifacts Versus Plummets as Aesthetic Objects

The opinions of researchers Karen Walker and Lewis Larson, that plummets are part of a net fishing technology are probably not correct, in spite of finding crude plummet shaped objects in middens, because most plummets did not have a groove deep enough to hold a cord heavy enough for fishing, and they probably would have been attached by a cord through a hole, a much stronger method. The shell plummets did not exhibit the wear one would expect from the friction of the plummets rubbing against other materials and each other if used in such a demanding situation. Irving Eyster's proposal that plummets were used as atlatls is also probably not correct, since the shell plummets are too fragile and unwieldy to allow the user to efficiently use the nets they are attached to.

The time taken to shape and refine many of the plummets, the fragility of the material (shell), combined with the existence of plummets in elite burials seems to indicate that plummets were special objects to the Calusa, not merely utilitarian objects.

De Bry's drawings indicate that there was a practice of hanging ornaments from cords for personal ornamentation, and Fontaneda's memoir mentions the elite members of the Calusa tribe wearing pendants around their necks.

The evidence indicates that shell plummets were made in a traditional form that was

special not only to the Calusa Indians, but to many of the Native Americans of the Southeastern United States. The material of shell was more commonly used within the Calusa culture, perhaps because it was a readily available resource, or because of its appropriateness as a material, both in practical considerations and in symbolic meaning. The form and material combine to form an object of simplistic beauty, of abstract design, that was used for decorative ornamentation, as a pendant suspended on a cord around the neck, suspended from a cord hanging from a girdle around the hips, or held in the hand. Such an object may have also been supported a number of other ways. The actual purpose or attributed power of this object is currently unknown, but it seems there must have been belief in their power and spiritual significance by the people who made and used them.



Bibliography for 'Plummet's'

- Alexander, Michael Discovering the New World.
New York: Harper & Row, 1976.
Based on the works of Theodore de Bry (1528-98)
- Bennett, Charles E. Settlement of Florida.
Gainesville: University of Florida Press. 1968.
Work of de Bry based on selected engravings, and narrative of Le Moyne, 1588.
Illustrations are poorly colored.
- Brown, Robin Florida's First People: 12,000 years of Human History.
Sarasota: Pineapple Press, 1994.
Describes artifacts and tested possible methods of production with tools available during time of production.
- Carr, Robert S. A Stone Pendant from Key Largo.
Florida Anthropologist
Vol. 35 no. 3 Sept. 1982.
- Clupper, Jim Reported Aboriginal Archaeological Sites from Charlotte Harbor South, Including the Florida Keys and the Okeechobee Basin. Unpublished compilation for the Monroe County Public Library, Islamorada, 1996.
- Dubin, Lois Sherr North American Indian Jewelry and Adornment: From Prehistory to Present. New York: Harry Abrahms Publishing, 1999.
Lavishly illustrated, this large book is a comprehensive study of Native American adornment.
- Gilliland, Marion The Material Culture of Key Marco Florida.
Port Salerno: Florida Classic Library, 1989.
Is basically an inventory and description of the artifacts found by Cushing at Key Marco, with B&W photographs.
- Gimbuta, Maria Civilization of the Goddess: The World of Old Europe.
San Francisco: Harper Collins, 1991.
Describes locations, sites, and artifacts relating to goddess culture.
- Goggin, John M. Excavations on Upper Matecumbe Key, Fl.
New Haven: Yale Univ. Press, 1949.
Goggin describes fieldwork, artifacts, and describes excavations, as well as description of terrain, geology and vegetation. Mentions Calusa, Tequesta, and Matecumbe Indians in keys during 16th, 17th and 18th centuries. Stone plummet description on p. 66. Shell working techniques described on pp. 71-73.
- Goggin, John The Archaeology of the Glades Area, Southern Florida.
Archaeological Cults in Florida.
New Haven: Yale U Press, 1949.
- Lorant, Stefan The New World; the First Pictures of America.
New York, Duell: Sloan and Pearce, 1965.

Based on the illustrations of Jacques le Moyne and John White, as engraved by Theodore de Bry.

- Mallery, Garrick Picture Writing of the Native American Indians, Vol. II. New York: Dover, 1972.
This book is based on Col Garrick Malley's report on the picture writing of the American Indians dated 1888-1889 for the Annual Rreport of the Bureau of Ethnology.
- McGoun, William Prehistoric Peoples of South Florida. Tuscaloosa: University of Ala. Press, 1993.
Very good resource describing Florida's Paleo-Indians, Archaic Indians and historical period. Author uses cultural-historical perspective, describes environmental influences. He sees S. Florida cultural tradition as a single tradition. Describes Calusa belief in 3 souls, (p. 17). Points out the importance of motifs of birds and eyes (p. 18) in Calusa belief system, believes it is evidence of affiliation with Southern Cult (p.19) in which eye is prominent motif. Describes (Waring and Holder, 1968:20) "*a baton (p.19) of wood which was 2 ft. long and terminated in a grooved knob or boss to which tassel cords had been attached.*" Believes Calusa influenced much of Fl. Attributes design on tablet to caterpillar which eats green corn. Purdy (p. 49) indicates Indians subservient to spirits, not vice versa, believes tradition may go back 10,000 years. States dating of shell is difficult due to calcium. (P. 65) S. Florida may have been the scene of a water mortuary cult (p. 81). Definition of Hopewellian culture (p. 84-85). Pendants or plummets found at Ft. Center (P. 88). Mentions Charlevoix's wreck off S. Fla.(p. 109).
This book compares opinions of noted experts on S. Fla. Indian culture, mentioning a lot of facts and has a good bibliography.
- Milanich, Jerald T. Archaeology of Precolumbian Florida. Gainesville: University Press of Florida, 1994.
In this general description of artifacts from early Floridian regional cultures, there is an illustration of shell columnella (plummets) on p.303, along with a brief reference to plummets as most likely being used for adornment (p. 301, Reiger, 1990).
Florida's Indians from Ancient Times to the Present. University Press of Fla, 1998.
Mentions databases at Bureau of Archaeological Research at Tallahassee (p26).
Description of stone plummets from Crystal River (p. 101).
- Moore, Clarence "Certain Antiquities of the Fla. West Coast."
Philadelphia:the Journal of the Academy of Sciences, 1900;
11:(second series) 351-394.
"Miscellaneous Investigations in Fla."
Philadelphia: the Journal of the Academy of Sciences, 1904;
13: 298-325.
"Notes on the Ten Thousand Islands, Fl."
Philadelphia: the Journal of the Academy of Sciences, 1907;
13:458-470.
- Perry, I. Mac Indian Mounds You Can Visit. St. Petersburg: Great Outdoors Publishing, 1993.
- Purdy, Barbara A. Indian Art of Ancient Florida. Gainesville: University Press of Florida, 1996.
The Art and Archaeology of Florida's Wetlands. Boca Raton: CRC Press, 1991.
On p. 48 describes shell artifacts found at Key Marco, as well as a stone plummet. Belle Glade (p. 700) site is where 7 pendants or plummets were discovered. Hontoon Island in N. E. Fl. Is site where shell tools from conch were found along with one pendant made of shell.

- Reiger, John F. "Plummets"- "An Analysis of a Mysterious Florida Artifact."
Florida Anthropologist vol.43 no. 4, Dec. 1990.
- "Artistry, Status, and Power: How "Plummet"-Pendants Probably Functioned in Precolumbian Florida and Beyond."
Florida Anthropologist vol. 52 no, Dec. 1999.
Reiger describes his investigation of plummets as well as others, mentions Karen Walker. He agrees that plummets were probably not utilitarian objects, but pendants.
- Rochefort, Charles de The History of the Caribby-Islands...
London: Dring and J. Starkey, 1666.
Interesting documentation of visits by French to N.A. and the Carribbean Islands. Claims that Carribbeans came from Apalachee, who came from the Appalachian Mountains. Written in colorful language, it describes people, customs and domiciles of early contact period.
- Safer, Jane Fearer, and Gill, Frances Spirals from the Sea: An anthropological look at shells
New York: Clarkson Potter, Inc., 1982.
- Schapiro, Phyllis. Ed. Myths and Dreams Exploring the Cultural Legacies of Florida and the Caribbean; Exhibition Guide.
Miami: Excello Graphics, 2000.
- Sears, William H. "The Turner River Site, Collier County Fl.
The Florida Anthropologist 9(2): 47-60.
- Shetrone, Henry The Mound Builders.
Port Washington: Kennekat Press Inc:1930
- Stone, Doris "The Relationship of Florida Archaeology to That of Middle America. "
Florida Historical Quarterly, vol. 17, no. 3, Jan. 1939.
- True, David Memoir of Don. D'Escalente Fontaneda respecting Florida, 1575.
Miami: Wometco. 1944. (Translated by Buckingham Smith)
Fontaneda was taken captive by Calusa, lived with them for 13 years. He mentions them traveling to Cuba for trade goods. Describes pearls from oysters and conchs. A legend about a conch gorget is on p. 59 in notes. Fontaneda was not an educated person, but related his memories of his time in S. Fl. When he returned to Spain.
- Walker, Karen Jo The Zooarchaeology of Charlotte Harbor's Prehistoric Maritime adaptation: Spatial and Temporal Perspectives.
Gainesville: U. of Fla. Press, 1992.
This is a detailed description of changes in water levels and salinity over a period of centuries based on scientific data, providing a background for the production of plummets. Walker has obtained radiocarbon dates of 400-700 AD for what she considers fishing technology artifacts. She mentions a description of fishing techniques using net s by the Calusa by Velasco ca 1570. On P. 178, she mentions the use of heavier columella due to changes in the environment. Two good resources in bibliography for descriptions of Conch shells (Hathaway, Ralph).
- Williams, Stephen The Waring Papers;the Collected Works of Antonio J. Waring, Jr.
Cambridge: Peabody Museum, Harvard U, 1977.

- Willey, Gordon Excavations in SE Fla. (No 42)
New Haven: Yale U. Press, 1949.
Describes excavations in Belle Glade and Big Mound in Palm Beach County, 1933-1936.
In Belle Glade, plummets not found in burials, 36, 50, 51, p. 55 illus. One small stone
plummet found in burial in SE Dade, p.107, 108. Plate 12 shows beautiful photographs of
shell plummets.
- Worth, John E. Fontaneda Revisited: Five Descriptions of Sixteenth Century Florida.
Florida Historical Quarterly, vol 73 no 3. Jan 1995.