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If there is a theme to this issue of the Bulletin, it is ‘breaking the box’, that is the conceptual box we use to define how we think about prehistoric archaeology. These articles do this in two ways. The first is geography. All the articles extend their scope beyond the boundaries of Massachusetts. Art Spiess begins with a bannerstone discovery in southern Maine and makes comparisons with other examples across the Northeast. Ed Kaeser focuses on coastal New York but draws on sites from New Jersey to Martha’s Vineyard. Bernard Otto’s article references similar points from Rhode Island while Curt Hoffman argues that some of the artifacts found in Middleboro originated in Upstate New York. Although we know that present-day political boundaries have little applicability to past cultural realities, these articles provide excellent examples of how broad ranging the Native cultures of New England could be.

The second way in which these papers break the box is in terms of artifacts – what we call them, how they were used and even what kinds of objects we consider to be artifacts. In his article, Spiess argues that bannerstones may not have been atlatl weights after all. Kaeser reviews fifty years of fieldwork on Middle Woodland sites and concludes that the coastal manifestations of ‘Fox Creek’ in coastal New York differ from Funk’s definition and are better termed the ‘Abbott Complex’. Otto describes a projectile point style from Kingston, MA that does not fit neatly into the existing typological categories. Finally, Hoffman explores the non-utilitarian use of quartz and polished stones, and urges us to be open-minded as we define the ‘artifacts’ a site produces.

My thanks go to each of the authors for their interesting and thought-provoking papers as well as to Shirley Blancke and Kathy Fairbanks for proof reading. Finally, a special thank you to Margaret K. Bradley for her assistance with editing and formatting.
A Winged Bannerstone From Maine:
Stone and Perishable Archaic Technology

Arthur E. Spiess

Introduction

Building atlatls and throwing spears has become a popular activity among archaeologists and those interested in 'primitive' technology. Recently Ives (2003) reviewed several aspects of atlatl design and performance in this journal, including the issue of weights on the atlatl. Here I present some thoughts on bannerstones (atlatl weights) and Archaic technology that follow an opportunity to examine a bannerstone from a site near Sebago Lake, Maine. Although I own an atlatl (commercially made) and have thrown spears several hundred times, I do not consider myself an 'expert' at the sport. Recent excavation of two bannerstones and Neville points from a grave feature at Annasnappet Pond in Massachusetts (Cross 1999) has also prompted me to think in terms of bannerstone chronology and function. Moreover, Robinson's observation that there are bone analogs of some stone tool forms, such as gouges, in the Moorehead Burial tradition (Robinson 1992, 1996) may be a clue that such elaborate stone objects as bannerstones had functional equivalents in wood or bone that do not usually survive in the archaeological record.

Many objects thought to be atlatl weights are carefully made in a variety of forms. The term 'banner stone' was used in the 1930s to describe 'winged varieties of polished stone objects'. Late 19th century terms for these objects such as 'ceremonial axes' and 'winged ceremonial stones' conveyed the sense that these objects were banners of prestige (Sassaman 1996:60). I would describe bannerstones as symmetrically shaped objects with a central hole, a set of 'wings' parallel with the hole. The thin dimension is perpendicular to the central hole and is (presumably) the horizontal plane of the wings. William S. Webb (1957; other references in Sassaman 1996) associated these objects with the functional spear thrower or atlatl.

Bannerstones are distributed geographically from southern Canada to Florida in the east,

Figure 1. The Merriman bannerstone (left) and a non-functional spear point ground into shape (right).
and west onto the Plains (Graybill 1974). The winged form of bannerstone appears to be much less common or absent from the Rocky Mountains westward. Issues of chronology and function are discussed further below.

The Sebago Find

Henry Lamoreau of Bowdoinham, who has been instrumental in many archaeological discoveries in central Maine for decades, brought the bannerstone and stone point described in this article to my attention in the spring of 2002. I visited the owner, Gerald Merriman of Auburn, ME, photographed and examined the artifacts in July 2002. Family tradition has it that the artifacts (Figure 1) were discovered in the spring of 1935, when Merriman’s grandfather, Chesley L. Ward, built a summer cottage (a ‘camp’ in Maine parlance) near the shore of Sebago Lake. The tradition is that these two pieces were taken to Harvard about 1936 or 1937 and shown to an archaeologist (presumably this might have been Charles C. Willoughby). Merriman’s mother also took these two pieces to the Farnsworth Museum about 1965. A handwritten note on a yellowing slip of paper accompanying the artifacts mentions the date of finding (1935), and that they were taken to the Farnham museum [sic] in Rockland and shown to an archaeologist there (presumably Wendell Hadlock). The note says, in part “The Farnham Museum at Rockland examined it and called it a Banner Stone used in Indian ritual.” Both archaeologists apparently mentioned the words ‘red ochre’ or ‘red paint’ to the owner’s family, since the subject was mentioned to me during our conversation. However there is no evidence of red ochre on the pieces themselves, nor is there any family memory of red color being associated with them when they were found. I surmise that Willoughby and Hadlock were conveying their opinions that the pieces originated with the ‘Red Paint people’, or perhaps they had just asked whether red ochre was found where the artifacts were discovered. In any case, the handwritten note with the artifacts, dating circa 1965, is evidence of the essential accuracy of the family tradition.

Merriman spent a great deal of time in the camp near Sebago Lake when he was a boy. I visited the location in September 2003 (Figure 2). The camp is located about forty-five meters from the shoreline, and it is built on posts, with a concrete slab foundation for a stone chimney. The style of construction indicates probable pre-WWII construction. The camp is situated in an area of rolling terrain with east-west trending ridges of sandy gravel. These ridges of washed glacial material exhibit about a two meters elevation difference between summit and trough, and there are many large boulders of one to three meters in diameter sticking up out of the ground. There is not much silt or clay in the soil, and the soil is apparently well drained. There is a privy located about twenty meters from the house on the top of one of the ridges. There is minimal landscaping around the house, so the artifacts must have been discovered during excavation of the foundation holes for supporting posts, or excavation of the chimney foundation or the privy. About ninety-five percent of the yard around the camp is intact, undisturbed soil, and much of the yard has excellent surface visibility on a thin or missing O/A soil horizon (without lawn). Vegetation cover is mature hemlock, pine and red oak forest with very little undergrowth. I walked over the surface of the yard, adjacent dirt tracks and roadway, and discovered two small quartz flakes and a fragment of fire-
cracked rock (or coarse stone tool chip that had been burned). The location was designated Maine Archaeological Survey site 13.53. The discovery of FCR and quartz flakes at the location, I feel, indicates that the site was a workshop and habitation site. The absence of red ochre suggests these finds were not directly associated in a grave.

The family’s collection from the Sebago Lake camp (site 13.53) consists of three pieces. Family tradition has it that the banners tone and point were found together. The third object is a large stone rod-shaped piece of metamorphic rock, thirty-six cm long by five cm in diameter. The material is easily matched with outcrops along the lakeshores in southern Maine and around Casco Bay (possible Cape Elizabeth formation metamorphic rock). There is slight evidence of pecking or damage on the ends of the piece, but no shaping or other work on the face or sides. This object may or may not have seen use as a pestle, but it was not modified from its original form. In any case, it is much larger and less modified than the ‘stone rods’ of the Moorehead Burial tradition as described by Robinson (1992, 1996).

The visually dominant object in the collection is a beautiful, black bannerstone, perfectly symmetrical and polished on its exterior (no exterior scratches remaining). The central hole is the same diameter all the way through (Figure 3). It exhibits no rotary scratch marks (from drilling); only longitudinal scratch marks can be seen. These are parallel with the long axis of the hole, as if made when putting the object on a shaft or taking it off a shaft. The bannerstone is fifteen cm wide and nine cm long (parallel with the central hole). Its ‘wings’ are gently rounded and full, rather than tapered. In cross-section (viewed end on looking at the hole) the wings expand from a narrow edge to a ridge on either side of the hole, where the bannerstone is three cm thick. The hole itself is approximately 1.5 cm in diameter (± 0.1 cm). The black stone from which the piece was made is unfamiliar to me based on the study of other Maine collections. It exhibits multiple light inclusions in a slightly banded pattern. The larger inclusions exhibit abruptly defined borders, and may be mineral crystals, such as quartz.

The accompanying stemmed ‘point’ is unique in my experience. It is semi-translucent, whitish-gray rock tinged with brown, 4.2 cm
long and two centimeters wide at the shoulders. One edge of the base is broken, revealing a granular structure about 0.5 mm in size in the rock. The rock may be a quartzite or perhaps calcite. It is definitely not Ramah chert. I did not test the hardness of the rock for fear of scratching the piece. Rather than being bifacially flaked, this 'point' was made entirely by grinding the rock. The point body was ground to a lenticular shape, as shown by remnant scratches and smooth patches on both faces. Three or four 'flake scars' were subsequently ground into each edge on each side to mimic biface flaking. The stem is 'blocky' in cross section but made with enough care to mimic a shouldered, stemmed point. The butt of the stem is rectangular, and the sides of the stem exhibit some scratches and patches indicating that it, too, was ground into shape. In general outline and size the point is reminiscent of a Susquehanna Broad or Atlantic point.

The only items I have ever noticed that are remotely similar to this piece are the large points made out of cannel coal from a Hopewell mound site in southern Indiana (Tomak 1994:33). The Hopewell specimens were also made by grinding a soft rock. Here too, flake scars were ground into the edges and faces of the 'points' to mimic carefully flaked points. This technique of mimicking flaking can also be seen on the elaborate, decorated 'Indian' spears made of rubber or plastic for the tourist industry today. I will return to this idea of mimicry or ceremonial representation below.

Archaeological Dates on Bannerstones in the Northeast

Bannerstones and other forms of presumptive atlatl weights are fairly common in New England. Willoughby (1935:61-64) illustrates about twenty-five specimens from Massachusetts, Connecticut and Maine. The excavation context for bannerstones, when available, places them in the Middle and Late Archaic, and associates them with a range of 'cultures'. For example, there is a bannerstone in the Simpson collection from site 15.53 in Brunswick; the rest of the collection includes ground slate ulus, as well as Middle Archaic and Late Archaic points, among other items (Maine State Museum notes). Winged atlatl weights have been recovered from Red Paint cemetery features at the Hartford site (Moorehead 1922: Figure 27 top), Emerson site (Moorehead 1922: Figure 54, possibly not drilled), and the Hathaway site (Snow 1969:94-95, and Plates 53 and 54). Note that Bourque's citation (1995:235) of a winged atlatl weight at the Hathaway site based on Moorehead's figure 36 (1922) appears to be in error. Snow illustrates a bannerstone from the Hathaway site adjacent to a polished siltstone atlatl weight without 'wings' (Figure 4). The latter is an elongated ellipse in cross section from site 91-5, the Passadumkeag Sand Pit site. Smith reports a spheroid atlatl weight from one grave at the Godfrey cemetery, and three winged atlatl weights from another grave (1948:51; also see Moorehead 1922:93-130). Bourque reports a winged atlatl weight from the Davis-Tobie site (site 26.6A) in Sheepscot, ME. He also reports that the Godfrey site atlatl weights are made from a "two-tone green and dark gray stone" that is the same material as the Davis-Tobie piece (1995:235-6).

Some of these Maine sites with bannerstones and atlatl weights have been dated by radiocarbon. Others have been dated by stylistic typology, based in part on a seriation of Moorehead Burial tradition sites into 'early', 'middle' and 'late' subdivisions with approximate dates based on the available radiocarbon dates (Robinson 2001). The
stratigraphic context of the Davis-Tobie find indicates an origin in the Small Stemmed Point tradition, with a radiocarbon age of about 4500 B.P. (Bourque 1995:235). One feature at the Hathaway site has been radiocarbon dated 5165±165 B.P. (Snow 1975:50), while Robinson has obtained five dates from three features at the site: Grave 152 at about 4100 B.P., Grave 151 with two dates averaging 5140, and Burial 40 with two dates averaging 5030 B.P. (2001:422). The Godfrey cemetery is also dated to the Hathaway Complex of the early period of the Moorehead Burial tradition ca. 5100 B.P. (Robinson 1996, 2001). Two other Hathaway Complex cemeteries have also yielded bannerstones. These are the Loring and Orland School House sites (Robinson 1996:103). Robinson (2001) placed the Hartford site in the middle phase of the Moorehead Burial tradition, about 4500 to 4000 B.P. The Emerson site yielded an estimated 200 graves (Moorehead 1922:36; Robinson 2001:191-192), and they appear to cover the entire middle and late (4000 to 3700 B.P.) phases of the Moorehead Burial Tradition in terms of included artifact style. Therefore, there is substantial data from Maine indicating that bannerstones date from some time during the Late Archaic to at least 4000 B.P.

Looking beyond Maine, two 'winged atlatl weights' or bannerstones were recovered from Feature 6 at the Annasnappet Pond site (19-PL-337) in Carver, MA (Cross 1999). Feature 6 was apparently a grave. Charcoal from the feature yielded a radiocarbon date of 7570±150 B.P. (Beta-58115). The grave also contained two Neville points, which are stylistically Middle Archaic. Just outside of New England, on the Mohawk River in New York, the Bent site has yielded 15 or more bannerstone or winged atlatl weights (Ritchie 1980:125-129). These objects apparently originated in the River phase component at the site, marked by diagnostic Normanskill points, dating ca 4200 to 4000 B.P.

At the Savich Farm in New Jersey, over twenty complete bannerstones, and as many examples that were broken or in the process of manufacture, have been recovered from feature and non-feature contexts. The feature recoveries are all associated with Koens-Crispen complex points of the early Susquehanna tradition. Three radiocarbon dates on nut fragments from Savich Farm features average 3726±22 B.P., with a date on wood charcoal that is 100 years older (3840 B.P.) (Robinson 2001:211-212). These points and radiocarbon dates are roughly equivalent to the Atlantic phase of the Susquehanna tradition in New England. The bannerstones have bilaterally symmetrical wings and central drilled holes of about one cm diameter, with a centrally thickened area around the hole. Longitudinal scratches are common in the central holes, as observed in the Sebago Lake specimen. Other Savich Farm references include Spiess, personal communication with Milan Savich and Richard Regensburg at ESAF 2003 - Mt Laurel, NJ, Regensburg (1971), Regensburg and Bello (1997) and Burrow (1997).

In summary, for the Northeast including Maine, we have solid archaeological evidence of bannerstone manufacture and use beginning during the Middle Archaic (associated with Neville points), extending through the early Late Archaic (associated with Small Stemmed points and Normanskill points as well as the Hathaway complex of the Moorehead Burial tradition) and lasting to the early portion of the Susquehanna tradition.

Bannerstones in the Literature

There is a large quantity of literature on bannerstones, atlatl weights and atlatls. Some of it includes images available on the internet. For examples from Ohio see past articles at:

www.ohioarch.org

For examples from the Illinois State Museum see Native American weapons at:

www.museum.state.il.us

Look up bannerstone on Met Timeline at the Metropolitan Museum of Art website at:

www.metmuseum.org

To see the Ben C. McCary bannerstone go to:

www.csasi.org/Oct98/179.htm

Finally to see an Ottawa-area bannerstone at the Canadian museum of Civilization go to:

www.civilization.ca/cmc/archaeo/kichisibi/regions/eott_hull-8.html

There are also articles on atlatls on the web posted by atlatl 'recreators' (Perkins 1992), and an annotated bibliography (Whittaker 2001) with hundreds of references.
Most of the printed literature on bannerstones describes their variation in form and geographic location. Early references include Knoblock (1939), and Webb (1957); more recent are Graybill (1974) and Kwas (1981). Hranicky (2003) presents a notable bannerstone attribute study focusing on hole drilling and bannerstone hole dimensions.

**Bannerstone Function**

Charles C. Willoughby published several plates of stone weights, including bannerstones (1935: 61-64, Figure 37). In these plates he included small schematic sketches of ‘Beothuk ceremonial staffs’ with a stone weight or effigy at the top of the staff (Figure 5), expressing his opinion that they were ceremonial in function.

Serious discussion on the function of bannerstones as spearthrower (or atlatl) weights began with William S. Webb following his discovery of atlatl parts and weights in graves in Kentucky (Webb and Haag 1939:51-58, Webb 1946, Webb 1957). Early experiments with spearthrowers (atlatls) and weights showed ‘no significant difference in force delivered to the spear’ (Peets 1960), and indicated that a sixty-four gram weight added to the atlatl ‘was a disadvantage’ (Howard 1974). I would note here that the spears used by Howard averaged 166 grams in weight. Spears used in another set of experiments weighed an average of 110 grams, and Ives is also equivocal on the utility of weights on an atlatl (Ives 2003). He concludes that a pebble or ‘no frills’ weight may improve the performance of a flexible atlatl. Hranicky’s recent study notes that only 6% of the holes on 60 broken bannerstones show polishing that suggested the bannerstone was hung on a leather strap as a pendant. He also notes that bannerstones he examined were often broken in the middle, and they averaged about forty-five to fifty grams (broken). Sixty broken bannerstones from four Mid-Atlantic States exhibit average hole diameters of 1.05 to 1.5 cm. This limited range of bannerstone hole diameters is noteworthy and seems to apply to the specimens from New England as well. I conclude that bannerstones had some function other than suspension on a string as an emblematic item. However, it is not clear that they were functional as weights on atlatls (or spearthrowers). Whatever their function, the ‘average’ weight of a bannerstone appears to have been about 100 grams.

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**Figure 5.** Bannerstones illustrated by Willoughby (1935:Figure 37; a-m) with a small drawing of a “Beotuck” staff surmounted by a similarly shaped object (see o).
In an excellent review of atlatl weights, Sassaman (1996:61) makes the point that atlatls, atlatl weights, and elaborated weights such as bannerstones had a prominent role in ‘Archaic mortuary ceremonialism’.

Sassaman points out that Webb recovered many atlatl parts from graves in the Green River valley where the contexts proved, to Webb, that “drilled prismoidal stones, composite drilled shell, and even stone bars were situated between the hook and handle ends of the spearthrowers” (1996:60). Webb later (1957) developed a functional explanation for atlatl weights, one including even the elaborate, winged (bannerstone) varieties, that “were designed to bring more of the stone’s mass toward the point of oscillation” of the spearthrower (Sassaman 1996:61). As mentioned above, experimental evidence has since questioned the efficiency arguments of attaching weights to spearthrowers. In fact, the atlatl weights that Webb illustrates are generally bar shaped and do not resemble bannerstones.

A Hypothesis – So, are bannerstones just ceremonial items affixed to staffs or non-functional spearthrowers, similar to Willoughby’s ideas? I think that there is enough evidence to suggest another hypothesis - that bannerstones, or the winged forms of weights, functioned as a weight on the spear shaft itself, not on the atlatl or throwing stick. A correlate of this hypothesis is that some larger, heavier stone bannerstones may in fact be non-functional representations of functional weights made out of other substances such as wood. In the sense that some may not be strictly utilitarian, these stone copies may have performed a ‘ceremonial’ function as a representation or embodiment of design form that carried luck or meaning for its owner. Obviously, and somewhat surprisingly, this hypothesis opens up a line for experimentation that seemingly has not been explored. Let us run through several types of evidence relevant to this hypothesis that bannerstones were spear shaft weights.

Form - Bannerstones, by definition, are bilaterally symmetrical objects with a central hole. W. H. Holmes (cited in Sassaman 1996) used the term ‘winged ceremonial objects’ in recognition of the obvious similarity to a pair of wings. In fact the wings tend to be lenticular in cross section parallel with the central hole, either thickly lenticular or elongated and thinly lenticular. The resemblance to a pair of airplane wings of strange shape strikes the modern observer, but of course could not have been envisaged by Holmes. In any case, I suggest that these objects generally look like wings, and were so carefully made to be bilaterally symmetrical because they were designed (by much trial and error) to fly through the air, as weights attached to the spear.

Secondly, the central hole of the bannerstone is relatively uniform in size, between 1.0 and 1.5 cm in diameter in the vast majority of cases, and absolutely straight. Longitudinal scratches on the walls of the hole (parallel with the long axis of the hole) indicate that the bannerstone was slipped onto and off of a round shaft of similar diameter fairly frequently, and that there was enough grit in the joint to scratch the inside surface of the hole. In the few cases I have examined, these scratches seem to be incised after the inside of the hole was carefully finished and partially smoothed or polished, and after any rotary scratches from manufacture had been obliterated. The hole diameter fits closely with the range of reproduction diameters on long spears designed to be thrown by an atlatl. Perhaps these wing-like forms functioned in part a ‘fletching’ on the spear, while also adding weight.

Third, I have had some experience with arctic archaeology where Inuit, Yupik and Northwest Coast Indian spearthrowers or throwing sticks are not round in form. In fact they are often described as throwing boards and have a flattened, often long triangular shape that is broader than they are thick (Holm 1988:282, Nelson 1983:154). It is unlikely that bannerstones, with their uniform round holes, were designed to fit on a round throwing stick of the same 1.0 to 1.5 cm diameter. This visual incongruity is made more unlikely by the experimental evidence that adding weight to the end of a throwing stick probably does not increase efficiency in throwing. In addition, if the bannerstone was mounted on a throwing stick with its wings parallel with the long axis of the throwing stick, they would provide resistance to the air during the latter half of the throw, as well as extra weight. I also suspect that a round wooden throwing stick of only 1.0
to 1.5 cm diameter would break after a few throws with a weight attached.

It seems to make more sense that bannerstones represent wings that were attached to spears to get them to ‘fly’, and additionally to provide extra weight (and thus penetration power) to the spear. Similar bone or ivory “winged objects” of the Old Bering Sea culture, circa 2500 B.P., were fixed to the butt end of the spear, and the winged object itself had a groove to receive the throwing board hook (Arutuinov and Fitzhugh 1988:122; Fitzhugh and Kaplan 1983:245). In fact, winged objects went out of style in Alaska about 1000 years ago, but functionally comparable objects survived in Greenland to historic contact (ibid).

Weight - Previously I mentioned that experimental long spears thrown with atlatls weighed an average of 166 grams (Howard 1974) and 110 grams (Ives 2003). While some large bannerstones certainly weigh well in excess of 100 grams, the broken (mostly half) bannerstones weighed by Hranicky (2003) averaged 45 to 50 grams. Perhaps a 100-gram weight bannerstone can easily be accommodated on a long throwing spear, especially one made out of a light material. Another possibility is that the stone bannerstones might be a representation of an object originally developed in wood or other substance lighter than stone. Thus the weight range of the non-stone analogues would be lighter than the stone objects that have survived.

Archaeological Evidence - There is no doubt that William Webb recovered multiple atlatl parts from graves in the Green River area. Antler hooks and drilled stones survived. In New England, Feature six at Annasnappet (Cross 1999) provided similar evidence, without wood preservation. Here two Neville points were found adjacent to cranial fragments of the deceased, and about one meter away two bannerstones were recovered. It is important to note that the “two Stanly/Neville points were aligned with the two winged atlatl weights in a manner that suggested the placement of atlatls and darts in a hafted, or ‘engaged’, position. The approximate lengths of the dart shafts are estimated at between 125 and 135 cm, given the relative positions of Stanly/Neville points and atlatl weights and the overall length of the pit” (Cross 1999:65). In other words, the points were aligned with the holes on the bannerstones, but separated from them by slightly over a meter. Cross follows the conventional wisdom that these bannerstones were atlatl weights, and reconstructs spears and atlatls in an engaged position in the grave (1999:65). That logic assumes that there were two atlatls in the grave, one for each spear. Perhaps it is just as logical to assume that a bannerstone was located each on two spear shafts and that the wooden atlatl with its (unburned) bone spur left no trace in New England’s acid soil.

Returning to the Sebago Lake find, we have the possible association of one spear point and one bannerstone. It is obvious, however, that the bannerstone is quite large and heavy, as well as beautifully made, and the stone point is non-functional. This hints that at least some bannerstones were not functional, even if they served as spear weights rather than atlatl weights.

Discussion: The Perishable to Stone Transformation in the Archaic

To move further along a speculative line of reasoning, I suspect that it was fairly common in Archaic cultures in eastern North America to fabricate stone replicas or analogs of items that were often made of other materials. Sometimes these objects were utilitarian and the stone objects were not; sometimes the reverse appears to be true. The Green River atlatl weights provide a case in point. Many of these were made of shell and survived, in the context of shell middens, along with their stone counterparts. In fact, imported marine shell was used for some of these weights (Claassen 1996). In New England, stone gouges appear in the Early Archaic. Robinson has argued that bone gouges may have been as early. He notes the similarity in shape and size between a bone scapula scraping tool (of recent ethnographic manufacture) and ca. 7000 to 8000 year-old ground and polished stone flared gouges, that are ‘relatively accurate copies of bone prototypes’ (1996:101,105). By the Late Archaic there are copper analogues for many stone tools, including gouges (Robinson 1996:115). Finally, we have surviving moose long bone bayonets (Robinson 1996:123) and ground slate analogues from the same Late Archaic
Moorehead Burial Tradition phase in nearby Maine sites. Therefore, stone copies of objects made of perishable material may have been common, even though we archaeologists rarely see them.

I believe that there is at least one surviving bone or antler analogue for the bannerstone as a spear weight (if not a winged form). It is from the ca. 7500 B.P. L'Anse Amour burial mound assemblage on the south Labrador coast. This object was originally described as an antler toggle (McGhee and Tuck 1975), and explained as an object or handle for hauling on a line (presumably a seal skin line). The attribution of this piece as a toggle, a common object in ethnographic arctic technology, is understandable. However, the contracting-stemmed stone points from the time period around 7000 B.P. on the north shore of the St. Lawrence have a distinct resemblance to Neville and particularly Stark points of the New England Middle Archaic. See the Barney site and Arrowhead Mine site (McGhee and Tuck 1975) as well as EiBg-5A and others (Pintal 1998:86-96). The cultural and functional connection with the bannerstones at Annasnappet is probably close.

In examining the photograph of the bone or antler piece, I notice that the object is bilaterally symmetrical, has narrow, curved ‘wings’ and a central line hole (McGhee and Tuck 1975:Plate 27). The central line hole is set off by a thickened ridge, as is common on many bannerstones. Elaine Anton of the Newfoundland Museum was kind enough to provide the following dimensions for the object: length 160 mm, width 17.6 mm, thickness 16.3 mm, and weight 15.8 grams (personal communication, December 2002). Applying those dimensions to the photograph indicates that the central line hole is approximately twelve mm (1.2 cm) in diameter, in the middle of the range of hole diameters reconstructed for bannerstones. I speculate that the L’Anse Amour object is an attenuated winged object for a throwing spear. Its weight of sixteen grams would be much closer to a wooden analog of winged bannerstones of similar size and shape than to the stone ones more commonly preserved in the archaeological record.

Conclusions

In sum, the speculation about whether bannerstones were atlatl weights may be misplaced. Perhaps the smaller stone examples represented functional spear weights, and helped the spear thrown by the atlatl to ‘fly’ with greater force and power. In addition, I suspect that the larger stone bannerstones represent non-utilitarian analogues of wooden or bone objects of similar shape. Experiments with sixteen to twenty-five gram wooden winged objects on thrown spears could be used to test these hypotheses. Of course this idea does not eliminate the arguments over non-utilitarian function of bannerstones and similar objects. In fact, the Sebago Lake find might just be evidence of association of a large stone bannerstone with a spear tipped with a non-utilitarian point. I should also point out that there is no real distinction between ‘functional’ objects and objects imbued with spiritual or magical powers in many northern hunting cultures, only a range of spiritual power from greater to lesser (Fitzhugh and Crowell 1988).

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Introduction

In the early 1960s, a growing concern arose over the imprecise definition of projectile point types and their use in deducing age and cultural affiliations. My interest in this problem focused on the occurrence of Steubenville-related points in coastal New York and a long-standing reluctance to ascribe them to an Archaic or late-Paleo Indian time period. In his definition of ‘Steubenville points’ Ritchie noted that these were considered ancient in Ohio in part because their lanceolate shape was superficially similar to some late Paleo forms. However, he also observed that in eastern and coastal New York, these points appeared to be associated with early pottery styles (Ritchie 1961:50-52). Published data from outside coastal New York provided no clues as to when these points were made, how they may have been introduced into coastal New York, or whether the stemmed and lanceolate forms represented separate traditions (Mayer-Oakes 1955:130-142). At the 1966 Eastern States Archaeological Federation (ESAF) annual meeting, William Mayer-Oakes and Don Dragoo examined several of my specimens of Steubenville-like points from coastal New York, as well as others from the mid-Hudson Valley submitted by Robert Funk. Both men rejected these New York examples as Steubenville points. This verdict inspired me to pursue the cultural and chronological context for these distinctive points more aggressively. My approach was to develop a research plan with a series of objectives, then proceed with the acquisition of data, conduct whatever analysis was possible, and develop a new interpretation. While the focus was on coastal New York, I also wanted to be able to make comparisons with adjacent regions whenever possible. The research plan and initial findings are presented in greater detail in Kaeser 1968.

Collections Survey

The first step was to survey existing museum collections and review all available site reports. My objective was to identify an assemblage of cultural material that might represent a distinct group of coastal New York inhabitants who used these points. I also hoped to identify the time period of this group and, if the evidence indicated that they were new to the region, trace their place of origin.

The largest source of lithic material from coastal New York was housed at the Museum of the American Indian, Heye Foundation. With their courteous assistance I was able to study their collections. These included more than 8,000 projectile points. From this, 246 lanceolate and ninety-four stemmed specimens were selected (Figure 1a and 1b, see next page). With this sample of 340 points, it was possible to confirm geographical occurrence, determine spatial distribution, variations in form and lithic preferences. Because the documentation was often incomplete, I viewed the results from this phase of the study as indicative rather than inferential. Still, it was possible to make some general deductions. Points were recovered from all five boroughs of New York City and the two counties of Long Island. The lanceolate form occurred more than twice as often as the stemmed variety. The largest number of points clustered in Suffolk (Long Island) and Richmond (Staten Island) Counties. This difference in frequency might reflect the slower pace of urban growth during the late 19th century which in turn allowed more museum excavations. The frequency of points also diminished northwards up the Hudson into Westchester County (Kaeser 1968:19, Table 2).

In terms of lithic preference, the majority, 209 of the specimens (61%) were made of purple or black argillite, an exotic material with no known source in coastal New York. The locally available materials occurred with much less frequency. These included quartz (8%), quartzite (4%) and chert (18%) (Ibid). It should be noted that the chert pebbles derived from local glacial till are usually too small to produce points with Steubenville-like dimensions. The collections survey produced another significant observation – that the argillite used to make...
these points could be traced to the Delaware Valley, as discussed in greater detail below. One assemblage from the Tottenville site on Staten Island was examined in greater detail (catalog number 10-1171). It contained both lanceolate and stemmed Steubenville-like points, as well as net-pressed ceramic sherds identified as North Beach Net Marked, one of the terminal (or Windsor Complex) Middle Woodland period ceramic types known from western coastal New York (Smith 1950:196). Also noteworthy was the presence of Abbot Zoned Dentate ceramics (Cross 1956:147, Plate 42b, 4 and 5; Figure 10 #9-12). This was a surprise since no other examples of Abbott Zoned ware had been reported in New York. The occurrence of these ceramics added credence to a Middle Woodland provenience for Steubenville-like points.

Field Investigations.

In 1899, M. R. Harrington tested the Pelham Boulder site in Pelham Bay Park, Bronx County, for the American Museum of Natural History (Harrington 1909:167-79). More than half a century later, this site was re-visited and excavated stratigraphically. As a participant in the excavation, the writer observed the close proximity of a large number of Steubenville-like argillite points with North Beach Net Marked, Clearview Stamped and modified Vinette pottery along with a group of atypical zone-decorated sherds. This typologically mixed ceramic assemblage was recovered from a single homogeneous level and believed to be contemporary with other components of the North Beach and Clearview ceramic traditions (Smith 1950:195-96). This unusual ware was recovered in quantity and, in terms of the techniques and motifs used, corresponded with several styles defined at the Abbott site located two miles south of Trenton, New Jersey. Specifically these zone-decorated wares fit the definitions for Abbott Zoned Dentate, Abbott Zoned Incised and Abbott Zoned Net Impressed (Cross 1956:131-160). Although initially defined at the Abbott Farm site, these

**Figure 1a.** Cony Stemmed Points from Canarsie, Kings Co. (1-3), Mariners Harbor, Richmond Co. (4,5), and Tottenville, Richmond Co. (6-10). Numbers 1-6, 9 and 10 are purple argillite, 7 is yellow jasper, and 8 is grey chert.

**Figure 1b.** Cony Lanceolate Points from Montauk (1), Three Mile Harbor (2,3), Shelter Island (4), Cutchogue (5,6), Port Jefferson (7,8), Northport (9), and Centerport (10), all in Suffolk Co. Numbers 11 and 12 are from Glen Cove, Nassau Co. Numbers 1, 4, 6, 7, 9 and 11 are purple argillite, 2-3 and 10 are grey argillite, 8 and 12 are black argillite, and 5 is a mottled grey chert.
zone-decorated wares have now been recognized from several sites in coastal New York and southern New England (Kaeser 1963:19). See Figure 2.

The discovery of a specific feature at the Abbott Farm site provided strong evidence for a relationship between Steubenville-like bifaces and both net marked and zone-decorated ceramics. This feature contained a large storage vessel with a Net Marked exterior that had collapsed into a dense mass of burned earth. Scattered among the sherds were pieces of another vessel decorated with Abbott Zoned Incised and Abbott Zoned Net Impressed motifs. Two argillite bifaces were also recovered from this deposit, each identical to Steubenville-like lanceolate and stemmed points (Cross 1956:159).

Excavations at the Morris Estate Club site, Bronx County, NY, in 1958 revealed three stratified cultural zones within a shell midden. The upper zone produced only Late Woodland period ceramics of the East River complex. The middle zone and bottom zones were not as clearly defined and contained both Middle Woodland period North Beach Net Marked and Clearview Stamped wares as well as Early Woodland Vinette I sherds. Included in these mixed strata was one Steubenville-like stemmed and one Steubenville-like lanceolate point, both of argillite. These were incorrectly identified as rhyolite in the original report. Four sherds of Abbott Zoned Incised pottery were found out of context on the eroded beach embankment below the site. This site also produced the first evidence of a shelter related to this material assemblage. This was a circular arrangement of large stones that contained the remains of a grit-tempered Clearview Stamped vessel and a shell-tempered, North Beach Net Marked vessel. Scattered among the ceramic sherds were more than 100 plates of muscovite mica. This exotic mineral is believed to have originated in southern Pennsylvania (Kaeser 1963).

In 1967, the Metropolitan Chapter of the NYSAA excavated the Oakland Lake site in Queens County, NY (Kaeser 1974). This site also had three distinctive stratigraphic zones. The upper zone, interpreted as Terminal Late Woodland, produced grit-tempered sherds with Cayadutta Incised and East River Incised motifs as well as small Levanna and Madison style points. With the exception of two Owasco-like sherds, there was no evidence for earlier Late Woodland components. The middle zone was assigned to the Middle Woodland period and contained the bulk of the ceramics. Although Windsor tradition wares, such as Clearview Stamped, predominated (more than 600 sherds), Abbott tradition vessels were also well represented (296 sherds). Within this middle level, eighteen Steubenville-like points, both lanceolate and stemmed varieties, were recovered along with two large Levanna points. The bottom zone had two levels. The upper portion contained Vinette I ceramics and one piece of soapstone bowl; the lower portion produced a series of Late Archaic Brewerton and Bare Island points and contained no ceramics. With its clear stratigraphic sequence, the Oakland Lake site provides strong evidence for the association of Steubenville-like points and Middle Woodland ceramics in coastal New York. In addition, the absence of a Late Woodland (East River tradition) component suggests that the Clearview phase was the final stage of the Windsor tradition in the western portion of coastal New York.

The discovery of an erosion-exposed cache of thirteen argillite blanks and several Steubenville-like points near the Oakland Lake site provided another significant piece of evidence. These bifaces were similar in material and form to those found in quantity at the Abbott site (Cross 1956:Plates 20, 21). In addition, samples

Figure 2. Pelham Boulder Site: Cony Lanceolate point (1) and Cony Stemmed point (2) are purple argillite. Number 3 is Abbott Zoned Dentate pottery.

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of the argillite from this cache were submitted for chemical analysis and found to be 'virtually identical' to argillite samples from the Upper Triassic Lockatong series in western New Jersey (Venuto 1967:21-29).

To strengthen the hypothesis that Steubenville-like points and Abbott tradition ceramics were part of a Middle Woodland, coastal New York assemblage, more than two dozen other sites in the Pelham Bay Park area, Bronx County, were examined. Between 1951 and 1973, three more sites were excavated. These included the Milo Rock site (Lopez 1958:127-42), the Cherry Orchard Rock site (Kaeser 1965:10-19), and the Archery Range Ossuary site (Kaeser 1970:9-34). All three were multi-component Late Woodland sites (East River tradition), with none producing evidence of the earlier Windsor tradition, Steubenville-like points or Abbott tradition ceramics.

In addition to the excavated sites, another twenty-four sites were examined through salvage efforts (Kaeser 1968:15, Table 1). Although these sites were disturbed, they retained sufficient integrity to document the sequential evidence of occupation. All were multi-component. Seven of these sites produced distinctive Bowmans Brook and Clasons Point phase ceramics typical of the Late Woodland East River tradition (Ritchie 1965:xxx-xxxi; 268-72), but no evidence of Steubenville-like points or Abbott tradition ceramics. As with the excavated sites, this strengthened the argument that Steubenville points and zoned ceramics were not Late Woodland traits. In contrast, three of the sites that produced Early to Middle Woodland Windsor tradition ceramics also produced Steubenville-like bifaces. Thirteen of the sites produced both Middle Woodland Windsor ceramics and Abbott Zoned wares. Steubenville-like points were recovered from five of these sites. On several of these sites, the uppermost level of midden contained Late Woodland East River tradition pottery. In sum, the twenty-seven sites examined in the Pelham Bay Park area provided convincing evidence to support two hypotheses:

First, Steubenville-like points and Abbott Zoned ceramics dated to the Middle Woodland period in coastal New York. Second, these material traits appear to represent the presence of a new group of people in the region.

During this same period, William Ritchie conducted excavations on a series of similar, stratified shell midden sites on Martha’s Vineyard, Dukes County, MA. His initial findings published in 1969 provide an important comparison with the Pelham Bay sites. Most important was the Cunningham site where he documented the distribution of Steubenville-like points well into southern New England. Stratum three at Cunningham produced five ‘Steubenville-Stemmed’ points, all made of local felsite and associated with a wide range of grit and shell tempered ceramics. No zone-decorated pottery, argillite or other Abbott Complex traits were reported (Ritchie 1969:109-112). Most important, stratum three provided a 14C date of A.D. 400±80 (or 1550 B.P.) clearly associating stemmed points with the Middle Woodland Period for the first time (Ibid. 122-23). A more recent study has documented the widespread distribution of these points throughout southern New England (Moore 1997).

Interpretation

Based on the results of collections survey and fieldwork, I felt that sufficient evidence had been gathered to propose a new cultural phase for the Middle Woodland in coastal New York. I termed this the Abbott complex because of the strong presence of Abbott tradition ceramics. Lithic traits characteristic of an Abbott complex assemblage include Steubenville-like lanceolate and stemmed points; points reworked into knives, scrapers and drills; three-quarter grooved stone axes; and a variety of rough stone tools. A detailed trait list is provided in Kaeser 1968:23, Table #3. As a defining component of the Abbott complex I also proposed a new nomenclature for Steubenville-like points. Although reluctant to apply new names, it seemed essential that these points be disassociated from the old and often erroneous ‘Steubenville’ affiliation. In order to simplify the logic behind a new name, I proposed using the first two letters of Coastal plus the abbreviation for New York to identify these lanceolate and stemmed points as Cony points (Kaeser 1968:24).
At the same time I was developing my ideas on the Abbott complex, Robert Funk was also rethinking the cultural placement of Steubenville-like points and Middle Woodland assemblages in general. Based on his analysis of sites in the upper Hudson and Susquehanna river valleys, Funk presented his findings for a new Fox Creek complex in eastern New York at the same time I made my argument for the Abbott complex (Funk 1968). With publication of his 1976 synthesis on Hudson Valley prehistory, Funk formally expanded his definition of the Fox Creek phase to include coastal New York and southeastern New England, dismissing the Abbott complex as 'unsatisfactory' (Funk 1976:293). A rebuttal of Funk's assessment is not presented here and, given Bob's recent passing, is probably no longer appropriate. Instead, I would like to offer the following observation. Since Funk and I worked on the same problem, albeit from different directions, it is not surprising that we each came up with similar results. Indeed there is a significant overlap in the proposed traits for the Abbott and Fox Creek complexes. However, there also appear to be important differences between the coastal manifestations during the Middle Woodland and those of the interior. Funk was not as familiar with the data from coastal sites and was incorrect in some of his comments on these sites and their assemblages. My concern is that, with the general acceptance of his Fox Creek terminology and its use for describing all Middle Woodland sites, these differences may be obscured or lost.

Since 1968 I have continued my efforts to refine the traits that define the Abbott complex. Let me, briefly, elaborate on two additional traits: the Cony knife and mica-tempered pottery. Since the Abbott complex was first defined, I have added another diagnostic lithic form to the trait list – the Cony knife. These knives have an isosceles triangular form and, like the lanceolate and stemmed points with which they are found, are made predominantly of argillite. For a more detailed discussion see Kaeser 2002. One of the most useful traits for tracking changes in ceramics is the choice of tempering materials. On coastal New York sites, Middle Woodland Windsor complex ceramics are predominantly grit-tempered although shell also occurs as a minor aplastic tempering agent. A significant change in temper coincides with the introduction of Abbott-zoned wares. While grit-temper was commonly used in Abbott

![Figure 3. Bird Rock Site, Pelham Bay Park, Bronx County, NY.](image)
tradition pottery, crushed shell and muscovite mica become the favored tempering materials for zone-decorated vessels. In particular, Abbott Zone Dentate vessels appear to have been tempered with a combination of crushed quartz and muscovite mica.

The Bird Rock Site

In 1973, another small but significant site was discovered in Pelham Bay Park approximately 500 yards southeast of the Pelham Boulder site. This site contained a small lenticular-shaped midden located at the leeward end of a large glacial erratic designated Bird Rock (Figure 3, see previous page). The overall site area is on a gentle slope overlooking Orchard Beach and the islands of Pelham Bay. Bird Rock itself is roughly twenty-five feet in length and ten feet wide with a distinct concavity in its southern face. This concavity, approximately five feet high and five feet wide, provides protection from the prevailing northeast winds off Long Island Sound and appears to have served as a ready-made location for a sheltered hearth. Around this protected area, a shallow midden (five to seven inches deep) extended ten feet on an east-west axis and seven feet on a north-south axis (Figure 4).

The midden was a homogeneous deposit of blackened granular earth, fragments of oyster (Crassostrea virginica) and clam (Mercenaria mercenaria?) shell as well as spalls apparently derived from the damaged lower face of the parent rock. The midden boundaries were clearly marked by the contrast with the sandy orange colored subsoil. No evidence of occupation was found beyond the midden. In spite of the burned earth, no evidence of a hearth, fire pit or charcoal was found. It appears that cooking or heating fires were built against the boulder’s southern face using the concave surface as a reflector. The homogeneous nature of the deposit suggests that this midden resulted from a one-time use of the site.

Although the artifactual assemblage from Bird Rock is modest in size, it is significant in terms of the Abbott complex. Seventy-one ceramic sherds were recovered, all possibly from one Abbott Zoned Dentate vessel. Six sherds from the upper portion of the body were cross-mended revealing a motif of zoned plats of dentate impressions aligned in a slightly curvilinear pattern with the vessel’s smooth exterior (Figure 5). A restored basal portion shows partially smoothed over cord malleation and random dentate impressions on the exterior. The interior surface was wiped smooth. Sherds were 1/4” in thickness and showed evidence of coiled construction. The clay used to make this vessel was an orange/tan in color and had been tempered with a combination of crushed quartz and muscovite mica. All the pottery was found at the same level, spread laterally among the scatter of rock and shell fragments in Squares 1, 2, and 4.

Four lithic artifacts were also recovered. These included the base of a Cony (Fox Creek) stemmed point of purple argillite, an isosceles Cony knife of purple argillite, a willow-shape biface with a square base (probably a knife) also of purple argillite, and a lanceolate cache blade with a square base of grey argillite (Figure 6). This cache blade is similar to many specimens recovered from a large cache at the Abbott Farm site (Cross 1956:68, Plate 14b). Other materials recovered included a partially worked core of rose quartz, two fragments of box turtle carapace (Terrapene carolina) and one channeled whelk columella (Busycon canaliculatum). Although Bird Rock is a small site, it presents a nearly perfect snapshot of Abbott
complex traits – zone decorated, mica tempered ceramics and argillite tools.

Conclusion.

After nearly fifty years of study, I remain convinced that the Abbott complex is a real and distinct component of the Middle Woodland cultures in coastal New York. It is characterized by the presence of stemmed and lanceolate Cony (Fox Creek) points, isosceles Cony knives, a preference for argillite, and mica-tempered pottery with Abbott Zoned motifs. It is my belief that these traits were brought into coastal New York by a migrant group, possibly from the lower Delaware Valley, who were contemporary with the indigenous people of the North Beach phase of the Windsor tradition. While we do not know what kind of relationships existed between these two cultures, the evidence from the Pelham Bay sites does suggest that they overlapped.

It is my hope that additional research will refine our understanding of this complex period in greater detail, and I leave these questions for others to pursue:

Were the cultures of the indigenous North Beach people and intrusive Abbott tradition contemporary in coastal New York? Can this be demonstrated through $^{14}$C dating?

How far up the Hudson river did the Abbott tradition extend? How far east along the southern New England coast?

What does the Abbott complex signify in terms of the broader movement of people during the Middle Woodland period?

Acknowledgements

Bird Rock is named in memory of the late Dr. Junius Bird, formerly of the Department of Anthropology at the American Museum of Natural History. While Dr. Bird’s primary interest was the prehistoric cultures of Peru, he was genuinely concerned with recording and preserving all aspects of coastal New York prehistory. He was unfailingly gracious to me. He actively encouraged my efforts and helped me obtain the Bronx County Park Department permit that allowed me to study the sites in Pelham Bay Park. His enthusiasm was contagious and it was from his example that my passion for archaeology was kindled.
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Probable Early Woodland Fish-Spearing Points
From Kingston, MA

Bernard A. Otto

Introduction

During the years 1984 to 1988, members of the Massasoit Chapter salvaged a portion of the fifty-four acre Powell-Heckman Trust property in Kingston, MA. This coastal upland site is located a quarter of a mile from the mouth of the Jones River and was part of the larger, well-known Bay Farm dairy. An area roughly two and a half acres in extent was located through spot testing. This rather flat high ground, densely overgrown with cedars, was unusual in that it showed no evidence of plowing or other disturbance. Between the cedars with their extensive root systems and the large backhoe trenches made for perk tests, excavation was difficult. Nonetheless, we were able to examine approximately sixty percent of the area before the property was sold and sub-divided. Cultural materials from the Powell-Heckman Trust site ranged from Middle Archaic through the Late Woodland period. A detailed review of this site, its artifact assemblage and features was presented in an earlier report (Otto 1998).

Here I want to focus on a particular class of unusual projectile points that were well represented on the site. These points have a long, narrow tapered shape. They average 2.75 inches (7.0 cm) in length, 0.5 inch (1.2 cm) in width and 0.25 inch (0.6 cm) in thickness. The tangs have a moderate constriction that results in weak rounded shoulders and some flaring of the very thin truncated base (Figure 1). These thin bases were probably fitted into the slot of a spear shaft and secured with pitch gum and

Figure 1. Early Woodland fish-spearing points from the Powell-Heckman Trust site.

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Figure 2. Comparison of an Early Woodland fish-spearing point (left) and an Orient Point (right) from the Powell-Heckman Trust site.

sinew. I believe that these long, tapered points were used on fishing spears to impale migrating fish, such as salmon, herring and shad, in the river. Of the 115 points recovered, nearly fifty percent were missing their tip ends, probably the result of striking stones in the bottom of the river.

Although they are relatively thick in cross section, the flaking scars indicate that they were pressure flaked with great skill. The majority of these points were made of felsite or quartzite although a few argillite examples were also recovered. Most of these points were found clustered in the central portion of the site (Otto 1998:48; figure 4). Stratigraphically, these points were recovered from the lowest zone of the loam level, indicating a likely Early Woodland association.

Although similar to Orient Fishtail points as defined by Ritchie (1961:39), they seem less ‘graceful’ and lack the characteristic flaring ‘fishtail’ base. In many ways these resemble well-made Small Stemmed points as much as they do Orients. See Figure 2 for an example of the fishing point in comparison with an Orient point from the Powell-Heckman Trust site.

Two recent articles in the Bulletin provide some additional examples of comparable points. Leveillee and Waller describe a similar style from the RI 2050 site in Cranston, RI, as a hybrid point type, terming it an Orient Stemmed point. One such point, made from argillite, was recovered from a feature dating to 2570±100 B.P. (Leveillee and Waller 1999). The Oak Knoll site in Lincoln, MA, also produced several typical Orient points as well as at least one example that fell ‘outside the range of what might usually be considered the Orient Fishtail type’. Donta considered this point similar to the Orient Stemmed examples reported by Leveillee and Waller (Donta 2003:16). One feature at the Oak Knoll site was radiocarbon dated to 2850±60 B.P. (Donta 2003:13).

Whatever we choose to call these unusual points, I believe that they were part of a specialized Early Woodland fishing kit and that the examples from the Powell-Heckman Trust site provide an important context for understanding their use.

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Symbols in Stone, Part Two: Quartz Ceremonial Items
From the Little League Site, Middleborough, MA

Curtiss Hoffman

In a previous article by this title in the Bulletin, the author and his colleagues described the utilization of the mineral chiastolite by the pre-European peoples of central and eastern Massachusetts (Hoffman et al. 1999). Following a suggestion by William S. Fowler (1966:44) that stones which displayed a cross would have special significance to the indigenous people of this area, we proposed that chiastolite, a naturally occurring mineral which crystallizes in such a way as to form a floriated or cross-shaped pattern in cross-section, was deliberately selected by Native peoples, either quarried from a primary source in the Lancaster-Sterling area or picked up in the form of glacially transported pebbles. It was then incorporated into their cultural repertoire, with some of the pebbles showing signs of deliberate polishing. We argued that these stones would have had great significance to Native people because of their four-fold symmetry, which figures in symbolic representations across the continent and, contra Fowler, long antedates the introduction of Christianity in the New World, and probably even in the Old World. The present article carries this idea of symbols in stone a step further and considers the uses of quartz in New England Native American sacred contexts. It examines three different kinds of non-utilitarian quartz artifacts: natural crystals (and crystal matrices), deliberately fashioned ‘gems’, and polished pebbles.

The Site

The stimulus for this article derived from recoveries at an extremely unusual site in the town of Middleborough, Massachusetts, the Little League Site (aka the Field of Dreams, 19-PL-520), where the author directed intensive surveys in 1996 and 1998, and data recovery operations from 1999 to 2002. The site is located on the second and third terraces to the northwest of the Nemasket River. Most of the recoveries discussed in this article derived from the northern end of the third terrace, at a mean elevation of 23.5 meters above sea level. The site slopes downwards gently to the north and west (ca 1°) and slightly more steeply to the east (ca 2°) at the terrace edge. An area seventeen meters north to south by thirty-eight meters east to west was investigated during the data recovery operation; sampling intensity was approximately twenty-three percent in this limited area (128 m²). To the north of this area, the intensive survey showed that the density of cultural remains declined, while to the south they increased. The eastern edge of the terrace has been significantly altered by grading for the existing Little League fields, and all but a small portion of the second terrace has been completely landscaped (Hoffman 2000; 2001).

Eighteen general areas containing pit features were identified within the data recovery area, numbered #19, #20, #26, #27, #40, #46, #66, #67, #69 to #77 and #79. Ten radiocarbon dates have been retrieved from the site, including six from features within the data recovery area: Feature #19, dated to 6250+80 B.P. (GX-31195, cal 7295 7020 bp); Feature #27, dated to 4770+50 B.P. (GX-27259, cal 5648 5318 bp); Feature #46, dated to 3640+80 B.P. (GX-27260, cal 4087 3835 bp); Feature #67, dated to 3790+110 B.P. (GX-27301, cal 4406 3986 bp); Feature #69, dated to 2990+70 B.P. (GX-27261, cal 3322 3076 bp); and Feature #74, dated to 5770+120 B.P. (GX-27302, cal 6723 6411 bp) (note: all dates corrected for C-13). The distribution of quartz sacred items (and other sacred items and utilitarian tools) in features is given in Table 1.

The Specimens

Crystalline sacred items include three subcategories: quartz crystals, quartz matrices and Herkimer Diamonds. These, plus ‘gems’ and polished pebbles, are described below.

Quartz Crystal (fifty-six specimens) - All of the specimens from the Little League site were quartz crystals (forty-four clear, nine white, two rose, one smoky) (Figure 1A, see following page). Some of the larger specimens showed wear at the edges of one or more of the crystal faces, suggesting abrasion against other object surface; four were in disturbed soil; nineteen
Table 1. Sacred Items from Features at the Little League Site

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| Point Types: | a - Small Stemmed; b - Vosburg; c - Neville Variant; d - Tip Fragment; *- includes units outside data recovery area and non-feature soils within it
There are some suggestions in the literature of New England archaeology that quartz crystals may have had utilitarian functions (Barnes 1972:239-240; Howe 1988:78). However, quartz crystals are more often attributed to ceremonial uses, especially those found in burials, beginning with Fowler’s (1975:12, 14) description of crystals (called ‘charmstones’ by him) extracted from burial contexts at the Crow Point and Rich sites on Cape Cod and the Titicut site in Bridgewater, MA. John Paul Murphy (2002:37) reports eight complete and three partial crystals found within and around the foundations of the Contact period meetinghouse at the Magunco Praying Village site in Ashland, MA. He considers them to be “...part of the Algonquian people’s response to contact with the Europeans... They were looking for a way of coping with the power of the English and the Englishmen’s angry Puritanical god. Adopting Christianity might have been part of a survival strategy, both cosmically and here on earth. However, the presence of likely shamanic crystals suggests

Figure 1. Non-utilitarian quartz and polished pebbles from the Little League Site; quartz crystals (A), crystal matrix pieces (B), Herkimer Diamonds (C), and polished pebbles (D).
that in addition to Puritan practices, the 'Praying Indians' were maintaining their own old-time religious practices." (Murphy 2002:41)

**Crystal Matrices** (thirty-one specimens) - These are chunks of worked quartz (seventeen clear, thirteen white, one grey) which contain either vugs or extruded crystal growth on one or more surfaces, which could have been processed into charmstones but were left in an unfinished condition (Figure 1B). There is no certainty that these were deliberately selected for this purpose; they could have been accidental by-products of the normal flaking process. Quartz was the most predominant material utilized at the site, constituting eighty-six percent of debitage by count and seventy-seven percent by weight in the data recovery area. Quartz was readily obtainable in glacially deposited cobbles at the site, though a study during the survey phase at the site showed that only five percent of unmodified cobbles by count were of quartz (Goncalves 1999:218). Quartz cobbles were opportunistically selected for tool making, and the presence of crystals within cobbble matrices undoubtedly resulted in many failed pieces, since the crystal faces will tend to deflect the force of the blow at an undesirable obtuse angle (Boudreau 1981:23). These failures may have provided a further opportunity for the extraction of crystals for non-utilitarian purposes.

Nine crystal matrices were found on the surface during the 1999 and 2000 seasons at the Little

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Figure 2. Maps of data recovery area showing distribution of quartz crystals, crystal matrix pieces, Herkimer Diamonds, and polished pebbles.
League site. Nine more were recovered in the topsoil, one from normal subsoil and the remaining twelve from features. Like the crystals, Figure 2 shows that they are distributed about evenly throughout the site. Their average length is 40.2 mm (range - 12.0 to 126.0 mm), average width is 30.3 mm (range - 7.0 to 85.3 mm), and their average weight is 90.0 g (range - 1.0 to 1176.0 grams).

Herkimer Diamonds (twelve specimens) - These are a special case of quartz crystals with bi-terminated ends, so that they have eighteen facets (Figure 1C). This is a formation that can only occur under very special geological conditions, one in which dissolved silica precipitates out of ground water into a cavity filled with silica gel. This enables the crystal seed to grow in both directions. In such cases, the crystal purity is typically rather high, resulting in a gem-like clear crystal (Dana 1958:474). At the Little League site, only one of the bi-terminated quartz crystals was occluded to white quartz; the others were completely transparent. The nearest source of bi-terminated quartz crystals to the site is north of Herkimer, New York (hence the name), in a small tributary of the Mohawk drainage, a distance of ca 250 km. There are no other North American sources east of the Mississippi River. Herkimer diamonds are common at Late Prehistoric and Contact period sites in the Mohawk Valley, so much so that the Mohawks were known to the Hurons and the French as Agniehronnons, or “people of the place of crystals”. Crystals were used for the magical detection of witches (Snow 1994:86, 98). However, Herkimer Diamonds have not previously been reported at sites outside of the Mohawk Valley, or for earlier periods in the valley (Robert Funk, personal communication, 8/19/99).

At the Little League site, two of these specimens were from the topsoil. The remainder occurred in features, including five from Feature #79, in an apparent cache placed under an overhanging erratic boulder. One of the Herkimer Diamonds found in the topsoil was from this unit. Their horizontal distribution is shown in Figure 2. The average length is 11.95 mm (range - 5.5 to 49.0 mm), the average width is 7.15 mm (range - 3.3 to 25.0 mm), the average thickness is 6.1 mm (range - 2.1 to 23.0 mm), and the average weight is 3.2 grams (range - 0.05 to 34.80 grams).

‘Gems’ (one specimen) - In his discussion of the quartz crystals from the Magunco Praying Village, Murphy mentions a series of nine worked pieces of smoky quartz (Murphy 2002:40-41), which he considers to have been deliberately reduced from blocky fragments into ‘gems’. Murphy considers these to be “not tools in the usual sense; their use was most likely spiritual”. Fowler (1975:11) describes a similar item, “a thick disc of crystalline iridescent quartz”, from a burial in a gravel pit near Wickabaug Pond, West Brookfield, MA.

There was one comparable item found at the Little League site, a large chunk of smoky quartz, worked on all sides so that cobble cortex remained only on a portion of one face. It was found in the top five cm of Feature #19, which also contained five quartz crystals, one crystal matrix, and thirty-six polished quartz pebbles. It measured 44.7 mm in length, 53.8 mm in width, 40.6 mm in thickness, and weighed 107.85 grams. Smoky quartz was not common at the Little League site; it constituted only 0.1% of the debitage by count and 0.3% by weight. There were only twenty other smoky quartz artifacts at the site, including a quartz crystal, a crystal matrix, and seven polished pebbles. Other artifact types made of this material included six hammerstones, two cores, a flake knife, a pecked pebble, a utilized flake, and a biface fragment. Thus, nearly half of the artifacts of smoky quartz from the site are of interest to this article. It may have been selected deliberately for ceremonial purposes, as it was at Magunco.

Polished Pebbles (170 specimens) - In the previously mentioned article on chiastolites, we noted that several of the specimens, including the one from the Little League site, had been intentionally polished on one or more surfaces (Hoffman et al. 1999:10,11,13). It was not until the 2000 field season that we began to notice and collect the large numbers of smaller pebbles, which showed similar signs of polish on all surfaces (Figure 1D). It is uncertain what they were used for, but one hypothesis is that they were placed in turtle-shell rattles and, essentially, tumbled one another through use. While no turtle bone has been positively identified at the site, painted turtles frequent it
today. Representatives of the Wampanoag, Micmac, and Western Abenaki nations have viewed these objects and confirmed that this hypothesis is a possibility, though today dried corn kernels or beans are most often used for this purpose.

Out of a total of 217 polished pebbles, 170, or seventy-eight percent were of quartz (113 white, eighteen rose, seventeen tan, fourteen clear, seven smoky, one purple). Polished pebbles were made of other materials including sixteen of chert, twelve of quartzite, five of andalusite/chiastolite, five of rhyolite, four of argillite, two of granodiorite, two of chalcedony, and one of hornfels. Twenty-two of the quartz pebbles were in the A3 zone; eight were in normal subsoil; and nine were found in disturbed soils. The remaining 131 derived from features. The strongest concentration was on the western side of the site, as shown in Figure 2. This area had relatively few chipped stone tools, but abundant quantities of other ceremonial objects, such as paint stones and pendants. The average length was 10.23 mm (range - 2.2 to 40.7 mm), the average width was 7.38 mm (range - 1.2 to 34.4 mm), the average thickness was 4.9 mm (range - 0.2 to 32.9 mm), and the average weight was 1.6 grams (range - 0.05 to 68.55 grams).

In his review of the Maine Red Paint Burial Complex, Benjamin Smith mentioned the presence of 'natural pebbles' or 'lucky stones' at twelve sites. Alluding to Moorehead's original study (1922), he noted that these are 'brightly colored pebbles' (without specifying the materials) and noted that some of them appeared to have been abraded while others did not. He classified the former as parts of fire kits, while the unabraded stones he thought were 'possibly charms' (Smith 1948:53). Fowler (1975:11-13) also noted the occurrence of polished quartz pebbles in burial contexts at the Seaver Farm site in Bridgewater, MA and the Wapanucket site in Middleborough, MA. Fowler's speculation that some polished pebbles were gastroliths was rejected, because no bird would be capable of containing a stone over two inches in diameter such as he illustrates in its crow. The polished pebbles from the Wapanucket–6 and –8 sites were roughly contemporary with those at the Little League site, though Robbins (1981:113, 299) did not specify their materials. At the Frontenac Island site in Seneca Lake, NY, Ritchie (1980:120) recovered a cache of quartz pebbles in association with box turtle shells. He concluded that the pebbles were 'shakers' for turtle-shell rattles. Their size range as illustrated (Ritchie 1980:118) is similar to the majority of polished pebbles at the Little League site. The temporal range of occupation of Frontenac Island is similar to that of the Little League site, with uncalibrated radio-carbon assays at 4930±260 B.P. (C-191), 3965±80 B.P. (Y-459) and 3685±250 B.P. (W-545).

Discussion

At the Little League site, quartz crystals, Herkimer diamonds and polished pebbles are associated with dated features that span the duration of the site's 3800-year occupation. Moreover, these objects were associated with one another in several of the features, along with other objects of potential sacred nature: paint stones of graphite, hematite and limonite as well as large pecked pebbles, one-hole pendants, pendant blanks, stone rods and an engraved stone (Table 1). This suggests that they all played a consistent, long-term role in ceremony, a side of Native culture to which archaeologists rarely have access.

To understand what this complex of symbols might have meant to Native peoples, we shall have to cast our net further afield than the Northeast, as we did for the article on chiastolites. Numerous statements about ceremonial uses of quartz are present in the ethnographic literature. We begin with a remarkable statement by Lee Irwin (1994:224-226) concerning the use of sacred stones by Plains peoples:

"There was a shared semiotics of stone lore among the Absarokee that allowed a visionary to identify its gender. Smooth or egg-shaped rocks were regarded as female, while more pointed shapes were regarded as male. Many Plains people believed that when male and female stones were wrapped in a bundle they could reproduce. When the bundle was opened at a later date, it would contain smaller stones that were regarded as the offspring of the male and female pair."

"For the Lakota Sioux, stone (inyan) was one of the great powers from which all creation ultimately originated. To dream of the sacred
stones was considered highly significant because these stones granted many different powers: to cure illness, to predict the future, to find lost objects, and to obtain information by extrasensory means.... The small, perfectly spherical stones found on the tops of high buttes and believed to be related to the thunderbird were packed with eagle down into small animal-skin pouches (some of which might be painted) and kept in the medicine bundle.... The symbolism of the stones again unites the above and below powers in a single sacred object. The *tunkan* is from the earth, but it is simultaneously an expression of the celestial powers of the thunderbird. This cosmological theme of the unity of the above and the below is a primordial concept of the fundamental unity of the world order. The stones 'know' the earth and what is happening on it at all times. A powerful shaman can send his stones after the requisite knowledge because they are capable of traveling throughout the world strata.

A similarly revealing statement by Pearson (2002:142-143) concerns the indigenous uses of quartz in Amazonian contexts:

"For the Cubeo Indians of the Northwest Amazon, one of the most crucial processes in the transitional passage from layman to shaman is the insertion of quartz crystals into the neophyte's stomach. Later these crystals will be used as shamanic weapons.... Quartz crystals represent shamanistic, transformational power objects and spirit helpers, highly valued for their potency and considered as vitally essential among peoples throughout the world. In many cultures, ranging from the California Yuma Indians to the Australian aborigines, quartz crystal is considered 'living' or a 'live rock'.... Among western Tukanoan shamans, quartz crystal is their most important power object, engulfed in rich lore. Crystals are passed down from father to son, and these valuable items are stored in special woven boxes.... Tukanoan speakers from the northwestern region of the Amazon use rattles containing small particles of quartz crystals. When shaken against the interior walls of the gourd, the crystals become energized and ignite the gourd's soft inner lining, producing smoke and sometimes sparks that can be seen escaping through slits and holes in the rattle. These sparks become a metaphor for creation *in utero*...."

Ryan (1999:128), in his cross-cultural study of shamanism and its connection to cave art, observes that:

"The Mayan shaman uses quartz crystals in conjunction with seeds and the 260-day Mayan calendar to divine the future. For the Maya, the calendar is not a mere linear progression of time but the unfolding of an essential order implicit in reality itself... Divining with crystals, the shaman mediates this unfolding reality."

Archaeological evidence for the pre-European use of quartz is beginning to accumulate as well. Pearson (2002:144; see also Gamble et al. 2001:192-194) observes:

"In far western North America, quartz and other crystals commonly served as shaman's talismans and were used as ritual objects in curing, rainmaking, and other ceremonies... Some archaeological sites in California have yielded quartz crystals, along with other objects of material culture, that date to around 8,000 B.P."

Pearson also indicates (2002:166) that:

"Clovis people buried caches of precious materials like crystalline quartz, decorated ivory and bone, and high quality stone for toolmaking.... At a site known as Fenn Cache, spearpoints have a thin coating of red ocher and are found with quartz crystals. Surely we can assume, based on current knowledge of the importance of quartz crystals in shamanistic ritual, that they must have had something to do with belief systems."

The predominant color of quartz crystals, white or clear, is usually associated with the eastern direction by local Native peoples. The root *wamp* has a semantic range of white, east, dawn, and light in Algonquian languages (Manitonquat 1991:27). In his study of color among Iroquoian and other eastern Woodland peoples, Hamell (1992) has emphasized the importance quartz crystals had to Native peoples in the Northeast, because of the symbolism inherent in their white color. He has perhaps gone the farthest (1987:67) in his attempt to position these objects within the semiotic context of the cultures:

"...whiteness (which also connotes transparency) and sky blue-greenness connote the cognitive and social aspect of life, the
purposiveness of mind, knowledge, and greatest being, as do light, bright, and white things generally. These colors are good to think (with). Within the northeastern Woodland Indians’ mythical realities, material substance is a manifestation of color, rather than color being simply a physical property of substance. White light, white shell, white flint, white wolf, white otter, and other white entities form a ritually semantic set, because they are material manifestations of whiteness.... Whiteness, sky bluegreen-ness, redness, and blackness invest the entities of which they are perceptually salient attributes with numinosity; that is with ideational, as well as with aesthetic, significance.”

Conclusions

These multiple references suggest a deeply interwoven set of connections between quartz crystals and polished pebbles, and various shamanic practices. These include initiation, divination, healing, exorcism, dreaming, weather forecasting, calendrics and ritual musical performance, with branches into cultural beliefs about cosmos, gender, social order, color, light and tool-making. These connections may go back as far as Paleo-Indian times in some parts of the continent; in the Northeast the associations of these materials at the Little League site and elsewhere indicate that they were strongly established at least by the Late Archaic period. The Herkimer diamonds are a particularly interesting case, both because they must represent long distance human transport and because of their absolute clarity and symmetrical form, pointing to a deeply embedded connection between the world of the Above and the world of the Below.

While these connections are most likely to be manifested archaeologically in burials, where the entire suite of ritual behaviors is concentrated, the Little League site shows that this is not necessarily the only place where they may be found. My conclusion is that, in addition to the normal subsistence activities documented there, the site is a place where groups of specialists made and cached objects related to ritual use over a long period of time.

In a non-burial context, it would indeed be easy to disregard these items as natural objects – as we certainly did with polished pebbles during the 1998 and 1999 seasons at the Little League site. The crystals, too, might have been overlooked as geofacts, had we not observed the wear on the edges of the first excavated crystal in 1998. Just as with the article on chiastolites, this article ends with an advisory to archaeologists to become more aware of the potential significance of these objects. As Brady and Prufer put it (1999:137, cited in Murphy 2002:36),

“The fact that the pieces are both small and unmodified raises the possibility that crystals may occur more frequently in archaeological contexts, but are simply neither recognized as artifactual nor even reported…”

In our efforts to reconstruct Native subsistence strategies, technology and social systems, we should not overlook the symbolic aspects of their culture, especially since by the accounts of both living and historically recorded Native peoples these aspects were central to their lives in all of the other systems. Quartz, especially in its crystalline forms, played an important role in the articulation of these systems.

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