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Maize has always been a problematic issue for students of New England prehistory. Since remains of prehistoric maize are extremely rare, and since indisputable dates for those remains are rarer still, the timing of the cultigen’s arrival into the region is a matter of particular dispute. Ritchie (1969) recovered a single kernel of maize from the Hornblower II site on Martha’s Vineyard. The charcoal ash in which that one kernel was found yielded an age of $790 \pm 80$ radiocarbon years B.P. (Ritchie 1969:52). Other dates for maize in New England are later than Ritchie’s by as many as three centuries. Bumsted (1980), for example, found maize in Vermont at the Donohue site in a level with an age of $510 \pm 125$ radiocarbon years B.P.

During the summer of 1979, Dr. Dena Dincauze and Ms. Janice Weeks conducted a salvage excavation of a pit in Gill (Dincauze and Weeks 1979). The feature contained artifacts ranging in time from a Late Archaic Orient Fishtail point to a sherd of twined-fabric impressed Middle Late Woodland Pottery, along with four carbonized kernels of Maiz de Ocho. Although the kernels were lost during the laboratory analysis, their recognition and identification are nonetheless a significant addition to the growing literature concerning maize in New England.

LOCATION, GEOGRAPHY AND GEOLOGY

A backhoe cut in the backyard of a residence at 19FR-329 in Gill originally revealed the pit in profile (Figure 1). The feature lay in an aeolian mantle on the western edge of the Fort Hill embankment. The Riverside National Register District encompasses the entire Fort Hill complex, including the excavated but unpublished Stemple and Casley sites. The district also includes the WMECO site (Thomas 1980), which lies approximately 300 meters to the north of Fort Hill. The area falls squarely into Thomas’ environmental Zone XI: “a gently sloping, south-facing area with riverine and lake-derived soils between the present Connecticut River and the upper terrace left by glacial Lake Hitchcock” (1980:80).

The neighborhood surrounding Fort Hill is residential. Disturbance has been extensive on other sites in the area (Thomas 1980; Janice Weeks pers. comm. 1988). The surface of the pit lay at an elevation of approximately 65 meters above sea level and 7 meters above the dammed artificial pool level of the Connecticut River, 120 meters to the east. The river and nearby Healall Brook are the only permanent sources of water in the Fort Hill vicinity.

On their arrival at 19FR-329 Dr. Dincauze and Ms. Weeks estimated that the backhoe cut had left intact at least 50 percent of the feature’s width, although other soil stains in the profile indicated that the operation had thoroughly destroyed at least one and possibly two other pits. The deposit was almost exclusively loose aeolian mantle, except for the uppermost level, a plowzone of dark brown fine sandy loam that extended 27 centimeters down from the ground surface and truncated the top of the pit neatly, obscuring its original shape. Organic material had stained the sand within the pit a rich, dark black, which contrasted sharply with the dark brown sand surrounding it. The roots of a nearby locust tree intruded through the plowzone into the pit; these not only contributed to the organic material but also hampered the excavation significantly.
Figure 1. The pit feature as it appeared after a backhoe had cut through the embankment. The pit is visible as a dark stain against the lighter-colored aeolian sand in this sectional view. In this photograph, east is to the right.

EXCAVATION

The pit's location in a 3-meter high embankment of aeolian sand, the large root mass in the pit and the steep, 90-degree nature of the cut all combined to make a conventional excavation impossible. The excavators feared that if they attempted to dig the feature from the ground surface, the loose sand would crumble, endangering the stability of the entire bank. Time was also an important consideration. Dr. Dincauze and Ms. Weeks had only the weekend in which to work, since further landscaping was scheduled to resume on Monday. After some deliberation, they concluded that by standing against the face of the backhoe cut and reaching above their heads, they could scoop the fill out of the pit while preventing the feature from collapsing in on itself. Although the strategy is not one that any textbook on archaeological method would recommend, it was imposed by the particular conditions and circumstances. All excavation was by trowel, with matrix checked visually for artifacts, faunal specimens and plant remains before being discarded. When the excavators had removed all the matrix from the feature, they collapsed the pit in on itself for the sake of safety.

ARTIFACTS

Artifact bag numbers from the 19FR-329 pit have no real stratigraphic or contextual meaning. Artifacts within individual bags were found within rough proximity to one another within the pit, although the preciseness of that proximity is impossible to determine. Table 1 lists the inventory of finds from the pit.

Several items were recovered from the fragile ground surface directly above the pit. These included a chip of quartz, as well as an 11.5 cm-long piece of tabular arkose that has a smoothed edge. The excavators also identified some historic material on the surface, including two sherds of creamware, a fragment of anthracitic coal and a piece of slag.
The excavators decided to leave the plowzone untouched because of the mass of locust roots. A sidewall slump immediately below the pit yielded a spall of historic creamware, as well as five quartzite and two flint flakes. When the excavators had reached a point well below the root mass, they removed approximately 1.2 kg of pitfill for flotation analysis. This material held the greatest potential for study because of its relatively high charcoal content. The excavators recovered additional charcoal in situ from two faint, concave-up lenses, although they noticed no seeds or other plant remains.

Just below this charcoal the excavators recovered four carbonized plant remains, which they immediately took to be a type of bean. Laboratory analysis would later reveal that these were, in fact, four kernels of Maiz de Ocho, an early variety of eight-rowed corn.

By far the greatest amount of material recovered was lithic in nature, most of which appeared on the eastern edge of the pit. The single intact diagnostic point was a Late Archaic Orient Fishtail Point that exhibits the small blue oolitic particles characteristic of Eastern Onondaga chert (John Cross, pers. comm. 1989). One point tip of argillite or mudstone was also recovered. Flakes represented include examples of quartz, quartzite, felsite, argillite and flow-banded rhyolite of possible New Hampshire origin (Dincauze 1976).

A large quantity (>1.5 kg) of burned, naturally broken rock (FCR) appeared in a concentration toward the bottom of the pit. Most of this rock was local arkose; however, chunks of felsite and granodiorite were also present. Six medium-sized unmodified quartz pebbles appeared in rough association with this group. The excavators also recovered a heavy (296 g) chunk of steatite; the chunk displays a high degree of curvature and may be a sherd from a massive bowl.

An unusual lithic object from the feature is a slab of Triassic “fossil rock” recovered from the floor of the pit. The rock has fossilized raindrops all over its surface and may well have been, as the excavators surmised in their field notes, “...a curiosity or a wonder” (Dincauze and Weeks 1979:3), which someone in the distant past deemed worthy of preservation.

Ceramic sherds recovered from the pit included 24 small body sherds of undecorated pottery of Middle Woodland to Middle Late Woodland date. All examples were grit-tempered, with grains of moderate size (2 mm or smaller). The excavators noted that, as was the case with the lithics, most of the sherds came from the eastern edge of the pit between 27 cm and approximately 55 cm. An on-site estimate placed the number of different vessels represented at six. All sherds were wet-wiped, and most display impressed exteriors.

In addition to the 24 sherds described above, the excavators recovered one diagnostic piece from a seventh vessel of probable Middle Late Woodland origin. This shell-tempered specimen bears the impression of a twined fabric on its exterior. Carbonized organic matter is present on the sherd’s inner surface, which has also been scored.

Flotation analysis of the soil sample was carried out in November, 1988, chemical studies having been deemed impractical and of little value to the analysis of the feature. The sample yielded only a small and unidentifiable amount of charcoal (< 5 g), five quartz flakes, one flint flake and several quartz and quartzite microflakes. All artifacts from the pit, along with the excavators’ field notes and photographs, are on file at the Anthropology Department of the University of Massachusetts, Amherst.

DISCUSSION

Maize kernels

The only plant remains recovered from the pit were the four carbonized maize kernels, which the excavators had initially mistaken for beans. It is truly unfortunate that the kernels disappeared after Dr. Walton Galinat had identified them as Maiz de Ocho, an eight-rowed race that originated in the American Southwest. In 1986 Fred Dunford
### Table 1: Finds recovered from in and near the 19FR-329 pit
(See text for explanation of bag numbers)

<table>
<thead>
<tr>
<th>Bag #</th>
<th>Contents</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>surface finds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 piece arkose, smooth edge</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>1 quartz chip</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>8 pieces burned arkose</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>2 sherds creamware</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1 lump anthracitic coal</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>sidewall slump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 quartzite flakes</td>
<td>4.9</td>
</tr>
<tr>
<td></td>
<td>3 frag. calcined bone</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>2 flint flakes</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>1 unid. dark rock</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td>1 spall creamware</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1 lump granodiorite</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>1 piece burned arkose</td>
<td>7.2</td>
</tr>
<tr>
<td>3</td>
<td>surface, east of pit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 lump pumice</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>1 lump quartz</td>
<td>13.3</td>
</tr>
<tr>
<td>4</td>
<td>pit, below root mass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 bag pitfill, for flotation</td>
<td>&gt;2000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bag #</th>
<th>Contents of Pit</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>unid. charcoal</td>
<td>25.4</td>
</tr>
<tr>
<td>5B</td>
<td>4 maize kernels</td>
<td>NA</td>
</tr>
<tr>
<td>5C</td>
<td>Orient fishtail point</td>
<td>NA</td>
</tr>
<tr>
<td>5D</td>
<td>151 pieces FCR; arkose</td>
<td>~1500</td>
</tr>
<tr>
<td>5E</td>
<td>6 calcined bone frags.</td>
<td>1.4</td>
</tr>
<tr>
<td>6A</td>
<td>71 quartzite chips and flakes</td>
<td>54.4</td>
</tr>
<tr>
<td></td>
<td>4 quartz chips and flakes</td>
<td>2.4</td>
</tr>
<tr>
<td>6B</td>
<td>3 flow-banded rhyolite chips</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>2 felsite flakes</td>
<td>1.5</td>
</tr>
<tr>
<td>6C</td>
<td>17 chert/flint flakes</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>8 argillite chips and flakes</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>1 flint proj. pt. tip</td>
<td>NA</td>
</tr>
<tr>
<td>6D1</td>
<td>1 twined-fabric impressed sherd</td>
<td>NA</td>
</tr>
<tr>
<td>6D2</td>
<td>7 grit-tempered sherds</td>
<td>16.7</td>
</tr>
<tr>
<td>6D3</td>
<td>1 grit-tempered sherd</td>
<td>1.1</td>
</tr>
<tr>
<td>6D4</td>
<td>9 grit-tempered sherds</td>
<td>3.8</td>
</tr>
<tr>
<td>6D5</td>
<td>7 grit-tempered sherds</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>1 steatite sherd</td>
<td>296.0</td>
</tr>
<tr>
<td></td>
<td>1 hammerstone</td>
<td>410.0</td>
</tr>
<tr>
<td>7</td>
<td>Triassic fossil rock</td>
<td>2121.0</td>
</tr>
</tbody>
</table>

Figure 2. Kernels of eight-rowed **Maiz de Ocho** from the Maluzo site, Chatham, MA (19-BN-468). The Gill kernels, which were lost in the laboratory, looked very much like these specimens. Note the kernels' resemblance to beans. (Photo courtesy of Fred Dunford).
recovered three kernels of *Maiz de Ocho* from the Maluzo site at Chatham (19-BN-468) (Dunford 1986). The resemblance that these kernels bear to beans is immediately apparent (Figure 2).

In a letter to Dr. Dincauze analyzing the Gill kernels, Dr. Galinat wrote that "...the diagnostic attributes of the kernels of this race are wider (w) than deep (d) and, thereby, give a w/d ratio greater than unity..." (Galinat 1979). Galinat also provided the measurements of the kernels:

<table>
<thead>
<tr>
<th>Kernel Width</th>
<th>Depth</th>
<th>Ratio</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 5.5 mm*</td>
<td>5.0 mm</td>
<td>1.10</td>
<td><em>Maiz de Ocho</em></td>
</tr>
<tr>
<td>2 7.3 mm</td>
<td>6.4 mm*</td>
<td>1.16</td>
<td><em>Maiz de Ocho</em></td>
</tr>
<tr>
<td>3 8.8 mm</td>
<td>6.0 mm*</td>
<td>1.47</td>
<td><em>Maiz de Ocho</em></td>
</tr>
<tr>
<td>4 9.0 mm</td>
<td>6.0 mm*</td>
<td>1.50</td>
<td><em>Maiz de Ocho</em></td>
</tr>
</tbody>
</table>

*Estimate

At the Blain Village site in Ohio, *Maiz de Ocho* kernels were radio-carbon dated to approximately AD 1040 (Galinat 1970). Furthermore, Brown and Anderson (1947) had reported *Maiz de Ocho* in New York state at approximately the same time. These recoveries originally led Galinat to conclude:

Data mapping the prehistoric spread of the eight-rowed race of maize...are still meager. This race left the Southwest after AD 700 on a course ... toward New England...where it probably arrived later than AD 1000... (1970:224).

As more data appeared, Galinat revised the date of maize’s entrance into New England dramatically to the present estimate of approximately 1400 A.D. (Galinat 1985).

Bumsted reported maize at the Donohue site appearing in the Middle Late Woodland period. Although three cobs and nine individual kernels were recovered during her excavations, Bumsted could not date the carbonized maize because of the unavailability of accelerator dating at the time. A sample of butternut shells yielded an age of 510 ± 125 radiocarbon years B.P., which made the recovered maize "...the first documented prehistoric remains [of maize] from Vermont" (Bumsted 1980:81). Ritchie’s kernel from Hornblower II has already been discussed.

Ceramics

The majority of the ceramics recovered from the 19FR-329 pit are of Middle Woodland origin. The crushed-granite grit temper generally has moderate, visible particles of feldspar and quartz; exteriors are impressed and wet-wiped. The mean thickness of the admittedly insignificant sample was 8.37 mm. Most of the sherds are light-colored, ranging in hue from tan to brown. In temper, thickness and color the 25 undecorated sherds generally resemble Middle Woodland ceramics from the Winooski site (VTCH46) described by Petersen (1980).

The twined-fabric impressed sherd differs noticeably from the other pottery fragments recovered from the pit. It appears to be shell-tempered, although the high degree of carbonization both of the temper and of the interior of the sherd makes the identification tentative. The fabric impression is one of tight weaving in a pattern similar to Category TF17 described by Scholtz in a Middle Late Woodland context (1975). The pattern is also similar to the Kelso Corded Variant of the Late Pahaquarra and Early Minisink cultures of New Jersey (AD 1250-1400) (Kraft 1975).

Clearly, the dating of the pit is problematic, given the broad temporal range of the artifacts. For example, the steatite sherd and the Orient Fishtail point are roughly coeval, both dating to the Late Archaic of approximately 3000 years BP. Furthermore, the majority of the ceramics were of Middle Woodland origin. The presence of the Middle Late Woodland sherd, however, at least allows us to propose that the sealing of the pit took place in the Middle Late Woodland period.
SUMMARY

Archaeologists working in Massachusetts need to realize that when it comes to prehistoric maize, things are very seldom what they seem. It is quite possible that other remnants of Maiz de Ocho may have passed undetected; it is also quite possible that they may have been misidentified as bean remains.

Furthermore, the presence of prehistoric maize at Gill confirms the necessity for further investigations within the Riverside Archaeological District. Thomas (1980:75) proposed questions of "short distance and long-distance phenomena" pertaining to the study of prehistoric population dynamics and settlement patterns in the District. Given his hypothesis that the area may have been "an important location for the maintenance of the communication network among 'minimal bands' during the Early and Middle Archaic" (1980:93), and given the Late Woodland date for the sealing of the 19FR-329 pit, the potential for observing long-term cultural change within a tightly-focused geographical area is significant.

Thomas recognized that his model was heuristic, especially because he based it on the only data available from the region, the excavation of the WMECO site. Certainly data from the unpublished Stemple and Casley sites will support or refute the theorized communication and trade networks. The sheer amount of material from the Stemple site alone, of which Hight (1980) made a preliminary assessment, holds an enormous potential for study.

Further work in the Riverside Archaeological District has a twofold potential. First, the tantalizing glimpse of maize from the 19FR-329 pit indicates that there may be other maize remains that archaeologists are just not recovering. Second, further examination of excavated sites might provide a data base from which the "actual population densities" (Thomas 1980:90) might be tested. These are questions that are fundamental to the larger issues of settlement patterns in New England prehistory, and they demand answers.

Acknowledgements

Writing a report about the excavation of a feature dug nearly a decade ago is a process fraught with peril. I would like to thank the excavators of the pit, Dr. Dena Dincauze and Janice Weeks. Their notes, comments and recollections have been invaluable in reconstructing events of the summer afternoon in Gill. Fred Dunford generously supplied the photograph of maize from the Maluzo site. I would also like to thank Ann Marie Mires for her help with the flotation sample and John Cross for his identification of the material of the Orient Fishtail Point. Any errors of fact or interpretation, however, are strictly my own.

REFERENCES CITED

Brown, W.L. and E. Anderson

Bumsted, M.P.

Cross, J. Personal communication to author, 17 November 1988.

Dincauze, D.F.
--- and Weeks, J.
1979 Field notes from the excavation of the [19FR-329] Pit. Manuscript on file at the Department of Anthropology, University of Massachusetts, Amherst.

Dunford, F.J.

Galinat, W.C.
1979 Letter to Dr. Dena Dincauze.

Hight, S.
1980 Fort Hill in Riverside, Gill, Massachusetts. Unpublished manuscript in the possession of Dr. Dena Dincauze, University of Massachusetts, Amherst.

Kraft, H.C.
1975 The Archaeology of the Tocks Island Area. Archaeological Research Center, Seton Hall University Museum, South Orange.

Petersen, J.B.

Ritchie, W.A.

Scholtz, S.C.

Thomas, P.A.
1980 The Riverside District, the WMEOCO site and suggestions for archaeological modeling. In Early and Middle Archaic Cultures of the Northeast, edited by D. Starbuck and C. Bolian, pp. 73-95. Occasional Papers in Northeast Anthropology No. 7.

Weeks, J. Personal communication to the author, 18 October 1988.

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A BRIEF NOTE TO CONTRIBUTORS

The Editor solicits for publication original contributions related to the archaeology of Massachusetts. Manuscripts should be sent to the Editor for evaluation and comment. Authors of articles submitted to the Bulletin of the Massachusetts Archaeological Society are requested to follow the style guide for American Antiquity 48:429-442 (1983). Additional instructions for authors may be found in the Bulletin of the Massachusetts Archaeological Society, Volume 50, Number 2:76 (1989).
Dugout boats provide an untapped resource for understanding the ways in which the inhabitants of New England have lived and worked at different times in history. Yet when unearthed from ponds or enshrined in museums, these vessels are often mistaken for artifacts from the precontact Indian past. My study of New England’s dugouts, or logboats as many prefer to call them (McGrail 1978, vol. 1: 2), has shown that most surviving boats date from a later period, when both Indians and Euro-Americans made such boats. Irish, English, French, African, and native American designs converged to create New England’s logboats. From their all-purpose uses in the seventeenth century, to their survival in the north woods of the twentieth, New Englanders preferred logboats to other, more sophisticated craft. Far from being pristine artifacts of Amerindian experience, all but a handful of the surviving logboats discovered in New England as of this writing appear to date to the contact or historic period.

By studying these logboats from New England we can glimpse the ways in which the people—English, French, and Amerindian—made and used these boats within specific regional economies. The dynamics between these three groups varied widely in different regions and different time periods. Further, the examples remind us once again that people shape their material world according to cultural needs and expectations, in combination with environmental conditions and resource availability. As students of material culture have argued, all material objects reflect the culture that produced them. The cultural and material worlds are intertwined in the design, construction, and use of common objects. As Robert St. George put it, when read "socially," artifacts must be "interpreted as related parts of a larger puzzle" (St. George 1988:9). Logboats, like other artifacts of the material world, have a great deal to tell us about the cultures that made and used them.

Elsewhere I have argued that New England’s logboats fall into two loosely defined types: a coastal/riverine type found from Connecticut to Nova Scotia, and an inland lake type prevalent in northern New England, New Brunswick, and Quebec (Plane 1990:2,38). My conclusions were based on the study of surviving canoes from New England and Canada, in combination with references in historical documents. Of the thirty odd boats I located, all but three survive in some form. Probably many more canoes were excavated in the early part of this century but did not survive. I was able to study eleven boats of the sample in detail, recording ten of them by means of photography, drawings, and detailed description. I also looked at other researchers’ surveys of these boats when available. Eight boats I studied via published or unpublished reports. I compared my sample to surveys of similar boats from Nova Scotia, New Brunswick, Ontario, Virginia, and North Carolina, as well as England and Ireland, in order to identify regional characteristics, common stylistic sources, and so forth.

For detailed reports on these vessels, I refer the reader to my unpublished essay (Plane 1990: Appendix). But, in brief, of those surviving boats that have been radiocarbon dated, only four, located at three underwater sites in Vermont, predate the period of contact with Europeans. Those which appear to be of early contact period native American origin (see Figures 1, 2) tend to have rounded ends and less angular appearance, whereas the Euro-American are more likely to have a pointed bow and a square or truncate stern (Fig. 3). Common features of historic period boats
Figure 1. Terminology for logboats. As regional studies of logboats increase in number, the need for standardized terminology also becomes greater. I am indebted to Michael Alford of the North Carolina Maritime Museum, Beaufort, NC, for his suggestions for a standard vocabulary. 1) Profile View. A: Bow (front); B: Stern (back); C: Depth; D: Gunwale (top edge); E: Hull; F: Bottom. 2) Plan View. A: Endpiece; B: Deck or seat. 3) End Shapes. A: Pointed End; B: Truncate or Square End; C: Round or Curved End. 4) End Profiles. A: Spoon; B: Raked; C: Upright; D: Steeply Raked.

are pegs, mends, nails, seats, and mast braces. As with any highly individuated artifact, however, New England’s surviving logboats vary tremendously in design and appearance.

Before Europeans ‘discovered’ the region now called New England, the Indian peoples of New England and Canada made two main types of boats, each adapted to the specific cultural needs of the group. The Indians of northern New England and Canada used canoes made of birch bark, stitching the bark into a pouch and then bracing this with a wooden frame. The design of these vessels varied according to the tribe, as well as to the conditions and purposes of its use, but all were lightweight and easily carried around impassable waters (Adney and Chapelle 1964:13,27,58-153). In the agricultural regions of southern New England, the birch (Betula papyrifera) did not grow large enough for canoe making (Peattie 1950:165). Peoples from Massachusetts Bay southwards along
the coast all the way to Florida made and used logboats (Salwen 1978:164; Roberts and Shackleton 1983:63-80). But Indian people chose to make either log or birchbark canoes for reasons beyond the simple availability of materials. For example, the Abenaki used both birchbark and log canoes, depending upon the body of water traveled (Day 1978:148-59). In the extreme north, trade networks supplied birch bark to Indians beyond the paper birch range (Taylor 1980:9). In later years, both Euro-American and Amerindian inhabitants of the Maritime Provinces and Quebec made log canoes (Roberts and Shackleton 1983:91-5). Rather than simply being determined by the range of the paper birch, the heavier logboats of southern New England’s natives may have better suited the more sedentary life of these peoples.

Europeans recorded some detailed descriptions of the construction and use of Indian logboats in the early seventeenth century. John Smith, William Wood, and Samuel de Champlain all described logboat making, the former from Virginia, and the latter two from New England. First the Indian felled a large tree, usually pine or chestnut, using fire and stone axes to do the job. He shaped the outside, and, using heated pebbles or slow-burning coals, he alternately burnt the inside and then scraped the charred wood out with stone scrapers or clam shells, carefully controlling the process to obtain the desired size (Fowler 1976:1-3). As William Wood described it in his accounts from 1629-34, "Their Cannows be made...of Pine-trees, which before they were acquai­nted with English tooles, they burned hollow, scraping them smooth with Clam-shels and Oyster-shels, cutting their out-sides with stone-hatchets" (Wood 1898:96).

Archaeological evidence seems to corroborate the historians’ accounts. A site in North Reading, Massachusetts may have been used for logboat making. A large mass of charcoal, 6.1 m square by 28 cm deep was found 1.8 m above Skud’s River and Martin’s Pond. Excavators recovered five large, undamaged stone woodworking tools from the site. Each tool appeared to fit a different phase of logboat construction. In addition, the larger pieces of charcoal each had one smooth side, as if scraped from the wood by a sharp tool. By the presence of a full grooved axe, the site could be tentatively dated to the middle or late Archaic Period, approximately 5000-1000 B.C. (Fowler 1976:4; Dincauze 1976:121). Thus, perhaps the peoples of early Massachusetts used particular locations for logboat manufacture—places close to both the trees needed as well as near the water.

While European reporters suggest that Indians made boats for individual use, at least some of the boats must have belonged to the kin-group or the wider community. Roger Williams’ 1643 account notes that a man would go alone into the woods, taking some food along and building a temporary shelter for himself. Williams wrote, "but so hee continues burning and hewing untill he hath within ten or twelve dayes (lying there at his worke alone) finished, and (getting hands,) launched his Boate; with which afterward hee ventures out to fish in the Ocean" (Williams 1971:108-9).

But Williams was writing as an English man, and, as we shall see, the English of the 1630s counted dugout boats as personal possessions, made exclusively by individual men. Many explorers reported large canoes, filled with many natives, especially in more southerly regions, near the Hudson River. The largest of these logboats were 12 or 15 meters long and could carry forty men (Salwen 1978:164). Did the members of the group own these boats in common? Did they share in their manufacture? European accounts do not answer these questions.

From the first years of their settlement throughout New England, English colonists also made their own multi-purpose log canoes. In William Wood’s 1634 account of New England, he described some of the ways in which Euro-Americans made and used these boats. He also noted that logboats
Figure 2a and 2b. Weymouth logboat, photo and plan. This boat was discovered in Weymouth’s Great Pond during the drought of 1965. It may have been made with aboriginal technology, but it has several nails associated with it, as well as faint lines marking a possible rib. Perhaps it was an Indian boat with contact period additions made by either Indians or Euro-Americans. A detailed recovery report exists (see Keavitt 1968). The boat was excavated by the Weymouth Historical Commission, and is now located at the Weymouth Historical Society Museum, Tufts Library, Weymouth, MA (photo by Ann Marie Plane). 1) Plan View: A: nail fragments in hull; B: Faint depression in hull; C: Discoloration, nails, possibly from a rib; D: large crack. 2) Profile view: 3.185 m length; 68.6 cm overall width; 29.2 to 29.9 cm depth; all measurements from Keavitt (1968). Locations of features approximate as the canoe is in a closed case.
were especially popular in particular areas, writing of Salem, Massachusetts,

they crosse these rivers with small cannowes, which are made of whole pine trees, being about two foot & a half over, and 20. foote long: in these likewise they goe a fowling, sometimes two leagues to sea; there be more Cannowes in this town than in all the whole Patent; every household having a water-house [water-horse] or two (Wood 1898:35).

"Cannows" show up frequently in probate and court records of the Plymouth Colony from a very early date. In 1638, a jury of inquest into the death of one John England found that he drowned while "sayling in a canow of Mr. Thomas Burne's betwixt Greene's Harbor and Plymouth...by reason of the insufficiency of the said canow, to make way in stormy weather..." (Yentsch 1986:57). Within a decade of year-round settlement, Europeans were making and using their own dugout canoes.

Where did Europeans learn of dugouts? Was it from the Indians? The Irish? Their own tradition? The evidence sometimes seems confusing. Certainly, as Sean McGrail has documented, the English and other Europeans had made logboats of various types, usually of oak (Quercus sp.), which McGrail has described as the ideal wood for logboat construction (McGrail 1978, vol. 1: 117). By the seventeenth century, wood shortages had limited English logboat-making to the extreme northern and western areas of the British Isles (McGrail 1978, vol. 2: fig. 206). In Ireland, "tree-boats" of oak or ash (Fraxinus sp.) were made right up through the end of the eighteenth century (MacDowell 1983, vol. 1: 16, 43). Henry Glassie has suggested that logboats were only fully accepted into Anglo-American culture when that culture included African and Irish elements (Glassie 1972:158), and certainly English contact with the Irish and African peoples familiarized them with such vessels.

But it seems likely that Amerindians had an enormous influence on boat technology in this region. The word itself, canoe, originated in the Americas, as a post-Columbian borrowing from the Carib word for logboat, canoa (Adney and Chapelle 1964:13). The small numbers of African and Irish Americans in seventeenth-century New England suggest that they may not have had much direct influence. Undoubtedly, the presence of a lively tradition of Indian canoe use in the region stimulated the adoption of logboats with such enthusiasm by the English.

The documentary record shows that logboats remained popular with colonists into the eighteenth century, and they used them for everything from ferrying passengers and goods across rivers to hauling manure, salt marsh hay, and other large loads (Plane 1990:16-34). People apparently even reserved certain trees for making canoes. In 1679 in Essex County, Massachusetts, Robert Cross, Jr. testified that one Samuel Pipen "sold deponent a canoe tree that grew upon the north side of a hill amongst ledges of rocks" (ECCR 1913-19, vol. 7: 203). Canoe trees were also protected by law in some areas, as in Springfield, Massachusetts, where they could not be felled without general consent (Bacon 1970:306). One survey of household inventories from Suffolk County, Massachusetts (excluding Boston), in the period from 1675 to 1775, turned up only four canoes out of all 109 inventories (Cummings 1964:v,276), perhaps so few because of the largely inland focus of the study. These four were used in Dedham (1681), Chelsea (1761), and in Dorchester (1768 and 1771). All four inventories also included salt marsh property, such as "Canoo meadow" valued at 9 pounds in the Dedham estate, and "ten load salt hay at 36/load" for a total of 18 pounds in the Chelsea estate. The Chelsea inventory also listed a great deal of livestock and a "Negro man," who perhaps brought African or African-American notions of boat design to New England. All this shows that throughout the colonial period, canoes fitted comfortably within the system of petty enterprise and private ownership common to New England's Euro-American coastal settlement. In certain pockets of the coast, logboats continued in
Figure 3a and 3b. Hopkinton logboat, photo and plan. Very well preserved boat found in Hopkinton's Jo-Sylvia Lake (NH) in the early twentieth century. It has overcut marks from an axe and such European maritime features as a pointed bow and a barely discernable stem or keel at the stern. This vessel is now at the New Hampshire Antiquarian Society, Hopkinton, NH (Photo, Robert B. St. George). 1) Profile view: 4.39 m length; 58.4 cm width; 39.4 cm depth at point A; B: This boat has an angled bottom with approximately a 10 cm rise at point B; C: A missing upper portion of the stern has been reconstructed in this drawing. 2) Section view, taken at point A of plan 1. The sides vary in thickness from 1.0 cm at D to 3.8 cm at E; the bottom is 7.6 cm thick. 3) Plan view of stern. F: Location of small projection at the bottom of the stern. The upper portion of the stern, approximately 15.2 cm long, is missing; G: Top of endpiece; H: Floor to chine line (where the floor ends and the endpiece begins its rise); Entire detail: 74.3 cm length. 4) Plan view of Bow. I: Floor to chine line; J: length of endpiece is 38.7 cm.
use right up to the twentieth century. Despite depletion of local wood resources by the late eighteenth century (Cronon 1983:112-3), logboats were used for oyster-tonging in the New Haven (CT), flats until the early twentieth century. Three which survive have histories that link them to a specific maker in the first quarter of the nineteenth century. According to Ernest E. Ball, the son of the original owner of several such boats, dugouts were made at Cayuga Lake, one of the "Finger-lakes" of upstate New York by "a man called Uncle John Smith who was a veteran of the war of 1812" (Ball 1938). Smith floated the canoes down the Erie Canal and the Hudson River. Oystermen of New Haven preferred these boats, presumably because they were uniquely suited to work among oyster flats.

In northern New England, sparser settlement and an economic dependence on hunting and fishing encouraged lively use of small logboats on ponds and lakes right into the twentieth century. These inland boats survive in relatively greater numbers than either the coastal/riverine or the aboriginal types. Sunk in ponds and marshes, they are discovered and excavated with some frequency. Their common characteristics include flat bottoms 6-7.5 cm thick, sides rising at near ninety degree angles, and square or pointed bows. These boats tend to range from 3-6 meters in length, while the coastal boats run from 6-9 m in length. The inland boats in general look rougher than the coastal and river logboats—their lines are sharper, and they sometimes still bear the blade marks from the tools used to make them. Examples of this type of pond or lake boat cluster in northern New England, although some examples exist elsewhere.

Boats such as these seem to have been used on one pond or lake, for fishing, transportation, and fowling up into the twentieth century. The Adams Family of Fair Haven, Vermont, made and used one such boat on Lake Champlain. John Tracy Adams described its manufacture and use in some detail after its purchase by the Vermont Division for Historic Preservation. Adams reported that the dugout was made in 1881 or 1882, "to use for hunting and trapping muskrats" (Adams n.d.:1).

Adams' ancestor, James E. Adams, made the boat with a friend, Benjamin Smith, who had built about thirty dugouts. Adams notes,

In the summer of 1881 Mr. Smith and Mr. Adams started searching for a fine log large enough to make a dugout. They finally found one in Benson, Vermont and purchased it, to be cut when the snow was deep to save log from any breaking or splitting damage when falling. When the snow was deep in the winter, they drove their team and sleighs up on the lake to Benson Landing, then to the tree which they fell, loaded on the sleighs, and started back to West haven. As they drove up the lake, they chopped off the rough sides of the log to start the outside shape of the dugout (Adams n.d.:1-2).

After the outside shape was complete, the men bored holes in the curvature of the boat to serve as thickness gauges. They cut red cedar pegs to the desired finished thickness, drove them into the holes, and then removed wood from the inside. The boat was repaired several times, once when the side was cracked, and again when the heartwood from the bow rotted away. Adams reports that the boat was in use for about seventy years, which would mean that his family stopped using it in the 1940's or 1950's (Adams n.d.:2-3).

To be sure, other than the four Vermont finds, there are no surviving logboats from New England that clearly reflect a flourishing and unchanged native American culture; no such unchanged culture could exist. However, boats from Canada demonstrate ways in which the material world of the Indians both responded to and influenced Euro-Canadian society. Both in New Brunswick and in Ontario, Indians made logboats that responded to birchbark designs as well as to European design challenges. Several canoes as well as oral history from Ontario suggest that, as Indians became more sedentary they adopted logboats, which remained in use well into the twentieth
century (Rogers 1965:458). A canoe from New Brunswick demonstrates similar influences from birchbark design on the log canoes of Indians in eastern Canada. Its light design and delicate hull reflect birchbark traditions as well as similarities to the light French-Canadian pirogue, which springs from the same influences (Plane 1990:42-4).

Euro-Americans also felt the influence of Indian boats, sometimes adopting Indian styles intentionally. As early as the late eighteenth century, Indians and their boats had begun to hold some romance for white New Englanders. By the mid-nineteenth century, the Indian was firmly entrenched as a romantic figure in the American mind. From Thoreau onward, whites traveled to the northwoods of Maine and Canada for 'back to nature' experiences.

It is this romance that shapes our attitudes about logboats even today. As I have shown in this paper, logboats did have a source in the native American cultures of this area. But they also were integrated into Euro-American culture, and this integration persisted beyond the point of initial frontier contact into the twentieth century in many areas. When we can keep this tradition in mind, then we can better understand and more accurately interpret the artifacts before us. I hope that this essay has demonstrated some of the real history of New England’s logboats, and the people who made them. Indians belong in this story, but not as they have been romantically portrayed. Rather, the Amerindian traditions form one strand of many which converged to create the logboats of New England’s past.

Acknowledgements: I would like to thank the many museums, historical societies, and individuals who opened their collections to me. I am also grateful for the advice and criticisms of Mary Beaudry, Robert B. St. George, Timothy Kent and Elizabeth Little. Of course, any errors in the conclusions presented here are mine.

* * * * * * *

Author’s Note: If you discover a logboat, contact your state archaeologist before excavation. In southeastern New England you may also report logboats to the archaeology department at the Peabody Museum, Salem (MA) (508-745-1876), or to the Massachusetts Archaeological Society, Middleborough (MA) (508-947-9005).

End Notes

1. Sean McGrail has argued that the term dugout connotes a method of construction which may not have been used, and also that these boats should be considered along with rafts and multi-log boats (McGrail 1978, vol 2: 2).

2. In 1654 a servant to Thomas Williams of Winter Harbor [Maine] was presented to the court, "for Emptying a conow that was laden with dressing for ground on the Lords day & for cariing the said conow to the side of Richard Moores boate" (See Case of Sylvester Page, June 29, 1654, Yorkshire County, Maine Province and Court Records, vol. 2: 31). In 1664, Nicholas Cole of Wells [Maine] was granted "lyberty to keepe the Ferry over Cape Porpus River for the Tearme of Seven Yeares, hee providing a Conow & makeing bridges for conveniency of passage & travelling...." (Act establishing a ferry, July 5, 1664, Wells, MPCR, vol. II: 158). In Essex County, Massachusetts, in 1670, a dispute over a piece of salt meadow led to the seizure of hay allegedly cut illegally. William Hascall, Jr. deposed that he went with the Constable’s deputy "to Goodman Harradine’s dock where there were two loads of hay on canoes" (Edward Harraden vs. James Steevens and Anthony Day, Ipswich Quarterly Court, ECCR, vol. III: 442).

3. Springfield, due to its location on the wide Connecticut River and its early settlement, may have used boats like those of the coastal regions.

4. Estates of Sgt. Henry Wight, Dedham, April 2, 1681; Jonathan Bill, Chelsea, Nov. 19, 1761; Samuel Pierce, Dorchester (Yeoman), Nov. 22, 1768; James
5. In 1773, a Connecticut-born white student of Dartmouth College, John Ledyard, left school in a dugout he made himself. As described by an unspecified alumnus of the college, Ledyard "absents himself for three months without leave in rambling among the Indians of Canada and the Six Nations. Leaves the college in a canoe made with his own hands and descends the Connecticut alone to Hartford." To complete the romance, Bacon's sources inform us that Ledyard took only a bearskin, a shelter made of willow branches at one end of the canoe, and Ovid and the Greek Testament along with him. Ledyard went on to explore the world, writing accounts of parts of Africa and Siberia and chronicling Captain Cook's last voyage to Hawaii (Bacon 1970:384).

6. For an account of Thoreau's journey and an example of the continued allure of the north woods, see McPhee (1975:69-73, and throughout).

REFERENCES CITED

Primary

Adams, John Tracy

Ball, Ernest E.

Cummings, Abbott Lowell

Dincauze, Dena F.
1976 The Neville Site: 8,000 Years at Amoskeag, Manchester NH. Peabody Museum Monographs, No. 4. Harvard University, Cambridge.

ECCR: See Essex County Court Records.

Essex County Court Records, vol. III, IV, VII, VIII. 1913-19. The Essex Institute, Salem, MA.

MPCR: See Maine Province and Court Records.

Roberts, Kenneth G., and Philip Shackleton

Williams, Roger

Wood, William

Yentsch, Anne E., ed.

Secondary

Adney, Edwin Tappan and Howard I. Chapelle

Bacon, Edwin M.
Cronon, William

Day, Gordon M.

Fowler, William S.

Glassie, Henry

Keavitt, Chester B.

MacDowell, Una

McGrail, Sean

McPhee, John

Peattie, Donald Culross

Plane, Ann M.

Rogers, Edward S.

St. George, Robert Blair

Salwen, Bert

Taylor, J. Garth
THE HATHAWAY SITE, SECTIONS 6 AND 5, ROCKY NOOK, KINGSTON, MASSACHUSETTS: A SMALL LATE WOODLAND AND LATE ARCHAIC LITHIC WORK SITE, AND A SMALL LATE ARCHAIC SHELL MIDDEN

Bernard A. Otto

This site is located on a seventeen acre (8.6 hectares) parcel of land owned by Isaac and Mary Hathaway. Westward lies an extensive salt marsh through which the lower part of the Jones River flows. Eastward at the mouth of the river is Kingston Bay (Figure 1).

The Hathaway property is part of the Rocky Nook peninsula and is heavily wooded with cedar, oak, maple and dense brush and briar. There are numerous rock outcroppings and ledges. Situated on a level, wooded shelf overlooking the marsh and river (Figures 2, 3a,b), the locus, section 6 of the Hathaway Site, lies south 525 feet (159 m) across the cart road from the Late Archaic site, Section 7 and 8, previously reported by the author ( Otto 1988; Figure 4).

Beyond a bordering old stone wall, the drop-off to the marsh is six feet (1.8 m). The stone tool preparation site lay over a lightly defined Late Archaic component.

After shovel testing for the limits of the site, I laid out a north/south baseline. Robert Po and I began excavations in the early spring of 1976. Working on weekends, we stopped the excavation...
Figure 3a. View from Hathaway site, section 6, westerly to Jones River.

Figure 3b. View easterly from the salt marsh toward section 6.

Figure 4. Sketch of the Late Woodland Site in Relation to the Late Archaic Site (Otto 1988).
in the late fall of the same year. Excavation was extremely difficult because of the forest cover and stony nature of the area, and no workable grid could be laid out. We excavated a total of one thousand eight hundred and forty square feet (171 sq. m) including tree interruptions. For recording purposes, I designated the locus as section 6 of the Hathaway site.

STRATIGRAPHY

Beneath a woodland duff of leaves and dead branches, vertical profiles revealed a dark brown loam averaging four to ten inches (10-25 cm) in depth, blending into a light tan sandy subsoil. Stony inclusions made it impossible to determine the depth of the lower strata of the subsoil and the composition of the underlying substrate (Figure 2).

OCCUPATIONAL EVIDENCE AND DEBRIS

Hundreds of percussion flakes of a reddish brown and tan mottled material were the predominant reduction waste, followed by felsites and quartz. Argillite was also present in lesser quantity. This waste material was scattered throughout the site but was found mainly in association with stone tools or stone anvils. Extensive screening produced thousands of small pressure-flakes indicating that finished products had been produced here. All stone material could have been selected and collected at local pebble-strewn beaches.

FEATURES

Figure 5 shows the locations of individual features, which are described in detail in the following sketches (Figure 7), photographs and text.
**Feature I** (Figure 7.1). Six inches (15 cm) below ground level and bedded well into the subsoil, a rather large boulder protruded with a longitudinal cleft or division. In the cleft were several one foot (30 cm) lengths of charred red cedar (Figure 6) with charcoal indicating use as a stone hearth.

![Figure 6. Charred red cedar and charcoal from Feature I.](image)

**Feature II** (Figure 7.2). A large rock resting in and on the subsoil with stone slabs set on edge formed a rectangular open-end hearth with charcoal within its structure.

**Feature III** (Figure 7.3). Two flat stone slabs, one smaller, rested at the terminus of the top soil and were used as anvils with chipping debris on and about them.

**Feature IV** (Figure 7.4). Directly off one end of an elongated flat stone anvil positioned at the loam junction was a concentration of quartz chips. Throughout the site, a number of flat surfaced rocks, large and small, with associated chipping debris revealed that they also had been used as percussion support platforms.

**Feature V** (Figure 7.5; Figure 8). Four inches below ground level a large boulder protruded from the subsoil with a wedge-shaped cleft through its center. In its soil- and rootlet-filled cavity I recovered two extremely well made Levanna points and one tapered stemmed point of maroon argillite.

The Levanna points, one of black felsite and the other of a semi-opaque yellow/red quartz, are very thin and were skillfully pressure-flaked to perfect symmetry exhibiting a high degree of knapping skill. The felsite point with excursive and recurve edges is 2 and 1/4 inches (5.72 cm) from tip to basal projections and 1 and 6/16 inches (3.50 cm) in basal width. The quartz schist point is 1 and 5/8 inches (4.13 cm) in length and 6/16 inches (0.95 cm) in basal width. I assume that the three projectile points were either hidden or misplaced and never utilized.

**Feature VI** (Figure 7.6; Figure 12). On the south side of a large, in-ground, rounded-top boulder, five feet (1.5 m) in circumference and surfacing at the top- and subsoil terminus, were six large broken-in-half stemmed knives and spearpoints, five inches (12.7 cm) below the junction of the loam horizon. Made of the reddish brown and tan mottled material, which predominated at section 6, they were recovered within a two foot (0.61 m) radius along with many waste flakes of the same material. The broken halves fit together to form six whole blades. Whether these large implements were broken and rejected in the final stages of reduction or ritually broken is conjecture.

**Feature VII** (Figure 7.7; Figure 9). Lying directly in contact and situated 5 and 1/2 inches (14.0 cm) in the topsoil lens, a lance head and a flat oval whetstone lying on top of it were recovered. The arrangement of these two artifacts hints of deliberate concealment.

**Feature VIII** (Figure 7.8; Figure 13). Two clusters, six inches (1.52 cm) apart, of pottery sherds were found at the base of the loam. Averaging 1/4 of an inch (6.4 mm) in thickness, the exterior surfaces exhibit cord-malleation and a medium brown coloration. The inner surfaces are also brown and tool-smoothed. No temper could be seen. The sherds were quite hard and durable. Forty-three body sherds comprised the entirety of this ceramic feature.
Figure 7 (one inch = 2.5 cm).

1. Feature I.

2. Feature II.

3. Feature III.

4. Feature IV.

5. Feature V.

6. Feature VI.

7. Feature VII.

8. Feature VIII.
Figure 8. Hathaway 6. 1,2: Levanna points; 3: stemmed point; 4-16: Levanna points, chiefly felsite; 17-20: Isosceles triangular points. 1-3: Feat. V; 4-20: isolated finds.

Figure 9. Hathaway 6, Feature VII. 1: oval stone with bifacial use polish, lying in contact with, 2: lance head.

Figure 10. Hathaway 6. 1,2: blade tips; 3,4: paint stones; 5-8: expanded-and T-base drills; 9: preform; 10: flake point; 11, 12: rolled-copper beads. Isolated finds.

Figure 11. Hathaway 6. 1-13: Late Archaic quartz Squibnocket triangular points. Isolated finds. One inch = 2.5 cm.
Figure 12. Hathaway 6. 1-6: spear heads or knives from Feature VI; 7: isolated find.

Figure 13. Hathaway 6. Pottery sherds, displaying cord-malleated exteriors.
The diagnostic Levanna points would indicate a Late Woodland occupation locus. Extensive use of stone anvils and large amounts of chippingdebitage would indicate a complete reduction locale for producing projectiles and edged tools. In comparing the enormous bulk of waste flakes to the relatively few recovered projectiles and edged tools, it would seem that the major portion of the finished products were transported off site and used elsewhere. The cord-malleated pottery sherds are probably associated with the Woodland triangles and date to the Late Woodland.

INTERPRETATION

Figure 14. Hathaway 6. 1, 2, 3: percussors or hammerstones; 4: basal end of pestle; 5: percussor with battering on projection; 6: leaf-type knife; 7: lanceolate biface; 8: gouge with concave bit; 9: ovate stemless knife. Isolated finds.
TABLE 1. ARTIFACT RECOVERIES FROM SECTION 6, HATHAWAY SITE.

<table>
<thead>
<tr>
<th>Category</th>
<th>Artifact Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projectile Points</td>
<td>Levanna triangles (felsite, argillite, quartz)</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Isosceles triangles (quartz, felsite)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Stemmed points (felsite, argillite, slate)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Squibnocket triangles (quartz)</td>
<td>13</td>
</tr>
<tr>
<td>Spear or Lance Heads</td>
<td>Stemmed (unknown mottled material)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Greene (unknown mottled material)</td>
<td>1</td>
</tr>
<tr>
<td>Knives</td>
<td>Weak stemmed (unknown mottled material)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Triangular, stemless, leaf (felsite, siltstone)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Blade tips (fragmentary) (unknown mottled material)</td>
<td>2</td>
</tr>
<tr>
<td>Drills</td>
<td>T and expanded base</td>
<td>4</td>
</tr>
<tr>
<td>Gouges</td>
<td>Woodland</td>
<td>1</td>
</tr>
<tr>
<td>Pestles</td>
<td>Broken</td>
<td>1</td>
</tr>
<tr>
<td>Hammerstones</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Boiling stones</td>
<td>(granite)</td>
<td>3</td>
</tr>
<tr>
<td>Whetstones</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Scrapers (quartz): side and end</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Retouched flakes</td>
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<td>5</td>
</tr>
<tr>
<td>Club prongs</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Paint Stones</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ceramic sherds</td>
<td>(organic tempered, cord malleated)</td>
<td>43</td>
</tr>
<tr>
<td>Copper beads, tubular, semi-rolled</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>140</td>
</tr>
</tbody>
</table>

Vertical distribution of artifacts varied very little at this undisturbed site with the exception that the Late Archaic triangular points were slightly lower in stratification. All recoveries were isolated finds, except in features as noted.

The mottled reddish-brown and tan blades (Figs. 9, 12) may be Mansion Inn blades (Watertown and Coburn varieties) and thus represent the Late Archaic (Dincauze 1968), and the thirteen quartz Squibnocket triangular points represent a slightly earlier Late Archaic time (Ritchie 1969). These Late Archaic artifacts may have been an isolated extension of the Late Archaic site on the opposite side of the cart road that was previously excavated and recorded (Otto 1988).

Shell refuse pits that normally give clues to food resources and diet preferences were totally absent. Also absent were fishing gear such as knobbed weights (plummets) and grooved net weights supporting the fact that other than edged tool fabrication, site activities were limited here.

The lower reaches of the Jones River and marsh are subjected to tidal in-flow and out-flow making the river water brackish and unpalatable. Two fresh water sources could have been a small brooklet entering the marsh one hundred yards (91.4 m) south of the site, and a now defunct spring three hundred feet (91.4 m) eastward.

COMMENTS

This relatively small and isolated campsite close to the marsh and river could have been a temporary activity area of short durations for a micro-group originating from larger camps across the river on the mainland. This riverside on the peninsula offers an excellent view of the marsh and
river system and a good exposure to the afternoon sun. However, open exposure to cold northwest prevailing winter winds would make this particular area uncomfortable for habitation during winter months. I would propose that it was sporadically occupied during warm seasons.

Levanna points, true armament for arrow shafts, are usually well made, as were the examples recovered. Flake scars often reveal a precise parallel pressure flaking technique.

Some of the numerous large bedded boulders, outcroppings, and rock ledges on the property appeared to have been focal points for some activity by the prehistoric occupants, as chipping debris, charcoal and an occasional artifact were found close by. Charcoal samples from the Woodland site were collected and saved for possible future carbon-dating.

HATHAWAY SITE, SECTION 5

Easterly on the Hathaway property, nine hundred feet (275 m) from the stone wall and marsh, we investigated a small clearing with a growth of young sumac. Sumac has an affinity for in-ground shell deposits, which prompted us to test the clearing. Shovel testing revealed a thin scattering of finely broken clam shell in the lower zone of the loam horizon. Four hundred and thirty-two square feet (132 sq.m) were excavated, the limits of this locus. Here we found six small shell refuse pits that were basin shaped depressions solidly packed with broken valves of the soft shell clam and blue mussel. At the bottom of each pit was grey ash indicating that they were formerly used as roasting ovens. Thirty-six edged artifacts, including one felsite eared-notched Brewerton in the top fill of one pit, and several crude quartz Squibnocket triangles were found at section 5. The location away from the present Jones River shoreline, and the age of the shell remains at this component must be related to the rising sea level or possibly to the prevailing northwest winter winds in some way and will require further study.

SUMMARY

The topography and soils at this property appear never to have been disturbed by former owners. In part because of this, the archaeological visibility of the small and isolated components was small. Those which have been excavated are diversified in location and in the chronological sequences of coastal adaptation patterns.

Records of archaeological studies at the Hathaway site (Otto 1988; this study) and a completed site inventory form have been deposited with the Massachusetts Historical Commission and the Massachusetts Archaeological Society, which have given the site numbers: MHC #19-PL-582 and MAS #M41-NW-114.

REFERENCES CITED

Dincauze, Dena F.

Otto, Bernard A.

Ritchie, William A.
A COPPER ARTIFACT FROM NEW BRAINTREE, MASSACHUSETTS

Maurice Robbins

As early as six or seven thousand years ago, the Indians of the Upper Great Lakes were mining and making artifacts of native copper. These people obtained much of their raw material from the upper Michigan Peninsula, particularly along the Ontario shore of Lake Superior. Many mining pits from prehistoric times have also been found on the Keneenum Peninsula and on Isle Royale in upper Michigan.

The prehistoric Indian miners, working with fire and hammerstones, broke up the rock surrounding the pure copper veins by heating and fracturing it with cold water and then prying out the nuggets of pure copper. This copper was then taken to village workshops nearby where it was pounded into the desired shapes. The process of smelting was unknown; all of their copper tools and other artifacts were fashioned by cold-hammering or forging and annealing (Drier 1961). In describing Late Archaic copper tools from the Lake Superior area, Martin, Quimby and Collier (1947:302) say:

"Pikes were gigantic awl-like forms in copper. One of these, for example, is forty inches long and weighs five pounds. With a sharp point at each end, it would have done considerable damage if used as a weapon."

Prehistoric artifacts of native copper from the Old Copper Culture (<3000 B.C.) up to the Owasco Period (1250 A.D.) have been found over a wide area - New York, Illinois, Kentucky and New England - in association with the typical stone tools of the Archaic and Woodland Periods (Bradley 1987; Martin et al. 1947:231-258; Quimby 1960:52-80; Willoughby 1935). Additional copper finds in Massachusetts have been reported in the Bulletin (Bradley et al. 1987; Howes 1942; Huntington 1957; Jeppson 1964; Little 1984; Revere 1942; Sherman 1959).

Early explorers of the New England coast, Verrazano at Rhode Island and Maine in 1524, Bartholomew Gosnold at the Elizabeth Islands off Massachusetts in 1602, and Martin Pring at Plymouth in 1603, all found natives wearing ornaments of copper or brass (Howe 1940a, 1940b, 1940c). Gosnold (Howe 1940b) reported "a plate of rich copper, in length a foot, in breadth half a foot, for a breastplate", ear pendants, collars and chains of rolled strung copper beads, arrow points and drinking cups. When asked where the copper came from, one of the Indians, "taking a piece of copper in his hand, made a hole with his finger in the ground, and withall, pointed to the maine from which they came." By 1602, much of it may have come from European traders.

While hunting Indian artifacts in a cultivated field in New Braintree, Massachusetts, Mr. Herbert L. Pollard, Jr., found the copper artifact shown in Figure 1. He and others have found at this site stone artifacts from all of the cultural periods known to be present in the area, including several Clovis-like fluted projectile points. Mr. Pollard brought the copper artifact to our attention and kindly allowed us to retain it for several weeks and to take from it a small sample of metal for analysis.

The artifact was made from a nugget of almost pure copper. It is a bit over 14 inches (36 cm) in length, oval in cross-section, and measures one and a quarter by three eighths of an inch (3 cm x 1 cm) at the butt end. The artifact shows pecking marks on all surfaces, with the exception of the butt end, which presents a smooth almost polished surface as if the tool had been cut off from a longer object. However, there are no saw marks or abrasions to give a clue as to how the end was cut off. The upper and lower surfaces at the butt end have been roughened for about four inches (10 cm) as if to provide for insertion in some sort of handle. At
the pointed end, the artifact has been bent to one side so that it is not now symmetrical. The method of manufacture by cold-hammering is suggested by surface irregularities and pecking marks, and the artifact could probably be assigned to the Old Copper Culture with a source near the Great Lakes without question.

However, there is a relatively new method of sourcing copper from spectrographic studies of its trace elements, which Bastian (1961) has reviewed for the purpose of identification of American and European sources. He reports considerable inconsistency, but in general, trace elements in American copper are most likely to be silver (also in European copper), iron, magnesium, silicon, arsenic, with nickel, lead, and rare cobalt. In European copper one would expect to find tin, zinc, lead (also in American copper) and bismuth. A good deal of variation is possible.

We are greatly indebted to the Leach and Garner Company of Attleboro for the following optical spectrographic analysis made in 1985 of a sample of the metal taken from the New Braintree artifact:

- Copper: almost pure
- Cobalt: trace
- Lead: small trace

The presence of lead and absence of traces of silver cannot prove Europe or America as the source for this material. The absence of tin, zinc and bismuth suggests an American source. The presence of cobalt, which is very rare, but American (Bastian 1961), suggests an American origin of as yet unknown location for this copper.

Careful trace element studies of copper artifacts, of copper sources and of soils are needed before we can draw firm conclusions from the present data.

REFERENCES CITED

Bastian, Tyler
1961 Trace Element and Metallographic Studies of Prehistoric Copper Artifacts in North Ameri-

Bradley, James W.

Bradley, James W., and S. Terry Childs

Drier, Roy W.

Howe, Henry F.

Howes, William J.

Huntington, E. G.

Jeppson, Britta D.

Little, Elizabeth A.

Martin, Paul S., George I. Quimby and Donald Collier

Quimby, George I.

Revere Copper and Brass, Inc.

Sherman, Charles F.

Willoughby, Charles C.

IN MEMORIAM: MAURICE ROBBINS 1899-1990
Thomas Lux

Maurice Robbins, 91, of 23 Steere Street, Attleboro, dean of New England archaeologists, died on June 13, 1990. Born in Mansfield, Mass., April 15, 1899, he was the son of George and Jenny (Robbins) Giles.

An electrical engineer with the New England Power Company for 42 years, Maurice Robbins’ real passion from 1925 on was archaeology and history. At that time, Doc, as he was later universally called, began working with Dr. Warren King Moorehead, who was assisting Charles C. Willoughby, then writing Antiquities of the New England Indians.

A graduate of Wentworth Technical Institute, Boston, Doc began taking courses at Brown University in archaeology and geology. He also completed correspondence courses with the University of Chicago, and in 1947 received his doctorate from McKinley-Roosevelt Institute, Chicago.

In company with Ben Smith, Doug Byers and Fred Johnson, among others, Dr. Robbins in 1939 founded the Massachusetts Archaeological Society,
and was elected its first president. He also served as editor of the Bulletin of the Massachusetts Archaeological Society between 1951 and 1956. In 1941 the Society moved into the fifth floor of the Bronson Building, then owned by Winn Barden, secretary-treasurer of the MAS. This was the start of the Bronson Museum, of which Doc became the first director, serving from 1944-1983, when he was elected director-emeritus.

Doc excavated the Faulkner Spring Site and the Titicut Site with the Moorehead Chapter, breaking away with other members in 1950 to form the local Cohannet Chapter. Some of those members became Doc's dig crew at the Wapanucket Site on Lake Assawompsett, Lakeville, Mass. It was here that Doc pioneered the environmental approach to archaeology and the collection of paleobotanical specimens.


Through the Society Dr. Robbins helped sponsor legislation that created the Massachusetts Historical Commission in 1969 and served as one of the original commissioners from 1969 to 1972. He was instrumental in the establishment of the Office of State Archaeologist and was appointed the first State Archaeologist 1972-1979. In 1986 he was honored by the Commonwealth of Massachusetts, the Congress of the United States and the City of Attleboro for his archaeological leadership. In 1989 he received a Massachusetts Historical Commission Lifetime Achievement Award.

From 1939 through 1990, Doc authored some 50 articles, reports and books, the majority published by the MAS. He remained mentally alert to the day of his death, holding a tremendous store of experience and knowledge in his memory. He was an irreplaceable resource for the Society to the very end.

**BIBLIOGRAPHY OF MAURICE ROBBINS**

1939 To the Members of the Massachusetts Archaeological Society. BMAS 1(1):2-3.
1941 Two Habitation Floors at the Faulkner Spring Site. Contributions of the Massachusetts Archaeological Society, 1.
1944 Comments on Interpreting the Past. BMAS 5:40-41.
1945 (with Ripley Bullen) An Indian Burial at South Dartmouth, Massachusetts. BMAS 6:44-45.
1946 It Pays to be Careful. BMAS 7:42-43.
1949 An Indian Burial at Warwick, Rhode Island. BMAS 11:1.
1950 Historical Approach to Titicut. BMAS 11:48-73.
1953 (editor) Museum Number. BMAS 14:89-103.
1955 (with Arthur and Arnold Staples) Sweet's Knoll. BMAS 16:61-76.
1956 Some Evidence of the Use of Red Ochre into Historic Times. BMAS 17:18.
1956 Indians of the Old Colony: Their Relation With and their Contributions To the Settlement of the
1959 Wapanucket #6, An Archaic Village in Middleborough, Massachusetts, Cohaenott Chapter, Massachusetts Archaeological Society, Attleboro.

1959 Some Indian Burials from Southeastern Massachusetts, part 1. BMAS 20:17-32.

1959 Some Indian Burials from Southeastern Massachusetts, part 2. BMAS 20:61-67.


1967 The Titicut Site. BMAS 28:33-76.


1968 A Brass Kettle Recovery at Corn Hill, Cape Cod. BMAS 29:62-68.


1969 The Indian History of Attleboro. Attleboro Historical Commission, Attleboro.


1976 A Unique Artifact from Cape Cod. BMAS 37:45-47.


1) The Rescue of Tisquantum Along the Nemasket-Plimoth Path.

2) The Path to Pokanoket: Winslow and Hopkins Visit the Great Chief.

3) The Sandwich Path: Church Searches for Awashonks.

4) The Monponset Path: The Capture and Death of Wamsutta.


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