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Publisher 
THE MASSACHUSETTS ARCHAEOLOGICAL SOCIETY, Inc. 
BRONSON MUSEUM — 8 NORTH MAIN STREET, ATTLEBORO, MASSACHUSETTS — 02703 
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MASSACHUSETTS ARCHAEOLOGICAL SOCIETY BULLETIN
Published in two numbers of one volume each year, beginning in April.
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Address all requests concerning membership to the Membership Secretary; all orders for back issues of the Bulletin to the Museum; mail Society dues to the Financial Secretary.

BRONSON MUSEUM
8 North Main Street
Attleboro, Massachusetts, 02703
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The Museum has extensive exhibits of stone implements, obtained for the most part from the Massachusetts area. They are arranged in culture periods identified in the Northeast, and cover a time extension of some 10,000 years.

The Museum is located on the fifth floor of the 8 North Main Street Building. No regular schedule is maintained and therefore it is wise to call before visiting.
- IN MEMORIAM -

WILLIAM BIGGAR BRIERLY (1912-1983)

John J. Hartwell

On January 3, 1983, the Massachusetts Archaeological Society lost a past president, long-time member and dedicated supporter.

William Biggar Brierly was born in Millbury, Massachusetts in 1912. Graduating from Millbury High School in 1930, he entered Clark University where he received his B.S. in 1934. Also from Clark he earned an M.S. in Geography and Earth Sciences (1936) and a Doctorate in Geography (1942).

From 1936-38 he was a Fellow in Hygiene and Preventive Medicine at George Washington University in Washington, D.C., where he conducted research in geo-medicine. His studies of geographical influences on the spread of disease were seminal.

In 1942 he began working for the Office of Strategic Services of the Department of Defense. Trained as an agent, he later became a research analyst, providing background data for the United States military decisions in World War II. After the war he became Chief of Western European Map Research for the Defense Department and participated in NATO conferences on re-drawing the political map of Europe. From 1956 until his retirement he was Chief of the Military Applications Branch, Earth Sciences Division, for Natick Laboratories, in Natick, Massachusetts. There he was engaged primarily in investigations on the application of environmental data to military problems. Most of his research was under Defense Department auspices, and restricted to the highest security classifications.

This bare outline, suggestive as it is of a life rich in experience and significant accomplishments, falls far short of even hinting at the scope and contributions of Bill Brierly's life. Both professionally and avocationally he made his impact upon a startling array of disciplines.

He became interested in the Arctic during his undergraduate days at Clark. Over the ensuing decades he participated in several Polar and Arctic explorations in association with such men as Sir Hubert Wilkins, Admiral Donald MacMillan, and Vilhjalmar Steffanson. He lived for long periods among the Eskimos, collecting botanical and geological specimens and studying the interrelationships between man and his environment. During an expedition to the north coast of Labrador, Admiral MacMillan named newly-discovered Brierly Island in his honor.

His interest in botany found application in his researches in geo-medicine and he wrote several papers on medicinal plants. He also worked closely with pioneer Harvard paleobotanist Elso Barghoorn, conducting ground-breaking research in that field. In New Hampshire he established a 40-acre arboretum specializing in hybrid oaks.

During his lifetime, Bill Brierly travelled extensively on every continent, visiting literally scores of countries. Everywhere he went a sharp eye and keenly discriminating judgement filled a trained memory with a myriad of facts and interpretations, which were readily available for synthesis into whatever projects he was currently working on.

Besides all this, he was an active member and occasionally an officer in the Institute of Environmental Sciences, the Association of American Geographers, the American Association for the Advancement of Science, and the Scientific Research Society of America.

During his retirement much of his time was taken up by his interest in historical research, especially industrial history. His extensive history of the mills of his native
Millbury was just in the final stages of completion at the time of his death and arrangements are being made for its publication. He was an active member of several historical societies, and a Director of the Bay State Historic League.

His interest in archaeology began early, and he was a long-standing supporter of scientific archaeology. He was a Trustee of the Massachusetts Archaeological Society for several years and served as President in the early 1960's. He participated in the salvage dig at Mansion Inn in Wayland and in the important excavations at the Dolly Bond and Horne Hill steatite quarries in Millbury. During his terms as Trustee and President he visited virtually every dig in progress anywhere in Massachusetts, offering encouragement, and sharing his insights and expertise.

Bill Brierly's bibliography, in a dozen different disciplines, numbers in the hundreds of titles. His work is noted for painstaking research and careful evaluation, and is enriched by a keen interdisciplinary insight.

Many of us came to know Bill Brierly in his later years. Although not in the best of health, he remained an active and loyal member of the W. Elmer Ekblaw Chapter, and rarely missed a meeting. What we will remember most is his unfailing kindness and generosity in sharing with us the fruits of his vast experience and insight. Many of us have benefited freely from the encouragement, advice and knowledge of Bill Brierly.

The legacy we each leave behind can be measured in different ways: in deeds and objective accomplishments, and more subjectively, in the ways we are remembered by those who knew us. Bill Brierly was a gentle gentleman, a man of kindness, of vast experience and sound accomplishment, and everyone who came to know him was enriched by all these qualities.

Besides his wife, Vivian Emilie (Ichla), William Brierly leaves four sons, William B. Jr., James Daniel, Christopher Jon, David John, and one daughter, Emilie Karen.

Figure 9. William Biggar Brierly.
THE CEDAR DELL POND SITE: 19BR218

Norman Vardney Mackey III, Clark Spencer Larsen, Mary Shotwell, and Alan Jackson

INTRODUCTION

The Cedar Dell Pond Site (19BR218) is located in North Dartmouth, Massachusetts, on the southeastern periphery of the glacial pond after which it is named, 50 meters from the eastern shore. The site's existence first became known during the landscaping of the Southeastern Massachusetts University campus in the early 1960's. At that time, a swath cut by bulldozer from the campus to the pond exposed artifactual materials in the vicinity of the eastern shore. Unfortunately, these materials were neither identified nor saved.

Initial excavations on the Cedar Dell Pond Site were begun during the summer of 1977 by Debra Frank (University of Massachusetts, Amherst) and were continued in 1978 and 1979 by Kathleen J. Bradgon (Brown University). Both directors were assisted by a small group of Southeastern Massachusetts University students. Though of a limited, preliminary nature, their test excavations revealed some artifactual materials: scrapers, projectile points and projectile point fragments, a knife tip, one hammerstone, chipping debris and cores. In addition, several superimposed fire hearths were uncovered and subsequently examined. Artifacts recovered which were temporally diagnostic suggested habitation during the Middle and Late Archaic periods, but the limited nature of the archaeological investigation precluded accurate assessment of cultural and temporal associations.

The present report discusses archaeological investigations at the Cedar Dell Pond Site under the direction of Clark Spencer Larsen (Southeastern Massachusetts University). The finds of Frank and Bradgon will be referred to in an overall context of analysis and interpretation. The text is partly comprised of sections concerning archaeological methods, features, stratigraphy, cultural remains, interpretations and conclusions. First, however, it is necessary to present a brief sketch of the natural history of Cedar Dell Pond and the land which closely surrounds it.

THE NATURAL HISTORY OF THE CEDAR DELL POND SITE

Like most areas of New England, southeastern Massachusetts is dotted by naturally occurring ponds and lakes, including Long, Assawompsett, and Great Quittacas ponds in the Middleboro-Lakeville vicinity, White Island and Great Herring ponds located close to Buzzards Bay, Silver Lake and Cedar Dell Pond. These freshwater bodies, though of differing sizes, were all formed as a result of glacial recession during the late Pleistocene. A comprehensive understanding of formative manifestations associated with this recession can give us reliable clues as to the origin of Cedar Dell Pond.

B.F. Thomson has prepared an outline of the different processes through which the lakes and ponds of New England were formed (Thomson 1977:68-71). The first of these processes defines what Thomson calls "the 'take' part of the glacier's action". As the great ice mass moved over the land, it scooped out numerous shallow concavities of varying sizes. Through time, the depressions retained increasing amounts of runoff, becoming large and small lakes.

Other ponds and lakes, usually smaller in size, were formed as a result of the "put" or depositional part of the glacier's action. Two processes of this type involved the extreme compaction of clay minerals either beneath the glacier itself or at the bottoms of ice-margin lakes. In the former case, compaction which occurred in hummocks and hollows created impervious basins; in the latter, the water's compaction made lakebottom depressions impervious to runoff long after the original ice-margin lakes had disappeared.
Still other small basins were formed when stagnating chunks of ice were buried in either morainal debris or the sediments of an ice-margin lake. When the ice melted, overlying debris caved in, creating a steep-sided hollow or kettlehole. If the bottom was comprised of relatively impermeable sediments, runoff would slowly have been retained. Water retention would also have been accomplished if the basin's bottom was deep enough to reach underground water.

Of the processes discussed, Cedar Dell Pond seems to owe its existence to the phenomena which produced steep cup-or-kettle-shaped basins. Several characteristics of the pond have led to this conclusion. First, the periphery of the pond is undoubtedly steep-sided, a result of slumping which occurred when stagnating ice melted beneath morainal debris. Second, surrounding soils are sandy in composition—a characteristic trait of morainal deposits. Third, inlet channels are curiously absent, indicating either the retention of runoff or an underground component as the cause of water accumulation.

**EXTANT FLORA AND FAUNA**

The Cedar Dell Pond Site is located in a secondary forest composed largely of Eastern White Pine (*Pinus strobus*). Specimens of this type range from 50 to 75 years of age. Other species include White Oak (*Quercus alba*), Black Oak (*Quercus velutina*), American Holly (*Ilex opaca*) and Red Maple (*Acer rubrum*). Wildflowers associated with the area include the Moccasin Flower (*Cypripedium acaule*) and the saprophytic Indian Pipe (*Monotropa uniflora*).

Chambers (1979:111-208) has described the mammalian population of the Northeast and he cites those species which range into the woodlands of southeastern Massachusetts, including white-tailed deer (*Odocoileus virginianus*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), weasel (*Mustela frenata, Mustela erminea*), skunk (*Mephitis mephitis*), fox (*Vulpes vulpes, Urocyon cinereo argenteus*), woodchuck (*Marmota monax*), squirrel (*Sciurus carolinensis, Tamiasciurus hudsonicus*) and muskrat (*Ondatra zibethicus*). He has also described the reptiles and amphibians which inhabit woodland-pond environments of southeastern Massachusetts (Chambers 1979:11-110). He listed nine species of snake, all of which were nonvenomous. These include the Northern Black Racer (*Coluber constrictor*), the Eastern Garter Snake (*Thamnophis sirtalis*) and the Eastern Ribbon Snake (*Thamnophis sauritus*). Seven species of turtles have been observed, including the Snapping Turtle (*Chelydra serpentina*), the Spotted Turtle (*Clemmys guttata*), and the Eastern Box Turtle (*Terrapene carolina*). In addition, Chambers lists 10 species of frogs and toads, five species of salamanders and one species of skink.

Finally, numerous species of birds (Forbush 1925; Griscom and Snyder 1955) and fish (Breder 1948; Jordan et al. 1930) have been described from the area, most of which were available to local prehistoric populations as part of their subsistence economy.

**ARCHAEOLOGICAL METHODS**

The preliminary investigations by Frank and subsequent work by Bradgon involved the excavation of several linear test trenches placed according to predetermined soil phosphate levels (Fig. 10). The assumption of the researchers was that higher phosphate levels indicated a higher incidence of human activity in areas of known habitation. The excavations of 1981, however, were not concerned with the continuation of this procedure. Instead, since the original trenches were rather widely spaced, it was decided to expand one of them in order to understand better the association of artifacts and features in a specific area. This expansion included re-excavation of the original test trench. Figure 10 shows the chosen test trench and notes the area of later expansion.

Prior to actual excavation, it was often necessary to remove trees from the site area. This was accomplished by using small hand-held saws. Rakes were used to remove
Figure 10. Map of Cedar Dell Pond Site showing areas of excavation.
the sometimes thick accumulations of leaves from the humus or surface layer. When these
obstacles were removed, an excavation area subdivided into one by one meter units was
measured and marked off parallel to the original test trench. This gridding procedure
continued until the final configuration evident in Figure 10 was achieved. In total,
eighteen units were excavated.

Excavation entailed methods which were simple and practical. Dirt was removed in
arbitrary 10 cm. levels, and, for two reasons, flat-based trowels were used at all times.
First, evidence of human habitation existed only to shallow depths, sterile soil being
encountered at roughly 30 cm. below ground surface. Second, historic-period plowing
had mixed artifactual materials throughout all levels above sterile soil, including the
humus. Shovels were used only to back-fill the site after excavations were completed.

All cultural materials found were placed in plastic bags denoting their discoverer,
type, and the general depth at which they were recovered. Exact provenience was recorded
for artifacts and features. Charcoal associated with a hearth was collected and submitted
for radio-carbon assay (see below). All recovered materials were removed to the Laboratory
of Biological Anthropology and Archaeology, Southeastern Massachusetts University for
processing and analysis. Furthermore, naturally occurring rock formations at the 30 cm.
level were measured and drawn to scale. Collectively, these procedures prevented the
loss of materials and facilitated the processes of cataloguing, storage and interpretation.

STRATIGRAPHY

Three distinguishable soil types were encountered at the Cedar Dell Pond Site. The
first of these was a thick, organic humus which extended from the surface to a depth of
approximately 5 cm. The second stratum was orange-brown in color and reached a depth of
roughly 15 cm. The third and final stratum was of a light orange color and extended
to the bottom of our excavation at the 30-cm. level. These strata do not appear to have
been directly associated with prehistoric activity; rather, it is likely that they corres­
pond to a developed New England soil column. Because the site area was disturbed in
historic times, the present profile is probably attributable to the process of soil re­

FEATURES

To date, several types of features have been located during excavations at the
Cedar Dell Pond Site. The first type, small stonelined hearths, contained varying amounts
of charcoal, oxidized soil and burnt rock. Three such features were discovered in units
32S50W, 34S48W and 36S54W. The tops of two of these features (32S50W, 34S48W) were en­
countered at an approximate depth of 13 cm and extended vertically to a depth of roughly
25 cm. The third hearth (36S54W) was first noted at an approximate depth of 13 cm and
extended downward to a depth of roughly 30 cm.

Burned earth and rock lacking clear structure were classified as a separate type
of hearth feature. Overall, two such features were discovered. The most extensive of
these was first noted in unit 18S0E at an approximate depth of 15 cm and later found to
extend horizontally into units 17S0E, 19S0E and 19S1E. The entire feature extended down­
ward to a depth of roughly 30 cm and covered a non-continuous area of about four meters
square. One charcoal sample was taken from this feature; this sample produced a date of
2590 ± 80 radiocarbon years BP, or 640 B.C. (I-12,210). A smaller feature of this type
was discovered in unit 32S54W at an approximate depth of 8 cm, covering an area about one
meter square.

Of the remaining features, small patches of burned earth, less than 10 cm square,
were noted in unit 24S0E at a depth of approximately 13 cm. A small concentration of
ochre was seen in unit 32S50W at a depth of roughly 13 cm, and very small ash concentra­
tions, less than 10 cm square, were discovered in units 34S48W and 32S50W at a depth of
15 cm, and in Unit 20S0E at a depth of approximately 30 cm.

**CHIPPED STONE ARTIFACTS**

**BIFACES**

Two biface fragments were recovered. One is ovoid, has a maximum length of 6.1 cm, a maximum width of 4.2 cm, and a maximum thickness of 1.5 cm. It is made of dark grey felsite (Fig. 11f). The artifact was found in unit 21S1E at a depth of 21 cm.

The second fragment is considerably more incomplete than the first, but it indicates a longer, narrower biface. It is made of black chalcedony(?), has a maximum length of 2.15 cm, a maximum width of 2.9 cm and a maximum thickness of 1.45 cm (Fig. 11g). The artifact was found in unit 16S0E at a depth of 13 cm.

---

**Figure 11.** Several artifacts recovered from the Cedar Dell Pond Site. a, projectile point 1-138; b, projectile point base(?) 1-166; c, projectile point 1-59; d, projectile point 1-8; e, knife blade 1-142; f, biface 1-8; g, biface tip 1-42; h, projectile point 1-55; i, projectile point base 1-127; j, projectile point base 1-146; k, projectile point base 1-115.
TABLE 4
Attributes of Projectile Points from Cedar Dell Pond Site
(Values in parentheses are estimates for broken artifacts. Measurements in centimeters.)

<table>
<thead>
<tr>
<th>SPECIMEN NUMBER</th>
<th>LENGTH MAXIMUM</th>
<th>WIDTH MAXIMUM</th>
<th>THICKNESS</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>4.3</td>
<td>1.7</td>
<td>1.2</td>
<td>Felsite(?)</td>
</tr>
<tr>
<td>1-55</td>
<td>(3.65)</td>
<td>(3.6)</td>
<td>0.65</td>
<td>Quartz</td>
</tr>
<tr>
<td>1-59</td>
<td>(4.5)</td>
<td>(2.0)</td>
<td>0.5</td>
<td>Felsite</td>
</tr>
<tr>
<td>1-138</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Felsite</td>
</tr>
</tbody>
</table>

BLADES

One bifacially worked knife fragment was recovered in unit 28S30W at a depth of approximately 2 cm (Fig. 11e). It is made of argillite, has a maximum length of 4.68 cm, a maximum width of 2.4 cm and a maximum thickness of 0.5 cm.

PROJECTILE POINTS

Four projectile points (Table 4, Fig. 11) and four projectile point fragments (Fig 11) were recovered from the excavations. The first point, 2d, appears to conform to the parallel-stemmed type; 2c, which bears a flake scar that may denote the knapper's slip, clearly falls into the bifurcate classification; 2h, though broken, is easily identifiable as a Levanna specimen; 2a is untypable.

The fragments all appear to be point bases and will be treated separately. The first base, 2l, is of dark grey felsite and clearly conforms to the Neville type (Dincauze 1976:26-29); 2j, which is made of green shale, may also conform to the Neville classification; 2k, which is made of red felsite(?) is easily identifiable as a Stark type base (Dincauze 1976:29-37). The last base, 2b, may represent a Neville or Stark variant, but could also be a midsection fragment. It is made of light brown felsite(?).

SCRAPERS

Approximately thirty scrapers were recovered from the excavations, several of which were stemmed specimens. All specimens recovered were made of quartz.

OTHER ARTIFACTS

A possible grooved axe or chopper was recovered from unit 34S48W at a depth of 15 cm. The artifact is made of sandstone(?), has a maximum length of 13.3 cm, a maximum width of 7.5 cm and a maximum thickness of 1.3 cm. Also, a felsite(?) drill tip was recovered from unit 16S0E in the second excavation level.

LITHIC DEBITAGE

Debitage from prehistoric stone tool manufacture was found in abundance at the Cedar Dell Pond Site. This consisted of flakes and cores of several different materials (Table 5). Quantitative analysis of recovered debitage has revealed that quartz and felsite were by far the most frequently utilized materials at the site (Table 5, Table 6). Dark grey felsite from the site appears to have the Lynn volcanics as its source (Jeffrey Boudreau, personal communication).

Despite the disturbed nature of the site, it is necessary to present general data pertaining to both horizontal and vertical concentrations of lithic debitage. Concerning the former, it is clear that the highest overall concentrations were associated with the hearth features described previously. Concerning the latter, Table 6 shows overall vertical distribution figures for all debitage recovered.
TABLE 5
Total Number of Flakes and Cores According to Material

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz</td>
<td>1208</td>
</tr>
<tr>
<td>Felsite</td>
<td>591</td>
</tr>
<tr>
<td>Shale and Argillite</td>
<td>34</td>
</tr>
<tr>
<td>Chalcedony(?)</td>
<td>9</td>
</tr>
<tr>
<td>Conglomerate</td>
<td>6</td>
</tr>
<tr>
<td>Granite(?)</td>
<td>4</td>
</tr>
<tr>
<td>Chert</td>
<td>2</td>
</tr>
<tr>
<td>Quartzite</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1858</strong></td>
</tr>
</tbody>
</table>

TABLE 6
Vertical Distribution Figures for Quartz Debitage, Felsite Debitage and Total Debitage

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>0-10 cm</th>
<th>10-20 cm</th>
<th>20-30 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz</td>
<td>27%</td>
<td>48%</td>
<td>24%</td>
</tr>
<tr>
<td>Felsite</td>
<td>9%</td>
<td>37%</td>
<td>54%</td>
</tr>
<tr>
<td>All</td>
<td>22%</td>
<td>45%</td>
<td>33%</td>
</tr>
</tbody>
</table>

ECOFACTS

Ecofacts recovered included three isolated shell fragments and five acorn cupule fragments. Though the shell is probably associated with prehistoric activity, it is certain that the cupule fragments are not. This conclusion is based on the fact that discarded vegetal materials cannot long weather the relatively high acidity of pine forest soils.

MISCELLANEOUS ARTIFACTS

Other artifacts recovered from the Cedar Dell Pond Site include one modern bullet, glass and metal fragments, and modern ceramic sherds. These materials are obviously associated with historic period activity at the site.

INTERPRETATIONS

Artifacts from the Cedar Dell Pond Site which are temporally diagnostic suggest aboriginal habitation during several cultural periods. The incomplete parallel-stemmed point (1-59) may be associated with the terminal Paleoindian-Early Archaic period, circa 9000-8000 B.C., or it may in fact represent a Middle Woodland Jack's Reef Pentagonal
point. The bifurcated point (1-4) is diagnostic of the Early Archaic period, circa 8000-6000 B.C. (Snow 1980). The Neville and Stark point bases (1-127, 1-146, 1-115) and the possible Neville Variant base (1-166) are indicators of the Middle Archaic period, circa 6000-4000 B.C. Finally, the Levanna point (1-55) is diagnostic of the Middle or Late Woodland periods. Presently, the time period represented by the flaked argillite knife (1-142) is uncertain; however, due to its relatively broad blade, it was most likely manufactured during either the Late Archaic or the Early Woodland period.

As we have mentioned previously, the charcoal sample preserved for radiocarbon assay yielded a date of 640 B.C. ± 80. This date also suggests habitation at the pond during either Late Archaic or Early Woodland times. In the near future, radiocarbon dates for previously untested hearth features could further add to our knowledge of the temporal aspect of the site's prehistoric occupation.

The functional aspect of the site is difficult to determine due to limited excavation and previous mechanical disturbance. However, several important characteristics of the site enable us to make the preliminary assumption that it was used during certain periods as a seasonal camp or work station. First, the artifactual materials recovered included a high percentage of lithic debitage, along with projectile points and scrapers found in association with specific hearths. Second, the hearth features occur at slightly different depths and in some cases occur close together or overlap. Finally, the overall occupation level of the site is relatively shallow.

CONCLUSIONS

The Cedar Dell Pond Site is a multicomponent site which encompasses several cultural periods in the southern New England sequence. Due to its long-term affiliation, continued intensive investigation of the site would no doubt increase our understanding of prehistoric adaption in the southern New England region.

ACKNOWLEDGEMENTS

First and foremost, we would like to acknowledge the generous support of the Southeastern Massachusetts University Foundation, which financed all necessary equipment and the radiocarbon assay. Their assistance is greatly appreciated. We would also like to thank Dr. Maurice Robbins and other members of the Bronson Museum staff for their helpful analysis of several artifacts from the Cedar Dell Pond Site. We acknowledge our debt to Debra P. Frank and Kathleen J. Dragdon for all the pertinent information recorded by them and preserved for our use. Jim Feely of the Audio/Visual Department, Southeastern Massachusetts University, prepared the site map and Janet P. Mackie typed the final manuscript. Finally, we thank the Editor of the Bulletin for her helpful suggestions for improvement of the report.

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SOME END PICKS FROM THE NORTH WILBRAHAM STEATITE QUARRY

John P. Pretola

W.S. Fowler first described end picks in his studies of steatite quarry tools. Among these, four end pick categories were described as rough pointed stones with one end made into a point and the other end rounded to fit the hand or hafted like an axe (Fowler 1947:150). Fowler noted specimens weighing from an ounce to three to five pounds and identified basalt as the favored raw material. In this paper I shall focus on a description of the larger-sized end picks represented by 19 specimens from the Springfield Science Museum's North Wilbraham quarry collection. For this study, only those specimens with a clear North Wilbraham provenience were chosen. The assemblage was obtained by surface collection over the years, and by excavation conducted by A.L. Dakin in 1903 and W.S. Fowler in the 1940's. The assemblage appears similar to those reported from other quarry sites in southern New England but is larger and presents a more complete series (Bullen 1940, Dunn 1945, Fowler 1943, 1966, 1967, Neshko 1970, Otis 1947).

END PICK DESCRIPTION

In general, these tools are large, heavy picks that are notched for hafting by chipping. Most are prismatic in cross section (73%) with others made from blocky cobbles (27%). In almost all cases the tools taper to a polished conical point that is the result of percussion flaking, then grinding and polishing. Grooves such as those common to axes and adzes are absent in most cases (95%). The raw material in a majority of cases is columnar basalt (95%) from talus slopes of the basalt ridges that trend north-south through the Connecticut Valley. Prismatic talus fragments incorporating two columnar facets seem to have been the preferred material. The shapes of the objects and their centers of gravity suggest hafting similar to an axe. Microwear analysis of several specimens indicates striations both diagonal and parallel to the longitudinal axis. (See Figures 12, 13 and 14.)

MORPHOLOGY

Morphological characteristics for individual specimens are presented in Table 7. Mean dimensions are:

- Mean length: 19.1 cm
- Mean thickness: 5.3 cm
- Mean width: 7.1 cm
- Mean weight: 1040.2 g

FUNCTION

Holmes (1919:228-232) described the method of quarrying steatite bowls from bedrock outcroppings: a circular groove was cut outlining the mass and then cutting continued around it to the appropriate depth. The resulting nucleus was detached by undercutting it until it could be broken off. At this point, before removal the nucleus resembled a mushroom.
<table>
<thead>
<tr>
<th>SSM NUMBER</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>THICKNESS</th>
<th>WEIGHT</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 31722</td>
<td>19.6 cm</td>
<td>7.7 cm</td>
<td>3.0 cm</td>
<td>610 g</td>
<td>Flat basalt fragment, not as large or prism-shaped, but notched for hafting and ground to a point</td>
</tr>
<tr>
<td>2) 31721</td>
<td>22.6</td>
<td>7.0</td>
<td>5.5</td>
<td>1159.7</td>
<td>Chipped notches, prismatic basalt</td>
</tr>
<tr>
<td>3) B281.2a</td>
<td>21.5</td>
<td>7.5</td>
<td>5.6</td>
<td>1224.1</td>
<td>Chipped notches, prismatic basalt, edge chipped from use</td>
</tr>
<tr>
<td>4) 31727</td>
<td>18.0</td>
<td>8.2</td>
<td>5.0</td>
<td>904.6</td>
<td>Only one chipped notch, prismatic basalt, problematic discard</td>
</tr>
<tr>
<td>5) 30444.2</td>
<td>16.0</td>
<td>6.5</td>
<td>5.6</td>
<td>998.8</td>
<td>Chipped notches, thick rectangular-shaped basalt cobble</td>
</tr>
<tr>
<td>6) B281.2b</td>
<td>21.5</td>
<td>5.0</td>
<td>5.4</td>
<td>703.3</td>
<td>Chipped notches, prismatic basalt, has a long groove produced by chipping on back side</td>
</tr>
<tr>
<td>7) B281.2c</td>
<td>20.5</td>
<td>6.7</td>
<td>5.7</td>
<td>1566.9</td>
<td>Large chipped notches, prismatic basalt, less of a poll than other specimens</td>
</tr>
<tr>
<td>8) 31719</td>
<td>24.0</td>
<td>6.9</td>
<td>5.3</td>
<td>1442.6</td>
<td>Chipped notches, rectangular basalt material</td>
</tr>
<tr>
<td>9) 31297</td>
<td>28.0</td>
<td>8.3</td>
<td>6.1</td>
<td>2027.7</td>
<td>Chipped notches, prismatic basalt, dendritic pattern on one facet appears to have developed before chipping and grinding took place</td>
</tr>
<tr>
<td>10) 30980</td>
<td>23.0</td>
<td>8.0</td>
<td>6.0</td>
<td>1528.5</td>
<td>Chipped notches, prismatic basalt, tip shows diagonal and vertical striations.</td>
</tr>
<tr>
<td>SSM Number</td>
<td>Length</td>
<td>Width</td>
<td>Thickness</td>
<td>Weight</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td>-------</td>
<td>-----------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>11) FI025</td>
<td>15.0 cm</td>
<td>6.5 cm</td>
<td>4.4 cm</td>
<td>778.6 g</td>
<td>Chipped notches, with some pecking and grinding—appears to be a modified axe, rectangular basalt</td>
</tr>
<tr>
<td>12) 31709</td>
<td>14.5 cm</td>
<td>5.7 cm</td>
<td>3.8 cm</td>
<td>361.3</td>
<td>Chipped notches, prismatic basalt small pick</td>
</tr>
<tr>
<td>13) 31675</td>
<td>19.6 cm</td>
<td>8.7 cm</td>
<td>6.1 cm</td>
<td>1326.9</td>
<td>Chipped notches, prismatic basalt, tip either unfinished or broken, poll broken at top of notch, possible discard</td>
</tr>
<tr>
<td>14) 31674</td>
<td>18.0 cm</td>
<td>7.7 cm</td>
<td>5.5 cm</td>
<td>1193.7</td>
<td>Chipped notches, prismatic basalt, tip chipped, no evidence of grinding at tip</td>
</tr>
<tr>
<td>15) 31784</td>
<td>14.0 cm</td>
<td>5.0 cm</td>
<td>3.6 cm</td>
<td>374.3</td>
<td>Chipped notches, prismatic basalt, small tool with broken tip</td>
</tr>
<tr>
<td>16) F1017</td>
<td>13.8 cm</td>
<td>5.3 cm</td>
<td>5.5 cm</td>
<td>413.6</td>
<td>Chipped notches, prismatic basalt, small tool</td>
</tr>
<tr>
<td>17) 31297.1</td>
<td>19.5 cm</td>
<td>6.7 cm</td>
<td>5.4 cm</td>
<td>595.3</td>
<td>Chipped notches, prismatic basalt, tip is triangular in section and not conical as other specimens</td>
</tr>
<tr>
<td>18) 31737</td>
<td>15.0 cm</td>
<td>8.0 cm</td>
<td>6.6 cm</td>
<td>1447.5</td>
<td>Basalt cobble, crudely shaped, heavy, possibly unfinished</td>
</tr>
<tr>
<td>19) 31685</td>
<td>18.5 cm</td>
<td>9.0 cm</td>
<td>9.0 cm</td>
<td>1105.5</td>
<td>Chipped notches, granite cobble, bifacially flaked, no evidence of pecking or grinding.</td>
</tr>
</tbody>
</table>
Figure 12. Larger end picks. Left to right, SSM specimen numbers: 31721, 30980, 31297, 31719.

Figure 13. Other end pick shapes. Clockwise from top left, SSM specimen numbers: 31737, B281.2, B281.2, F1023, 31297.1, 31722.

Figure 14. Sketch showing typical end pick features.
Holmes noted that bowl-hollowing was often begun before separation. Once removed, the blank was transported to other sites for completion. Holmes described a number of tools used to shape and detach blanks from the rock surface but did not identify end picks notched by chipping and tapering to a conical point (Skinner 1908:703). Most of his tools were chisel-shaped or unmodified axes and adzes. Despite the fact that steatite blanks were quarried from glacial boulders rather than bed rock at North Wilbraham, the rock scars are identical to Holmes' illustrations, suggesting a similar process. The fact that the large end picks are primarily restricted to quarry sites and often found adjacent to scarred boulders at North Wilbraham, indicates they functioned in the rough shaping and removal of bowl blanks to be finished elsewhere.

AGE

In few cases have projectile points or charcoal samples been reported in association with quarry tools. As a result no absolute dates based upon radiocarbon or typological analysis have been secured. It is generally assumed that these end picks date to the Terminal Archaic cultures of the Susquehanna Tradition of 1300-500 B.C.

REFERENCES CITED

BULLEN, Ripley P.

DUNN, Gerald C.

FOWLER, William S.

HOLES, W.H.

NESHKO, John Jr.

OTIS, Leo D.

SKINNER, Alanson

**********

A DATED FEATURE COMPLEX FROM CHARLESTOWN MEADOWS AND ITS IMPLICATIONS FOR REGIONAL PREHISTORY

Curtiss Hoffman, Ph.D.

INTRODUCTION

The Charlestown Meadows Site (M.A.S-M22SW16; M.H.C.-19WR268), located at the extreme western edge of both the Town of Westborough and the Assabet River drainage, has been under excavation since 1974 by students from Clark University and members of the W. Elmer Ekblaw Chapter of the Massachusetts Archaeological Society, under the author's direction.
For over 50 years prior to excavation, the site was surface-hunted by Thomas Luuko and his sister, Lillian Harding, who were raised on the farm and who still reside there. The collection of surface artifacts after spring plowing continues, and has included not only obvious pieces but also broken tools, flakes, blocks and cores. Combined with the artifacts excavated from one hundred thirty-two 1.6 meter squares, the total assemblage now includes 2,300 artifacts and over 18,000 pieces of debitage. Very few outside collectors have been permitted on the land, so the collection may be considered to be relatively closed.

The distribution of materials at Charlestown Meadows is strongly oriented toward the use of local quartzite and vein quartz (78.9% combined) for tool-making. Blocks quarried from nearby sources were reduced into preforms and finished. In at least one case, heat-treating appears to have been used to minimize the tendency of the quartzite to fracture along lamellar planes (Hoffman 1981). Many of the tools were abandoned after having broken in process of manufacture. Some exotic materials were also used, notably felsites from the Blue Hills, Mattapan, Westwood and Marblehead sources (10.9%), Cambridge and Braintree slates and argillites (5.3%), and small quantities of Wayland metaquartz, phyllite and New York State chert. A Middle Woodland component in one portion of the site has yielded two tools, a core, and several flakes of Pennsylvania jasper (Luedtke 1982).

The projectile point assemblage is dominated stylistically by what W.A. Ritchie (1954) has termed "Laurentian" types: Brewerton Eared-Notched, Brewerton Side-Notched, Brewerton Eared Triangle, Vosburg and Brewerton Corner-Notched points (44.7% of 425 typable points, combined), along with Beekman and Squibnocket Triangles (25.9%), which I have elsewhere (Hoffman 1980a) suggested were associated with Laurentian components in southern New England. A small number of the pecked and ground stone tools of types associated with Laurentian points in New York have been found on the surface: ulu, plummets, gouges, a grooved adze and a grooved axe blank. In addition to the above, there are smaller, but still quite significant, numbers of small stemmed points (15.5%), and of Neville/Stark/Merrimack points (5.2% combined). A number of Woodland points, including Jack's Reef Pentagonal, Jack's Reef Corner-Notched, Greene and Levanna/Madison points have been found (7.3%). Susquehanna Tradition points form only 1.4% of the typable projectiles.

Absent from the assemblage entirely are Paleo, Plano, Early Archaic and Early Woodland diagnostics, as these are defined by the existing typologies; however, points of these styles are not unknown from surface collections elsewhere in Westborough. Several presumed seed-processing tools—pestles, corn planters, mullers and grinding stones—have been surface collected, mostly from the area of the Middle Woodland component. The remainder of the assemblage is made up of literally hundreds each of stemmed, stemless and flake knives; stemmed, oval, shaft/side and flake scrapers; perforators and hammerstones.

**AREA I**

Excavation commenced in the Fall of 1974. From 1977 on one focus of excavation was Area I, a 15-meter-wide band running for 45 meters parallel to the gentle southeast-facing slope of the site. This area may be thought of as a single continuous chipped stone tool workshop, possibly representing a single point in time. The flake counts for the 45 squares excavated within this area ranged from 100 and 1600; the average was 250. Outside the area, flake counts dropped to an average of 25 per square.

Within the band, 10 very dense, lithic-specific flake scatters have been found: three for felsite, four for quartzite, two for quartz and one for argillite. In addition, nine large, deep pits filled with lithic waste have been recovered from this area: five for quartzite, one for felsite, one for quartzite and argillite, one for quartzite and quartz and one which contained flakes of every material found at the site. The quartzite heat-treating workshop was also found within Area I.
Much general information about Charlestown Meadows has either been published previously (Hoffman 1978, 1980a, 1980b, 1981, 1982a, 1982b, 1982c, 1983b) or will appear in a full site report in the future. The current article describes a specific feature complex within Area I and its implications for regional prehistory. This complex includes 4 of the above-mentioned lithic scatters, 6 of the lithic disposal pits, and centers about Features 25, 59 and 63, described below.

Twelve squares have been excavated within this area, eight of them along the S10 line from E27 to E34 and the other four on either side of this line. (S10E27 was only a partial square, excavated to determine the extent of Feature #21.) These squares will be referred to henceforth as Area Ib (Figure 15).

The southern and western boundaries of the complex cannot be said to have been determined; any square within Area I is likely to contain similar features and lithic scatters. For the purposes of presentation these boundaries will be considered to be coterminous with the edge of excavation.

The eastern edge probably lies within S10E34, since from the E36 row to the eastern edge of the area in E42 the debitage is dominated by quartz, which is not the case in Area Ib.

The northern edge is probably represented by the sharp dropoff in debitage in S09E31.

FEATURES 25, 59 AND 63

The two central features were both first noted during the 1978 field season. Feature 25 was partially excavated in S10E30 at that time. It was associated with a moderately dense scatter of quartzite flakes to its west, extending into S10E29. Feature 25 was a large, bowl-shaped pit, roughly oval in shape, 100 x 85 cm in maximal horizontal dimensions and 27 cm deep. It contained numerous quartzite flakes mixed with burnt soil and pockets of charcoal at varying depths. It is probably most accurate to describe the feature as a pit for the disposal of lithic waste and charcoal, rather than as a firepit. A radiocarbon sample was taken, but was not submitted, due to the presence of a rodent burrow running through the feature. In 1981 the remainder of the feature in S10E31 was excavated, and a second radiocarbon sample was taken. A quartzite flake scraper was recovered from this half of the feature at a depth of 39 cm, 16 cm below junction. It is my intention

Figure 15. Charlestown Meadows Area Ib: features and flake distributions.
to submit both samples to different laboratories in the near future; the possibility of contamination cannot be ruled out entirely.

During the excavation of S10E32 in 1978, the presence of large quantities of fire-burnt rock was noted at 2 cm below junction throughout the square. No attempt was made at the time to map the distribution of firerock within the square. However, the firerock was found to extend into S10E33 to the east in 1979, and these rocks were mapped. No traces of the feature were recovered from S11E32 in 1981; thus, its southern edge must have been in S10E32. When S10E31 was excavated in 1981, this burnt rock pavement was carefully mapped and designated as Feature 59. (Figure 16.) It occupied approximately the northeastern half of the square and extended for 30 cm into S09E31 to the north.

Of the 105 rocks mapped, 89.5% were of granite, with a few of quartzite, schist and gneiss. Most of the rocks show at least fire-reddening, and some are clearly cracked by exposure to heat. One of them had been utilized as a pounding stone; this suggests that the rocks may have been placed after a fire had been started to distribute the heat to a

Figure 16. Charlestown Meadows Square S10E31: burnt rock platform (Feature 59). x = artifact; • = red felsite flake; □ = bone.
larger area. In and among the burnt rocks were 44 flakes of a distinctive red-pink flow-banded felsite thought to be from the Mattapan volcanics, and 87 fragments of medium-sized mammal bone, too fragmentary for species identification but possibly of white-tailed deer. The plow had turned up some of the rocks of the pavement and scattered them, but at least 5 cm depth of undisturbed pavement remained in situ.

Beneath it, absolutely sealed from plow disturbance, was a small, round firepit, 11.5 cm deep and 36-39 cm in diameter, designated Feature 63. At a depth of 41 cm, nearly at the base of this feature, was a quartzite flake scraper similar to that found in Feature 25. Due to its sealed context and the absence of macroscopic root hairs, the charcoal from this feature was considered unlikely to be contaminated, and a radiocarbon sample was accordingly taken and submitted to Krueger Laboratories. The date returned was 5225 ± 195 B.P. (GX-8614, C-13 corrected, Libby half-life of 5730 years). The author wishes to thank Ekblaw Chapter and the M.A.S. Board of Trustees for agreeing to fund the date.

While no diagnostic artifacts were recovered from the fill of either of these features, a Brewerton Eared Triangle of Blue Hills felsite was found just below junction between the rock pavement and Feature 25 in S10E31. Thirty-one additional points have been recovered from Area Ib: two grey felsite Nevilles, 3 Brewerton Eared Triangles, 2 Brewerton Eared-Notched points, 2 Brewerton Side-Notched points, 2 Vosburg points, 2 Otter Creek-like points, 5 Squibnocket Triangles, 3 of quartzite, 4 Beekman Triangles and 9 point fragments (Figure 17).

Figure 17. Charlestown Meadows projectiles - Area Ib.

Materials: a-c, f, r, felsite; d, e, i-n, p, quartzite; g, q, quartz; h, o, argillite.
Some of these points were found in the plow zone, but as I have shown elsewhere (Hoffman 1982b), there is a 70% probability at Charlestown Meadows that materials in the plow zone of any square have actually come from the subsoil of the same square, because the site has been plowed consistently parallel to the slope.

In addition to these points, the following artifacts have been recovered from Area Ib:

<table>
<thead>
<tr>
<th>TABLE 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stemless Knives...... 25</td>
</tr>
<tr>
<td>Flake Knives............ 7</td>
</tr>
<tr>
<td>Knife Fragments....... 31</td>
</tr>
<tr>
<td>Stemmed Scrapers...... 6</td>
</tr>
<tr>
<td>Flake Scrapers......... 15</td>
</tr>
<tr>
<td>Thumbnail Scrapers.... 2</td>
</tr>
<tr>
<td>from Projectiles...... 1</td>
</tr>
<tr>
<td>Scrapers Reworked.....</td>
</tr>
<tr>
<td>T-Base Drills......... 1</td>
</tr>
<tr>
<td>Total................... 176</td>
</tr>
</tbody>
</table>

TYPOLOGICAL ASSESSMENT

The date of 5225 ± 195 was somewhat unexpected, since the other two radiocarbon assays from Charlestown Meadows produced dates of 4365 ± 95 B.P. (UGa-932) and 4290 ± 280 B.P (BS-225). The former had only weak association (that is, was found more than 5 meters away) with a Vosburg point. The latter (Hoffman 1981), from Area II, a feature complex near the ancient Assabet shoreline, was associated with a Neville point and a quartz flake tool industry; small stemmed, small triangular, and Brewerton/Vosburg points were loosely associated.

I had speculated that Charlestown Meadows represented a single component site, but clearly the three dates obtained span a millenium, with fully 460 years separating the proximal ranges of their standard deviations. If we extend the ranges to 2 standard deviations, there is a 15-year overlap between the 4290 and 5225 dates (from 4850-4835 B.P.); but still there is a gap of 280 years between the 5225 and 4365 dates. Statistically, this means that there is a 95% probability that the actual occupations which the samples are assumed to date were not contemporary.

Within this time period, Northeastern archaeologists have not yet succeeded in seriating components reliably. It is true that Ritchie (1969, 1971), on the basis of studies on the western and southern margins of the region, suggests the existence of two parallel, separate traditions, separated into upland vs. coastal adaptations, with the interior Brewerton types preceding the coastal Squibnocket complex by perhaps a century or two. A similar division into regions, but without chronological separation, is perpetuated in Snow's (1980) synthesis of regional prehistory under the rubric of "Lake Forest Archaic" vs. "Mast Forest Archaic".

Charlestown Meadows lies within an upland-lowland transition zone; it is 25 miles (40 km) inland from the present coast, and is 350 feet (107 m) above sea level. While Ritchie's hypothesis seems confirmed by the dominance of eared and side-notched points in the assemblage scattered uniformly throughout the excavated portions of the site, it is difficult to maintain it when one considers the fact that Squibnocket Triangles are the single most common point type found (78 points, 18.3% of 425 typable projectile points). Nor can Ritchie explain the presence of the notorious intergrades between Brewerton Eared Triangles and Squibnocket Triangles, nor the same-square associations between triangular and notched points, of which 12 have been found at Charlestown Meadows. W. Ritchie (personal communication, 1980), without having visited the site, has attempted to argue that these must represent stratigraphically different components, but this argument flies in the face of all the associational data.
Thus, Charlestown Meadows forces me to posit an alternative explanation for the Late Archaic. Dincauze (1975) has argued that it is not possible to separate so-called "Laurentian" manifestations from the coastal traditions on the basis of ground stone assemblages. This would appear to be applicable here, as well. However, Charlestown Meadows does not support her conclusions (Dincauze 1974) that "Laurentian" materials are ephemeral and confined to the uplands, since they are dominant at the site, and since felsites and argillites from coastal plain quarries were used to make some of them.

At Charlestown Meadows, at least, we shall have to accept a long period of overlap between Brewerton and Small Triangular point-making traditions and perhaps even an evolution of the latter out of the former. Very similar associations occur at sites with contemporary radiocarbon dates in Canton (Nelson, Hoffman and Riley 1981), Taunton (Public Archaeology Laboratory 1982), Berkley (Barnes 1972), Middleboro (Robbins 1981), and Marlborough (Huntington 1982).

A more promising line of approach may be pursued with respect to the small-stemmed points. None of these has been found in Area Ib, although there were 5 of them from the western end of the flaking complex, Area Ia. However, 4 of them have come from Area II, where they were weakly associated with the most recent of the 3 dates from the site. So far as I am aware, the oldest small-stemmed points in southern New England are dated at 4465 ± 240 B.P. at Kirley Brook (Swigart 1974). They became quite frequent from 4300 B.P. onwards and have recently been shown to continue long into the 4th, or even 3rd millennium B.P. (D. Ritchie, personal communication, 1982). It may be hypothesized that the appearance of small-stemmed points serves as a diagnostic marker for sites dating no earlier than the latter half of the 5th millennium B.P. That they were not found in association with the late 6th millennium date from Feature 63 tends to support this hypothesis.

Much more equivocal is the status of Neville points. These were originally defined as Middle Archaic diagnostics (Dincauze 1976) on the basis of their stratigraphic position at the well stratified Neville site. Certainly they have been associated with dates as early as 7800 B.P. there and elsewhere in New England (Rosser 1980; Bolian 1978), but what the Charlestown Meadows data suggest is that they need not have disappeared from the repertoire at the end of the Middle Archaic, and thus need not be interpreted as Middle Archaic in every context.

At present, I can cite 8 radiocarbon dates from southern New England associated with Neville points (that is, found within 5 m of the points) whose ranges overlap the millenium 5000-4000 B.P. (Hoffman 1982a). To these we may now add the late 6th millennium date from Feature 63 at the upper end of the spectrum, and the 3800 ± 100 B.P. date from the Wilcox Brook Site in Rhode Island (Fowler 1975) at the lower. It appears that Nevilles continued as a minority type throughout the Late Archaic, well into the 4th millennium B.P.

It is even possible to suggest that Nevilles evolved directly into the Atlantic blades, the oldest date for which is currently 4200 ± 100 B.P. from the Flagg Swamp Rockshelter in Marlborough (Huntington 1982), only 8 miles from Charlestown Meadows. Atlantic-like points have 5th millenium dates south of New England, and these have been taken as evidence
that the peoples using them migrated into New England during the early 4th millennium, displacing or interacting with indigenous groups (see Snow 1980, for the most recent presentation of this hypothesis). However, the present data more strongly favor an in-place evolution of a broad-bladed tradition in New England during the 4th millennium.

All of these typological considerations are founded upon a single premise: that types as we define them do not necessarily correspond to intrinsic categories of Native American behavior or thought, and that even where they do there is no reason to suppose that the sophisticated gathering/hunting peoples of the Late Archaic were incapable of using more than one type of projectile per band or tribe. There are really few Archaic sites anywhere in New England prior to Terminal Archaic which contain components neatly separated by points, even where stratigraphy is good. As an example, a probable cache of quartzite points recovered from an exposed subsoil surface about a mile from Charlestown Meadows contained Brewerton Eared Triangles, Brewerton Side-Notched, Brewerton Eared-Notched, Squibnocket Triangles, and larger triangular points, as well as intergrades among these types (Hoffman 1979). That the Native Americans should have been this eclectic in their choice of projectile styles should be obvious to any reader who has actually worked at sites in the region. Archaeologists may wish that they were not, because it creates problems of interpretation for us.

It is sometimes argued that because the associations of points with radiocarbon dates is not incontestable, i.e., that the points were not found within the features, as at Charlestown Meadows, it is always possible to claim that they could have been deposited by earlier or later inhabitants, when such associations conflict with our preconceptions about regional culture history. However, as I have shown elsewhere (Hoffman 1982a), the majority of associations upon which those concepts are based are precisely of the type we find at Charlestown Meadows. For example, Dincauze (1975) had at her disposal 80 projectile point associations from 25 dates ranging from 5000-4000 B.P.; of these, only 21 were from within dated features. The remainder were from within 5 meters of the feature perimeters, and stratigraphically associated.

From the same period I can today cite 143 associations from 76 dates; only 37 of these are from within features. We would do well to consider more carefully what differences in projectile point styles meant to their manufacturers. Did they reflect inter- or intra-cultural differences? Do they represent differences in status, or function, or both (Hoffman 1980b)? The argument for geographical and/or chronological separatism is only one of several possible explanations for the diversity in projectile point styles.

INTERPRETATION

Moving beyond considerations of typology and regional culture history, it will be of interest to assess the function of Features 59 and 63. Burnt rock platforms have been reported from several contexts in Massachusetts recently. They have been interpreted as processing stations for large quantities of food resources for long-term preservation. Platforms at the Wheeler's Site (Barber 1982) in the Merrimack estuary are specifically linked to Middle Woodland shellfish processing. At Johnson #1 in Taunton a burnt rock scatter was associated with a Jack's Reef Pentagonal point; it was within 20 meters of a deer bone butchering workshop (Hoffman 1982a). At Canoe River West in Norton, large rock platforms were associated with a date of 4005 ± 120 B.P. and with small stemmed points (Public Archaeology Laboratory 1982); the excavators theorize that aquatic resources were smoked there in large quantities. A platform at the Iglesias Site in the Westfield drainage has no absolute dates as yet, but appears to be associated with a Susquehanna component (Parrett 1981).

The platform at Charlestown Meadows is thus the oldest so far reported, by as much as 1000 years. While its functions is clearly related to food processing, given the presence of cracked calcined mammal bone among the rocks, we should not necessarily expect that the resource processed or the method of processing was identical to those of the later cases.
In fact, a smoking hearth may be represented at Charlestown Meadows by Feature 20 in Area II. This is a burnt earth pit about 5 meters in diameter, with a double row of post molds crossing it at a span of 40 cm. Within the pit is a small firepit and a massive quartz scatter, including 2 small-stemmed points. Given the proximity to the shoreline, I have (Hoffman 1978) suggested that the post molds supported a smoking rack for fish; the majority of artifacts in the vicinity of the feature are small quartz flake tools which would have made efficient scalers. Between this complex and the shoreline is a second large red earth pit with a firepit at its base that yielded the 4290 ± 280 B.P. date.

Given the 1000-year discrepancy between this date and that from Feature 63, as discussed above, it is no longer possible to maintain that Charlestown Meadows represents a single occupation. In retrospect, the differences between Area Ib and Area II are striking: quartzite/felsite industry vs. quartz tool-making; large tools vs. small (these two differences undoubtedly interrelated, but it is striking that within a quarry region for quartzite the Area II occupants chose the more shatter-prone crystalline vein quartz); notched/eared vs. small-stemmed points; distance vs. proximity to the shoreline; emphasis on core tool-making and debitage disposal vs. emphasis on food processing and utilization of debitage; processing of large faunal food vs. (presumed) bulk processing of small foods.

Prior to obtaining the date from Feature 63, I had speculated that the two areas might represent sex-role specialized work groups, with the men up the hill making tools while the women processed fish by the shore. While the contemporaneity of the areas can no longer be maintained, there is still some value in considering the social aspects of this model, especially in light of Levi-Strauss' (1978) research into the separation of smoking, boiling, and roasting among ethnographically studied cultures in both North and South America.

He has shown that roasting has specifically male associations (as it still does in our own culture!) while boiling, or in cultures which have not developed pottery, smoking, are activities more frequently performed by women. Roasting produces food which is culturally altered on the periphery only, and which therefore spoils rapidly; smoking and boiling produce food which is culturally altered throughout, and which is therefore preserved for a longer time. It may be helpful to consider the differentiation of cooking functions as a means of approaching one of the "Big Questions" in New England prehistory (Dincauze 1981): what were upland environments used for, by whom, and when?

My research on radiocarbon dated sites in southern New England and eastern New York (Hoffman 1982a) has shown that, up to about 4500 B.P., most settlements tended to be near major rivers, and that the total number of settlements was (perhaps as a consequence) rather limited. From the period 6000-4500 B.P., there are but 4 dated sites in upland situations: Charlestown Meadows, Sylvan Lake Rockshelter (Funk 1978), Flagg Swamp Rockshelter (Huntington 1982), and Canoe River West (Publich Archaeology Laboratory 1982), compared with 12 on major rivers and in estuarine environments.

From 4500-4000 B.P., the number of settlements effectively doubled, as did the average stream rank. From 4000-3000 B.P. the number of sites shrank to nearly the pre-4500 B.P. level, but the average stream rank remained high. While this is necessarily a very cursory summary of the data, it does suggest that around the middle of the 5th millennium the utilization of upland zones in southern New England changed significantly.

Previously, these zones had been distinctly marginal to population centers in the major river valleys; the two rock shelters could have supported only tiny populations. Based on ethnographic evidence, it is certainly not impossible to argue that food procurement strategies would not have had to provide for more than immediate needs; hence, preservation would not have been a high priority.

After 4500, groups in the uplands became more numerous, and site utilization patterns suggest somewhat greater permanence of occupation, although not necessarily for more
than one season. Seasonal camps would not have been as strongly tied to base camps in low-lying areas as before, and correspondingly would have been more likely to have included work groups of both sexes. The longer duration of occupation would have made food preservation techniques a more attractive investment of labor, especially if one reason for upland occupation was the procurement of locally abundant food resources.

The utilization of quartz for the bulk of the tool kit may be significant. Thorbahn (Public Archaeology Laboratory 1982) has argued that a regional drought caused populations in the Taunton basin to restrict territory size and abandon intra-regional contacts, concentrating on local quartz for tools. However, in Westborough the most abundant local resource is quartzite; yet the shoreline component at Charlestown Meadows is still overwhelmingly (97.3%) dominated by quartz, in contrast to Area Ib (11.9%). It might be noted that the 1982 field season in Westborough included the excavation of two probable single-component sites immediately to the northeast of Charlestown Meadows; both had Brewerton components, but one was a quartzite-felsite assemblage (like the cache site mentioned above) while the other was dominated by quartz (Hoffman 1983a).

Hypotheses explaining the shift into the uplands have as yet to be tested in field situations. No known environmental fluctuations appear to correlate with the proposed 4500 B.P. date of the shift. Social factors engendered by population growth and consequent village fissioning (Flannery 1969) of pioneering opportunism (Smith and Young 1970) are possibilities, but much thought must be given to constructing models to test these processes in the Northeast. In any event, once having moved into the uplands on a regular basis, groups were there to stay, despite an apparent decline in population around 4000 B.P. Any contrast between upland and coastal traditions might not predate the shift, and this may help to explain the emergence of trade and social inequality in the region (Rathje 1970; Keene 1982).

**SUMMARY**

At Charlestown Meadows, then, we may suggest the following scenario. Late in the 6th millennium, a small band of hunters foraging out from a major base camp in one of the adjacent river valleys utilized the hillside as a convenient place to reduce quarry blanks of local quartzite as well as to refurbish felsite and argillite tools. Their base camp may have been either the Heard Pond Site in Concord, which is in the same drainage and which has a remarkably similar assemblage to Charlestown Meadows (Massachusetts Historical Commission 1981), or the Bliss Site in the Connecticut estuary, which has a very similar assemblage (Pfeiffer 1983). They prepared the rock platform to roast the game they hunted to maintain themselves while engaging in their tool-making pursuits. Their duration of stay was short, but presumably longer than a day. Otherwise why would they have felt the need to dump so much of their debitage into disposal pits? The maximum number of lithic scatters in Area I, extrapolating from the excavation data, is 40; but some of the 9 excavated scatters are quite small and may represent a single flaking event (Kalin 1982). Thus, it would not have taken very long for the debitage to accumulate. A band of less than 10 could easily have produced the entire work area in less than a week.

About 1000 years later, well after the population shift into the uplands, a somewhat larger group, possibly representing an extended family unit, moved into the area. They appear to have largely eschewed the use of the local quartzite in favor of crystalline vein quartz. This suggests that they were less attracted by the lithic resources of the region than by its subsistence possibilities. These people were strongly oriented toward aquatic resources, and constructed semi-permanent facilities to process them.

While these people were also not sedentary, one has the impression that they spent more time at the site; the construction of the large red-earth pits alone would have required the investment of more labor than the casually dug disposal pits of Area I. The range of tools, however, is much more restricted in terms of choice of material and style, and emphasizes small scraping and cutting tools made from flakes which could have been utilized effectively in the processing of quantities of small fauna, which were also being preserved for future use.
The two cultural styles contrasted here are admittedly thumbnail sketches, but they are intended to serve as models for future research in that they permit the generation of a series of test questions which otherwise could hardly be asked of the data. Clearly, in order to confirm these hypotheses, Charlestown Meadows must be fitted into a larger local and regional context. The Ekblaw Chapter's efforts in coming years will be devoted in part to this goal. As the evidence emerges, we may well learn to appreciate what the uplands meant, through time, to the prehistoric inhabitants of southern New England.

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**********
AN ARCHAEOLOGIST'S GUIDE TO DEED AND LITERATURE RESEARCH

Mary K. Johnson

It is vital to the archaeologist to know the history of the land that (s)he is researching. Deed and literature research, in conjunction with cultural remains obtained by the historical archaeologist, can show direct evidence of social change. This can give a fuller picture of past peoples and their society. For the prehistoric archaeologist, early deeds can give information on the Native American people including territorial land rights of certain tribes at the time these lands, or portions of them, were sold to the colonists. This can provide a basis for further studies, such as Native American settlement patterns, or the rate of loss of their tribal lands. There are many other possibilities depending on your research interests. In addition, knowledge of the history of land use at both historic and prehistoric sites can help explain the kinds of disturbance observed during archaeological investigations at the site.

Valuable information can be obtained by consulting sources available in every town, county and state. If one follows a few simple procedures, much information concerning past occupants and their use of their land can be traced through deed research, and a review of the literature (i.e., written histories, newspapers, etc.).

The first step in historic research of this nature is to determine whether you have the correct name of the legal owners of the property. You may, for example, know that "John Doe" is the owner, but the property may be listed as a trust, "Sue Doe Trust", or as a corporate property, "R. Gil Light, Inc." You may not be able to learn the legal name at first; yet, it can be found. Your first stop is the Assessor's Office.

You will need the following convenient tools for this kind of research:

- Different colored pencils (red for seller, green for buyer).
- Index Cards (to keep your information organized).
- Meticulous and accurate notes should be taken, especially when one is working with numbers.

ASSESSOR'S OFFICE

The Assessor's Office is usually located at the Town Hall of the town in which the property is located. The resource person there is the assessor's clerk who is in charge of the three books and one card that you may find useful: the Alphabetical Valuation Book, the Assessor's Map Book, the Numerical Valuation Book, and the Deed Card.

If you have been unable to learn the legal name of the property owner, it is most important to determine the precise location of the property. Study the site and note what you would assume to be the boundaries. When you have this information, ask at the Assessor's Office for the Assessor's Map Book. The first page divides the town into numbered sections referred to as "parcels". Now locate your parcel number, and turn to the page in the Map Book with the corresponding number. Locate the specific lot of interest to you. Each lot is identified by a number called the Assessor's Map Reference number. For example, a Plymouth County lot would have a nine-digit number, such as, 012-345-678. In this case 012 would be the map number, 345 would be the block number, and 678 would be the lot (sometimes referred to as the plot) number. If in doubt, ask the assessor's clerk in your area how the local numerical identifying system is set up. Look up the nine-digit number in the Numerical Valuation Book, (Figure 18), which lists numbers sequentially, and, from it, you can obtain the owner's name at it appears on the same line along with the address.

If you already know the correct legal name of the owner, which may be a trust or a corporation, ask for the Alphabetical Valuation Book which lists alphabetically all owners...
of property in the town. You will find immediately after the legal owner's name the Assessor's Map Reference Number and the Land Record Book and page numbers. Write the last set of numbers down very carefully, as they will be your reference later at the Registry of Deeds. The assessor's clerk can also get you the Deed Card which will give you the Assessor's Map Reference Number, the Land Record Book and page numbers, and in addition, the date of conveyance, the land court certificate (lcc) number, and the land court document (lcd) number. (Figure 18.)

REGISTRY OF DEEDS

Your next stop is the Registry of Deeds. The Registry of Deeds is usually located at the county seat, and is a repository of filed and recorded, but not officially registered, deeds within the county. Your resource person is behind the information desk.

There are two resource systems available to the researcher at this office. The first can be the plan room. This room contains all the Plan Indexes and Plan Books. They offer the researcher information from surveyor's notes on boundary changes over time. These notes will show, also, any changes of name of the land owners. Specific plans may or may not be available, depending on whether or not they were filed.

The Plan Index (Fig. 19) contains listings by town, of owner, street, surveyor, date of plan, Plan Book and page numbers. Note the Plan Book and page numbers, the date, and any other pertinent data for your next step, which will be the Plan Books. There are two sets of Plan Books that can be consulted:

1. Those containing maps 8 x 14 inches or less.
2. Those containing maps greater than 8 x 14 inches.

These maps can show various land boundary changes over the years, which can be of great value in many cases to your research.

Figure 18. Page from Numerical Valuation Book, with Deed Card in lower left corner. Arrows point to map, block, and lot numbers.
Your second resource system is the Grantee/Grantor Index and the Land Record Books. At the Registry of Deeds, deeds are indexed in large volumes labelled Grantee/Grantor, either yearly, or grouped by a number of years. There may be five, ten, or more years indexed together, with the dates clearly defined on the volume's spine. Within these chronological volumes, names of buyers and sellers are listed alphabetically. Should you have been unable to obtain the Land Record Book and page numbers at the Assessor's Office, these efficient Grantee/Grantor Indexes at the Registry of Deeds can be of help, if you know the owner's name and the date of conveyance. The Grantee/Grantor Index will refer you to the Land Record Books (Figure 20).

The Land Record Books are well separated from the Grantee/Grantor Indexes. They contain copies of the original deeds, indexed according to the book number and page number. Each Land Record Book has its number clearly defined on its spine. Take down pertinent information, such as boundaries, and Land Record Books and page numbers of any previous deeds. These will be indicated by sentences similar to this: "Being the same property conveyed to us by Sue Doe by deed dated January 31, 1974, and recorded in said Plymouth deeds, Book 2345, page 67". Now go to the Land Record Book thus specified, and find the deed for the previous owner. Following this procedure, it is possible in some cases to discover very early owners. This study may even take you back to the earliest European grantees, and to the Native Americans who were the first grantors.

Many complications can arise as one goes back in time with deeds, and therefore, careful attention to detail will be required. One may find that the property was not conveyed by deed, but rather, inherited. This will be indicated toward the end of the body of information in the deed. The deed may give the docket number indicating the Probate Court records. Note this number and proceed to the Probate Court.

**PROBATE COURT**

The Probate Court is usually located at the county seat, and its function is the recording and storage of wills. Your resource person is behind the information desk. Probate Court has four resource systems available to the public: the Probate Index, the Probate Files (packets), the Probate Docket Books, and the Probate Record Books.

The Probate Index is used to see if the case (the deceased person's estate) was probated. The names are listed alphabetically in books similar to those at the Registry of Deeds, that is, the Probate Index volumes are chronological, and within each volume, the listings are alphabetical. This index will give you the Probate case (or docket) number.

The Probate Files (packets) contain all matters concerning each probate case. With the docket number ask the clerk behind the information desk for the Probate File. If there is no mention of the deceased person's real estate, look in the "rest and residue" and see to whom the property was left. You may also consult the inventory, in the file, which lists the properties owned by the deceased. Another possibility is that the property may have been turned over to, or sold by the executor. Should this be the situation, note the executor's name and the date of transfer carefully. With this information, return to the Grantee/Grantor Index at the Registry of Deeds.

![Figure 19. Example of Plan Index volume, plan room, Registry of Deeds.](image1)

![Figure 20. Example of Land Record Book, Registry of Deeds.](image2)
Probate Docket Books are a chronological list of all of the items found in the Probate Files above.

It is only necessary to use Probate Record Books if the items in the Probate Files are missing or illegible. Also, not all probate items are recorded in the Probate Record Books. For example, you will not find the petition for probate of will/administration on which the surviving heirs and next of kin are listed. Reference to Probate Record Books is found in the Probate Docket Books as well as the Probate Files. Take down your pertinent information—to whom the property was transferred (such as the heir or executor), and important dates and numbers. Then check at the Registry of Deeds to see if the property was sold by the heir or the executor, and when. This can be time-consuming and troublesome. For example, the deceased may have left his property to the eldest son. This son may never have had the deed put into his own name, and then died, leaving the property to his eldest son, who never had the property put into his name. Thus, although three different generations occupied the land, the deed may still be in the grandfather's name. This sort of situation does happen and can complicate matters for the researcher; yet information concerning the property and occupant in such a situation can be found, perhaps, through researching additional literature which we well examine shortly.

LAND COURT

If you do not need to go back in time before 1898, you can eliminate trips to the Assessor's Office and the Registry of Deeds, by visiting the Land Court.

The Land Court, established in 1898, is located in the county seat and is a county department of the main office in the capitol. It is a repository for registered deeds, known as certificates of title. Your resource person is behind the desk. The resource system here consists of the Land Court Certificate Index Cards and the Transfer of Certificate Books. In the Certificate Index Card file you will find listed, next to the owner's name, the Land Court Certificate (lcc) Number that will refer you to a Transfer of Certificate Book. In the specified Transfer of Certificate you will find the lcc numbers referring you to previous grantors. Continue this procedure until you reach your desired goal.

The main office in Boston has abstracts for all registered land titles in the state. Should you be interested in using this resource, obtain the Land Court Case Number from the Transfer of Certificate at the county Land Court and then ask for the abstract by this number at the Massachusetts Land Court. This can save you much research, for these records contain consolidated information on titles concerning specific properties.

LITERATURE RESEARCH

Deed research is concerned with the particulars of ownership, boundaries, and conveyances. Literature research amplifies that information more specifically. It provides details about the property such as the various owners, what they did for a living, the members of their households and how they used the land. Your own interest will dictate the direction of your research. There are many town, county and state records and reports available to the researcher.

Do not overlook the local libraries which contain old newspapers, local histories, old scrapbook collections, local family genealogies and histories. The local historical societies may have old photos, diaries, letters and family Bibles which can give precise information on family matters.

Surveyor's records are a valuable resource, and are often located at the town hall. There, ask at the town clerk's office or at the town archives to see old town census records, records of the overseers of the poor, and any other pertinent records concerning your interests. Most towns made use of the Works Progress Administration (WPA) begun in 1935.
during the Great Depression. Some towns sponsored historic buildings surveys and have these records on file and indexed. The department of public works (DPW) also keeps records and has an indexing system.

Local museums often hold information on the local residents who made a cultural and historic impact on the community. Church records can be of aid, and, on occasion, when town records may be missing, information on births, marriages, and deaths can be obtained from the churches, as can other types of information on past parishioners. Back around the turn of the century itinerant artists rendered "Bird's Eye Views" of the different towns. These drawings are most remarkable in giving to-scale aerial views of certain portions of the towns. Most often the town center is represented in such detail that architectural features of individual structures that no longer exist, or of buildings that have been altered, are plainly evident. "Bird's Eye Views" may be available, also, through libraries, historical societies or at local museums. Metropolitan and state museums will hold information valuable to the researcher also. The resource person in museums is most often the archivist.

The state historic commission and archaeological societies may be good resources as well. The state capitol has much information available. For example, in Massachusetts, specific information on the division of towns and counties and their dates of incorporation may be found in a book located at the state capitol. That book of historical data, put out by the Commonwealth of Massachusetts, is titled *Counties, Cities and Towns of Massachusetts*. It was prepared by K. White. The state antiquities office can be consulted for various resources depending on your specific interests.

Do not be apprehensive about asking to see any of these records mentioned, for they are all public documents maintained at the public expense. You have a right to see them. Please, however, show every courtesy in asking to use them; you may be rewarded with far more information than you will have time to see. Remember, too, when using original documents (which often give the least adulterated view of history), that these are one-of-a-kind and highly perishable, so please, do handle them with care.

**SUMMARY**

To summarize the sources and their use, Table 9 gives a list of the essential data mentioned in this paper, and Figure 21 provides a flowchart to outline the procedure.

**TABLE 9. LIST OF ESSENTIAL DATA**

<table>
<thead>
<tr>
<th>DATA</th>
<th>WHERE FOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Correct Name of Legal Owner</td>
<td>AO</td>
</tr>
<tr>
<td>B. Assessor's Map Reference Number</td>
<td>AO</td>
</tr>
<tr>
<td>C. Land Record Book &amp; Page Number</td>
<td>AO</td>
</tr>
<tr>
<td>D. Date of Conveyance</td>
<td>AO</td>
</tr>
<tr>
<td>E. Land Court Certificate (lcc) Number</td>
<td>AO, LC</td>
</tr>
<tr>
<td>F. Land Court Document (lcd) Number</td>
<td>AO, LC</td>
</tr>
<tr>
<td>G. Land Court Case Number</td>
<td>LC</td>
</tr>
<tr>
<td>H. Date of Registry Plan</td>
<td>ROD</td>
</tr>
</tbody>
</table>
TABLE 9 (continued)

<table>
<thead>
<tr>
<th>DATA</th>
<th>WHERE FOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Plan Book &amp; Page Number</td>
<td>ROD</td>
</tr>
<tr>
<td>K. Previous Grantor Land Record Book &amp; Page Number</td>
<td>ROD</td>
</tr>
<tr>
<td>L. Probate Docket Number</td>
<td>ROD, PC</td>
</tr>
<tr>
<td>M. Heir(s)</td>
<td>PC</td>
</tr>
<tr>
<td>N. Executor</td>
<td>PC</td>
</tr>
<tr>
<td>R. Date of Transfer</td>
<td>PC</td>
</tr>
</tbody>
</table>

*Reference letter to use with flowchart, Figure 21.

Legend: AO = Assessor's Office  
ROD = Registry of Deeds  
PC = Probate Court  
LC = Land Court

Should one run into difficulties in researching at the Assessor's Office, Registry of Deeds, Probate Court, Land Court, or at the various literature sources mentioned, the persons behind the information desks or other persons described above may be of aid. At the first four offices, you can also ask if the resource persons might know of a free-lance title examiner. There is also a Massachusetts Association of Title Examiners (M.A.T.E.) which is a state-wide organization. You may write to them at 745 High Street, Westwood, MA 02090.

The time and effort that the archaeologist puts into researching deeds and literature can produce important information relating to the property that (s)he is researching for an excavation, and it can be a fascinating experience, which is, in itself, rewarding.

ACKNOWLEDGEMENTS

I would like to give my appreciation to the following for their encouragement, guidance and assistance on this paper: Jan Peterson, Marshfield Historical Society; Jeanne M. Mills, archivist, Pilgrim Hall Museum; Frances Leach, Educational Consultant; Elizabeth W. Meissner, Title Examiner (M.A.T.E.); Jaqueline White Smigliani; Judith Moran-Kelley, for the photographic materials presented; Dr. Curtiss Hoffman; Dr. George Horner; the Overseers of the following Plymouth County departments: the Registry of Deeds, Probate Court, and Land Court; the Assessor's Office of the Town of Duxbury, Massachusetts; Marie Eteson and Elizabeth A. Little, of the Research and Education Committee, Massachusetts Archaeological Society.

**********

This article will be reprinted in the Massachusetts Archaeological Society "DATUM POINT" series, with additional Xeroxed photographs, and will be available for $1.25 (plus postage) at the Bronson Museum, 8 North Main Street, Attleboro, MA 02703.

**********
Figure 21. Flowchart for use with Table 9 in locating data.
Alert readers will have noticed a change in this issue of the Bulletin; articles are now officially copyrighted, and registered with the United States Copyright Office. The decision to officially copyright the Bulletin was taken recently by the Board of Trustees, and I want to take this opportunity to explain to the membership at large the implications of this action, and to reassure you that this is not just another example of "creeping bureaucracy", but was done for good reasons.

Authors will be affected very little by the change. From now on, they must sign a form assigning the copyright of their articles to the Massachusetts Archaeological Society, Inc., as a condition of publication in the Bulletin. This is now standard procedure for many archaeology journals, and protects the publisher's rights. The same form preserves the author's rights by guaranteeing that if the Massachusetts Archaeological Society wishes to reprint or use the article in some way, all efforts will be made to contact the author for permission first. Also, if the author wishes to reprint the article elsewhere, all he or she has to do is write to the Editor (who acts on behalf of the Massachusetts Archaeological Society) requesting permission to do so and promising to give proper credit to the Bulletin. Approval is automatic under most circumstances. Thus, the new procedures make no real changes in the author's rights, but do put our past informal practices on a formal footing.

Copyrighting also results in no real changes for readers. United States copyright law already allows individuals to make one copy of copyrighted materials for private research or study. Readers are also reminded that they can obtain entire copies of many back issues of the Bulletin for a very nominal fee. An individual who wishes to make multiple copies of an article (for example, a teacher who wants to make copies of a certain article for a whole class) should write to the Editor for permission, explaining the circumstances. Our general policy is that we are very happy to have our publications read and used, but we don't think anyone else should make a profit from a Massachusetts Archaeological Society publication!

Official copyrighting provides the best legal protection against unauthorized use of articles for both authors and publishers. It also clears the way for the Bulletin to be listed with indexing and abstracting series such as Abstracts in Anthropology, and this possibility is what actually precipitated the change in policy. Such listings would make the Bulletin much more accessible to students and to professional and amateur archaeologists throughout the United States and in other countries. Our Massachusetts data will be used more often, by more people, and this is a very important achievement. The Massachusetts Archaeological Society is committed to promoting Massachusetts archaeology in many ways, including working to protect our remaining cultural resources, writing and publishing what we have learned from our surveys and excavations, and communicating what we know to other archaeologists and to the public through museum displays, lectures and publications. If copyrighting the Bulletin will have the effect of further promoting Massachusetts archaeology, then it is worth a little extra bother.
THE CONTRIBUTORS

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A HANDBOOK OF INDIAN ARTIFACTS FROM SOUTHERN NEW ENGLAND, with drawings by William S. Fowler. Paper, 79 pages, 5 1/4" x 8 1/2", spiral bound, 467 illustrations. Price: $5.00 members, $6.00 non-members. Include $1.00 for postage/handling.

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INDEX-BULLETINS of the MAS, Vol. 38, No.4; paper, 8 1/2" x 11", 32 pp. Price: $2.00; $3.00 non-members, plus 50 cents mailing/handling.

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NOTE: This new edition of the Handbook of Indian Artifacts from Southern New England includes three independently prepared concordances of the M.A.S. typology with the New York, and in once case, the Massachusetts Historical Commission typology as well.
This final descriptive report contains the largest compendium of data from a single New England site ever published—a feat not likely to be equalled for many years.

Although Wapanucket—with eight excavated loci totaling 5,697 two-meter squares—has an important Paleoindian component, it is primarily an Archaic site with separate living and ceremonial areas. It is located in southeastern Massachusetts on Assawompsett Pond.

The report opens with a brief description of the site's geology and topography, then discusses excavation methods, soil stratigraphy, the artifacts and the classification system used, including its limitations.

Each locus is discussed separately, covering soils, artifacts, horizontal and vertical distributions and plans, features, flotation results and lithics, plus burials and house floors when appropriate. A summary description integrates the data from the eight loci—some 15,000 artifacts with approx. 10,000 typologically classifiable and 829 features—in terms of Paleoindian, Early, Middle and Late Archaic, Woodland and Historic cultural components. Palynological data are presented as well as vertical and horizontal distributions of diagnostic points over the entire site.

Dr. Robbins presents a descriptive rather than interpretive analysis, aiming at completeness of recovered evidence. Among the many illustrations are superb renderings of significant artifacts, including ceremonial blades and Paleoindian artifacts.

** Include $1.00 for postage/handling.
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AUTHORS of articles submitted to the M.A.S. Bulletin are requested to conform to the following regulations:

Manuscripts must be typed as an original with one carbon (or photocopy). Margins must be 1¼ inches (38mm) on both sides. Corrasable paper should NOT be used. Original and copy are to be sent to the Editor for evaluation and comment.

Typing is to be on one side of paper only with at least double spacing. Proper heading and bibliographic material must be included.

Manuscript headings should be prepared as follows:

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Robert A. Martin

Bibliographic references are to be presented as follows:

GOOKIN, D.
1970 Historical Collections of the Indians of New England (1674)

They should be listed alphabetically by author; several references by the same author should be listed chronologically by year.

Intratextual reference citations are to include the author's name, date of publication, and the page, plate, or figure number, all enclosed in parentheses, as follows:

(Bowman & Zeoli 1973:27) or (Ritchie 1965: Fig 12)

Illustrations must be submitted to the Editor as originals and must conform to the following set of standards:

1. All illustrations must be planned with the page size in mind, either full page, half page or quarter page. Allowance must be made for caption. Special cases must be discussed with the Editor before illustrations are made.

Drawings should be made for same size reproduction, and must be sent as originals executed in India ink. NO WASH DRAWINGS OR PENCIL RENDERINGS ARE ACCEPTABLE.

Photographs must be glossy prints with HIGH CONTRAST. Standard 5"x 7" or 7"x 9" work out very well. Special problems, as with the drawings, must be referred to the Editor before preparation.

2. All illustrations are called Figures (including maps). They are to be numbered on the back in order of reference from the text. Every item in drawings or photographs must be properly identified either by number or letter. All lettering must be clear and legible. All persons in photographs must be identified. Captions should not be considered part of the illustration.

Captions for figures should be typed on a separate sheet in order, numbered to correspond to the figures. Scales should be included with all figures for which they are appropriate, and they must be LINEAR (no "full size" notations).

Dimensions and distances should be given in English and metric units, or metric alone. The two systems should not be mixed within a text. If feet and inches are used, they are to be spelled out (no ' for feet nor " for inches).

THE EDITOR is receptive to archaeologically serious contributions of any reasonable length. Long pieces can usually be condensed effectively if they exceed the limits of our publication. The Editor welcomes short pieces and encourages contributors to write them.

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