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EDITOR's NOTE
Barbara E. Luedtke..................................... 1

IN MEMORIAM: WILLIAM SMITH FOWLER (1893-1983)
Maurice Robbins........................................... 1

THE ROY ATHEARN COLLECTION: A REPORT FROM THE MASSACHUSETTS
HISTORICAL COMMISSION'S STATEWIDE SURVEY
Eric S. Johnson and Thomas F. Mahlstedt............... 3

LOCUS Q-6, SITE M52/65, QUIDNET, NANTUCKET, MASSACHUSETTS
Elizabeth A. Little........................................ 9

A POSSIBLE BONE EFFIGY FACE
Philip Brady................................................. 23

PEMAQUID, MAINE: PRELIMINARY RECONSTRUCTION OF A SEVENTEENTH
CENTURY COASTAL COMMUNITY'S DOMESTIC AND INTERNATIONAL
TRADE CONNECTIONS
Neill DePaoli................................................. 24

NEW ENGLAND'S URBAN PREHISTORY: EVIDENCE FROM TWO SITES
IN NEWPORT, RHODE ISLAND
Stephen A. Mrozowski................................. 41

THE CONTRIBUTORS........................................... 47

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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.
EDITOR'S NOTE
Barbara E. Luedtke

This issue of the Bulletin provides a cross section of the many kinds of archaeology being done in New England today. It includes articles on prehistoric and historic sites, analyses of single artifacts and of large assemblages, and data derived from contract archaeology, from academic projects, and from amateur excavations.

We begin with a tribute to William S. Fowler, a former editor of the Bulletin and someone who has had a powerful impact on Massachusetts archaeology because he did not simply keep his findings and ideas to himself, but instead took the crucial step of committing them to paper. Writing is hard work, and it also takes a certain amount of courage to expose one's cherished ideas to possible criticism. However, publication is still the best way to create a permanent record of a dig, and to establish the intellectual foundations future archaeologists will build upon. Bill Fowler had strong opinions on many aspects of Massachusetts archaeology, but while he would probably disagree vehemently with some of the specific ideas and conclusions in this issue, he would surely approve of the fact that so many authors took pains to write, and in many cases rewrite, these records of their findings and interpretations.

**********

- IN MEMORIAM -

WILLIAM SMITH FOWLER (1893-1983)

Maurice Robbins

On June 10, 1983, at the age of 90 years, William Smith Fowler passed away and the Massachusetts Archaeological Society lost a loyal and valued member. After graduating from Yale University (Ph.B.) in 1914, Fowler served in the French Ambulance Service in World War I. Returning at the close of hostilities he began a successful business career from which he retired in 1946.

Having been for many years interested in the science of archaeology, Fowler became a member of the Massachusetts Archaeological Society in the fall of 1939, only a few months after its organization. At that time he was a resident of Holyoke, Massachusetts and, with others, became a founder of the Connecticut Valley Chapter. This chapter was one of the leading sub-groups of the Society. William Fowler served as its chairman from 1939 until 1946. Later he held membership in the Warren King Moorehead and the Cohannet Chapters. While in Holyoke, Fowler directed the field work of the Connecticut Valley Chapter at a number of important sites in Wilbraham and Westfield.

After he retired from business in 1946, Fowler moved to Attleboro where he became the Curator of the Bronson Museum and Secretary of the Massachusetts Archaeological Society. About this time he also affiliated with and played an active role in the Narragansett Archaeological Society of Rhode Island. Pursuing his interest in archaeology Fowler also undertook graduate studies at the University of Chicago and, in 1948, took his Ph.D. from McKinley-Roosevelt Institute, Chicago, Illinois.

In 1949 Dr. Fowler became the Research Director of the Narragansett Archaeological Society of Rhode Island and continued to serve the Massachusetts Archaeological Society as its Secretary and Curator of its museum. In 1960 Dr. Fowler was elected to the office of Editor of the Bulletin of the Massachusetts Archaeological Society, which office he held until his retirement from the Bronson Museum in 1975 at the age of 82. After
relinquishing his many duties with the Massachusetts Society, Dr. Fowler continued to be very active in the Narragansett Society, serving as its Editor and Research Director until his death last June.

As the Editor of the Bulletin Dr. Fowler produced outstanding publications. His abilities as an editor, artist, and author were appreciated both by the membership of the Society and by archaeologists in general. As curator of the Bronson Museum, Dr. Fowler was responsible for the many excellent displays which we have all enjoyed over the years. The dioramas which depict various aspects of local Indian culture would not have been possible were it not for Fowler's skill and his willingness to give of his time and energy.

As a co-worker the writer can attest that no one individual in the history of the Massachusetts Archaeological Society has devoted more time and talent to the organization than William S. Fowler. While he lived in Attleboro he came to the museum every weekday, summer and winter. After he moved to East Providence and then to Barrington, Rhode Island he continued to travel to Attleboro at least three days each week, regardless of weather, to continue as curator and editor. All of this was a "labor of love" and an outstanding demonstration of devotion to the science of archaeology and to the Society.

One aspect of the work which Bill Fowler gave so freely was his unique talent for restoring archaeological artifacts, particularly ceramics. Many of the artifacts now on display at the Bronson Museum are a silent witness to his artistic and meticulous work in this field. Bill was always ready to lend his talents to restore the prized specimens of individuals who came to him for help. It is not generally known that the small monetary rewards which Dr. Fowler received for this service were accumulated and donated to the Red Cloud Indian School in Pine Ridge, South Dakota to be used for the support of educational facilities for Indian children.

For many years Bill Fowler was a source of inspiration to the membership of both the Massachusetts and the Narragansett Archaeological Societies. He will be sorely missed by all.

Figure 1. William Smith Fowler.
THE ROY ATHEARN COLLECTION:
A REPORT FROM THE MASSACHUSETTS HISTORICAL COMMISSION'S STATEWIDE SURVEY

Eric S. Johnson and Thomas F. Mahlstedt

INTRODUCTION

The Massachusetts Historical Commission (MHC) has been sponsoring a statewide inventory of historic and prehistoric resources for over three years. The principal goal of the survey is to create a standardized filing system and accessible data base upon which well informed decisions concerning the management and preservation of the Commonwealth's cultural resources can be formulated. A significant addition to the existing site records of the MHC are computer-indexed inventories of the artifact collections of regional and local museums and large private collections. To date, the archaeological collections of the Bronson Museum (Attleboro), the Peabody Museum (Harvard), the R.S. Peabody Museum (Andover), Peabody Museum of Salem, and the Ben Smith Collection (Concord), Roy Athearn Collection (Fall River), and the Read Farm Collection (Seekonk) have been analyzed and entered into the computer files. The Roy C. Athearn Collection, which is the subject of this report, is outstanding among these collections because of its size, condition and significance. We hope that Roy's many friends and colleagues from the Massachusetts Archaeological Society enjoy and benefit from this report, which is a testimony to Roy Athearn's integrity, high standards, and devotion to archaeology.

COLLECTION ANALYSIS

Roy C. Athearn was born in Dighton, Massachusetts in 1895, and grew up in Fall River, in the house where he and his wife, Eleanor, presently reside. He was a skilled tool and die maker by profession and worked in Taunton most of his life. His many interests include geology, mineralogy, oceanography, other natural sciences, and archaeology. He possesses a fine library on these subjects, as well as interesting collections of minerals, shells, and fossils. By far his most extensive reading and collecting has been in the field of archaeology. He found his first arrowhead while a boy and has enthusiastically pursued his interest over the years. As his collection and his interest grew, he joined the Massachusetts Archaeological Society, became active in the Society's project at Wapanucket, and through the years has contributed articles to several M.A.S. publications.

The Athearn collection includes over 13,000 artifacts, of which over 9,600 were inventoried (Tables 1, 2). The majority of these was collected by Mr. Athearn from the east side of the Lower Taunton River Valley between northern Fall River and the Berkley Bridge in Berkley. For over 50 years, Roy Athearn collected and recorded prehistoric artifacts from the archaeologically rich plowed fields and exposed shell middens in this area. Although most of his material was surface collected from plowed fields, a small but significant portion came from excavated contexts, mainly from shell middens at the Barnaby's Cove and Tan Pond Brook Sites and from the Bear Swamp Sites. Athearn pursued his interest with enthusiasm and energy. Most of the sites from which he collected were situated within five miles of his home, on the route to and from his place of work. His notes indicate that he often stopped to search for artifacts on his way home. He also spent many a weekend and holiday, including a few bitterly cold Thanksgiving and Christmas days, searching his favorite fields.

In addition to his collecting, Athearn took copious notes on over 10,000 artifacts which he numbered and catalogued, describing in considerable detail the circumstances and the sites from which they came. These notes fill ten handwritten notebooks and span a period of over 40 years. They include information on site locations, boundaries, stratigraphy and disturbance, as well as other observations and notes on sites which are not physically represented in the collection.

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The MHC inventory indicated that the Athearn Collection identifies at least two major areas in the Lower Taunton River Valley where prehistoric activity was concentrated for considerable periods of time.

**BARNABY'S COVE AREA**

The first area is located in Freetown, just a short distance from the Athearn home. The plowed fields along the margins of Barby's Cove and Barnaby's Point were collected over a span of 40 years, during which time Athearn identified four very large sites. These have become known as: Barnaby's Cove, Peace Haven, Mother's Brook and Terryland. These sites are, for the most part, contiguous to one another and are inextricably related to one another in time and space. The Peace Haven Site, the most productive site in terms of the absolute number of artifacts, was excavated by Athearn and a number of colleagues prior to massive development by a gas refinery, and has been reported on in the *Bulletin* (Athearn, Staples and Barnes 1981) and in the *Widening Horizons* volume presented to Maurice Robbins in 1980 (Athearn, Staples and Barnes 1980).

Although this area has been defined in terms of only four large "sites," in fact these are better described as collecting areas bounded by modern landscape features such as field boundaries and probably comprising many smaller, discrete loci which could not be precisely defined by surface collection. Therefore, for greater ease of discussion and because of their relationship to one another, these sites are summarized together.

Taken together, the sites in the Barnaby's Cove area contained over 6,700 artifacts, comprising two-thirds of the inventoried portion of the collection. Paleoindian materials are lacking, but virtually every other known form of projectile point commonly found in eastern New England is present at these sites.

Four Bifurcate Base points from Mother's Brook and Peace Haven indicate the presence of people here during the Early Archaic period. A significant Middle Archaic component, represented by 105 points, including all of the forms generally attributed to this period (Neville-like, Neville-variant-like, Stark-like) is also present.

Based solely on absolute quantities, the Late Archaic is by far the most visible cultural horizon at this cluster of sites. The many Atlantic-like, Susquehanna Broad-like and Wayland Notched-like varieties indicate that peoples of the Susquehanna Tradition were active at this riverside/cove location also.

The Small Stemmed Point Tradition, dating from the Late Archaic and Early Woodland periods, is represented by a large number of specimens representing a major proportion of the entire point assemblage. At the Peace Haven Site, 70% of the typed points were identified as varieties of Small Stemmed points. By far the greatest percentage of these points was made of quartz with a significant minority manufactured from what was probably a locally derived blue-green argillite. Quartz was also the predominant raw material used for both Small Triangular (Squibnocket) and Large Triangular (Levanna) projectile points and for a variety of edge tools.

Large quantities of quartz chipping debris, including several workshop areas described in Athearn's notes, and large numbers of unfinished quartz stemmed and triangular preforms inventoried in the collection, indicate that both Small Stemmed and Triangular points of quartz were being manufactured in this area. The blue-green argillite also appears to have been used in manufacturing a variety of projectile point types in addition to the Small Stemmed points; the material was frequently used in the manufacture of Neville-like points. This pattern of raw material utilization is quite different from that observed in inventoried collections from the Concord and Essex County area, where Neville-like points are most frequently manufactured from local volcanics and quartzites (Johnson and Mahlstedt 1982a; 1982c).
In 1923, Athearn began excavating small test pits in a large shell midden which he had discovered at the Barnaby’s Cove Site. He continued working this feature for many years. His excellent records contain detailed information on the stratigraphy of the site as well as the context of specific artifacts and the location of hearths, pit features, and clusters of lithics. It is probable that detailed re-analysis of this feature could distinguish sequential cultural deposition here.

Other middens at Terryland and Peace Haven, owing to their excellent preservation qualities, have yielded forms of material culture and faunal remains seldom recovered in New England. Worked bone perforators and utilized bone shafts add to the already sizable tool kit from these sites.

The presence of several varieties of clam, including both hard and soft-shelled types, oyster, periwinkle and snail indicate that a range of shellfish was exploited from the adjacent mud flats. Other preserved faunal material such as deer vertebrae attests to the hunting of large terrestrial species.

Significantly, these middens all appear to have been the by-products of Woodland subsistence activities. Interior/exterior cord-marked sherds reminiscent of Vinette I pottery suggest Early Woodland activity for at least portions of these features. This complex of sites has also yielded sizable samples of Rossville and Meadowood points which are considered to be diagnostic of the Early Woodland period.

The Middle Woodland is relatively well represented at this complex of sites by over 130 projectile points. Lanceolate and Stemmed points similar to "Steubenville" types (Ritchie 1971:107-110) are most numerous. At Peace Haven alone, 67 examples of these two types were inventoried.

The presence of 244 Large Triangles, commonly known at Levanna points, provides vivid evidence of the presence of Late Woodland peoples here.

Projectile points have been the focus of discussion because of their value as chronological markers and because of their large numbers; over two-thirds of the artifacts in the collection are projectile points. However, the tool kits from these sites include a wide variety of other forms. It is beyond the scope of this paper to highlight them all. However, two classes of tools which were collected in large numbers in the Barnaby’s Cove area merit further discussion.

At the Peace Haven Site, Athearn noted a stratigraphic association between Small Stemmed points and bifacially worked, stemmed scrapers of quartz. At the nearly Barnaby’s Cove shell midden, dominated by Large Triangular (Levanna) points, Athearn noted that scrapers tended to be unifacially flaked and unstemmed, although still predominantly made of quartz. Analysis of his collection supports Athearn's observations: the distribution of bifacial and unifacial edge tools does appear to be correlated with the distribution of Small Stemmed and Large Triangular points.

A curious artifact form that is common in the Barnaby’s Cove area, but extremely rare in other inventoried collections, typically consisted of a rounded, flat, water-worn stone with a hole pecked through the center from both sides. These sites are favorably situated for fishing, and it appears that these perforated stones were the favored form of net or line sinker. While such specimens have been inventoried from other sites in southeastern Massachusetts, they are noticeably absent in the northeastern part of the state.

Since much of the Barnaby’s Cove area has been industrialized and large portions of several of these sites have been destroyed and can no longer be investigated, the Athearn Collection is the only remaining source of information on these sites. Thus, it is a valuable cultural resource in its own right and will hopefully be studied in greater detail than we have attempted.
TABLE 1

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ASSONET NECK AREA

The other major area represented in the Athearn Collection is the Assonet Neck region of the towns of Freetown and Berkley. This fairly well defined geographical area lies only a few miles north of the sites at Barnaby's Cove. Forty years of collecting enabled Athearn to identify at least six major sites. These sites are: the Friend Street Site; Chase Farm; Bayview Avenue; Fox Cemetery and Bear Swamp I and II. The six major sites on Assonet Neck from which Athearn collected essentially comprise one large continuous area of cultural deposits. Here, as at Barnaby's Cove, the site boundaries were defined by the presence of modern features on the landscape, such as roads and plowed fields, as much as by the presence or absence of cultural materials. These large sites, like those at Barnaby's Cove, are undoubtedly related to one another, and may well be portions of one another. None of these sites individually (or even as a group) has been as prolific in terms of the absolute quantity of artifacts as those around Barnaby's Cove. In fact, there may be few sites in New England that have yielded as many artifacts as the latter. The sites on Assonet Neck nevertheless contribute to the picture of extensive occupation for several thousand years along this portion of the Taunton River. Athearn's collection clearly documents that this was a significant focus of prehistoric activity.

Over 1,400 projectile points were inventoried from these sites, 1,151 of which could be typed. Unlike the Barnaby's Cove complex, Athearn's collecting on Assonet Neck has yielded no evidence of Early Archaic activity. The ensuing Middle Archaic period, however, is represented by an assemblage of 66 points. The Friend Street Site appears to have been the primary focus for Middle Archaic activity, as it contains over half of the Middle Archaic points in the Athearn Collection.

As is the case with the sites around Barnaby's Cove, Late Archaic point types, particularly those of the Small Stemmed Tradition, dominate the assemblages. The Susquehanna Tradition also appears as a well represented part of the Late Archaic.

The continuing importance of this area is indicated by the highly visible Woodland components, with each succeeding period being well represented by nearly all of the appropriate projectile point types.

The Bear Swamp II Site is the only site from the Assonet Neck area which has been excavated and reported. In 1969 Athearn and his friend and collecting colleague, Arthur Staples, published a preliminary report after two years of fieldwork (Staples and Athearn 1969). Their insightful article noted the predominance of Late Archaic material from this site and offered for the first time an interpretation of several large pit features which had mortar-like stones associated with them, suggesting that they were used for food processing, probably for nuts. This site proved to be so significant that it served as the data base for Carol Barnes' (1972) doctoral dissertation in which she interpreted Bear Swamp II as a fall and winter seed and nut processing station.

CONCLUSION

One of the most important aspects of Roy Athearn's collecting is that he was not just a collector, but in a very real sense he was a student of archaeology. His conscientiousness and dedication are exemplary, for both professional and amateur archaeologists. He has actively engaged in disseminating information to the community at large through articles to the Bulletin, and his work has stimulated others.

His copious notes are often so detailed that at a number of sites reasonably reliable reconstructions can be generated. His thoroughness and clarity have greatly increased the value of his collection for both cultural resource management and other archaeological research. The information contained in Athearn's notes on site locations, boundaries, stratigraphy, disturbance and contents, and information on cultural/temporal components contained in his collection are useful to cultural resource managers endeavoring to
protect the few sites that remain in the Lower Taunton River Valley area. The large samples of artifacts and faunal remains and the detailed notes are also valuable as a set of data with which archaeologists can study a range of topics, including culture history, technology, raw material distribution, subsistence, and social organization.

Roy Athearn's lifelong interests and pursuits have greatly added to our knowledge about prehistoric peoples. We have all been enriched by his activities and his collection will be of value to students of prehistory for some time to come.

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MASSACHUSETTS HISTORICAL COMMISSION

RITCHIE, William A.

STAPLES, A. C. and R.C. ATHEARN

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LOCUS Q-6, SITE M 52/65, QUIDNET, NANTUCKET, MASSACHUSETTS

Elizabeth A. Little

Locus Q-6, excavated in 1976 and 1977 by the Nantucket Historical Association, is a small portion of a large Woodland site, M52/65, which has been extensively excavated by Nantucket collectors. Locus Q-6 included part of a structure defined by an arc of post molds and part of an adjacent shell midden. Two radiocarbon dates have been obtained for the site. Because the M52/65 site has potential for helping to define coastal Woodland occupations in southeastern Massachusetts, we report our preliminary findings.

The Island of Nantucket is fortunate in the number and size of sites of prehistoric occupations (Little 1979), as well as in the number of archaeologists who have excavated parts of these sites and reported their findings (Little 1980). However, most prehistoric sites on Nantucket consist of many components, dating from ca. 11,000 to ca. 350 years ago on stylistic evidence, vertically intermixed in a thin layer of soil. A number of multi-component sites which may have had some stratification have been excavated without records.

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The resulting variety of projectile points, for the most part untyped, in private collections has contributed little to our knowledge of how and when prehistoric man lived on the island.

I report here on the details of a small controlled excavation at Locus Q-6 of the site M52/65. In addition, 732 catalogued artifacts in a private collection, representing a large sample of what has been excavated from other loci of M52/65, were available for examination. These complementary studies allow some conclusions to be drawn about the occupants of site M52/65 and the Woodland Period on Nantucket.

The excavation of Locus Q-6 was carried out for the Nantucket Historical Association by Paul C. Morris, Jr., with Barbara Kranichfeld as 1976 field director and Cynthia Young and Elizabeth A. Little as field directors in 1977. Young and Little supervised the laboratory work and produced a preliminary report on the archaeological findings (Little 1977). After completion of a survey of island collectors (Little 1979), and with the advice of Dena F. Dincauze, I have revised the 1977 report, especially with respect to the temporal and spatial context of Locus Q-6 and its significance.

THE LOCATION AND ENVIRONMENT OF M52/65

Quidnet is located at the east side of Nantucket Island, adjacent to the rich cod-fishing waters of the Atlantic Ocean (Figure 2). However, site M52/65 is an interior site overlooking a small fresh water pond, about 0.8 km from the open ocean on the east and about 2.4 km from the shellfish habitat at Polpis on the west. About 0.3 km to the east of the site is the large fresh-to-brackish Sesachacha Pond, which is occasionally open to the ocean, and is today the only place on the eastern shore of Nantucket which produces oysters (Zube and Carlozzi 1967). With a history of shore-line erosion, the east side of Nantucket may have once had additional oyster habitats. However, the dominating presence of oyster shells in the midden at Locus Q-6, coupled with reports of other large Woodland sites having oyster shell middens around the shores of Sesachacha Pond (Little 1979) and inland as far as 0.6 km from the pond (Bullen and Brooks 1949), suggests that M52/65 was one of a number of Woodland settlements associated with the oyster habitat of Sesachacha Pond.

A close view of the environment of M52/65 (Figure 3) shows that the "Bonanza" Site, as it is called by Nantucket collectors, lies in a shallow depression in the hilly north-
eastern part of the island, once covered by late Wisconsinan ice (Oldale 1982:16). Although occasional boulders (diameter 0.5-1.0 m) were encountered below the ground surface of Locus Q-5, the surficial glacial deposits found below the humus layer of Locus Q-6 consist of water-sorted sand and pebbles (diameter 0.5-1.0 cm) (David Folger, USGS, Woods Hole, comments at the site 1976).

At the lowest part of the depression, a sedge (Scirpus cyperinus ?) covered area, surrounded by tall shrubs (mostly Ilex verticillata), was dry for the summers of 1974-1977, and a test boring in August 1977 showed the water table to be at 67 cm below ground surface. However, the shrubs show a coating of scum for about 0.5 m above the ground, and off-season visits to the site proved that there was in fact a seasonal pond here, about 0.15 m deep in December in 1976, and about 0.3 m deep in March of 1977.

The seasonality of the pond at M52/65 suggests occupation only between late fall and spring. Protected from the prevailing northwest winter winds by hills to the north and northwest, the site is today noticeably warmer and less windy in December than the nearby tops of hills. Additional evidence that M53/65 was used during the winter and spring is provided by the presence of teeth from gray seals in the Q-6 midden. According to Andrews (Andrews and Mott 1967; Andrews, personal communication), gray seals can be obtained most easily by clubbing on beaches during the winter and early spring, when they haul out for pupping or moulting. Gray seals today frequent Muskeget Island (Figure 2), and may have been found off the eastern shores of Nantucket in prehistoric times.

Since there are many protected sites of a similar age to M53/65 in the Quidnet region with year-round water, the use of a marginal site such as M52/65 suggests a large population density.

Before leaving the subject of the pond, I would like to note that there is a very slight suggestion in the artifact spatial distribution that later occupations tended to be closer to the present pond edge than did earlier occupations. Therefore, in reconstructing the environmental history of this pond, one would look for evidence that in the past the pond had a higher water table than it does today.

THE EXCAVATION OF LOCUS Q-6

Complete details of the excavation of Locus Q-6 have been published (Little 1983), and only the highlights will be included in this report. The excavation of Locus Q-6 was carried out in 1976 and 1977 in undisturbed ground adjacent to a group of previously excavated loci, Q-5, and N1-1 through N1-10 (Figure 3).

Figure 3. Topography of Site M53/65, based on Map Sheet #21 (Schofield Brothers, Inc, 1976). Elevations are in feet (0.305 m) above half tide. Q-5, Q-6, Q-7, N1-1, N1-2, N1-3, N1-4, N1-5, N1-6, N1-7, and N1-9 are loci which collectively constitute site M52/65, as reported by Paul C. Morris, Jr., and the 1978 site survey (Little 1979). A, gives the location of new houses, and B, of a new driveway, where earth moving operations in 1978-1979 revealed no signs of prehistoric sites. Datum is a concrete post marking the northwest corner of the property of Paul C. Morris, Jr.
A base line running north and south (magnetic) was laid out and a grid of two-meter squares was staked. Each square was identified by its southwest stake, which was labeled with its coordinates, in meters and direction, from the stake EONO. The stake EONO was 10 meters east and 16 meters south (magnetic) from the concrete bound labeled "datum" (Figure 3) which marks the northwest corner of the Morris property. Locus Q-6 consisted of the 10 contiguous squares shown in Figure 4, which also gives the elevations of the corners of the squares as measured from ground level at W22S26. Ground level at W22S26 is 69 cm below the top of a buried boulder at ground level in W10S2. The top of this boulder is approximately 16 meters above half tide (Schofield Brothers 1976).

Tools used for excavations included trowels, paint and dust brushes, 1/4 inch (0.635 cm) mesh screens, dust pans and buckets, line levels, meter sticks, and a two-meter stick marked in centimeters. Since no natural levels were discernible in the material above the sandy subsoil, excavation proceeded in 10 cm levels, in 14 cm levels, or in 20 cm levels, under various field directors. Three coordinates were taken for each artifact in situ, and records were kept on artifact cards as well as in field notes. The numbered artifacts, field notes, detailed summaries, and faunal and soil samples are stored and available for study at the Nantucket Historical Association's archaeology department at Nantucket.

Vegetation present at the site at the start of excavation was: milkweed, grape, bayberry, beach plum, viburnum (arrow wood), wild rose, blackberry, scrub oak, red cedar (23 cm tall), sumac, cherry, pokeweed, choke cherry, golden rod, and poison ivy. Traces of ancient trees or plowing were not observed.

The soil at Locus Q-6 generally consisted of 20 to 40 cm of dark brown-gray sandy, silty humus, underlain by a yellow-orange sand with a scatter of water-washed pebbles. These levels are described as "dark soil" and "yellow sand" in field notes and drawings. The top 5 cm of the yellow-orange sand showed dark mottling. At the north (Figure 5), a shell midden with whole oyster shells formed a layer from 0 to 17 cm thick directly on the yellow sand layer. Above the layer of whole shells, a layer of dark soil containing shell fragments ("shell bits") and other occupational debris covered the whole-shell midden and extended downhill to cover the yellow sandy subsoil in all but the three squares at the extreme southeast (Figure 5).

FEATURES

Figure 5 shows the locations and horizontal dimensions of the tops of eight pits identified at Q-6. These pits ranged from 30 to 100 cm in diameter and were basin-shaped, conical, or oval with depths from 5 to 73 cm, as shown in Table 3. With the exception of Pit A, which was first noted in the middle of the layer of dark soil and shell bits, pits were detected only at the top of the yellow sand from which they extended down as much as 45 cm. They were filled with dark, greasy soil, and dark silty sand, and occasionally contained small fragments of charcoal, burned bone, burned stones, flakes, shell, and pottery fragments. All of the pits were located in the five southeastern squares, with the exception of Pit C in the shell midden.
TABLE 3. PITS AT LOCUS Q-6

<table>
<thead>
<tr>
<th>PIT</th>
<th>LOCATION</th>
<th>DEPTH (CM)</th>
<th>DIAMETER</th>
<th>SHAPE AND FILL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Top-bottom</td>
<td>Top (CM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>W18S24</td>
<td>12-85</td>
<td>100</td>
<td>Large basin of dark soil, containing intrusion with shell, bone, flakes.</td>
</tr>
<tr>
<td>B.</td>
<td>W22S26</td>
<td>20-65</td>
<td>75</td>
<td>Deep, conical, with dark soil, bone, shell, flakes.</td>
</tr>
<tr>
<td>C.</td>
<td>W20S20</td>
<td>30-35</td>
<td>60</td>
<td>Shallow, oval, in midden.</td>
</tr>
<tr>
<td>D.</td>
<td>W18S24</td>
<td>26-46</td>
<td>30</td>
<td>Shallow, oval, dark soil with shell.</td>
</tr>
<tr>
<td>E.</td>
<td>W22S26</td>
<td>25-30</td>
<td>15 x 84</td>
<td>Shallow, long, dark soil.</td>
</tr>
<tr>
<td>F.</td>
<td>W18S26</td>
<td>20-25</td>
<td>75</td>
<td>Shallow, oval, dark soil.</td>
</tr>
</tbody>
</table>

Sixty-six post molds were identified (Figure 5), of which 22, sometimes paired, described a 4.75 meter arc between W22S24 and W18S22. This arc suggests the outline of a structure or structures, but because of probable overlapping, does not quite define either a shape or dimensions. However, the north and northwest walls of a structure are defined by this arc of post molds, and the interior of the structure would have included Pits B, E, G and H.

The post molds, 7-10 cm in diameter and usually tapering to points, penetrated the yellow sandy subsoil as much as 35 cm, and were in most cases filled with the broken shell and dark soil of the top layer. In the most southeasterly squares, where there was no broken shell in the top layer, it was very difficult to identify post molds. The molds could not be traced in the layer of dark soil and shell bits: the excavators never found any evidence that

Figure 5. Horizontal map of features at Locus Q-6, showing pits, shell midden, and post molds, as well as the approximate southern boundary of the whole shell midden, A, and the approximate southeastern boundary of shell bits in dark soil layer, B.
Figure 6. Q-6 organic artifacts and other items, with comments by Dena F. Dincauze, 1977. Deer bone, not worked: A, B; deer bone awl: C, D; tooth: E, F, G; antler tips: H, I; worked bone?: J; fragment of turtle carapace: K; codfish ear-bone: L.

Figure 7. Q-6 artifacts with comments by Dena F. Dincauze, 1977. Small Woodland triangles: A, C, D, E, F, H; Late Archaic or Woodland Triangles: B, M; Fox Creek-like: K; Fox Creek-like?: L, N, O, P; Rossville or reused Stark: J; no comment: G, I; ?-important: Q.
the molds extended above the yellow sand. Some doubtful post molds, less than 7 cm deep, are included in Figure 5 as open circles in case a pattern of posts supporting beds or cooking frames might have emerged. The resulting scatter of molds suggests multiple and sequential uses of this ground.

Closely packed whole shell and other debris were found 20–40 cm below ground surface in the northern squares of the locus, as shown in Figure 5. Table 4 lists the contents of a sample of the midden, which included nearly whole shells, large fragments of deer bone (Figure 6: A, J), seal teeth (Figure 6: G, F), a bone awl (Figure 6: D), and a Rossville or re-used Stark point (Figure 7: J).

ARTIFACTS

The figures illustrate certain finds at Q-6 according to kind: Figure 7--mostly diagnostic artifacts; Figure 8--selected pottery; Figure 6--organic remains of particular interest. For the complete set of artifactual finds, see Little (1983). Dena F. Dincauze in 1977 helped us group the finds for the photographs, and her comments have been indicated on the captions to the figures. With a few uncertain exceptions, the diagnostic artifacts of Locus Q-6 indicate Woodland occupations.

Most of the pottery sherds are too small to be informative beyond noting that all are medium thick (0.6 to 0.7 cm), and that some are grit tempered, with mineral grains as large as 3 mm on an edge, and others are shell tempered. According to Moffett (1957) and Fowler (1966), both Stages II and III of the M.A.S. classification are represented here.

Figure 8. Q-6 pottery, large fragments only, see text for comments by Dena F. Dincauze, 1977.
TABLE 4. CONTENTS OF SHELL MIDDEN, LOCUS Q-6

From one bucket of midden contents, square W20S20, 20-30 cm below ground surface, material not passing through a \( \frac{1}{4} \) inch screen consisted of:

- **Oyster** (*Crassostrea virginica*): 90% by weight, whole shells, some very mature specimens, and fragments.
- **Quahog** (*Mercenaria mercenaria*): 10% by weight, mature (diameter larger than 6 cm), and immature.

Miscellaneous: less than 1% by weight, and consisting of:

- Soft shell clam (*Mya arenaria*): occasional whole and broken shells.
- Bay scallop (*Pecten irradians*): small fragments, rare.
- Surf clam (*Spisula solidissima*): a single large hinge.
- Oyster drill (*Urosalpinx cinerea*): one specimen.
- Ribbed mussel (*Volsella plicatulus*): several fragments.
- Boat shell (*Crepidula fornicata*): occasional whole shells.
- Jingle shell (*Anomia simplex*): occasional whole shells.
- Knobbed whelk (*Busycon caricum*): a single knobbed fragment.
- Blue crab (*Callinectes sapidus*): four claws.
- Striped forest snail (*Anguispira alternata*): 20; probably inhabitants of the midden.
- Eastern mud snail (*Ilyanassa obsoleta*): about 5.
- Barnacles: several whole specimens.
- Turtle: fragment of carapace of small turtle (*Figure 6:K*).
- Fish: occasional bones, unidentified.
  - Perch: possibly a couple of bones.
  - Cod: one codfish earbone (*Figure 6:L*).
- Gray seal (*Halichoerus grypus*): two teeth (*Figure 6:E, G*).
- Harbor seal (*Phoca vitulina*): possibly one broken tooth (*Figure 6:F*).
- Bird: fragments of hollow bones, generally small.
- White-tailed deer (*Odocoileus virginianus*): antler, leg bones, jaw bone (*Figure 6:A,B,H,I*).
- Bone: many fragments, often burned, unidentified.
- Pottery: 17 small fragments grit tempered; 40 small fragments shell tempered.
- Flakes: occasional dark grey felsite flakes.
- Stones: several fire-burned and fire-shattered stones.
- Tools: Deer-bone awl (*Figure 6:D*), and red felsite Roseville point (*Figure 7:J*), found at bottom of whole shell midden.

ETC.: Owl pellet containing fur and bones of small mammals, and shrew skull, both probably inhabitants of midden.

An inspection of the largest and best preserved sherds resulted in the following descriptions of some of the pottery, with comments by Dena F. Dincause. Pottery found above and in the whole shell midden (W20S20), *Figure 8: R, S, and T*:

- **R.** Grit tempered, wet wiped interior, quahog shell (the serrated edge) impressed exterior, thickness: 0.6 cm.
- **S.** Grit tempered, wet wiped interior and exterior, thickness: 0.6 cm.
- **T.** Shell (?) tempered, plain, weathered, thickness: 0.6 cm.
Figure 8: U, found under whole shells; V, W, found among whole shells, at the bottom of the midden in W20S22:

U. Shell tempered, platted, trailed incisions, thickness: 0.7 cm.

V. Shell and grit tempered, wet wiped interior, quahog shell and cord wrapped stick impressed exterior, thickness: 0.7 cm.

W. Grit tempered, wet wiped interior, quahog shell and fabric impressed exterior, thickness: 0.6 cm.

Flakes not passed through the 1/4 inch screen were saved and bagged. Due to the variable range of depths bagged together under different field directors, it is not possible to distinguish occupation layers by changes in the vertical flake density or material. The horizontal density variation for flakes showed the following distribution in the number of flakes per square: 76 (W22S20, 42 (W22S22), 271 (W22S24), 166 (W22S26), 111 (W20S20)), 90 (W20S22), 188 (W20S24), 48 (W20S26), 497 (W18S24), and 103 (W18S26). The variation in flake density is due in part to the many flakes found in pits. Of the flakes, 92% were green/gray, gray, or black felsite, and 8% were quartz, percentages which reflect the composition of the flaked stone tool materials at Q-6, as well as at most Nantucket sites (Luedtke 1980:128, Little 1979).

CARBON-14 DATES

A carbon-14 date of 1575 ± 160 C-14 years B.P. (GX-4528; half life: 5570 years; 67% confidence interval; apatite fraction; P. = 1950) was obtained from Geochron Laboratories in 1976, for 140 grams of deer bone fragments collected from the balk between squares W20S24 and W22S24, 20-25 cm below ground surface near the bottom of the layer of dark soil and shell bits (Figure 9). This sample represents the lowest stratum of occupational debris inside the post mold outline, excluding pit contents.

Another carbon-14 date, 1680 ± 80 C-14 years B.P. (I-9734; half life: 5568 years; 67% confidence interval; outer 7% of shell removed with acid washes, inner 25% dated; P. = 1950) was obtained in 1977 from Teledyne, courtesy of David Folder, on whole oyster shell from the bottom of the shell midden, 40 cm below ground surface in W22S20. This should represent the oldest date for the whole shell midden (Figure 9).

Figure 9. Schematic diagram of stratification at Locus Q-6, projected onto a vertical plane through stakes S18W22 and S26W16, i.e., a plane which is central and runs nearly parallel to the downward slope at the site. Rossville and Fox Creek-like artifacts, which appear to originate at the shell midden at the upper right, may have moved downhill at least as far as the boundary between "a" and "b", along with bone and shell debris, to cover the Woodland Triangles within the arc of post molds. Note the locations of the bone and shell samples taken for C-14 dating.
These two dates, taken on different substances, are not strictly comparable. However, estimating and applying corrections for fractionation, reservoir effect, C-14 half life, and atmospheric C-14 variation with time (Stuiver and Polach 1977:357-358; Klein, Lerman, Damon, and Ralph 1982), we find a corrected date range of 460 A.D. to 155 B.C. for bone, and 580 A.D. to 65 A.D. for shell (95% confidence interval). These two dates cannot with confidence be considered to be different (Long and Rippeteau 1974:211).

ANALYSIS

Since the lack of archaeological expertise at Nantucket limits our ability to interpret these results, I shall attempt to present our findings without encumbering them with speculation. Also, because of the lack of good definitions for the Early, Middle, and Late Woodland periods in New England (Ritchie 1969:226,228), I shall avoid these terms.

Locus Q-6 represents, with only a few exceptions, Woodland Period occupations (Ritchie 1969 225:228). By plotting the artifact finds for Locus Q-6 against depth, one finds two peaks in the number of artifacts, one at 10-16 cm and one at 18-26 cm below ground surface. Woodland Triangles dominate the lower peak, but Rossville and Fox creek-like artifacts are found at all depths to 25 cm. However, this analysis is too coarse, and obscures significant horizontal variations in the depth distribution. Figure 9, in which location downhill is combined with vertical position, more accurately describes the vertical distribution of diagnostic artifacts at Locus Q-6.

Our analysis of the vertical and horizontal distribution of diagnostic artifacts has proved the major stumbling block to understanding this site. Most of the Woodland Triangles were excavated at the base of the layer of dark soil with shell bits, that is, below the occupational debris inside the arc of post molds defining a structure. On the basis of stratification, one hypothesis has to be that these Triangles date to 460 A.D. or earlier. Alternatively, since nowhere in New England have Woodland Triangles been dated earlier than 700 A.D. (Ritchie 1969:232; 1971:31), we are led to propose that the Triangles represent the latest occupation at Q-6, and that the earlier midden material has moved downhill to cover, in part, the later cultural remains.

There are many mechanisms which might have moved the midden debris downhill. A layer of pebbles noted in W18S24 at 14 cm below ground surface faintly suggests an episode of slope wash. On the other hand, the high density of possibly non-synchronous occupational loci at M52/65 would argue for prehistoric man as the earth moving agent. Since some of the shell debris has filled the post molds, the abandonment of the structure associated with the post molds and the movement of the shell midden debris could not have been very far apart in time.

Except for the Woodland Triangles, all diagnostic artifacts are of the Fox Creek-like or Rossville style, which have been C-14 dated elsewhere on charcoal to dates between 1450 to 2400 C-14 years B.P. (Libby half-life)(P=1950) (Ritchie and Funk 1973:120; Ritchie 1969:231). Therefore, the Q-6 dates are not inconsistent with published dates for Rossaville and Fox Creek-like styles.

THE CONTEXT OF LOCUS Q-6

There is some information available about the other parts at Site M52/65. A controlled excavation was carried out at Locus Q-5 in 1974-1976 under the direction of Barbara Kranichfeld (Kranichfeld 1975). Eighteen two-meter squares were excavated between W2S2 and E10N8, on the same grid as that used for Q-6, and 14 m east and 18 m north of Q-6 (Figure 3). The Q-5 artifacts include diagnostic Rossville and Greene points (Ritchie 1971:122), as well as variants (Little 1983). Two large quartz square-stemmed points (Inquirer and Mirror, August 21, 1975), together with two Side-Notched points (Little 1983), may represent the earliest Woodland remains at Locus Q-5 (compare Ritchie's Side Notched and Wading River styles at Peterson Stratum 2B (Ritchie 1969:231). A rolled
copper bead (Little 1983) found at Q-5 in an Early Woodland context suggests a native origin for the copper (Ritchie 1969:225). The lack of Triangles at Q-5 is notable, and could indicate a changed water level, or other environmental differences, between the Rossville/Greene period and the Triangle period.

Q-7 (Figure 3), which lies approximately 22 meters north of Q-5, has a surface scatter of shell and flakes, and represents the presently known northern extent of M52/65. The tops of several hills nearby have recently been excavated for new houses, and, along with a driveway on the west of M52/65 (Figure 3), proved to have no evidence of prehistoric occupations. In 1978 we were fortunate to be able to study and photograph 732 artifacts collected by Paul C. Morris, Jr., from the Bonanza Site (M52/65), Locis N1-1, N1-2, N1-3, N1-4, N1-5, N1-6, N1-7, and N1-9 (Figure 3). Many of these artifacts have been examined by Barbara Luedtke and Dena F. Dincauze. The diagnostic artifacts consist primarily of Woodland Triangles, Rossville points, and Greene points. Also included are untyped pentagonal points, and intermediate forms which include those classified by the Massachusetts Archaeological Society as Tapered Stem, Diamond, and Leaf (Fowler 1963). Not identified at M52/65 are: Orient Fishtails, Meadowood, Fox Creek Stemmmed, Jack's Reef Corner Notched or Jack's Reef Pentagonal points (Ritchie 1971:26-28), although all of these have been found at Nantucket in fairly substantial numbers in the first four cases (Nantucket Historical Association Files). We summarize the artifact distribution as a function of locus in Table 5. The heading "Rossville, Green, and Variants" includes Fox Creek-like, and untyped pentagonal styles.

Woodland Triangles occur almost equally in number and distribution with other artifacts at M52/65 (Table 5), but we presume that the Triangles are the youngest artifacts at the site. The earliest C-14 date for them at Martha's Vineyard is 920 ± 70 A.D. (Ritchie 1969:206), and at Nantucket is 940 ± 100 A.D. (Stockley 1965; and letter 1982). We find some support for an early rather than late date for the Triangles from their strong association with Greene points (Ritchie 1969:226), and from the thickness and crudeness of the pottery (Dincauze, personal communication). However, studies of Nantucket ceramics associated with C-14 dates are required before pottery can be used as a chronological marker.

In summary, M52/65 has produced a large number of diagnostic artifacts (569), almost entirely of the Woodland Period, with a strong representation from the first half of the period.

NANTUCKET

From inspections at Nantucket collections in 1978, Woodland artifacts dominate the diagnostic materials found on the island. At least 18 sites with Woodland components similar to those of M52/65 were inventoried (Little 1979; see for example Bullen and Brooks 1947, 1949). Although many of these sites had additional components, the Woodland Period includes the most intensive occupations so far identified on Nantucket.

MARTHA'S VINEYARD

William Ritchie (1969) excavated six sites at Martha's Vineyard, each of which contained some Woodland material. However, Locus Q-6 can best be compared to Ritchie's data for the Cunningham Site, C-14 dated to 400 ± 80 A.D. and 1150 ± 80 A.D., which produced 21 Woodland Triangles, eight Jack's Reef Corner Notched points, and 18 artifacts of Lagoon, Rossville, Fox Creek, Greene, and Jack's Reef Pentagonal styles. In addition, there were two Side-Notched points and two Susquehanna points (Ritchie 1969:111). With one possible exception, M53/65 does not include Jack's Reef Corner Notched points; and M52/65's pentagonal points, which I am calling untyped, are more similar to Greene points than to Jack's Reef Pentagonal points. Ritchie found at Cunningham the only recognizable post mold patterns of all his sites, and 16 features (hearth or pits); both findings compare well with our results for Locus Q-6.
Like Q-6, Cunnungham was occupied in the fall, winter and spring (Ritchie 1969:116; Ritchie and Funk 1973:358), and the diet consisted mainly of deer. Both Q-6 and Cunning­ham included remains of gray seal, bone awls, and shell and/or grit tempered pottery. The major difference, aside from the lack of Jack's Reef Corner Notched points at Q-6, is that oyster shell dominated the midden at Q-6, while bay scallop and quahog formed most of the shell midden at Cunningham. Problems of stratification were severe at both sites.

**THE MAINLAND**

There is a great deal of similar "Middle" Woodland material on Cape Cod (see, for example, Eteson, Crary, and Chase 1978), where it is associated with an increase in population intensity and the first use of shellfish (Moffett 1957).

Although there are problems in definition, "Early to Middle" Woodland sites similar to M52/65 can be traced from southeastern New England through eastern New York, eastern Pennsylvania, New Jersey, and Maryland, to Virginia (Kinsey 1974).

**SUGGESTIONS FOR FUTURE RESEARCH**

The excavation procedure, record keeping, and curation of materials from the excava­tion of Locus Q-6 represent a considerable advance over most previous archaeological pro­jects on the island. Considering the challenging stratigraphy we encountered, a gratifying amount of analysis has been achieved. However, if we could excavate the site again, we would want to collect botanical samples by flotation, especially from pit features, stabilize and record small pottery finds in a more permanent manner than just putting them in envelopes, and record individual flakes by depth and stone type. We also need to acquire on the island the expertise necessary to study and identify faunal, floral, lithic, and pottery remains. Pottery and botanical studies for Woodland sites could help identify changes in subsistence strategies as well as fine-tune our knowledge of chronology for the Woodland Period, during which major prehistoric occupations occurred on the island. Particularly valuable information might have been obtained from botanical samples and C-14 dates from pits at Locus Q-6, which, on stratigraphic grounds, may have belonged to the Woodland Triangle component.

**SUMMARY**

Repeated use of the same sites, the thin soil of New England, and a lack of cultural definition have resulted in the under-reporting of Woodland sites (Dincauze 1974, Ritchie 1969). While site M52/65 has most of these problems, the significance of this marginal and seasonal site lies in the limitation of its occupations to the central portion of the Woodland Period. As an explanation for this limited occupancy, we postulate that, on the basis of the other Nantucket sites of this same period, the population density of this time was high, perhaps at its peak, considering the diminishing area of the island over time with the rise of sea level.

We have described evidence for a Woodland structure and shell midden at Locus Q-6, site M52/65, Nantucket. Deer bone remains above the floor of a structure defined by post molds and Woodland Triangles have been dated to between 155 B.C. and 460 A.D. (95% certainly). Although we have not been able to exclude the possibility that there were Woodland Triangles in use before 460 A.D., Ritchie (1969, 1971) gives evidence that Woodland Triangles reached New England only after 700 A.D. In this case, we show data which would support the proposition that midden debris of about 150 A.D. has moved downhill to cover a structure abandoned sometime after 700 A.D. If this is what hap­pened, then the earth movement, caused either by man or by nature, took place after 700 A.D. One could speculate that the earth movement was effected for the purpose of gardening. Unfortunately, no flotation samples were taken to address these issues.
TABLE 5. SUMMARY OF ARTIFACT STYLES AT SITE M 52/65

<table>
<thead>
<tr>
<th>LOCUS:</th>
<th>NL-1</th>
<th>NL-2</th>
<th>NL-3</th>
<th>NL-4</th>
<th>NL-5</th>
<th>NL-6</th>
<th>NL-7</th>
<th>NL-9</th>
<th>G-6</th>
<th>PCM</th>
<th>WB &amp; RH</th>
<th>Missing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROSSVILLE, GREENE, &amp; VARIANTS:</td>
<td>10</td>
<td>4</td>
<td>12</td>
<td>54</td>
<td>129</td>
<td>5</td>
<td>76</td>
<td>38</td>
<td>17</td>
<td>5</td>
<td></td>
<td></td>
<td>350</td>
</tr>
<tr>
<td>WOODLAND TRIANGLES:</td>
<td>9</td>
<td>19</td>
<td>34</td>
<td>97</td>
<td>4</td>
<td>26</td>
<td>24</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>219</td>
</tr>
<tr>
<td>ARTIFACT TOTAL:</td>
<td>11</td>
<td>15</td>
<td>45</td>
<td>251</td>
<td>9</td>
<td>140</td>
<td>104</td>
<td>31</td>
<td>56</td>
<td>2</td>
<td>24</td>
<td>3</td>
<td>824</td>
</tr>
</tbody>
</table>

Included in the artifact total are: six bone awls, one bone flaker, two copper beads, one double-pitted hammerstone, two grooved hammerstones, one (broken) celt, two two-holed gorgets, six one-holed gorgets, four worked red ochre stones, a large number of scrapers, three untyped Side-Notched points, two Late Archaic or Woodland Triangles, three Stark or Rossville points, two quartz square-stemmed points, and a skate tail. WB, RH, and PCM are collectors with artifacts from M52/65 without exact provenience.

Deer bones and oyster shell dominate the food remains at Locus Q-6. Late fall, winter and spring occupation of Q-6 is suggested by the remains of gray seal, the current seasonality of the pond, and the wind protection afforded the site by the hills around it.

Woodland artifact styles in southeastern Massachusetts are variable and ill-defined in the literature. However, artifacts like those at M52/65 are common on Nantucket, Martha's Vineyard, and Cape Cod, and can be found along the coast south to Virginia (Kinsey 1974). A major prehistoric occupation of the southeastern Massachusetts coastal islands, such as this, deserves to be more fully studied and described than it has been heretofore.

ACKNOWLEDGEMENTS

The excavation of Locus Q-6 was directed by Barbara Kranichfeld, Cynthia Young, and Elizabeth A. Little, under the guidance of Paul C. Morris, Jr. Cynthia Young, Elizabeth A. Little, Mary Lou Campbell, Ann Ross, and Jane Murphy have helped with the lab work and 1977 report. Shirley Blancke of Concord, Massachusetts, contributed advice and references. Barbara Luedtke helped catalogue Morris's Bonanza collection. Dena F. Dincauze examined and commented on the materials from Locus Q-6, Morris's Bonanza collection, and other Nantucket collections. We are particularly grateful to Paul C. Morris, Jr., for permission to excavate on his land. I thank Dena F. Dincauze and Barbara Luedtke for their sustained help and many constructive suggestions during the writing of this paper.

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<table>
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<tr>
<th>Author(s)</th>
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<th>Year</th>
<th>Source</th>
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<tr>
<td>Inquirer and Mirror</td>
<td>Indian Village unearthed at dig, possibly oldest on island.</td>
<td>1975</td>
<td>Nantucket Inquirer and Mirror August 21, 1975.</td>
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<tr>
<td>Kranichfeld, Barbara</td>
<td>The Quidnet Site on Nantucket, Massachusetts. Report submitted to the Nantucket Historical Association.</td>
<td>1975</td>
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<td>Little, Elizabeth A.</td>
<td>Report on 1976 Excavation at Site Q-6, Quidnet, Nantucket, Massachusetts. Report submitted to the Nantucket Historical Association.</td>
<td>1977</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
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<td>1982</td>
<td></td>
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</table>
A POSSIBLE BONE EFFIGY FACE

Philip Brady

On Saturday, November 18, 1981, a friend and I visited an early Colonial mill site in Middleton, Massachusetts, located on Sawyer Brook, a tributary of the Ipswich River. The dam is located in a heavily wooded area approximately halfway between Bold Hill in Boxford and Peabody Street in Middleton. It is off Old Thomas Road which is almost on the Middleton-Boxford town line. Not far from the site is the farm, now overgrown, where the famous Danvers Carrot was propagated. When we visited the dam, the brook was dry. Its course is slightly downhill and the dam remains now consist of large scattered boulders at the bottom of a rather narrow ravine. Fairly steep banks rise approximately eight meters.

At the top of one bank is a small rock shelter. It has just enough room inside for a large man to sit comfortably. The floor is rock, but there was about a shoebox of damp, black, compacted soil inside. I scratched through the earth with my onion hoe and as I scraped it toward the front of the shelter, I uncovered a quartz chip, a Small Stemmed quartz point with a portion of the top missing, and a small bit of bone. After I cleaned it, I discovered the bone had been carved to depict a face, with an exaggeratedly large open mouth (Figure 10).

The bone, being hollow, is presumed to be from a bird, species unknown. Measurements are: length, 37 mm; width at top of head, 14 mm; depth, nose to back of head 14 mm; mouth opening, 18.5 mm x 7 mm, tapering to 4 mm. The right eye socket is 4 mm wide, the left socket 5 mm. The lines forming the sides of the nose are 4 mm long, the base line, 3 mm.

The outer bone surface forming the underside of the jaw has been worked and smoothed; the jaw tip has been shaped to bring it to a blunt, upswept point. The cheeks and the area beneath the nose have also been shaped by cutting and smoothing.

Visual examination gives a definite impression that the workmanship that created the eyes, nose and mouth is very precise. Examination under an industrial microscope (Olympus Zoom Stereo Microscope, Model SZ-Tr.), at a magnification of 25x, revealed that, in fact, the cutting of the features is very rough. A few of the imperfections noted include a scratch running between both eye sockets that was largely smoothed away, as well as a 3 mm scratch slanting down from the forehead to the nasal corner of the left eye. The right eye socket was formed with five or more tool cuts; the outer end of the socket has a small fault where the bone resisted the tool.

The bone ridges forming both sides of the mouth opening are serrated and microscopic examination reveals that the cuts were partially smoothed after initial work. The serrations are unevenly spaced and were cut with individual strokes of a tool. The serrations vary in depth.
and the lines are not rigidly straight. Because of the great unevenness of the marks, it is obvious that they were not made with a mechanically perfect tool. Finally, there is a scratch approximately 1.5 mm long leading into the top of the left-hand groove forming the nose.

Many other imperfections were noted and could be cited, but it was the unanimous feeling of those who microscopically examined the bone face that the work was not done with a modern-day tool, such as a file, but rather with a knife, perhaps, steel, but quite possibly stone.

There are a number of unanswered questions: Is this an effigy of a face? If an effigy, what does the face represent? If the item is a product of a Woodland Indian, why does the bone not show more decay, buried as it was in soil that must have often been wet from snow and rain? Does the face represent, or was it intended to represent, either a particular person, or, perhaps, a type of general facial appearance known to the carver? Finally, have any other such bone faces been found, the product of local native peoples?

The representation effigy carving, if such it is, is now on loan display at Bronson Museum and is available for examination by any interested person.

**********

PEMAQUID, MAINE: PRELIMINARY RECONSTRUCTION OF A SEVENTEENTH CENTURY COASTAL COMMUNITY'S DOMESTIC AND INTERNATIONAL TRADE CONNECTIONS

Neill DePaoli

The commercial development and settlement of seventeenth century Maine has, until relatively recently, been dealt with only sporadically. To a large degree, most of the research efforts have been undertaken by historians who have tended to focus on the larger, better documented communities such as Kittery, York, and Falmouth. Not surprisingly, little is known about the smaller, poorly documented fishing and trading outposts scattered throughout the Maine coast and the lower reaches of its major rivers. Increased efforts to document these peripheral communities have been undertaken by the Maine archaeological community in the last decade. These efforts have included excavations at Arrowsic, Damariscove, Pemaquid (Pemaquid Beach) and Ft. Pentagoet (Castine) (Figure 11).

This paper focuses on the English settlement of Pemaquid, Maine during the period 1650-1675, as represented through its material culture. The artifacts examined were limited to eight categories due to the large quantity of material recovered from the site. These are items traditionally associated with European-Indian trade: glass beads, clay tobacco pipes, iron kettles, cutlery, lead bale seals, European ceramics, spearpoints, and one exotic item. Particular attention was focused on the correlation between the English character of the settlement and the production sources of the recovered cultural material. Preliminary efforts were then made to reconstruct the trade networks used to transport these items to Pemaquid.

It became readily apparent the artifact assemblage excavated from Pemaquid was far from being uniformly English. Although the majority of the study group materials were of English manufacture, a considerable number of continental European items were also present. Contrary to the traditional assumption of the economic isolation of the English frontier settlements of northern New England, Pemaquid was part of an extensive trade network linking it with the region's native population, other Maine settlements (English and French), the commercial centers of southern New England, England and continental Europe.

The site of the seventeenth century English settlement of Pemaquid is located midway
up the Maine coast in the village of Pemaquid Beach. This small fishing and tourist community is located on the western shore of the Pemaquid peninsula at the mouth of the Pemaquid River. From this point, the Atlantic Ocean is only three miles to the south (Figure 12).

Figure 11. Map of Maine, after Sanger (1979:14).
The Pemaquid area initially appears to have been utilized as a seasonal fishing station by European fishermen by the first decade of the seventeenth century (Camp 1975:IX). By the early 1920's, the Pemaquid peninsula was a regular rendezvous for European fishermen, traders and natives (Levett 1847:II, 87). Establishment of a permanent English settlement occurred in c. 1628 under the sponsorship of two Bristol, England merchants, Gyles Elbridge and Robert Aldworth (Farnham 1901:165). Not surprisingly, a considerable portion of Pemaquid's population throughout the first half and into the third quarter of the seventeenth century were from the Bristol area.

Figure 12. Map of Boothbay and Bristol, Maine. Pemaquid study area roughly delineated by square. After USGS Quad map of Bristol, Maine (1957).
During the seventeenth century, Pemaquid was situated in the "howling wilderness" the Puritans of southern New England continuously spoke of and sought to overcome. Maine was heavily forested and sparsely inhabited by the English who numbered approximately 1,000 in 1650 (McManis 1975:68). Pemaquid's population, in turn, was small. One source claimed "there were in the year 1630, eighty-four families, besides fishermen, about Pemaquid, and St. Georges and Sheepscot" (Sullivan 1971:167). Even in 1670, during the apparent peak period of the settlement's seventeenth century occupation, one estimate placed Pemaquid's population between 150 and 200 year-round residents (Camp 1975:X).

Furthermore, a considerable native population inhabited Maine and the adjacent Maritime provinces. In the early seventeenth century, the Eastern Abenaki were situated primarily in the Presumpscot, Androscoggin, Kennebec and Penobscot River drainages. The Maliseet-Passamaquoddy occupied territory that extended from the St. John River in New Brunswick to the Kennebec River (Champlain 1966:1, 238; Trigger 1978: XV, 123). The Micmacs inhabited Nova Scotia, the northern portion of New Brunswick, the Gaspe Peninsula and Prince Edward Island (Jenness 1963:267; Martin 1973:7). Although these territorial boundaries were modified by the period under examination, the basic native settlement patterns remained.

Pemaquid was not only adjacent to a sizable native population, but the settlement was situated within a region contested by France and Great Britain throughout the seventeenth century (Ganong 1901:175; Winthrop 1931:277-278, 392; Fortescue et al. 1898:XI, 555, 740). Several French trading and military posts were located on the northern coast of Maine, New Brunswick and Nova Scotia. Further compounding Pemaquid's tenuous position were the considerable distances separating the settlement from the protective umbrella and markets of Boston and Manhattan.

Since its initial settlement, Pemaquid's economic base was limited and closely linked to the area's natural resources. Fishing and trade with the French and natives were crucial aspects of Pemaquid's economy (Bradford 1976:279; Fortescue et al. 1896:X, 345; Josselyn 1833:XXIII, 347). Lumbering was seriously undertaken in Pemaquid during the second half of the seventeenth century (Brodeur 1853:III, 261; Fortescue et al. 1901: XIII, 271). Due to its restricted economy, Pemaquid sold a large portion of its fish, timber, and agricultural and fur products to merchants in Massachusetts, particularly Boston, and in Manhattan (Brodeur 1853:III, 334; Josselyn 1833: XIII, 348-351). In return, Pemaquid received much-sought-after manufactured goods produced in the colonies, England and continental Europe.

This examination deals with cultural material recovered from what probably was the original core of the Pemaquid settlement. This area encompasses the lower portion of the Colonial Pemaquid Restoration site, which has been designated the "Lower Village." Period artifacts recovered from the fort compound (Figure 13) have not been included in this study primarily because they cannot be associated with a discrete cultural deposit predating 1676. This fact is not particularly surprising since to date excavations have been confined to the officers' quarters of Fort William Henry and Fort Frederick, structures built in 1692 and 1729, respectively.

The study assemblage includes artifacts removed from nine cellar holes tentatively identified as the remains of three dwelling houses, a storage building, a forge, a garrison house/fortification, a tavern, a jail and a civic structure. These structures have produced occupational sequences that fall within the 1650-1675 study period. However, it should be noted when these cellar holes were excavated, vertical controls were at a minimum. As a result, it was extremely difficult to delineate discrete occupational sequences.

**EUROPEAN CERAMICS**

Most interesting was the diversity of non-English ceramics recovered from Pemaquid's Lower Village. Although only the coarse Spanish earthenware and Dutch delft ceramics were...
present in large quantities, the site produced ceramics originating from a number of manufacturing centers on the Continent.

Figure 13. Map of Colonial Pemaquid Historic site. Study area enclosed within dashed line. After D.B. Peck, Jr. (1979).
The geographical range was greatest among the earthenwares. These included the popular Spanish oil jars, which accounted for 57.4% of the non-redware earthenware excavated from the Lower Village (Table 6). These jars were produced in the Iberian portion of Spain between the sixteenth and eighteenth centuries. Also originating from Spain was a small amount of Spanish majolica (0.5%). The majolica included a nearly complete dish, probably dating from the second quarter of the seventeenth century (Figure 14a). The dish's interior was decorated with cobalt blue glaze consisting of a single band circling just below the rim while two concentric bands enclosed a chevron-like floral motif in the bottom of the dish.

Twenty-three fragments of Portuguese tin enamelware or Lisbonware were recovered from the study area. These fragments were decorated with blue and white or polychrome motifs. One shard was particularly interesting (Figure 14b & c). This piece was part of a plate rim decorated with a polychrome floral pattern situated on the plate's interior. The pattern consisted of a spray of leaves and berries in blue and purple. Immediately above and below the design were alternating blue and purple bands circling the rim fragment. This fragment was similar to shards recently recovered from mid to late seventeenth century deposits in Boston and James City County, Virginia. Examination of a slide of an identical reconstructed plate from the latter area revealed that the floral pattern present on the Pemaquid plate originally alternated with panels of blue and purple leaf and tendril motifs. A rabbit perched on a rock and flanked by flowers in blue was painted on the center of the plate's interior. These floral-decorated plates were manufactured in Coimbra or Lisbon, Portugal, in the mid to late seventeenth century.

In addition to the Lisbonware, a small amount of marbleized slipware (6 fragments), possible north Italian in origin, was excavated from the study area (Figure 15a). This slipware is similar to a plate fragment recovered by Noel Hume in Virginia Beach, Virginia (Wendy Cooper, personal communication, 1981). He believes the Virginia example to have originated in Pisa or Genoa, Italy and to date c. 1630-1665.

A considerable quantity of Dutch delft occurred in the Lower Village. However, it was unclear what proportion of it dated to the 1650-1675 period.

The remaining earthenwares were all English in origin, possibly excluding some of the redwares. A small group of North Devon earthenwares was recovered from the Lower Village study area. Production of these earthenwares generally took place in Biddeford or Barnstable throughout the seventeenth century; in the case of the gravel tempered ware, well into the eighteenth century (Watkins 1960:58).

The coarse bodied gravel temper ware accounted for the largest proportion of the North Devon earthenwares. Over 200 pieces, or 3.0% of the ceramic total, were excavated from the Pemaquid study area. One outstanding example consisted of a reconstructed three-legged cooking pot manufactured in c. 1640 (Camp 1975:36).

An extremely small quantity of a slip-lined North Devon ware (36 shards, 0.5% ceramic total) probably dating to the second half of the seventeenth century (Watkins 1960:48) appeared in the study area. The interior of the ware's dull red body was covered with a thin kaolin slip wash. In turn, the wash was covered with a clear lead glaze which imparted an amber color to the surface.

The third group of North Devon earthenwares encompassed the sgraffito wares. This ceramic type was even less prevalent than the slip-lined ware. Only 11 shards appeared in the Lower Village study area. The exterior of the sgraffito ware was decorated with the characteristic incised and punctuated geometric and floral designs that cut through the white slip and exposed the underlying dull red body. These pieces probably dated between the third and fourth quarters of the seventeenth century (Watkins 1960:18, 32, 33, 35-37). As in virtually all English colonial sites, the undecorated redwares were by far the most prevalent ceramic category in the Pemaquid study area. They accounted
### TABLE 6. Site Ceramic Distribution

<table>
<thead>
<tr>
<th>CERAMIC TYPE</th>
<th>S1</th>
<th>S2/S2A</th>
<th>S3</th>
<th>S4</th>
<th>S5</th>
<th>S6</th>
<th>S7</th>
<th>S10</th>
<th>S11</th>
<th>TOTAL/%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Devon Gravel Temper</td>
<td>0</td>
<td>8/125</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>87</td>
<td>0</td>
<td>236 (3.0%)</td>
</tr>
<tr>
<td>Spanish Oil Jar</td>
<td>0</td>
<td>0/55</td>
<td>0</td>
<td>132</td>
<td>1</td>
<td>7</td>
<td>225</td>
<td>55</td>
<td>0</td>
<td>475 (6.1%)</td>
</tr>
<tr>
<td>Redware</td>
<td>34</td>
<td>1193/1209</td>
<td>140</td>
<td>747</td>
<td>522</td>
<td>939</td>
<td>2131</td>
<td>31</td>
<td>102</td>
<td>7048 (88.6%)</td>
</tr>
<tr>
<td>N. Devon Slip Lined</td>
<td>0</td>
<td>18/0</td>
<td>1</td>
<td>12</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>36 (0.5%)</td>
</tr>
<tr>
<td>N. Devon Sgraffito</td>
<td>0</td>
<td>1/2</td>
<td>0</td>
<td>1</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>11 (0.1%)</td>
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<td>Marbleized Slipware</td>
<td>0</td>
<td>0/6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6 (0.1%)</td>
</tr>
<tr>
<td>Spanish Majolica</td>
<td>0</td>
<td>1/8</td>
<td>0</td>
<td>31</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>Lisbonware</td>
<td>0</td>
<td>4/18</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>23 (0.3%)</td>
</tr>
<tr>
<td>Bellarmine</td>
<td>4</td>
<td>18/25</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td>66 (0.8%)</td>
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<tr>
<td>&quot;Flanders&quot; Stoneware</td>
<td>0</td>
<td>0/8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>12 (0.2%)</td>
</tr>
<tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>7953 (100%)</td>
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for 87.3% (6942) of the total ceramic assemblage. (The total does not include the purple and blue Westerwald stoneware or the English and Dutch delft.) In contrast, slip decorated redwares comprised less than 1.3% (102) of the total.

A limited quantity of stoneware (78 shards, 1%) was found. All of it originated from continental Europe, the vast majority coming from Germany. The largest assemblage of stoneware (85%) consisted of Bellarmine jugs, storage vessels frequently found on

seventeenth century English colonial sites. These vessels were produced in the Rhineland in and around the town of Frechen between the mid-sixteenth and the first quarter of the eighteenth centuries (Hume 1969:55-57). Those fragments excavated from the Pemaquid study area ranged in date from the second to the third quarter of the seventeenth century. Most notable was a virtually complete Bellarmine (reconstructed) dating to c. 1630. This vessel was distinguished by an unusual "twisted cord" handle.

The remaining stoneware consisted of a small number of fragments of blue and brown salt glazed stoneware reputedly produced in Flanders in the early seventeenth century (Helen Camp, personal communication, 1981). The brown glaze (similar to that covering the Bellarmines) covered a grayish light brown body, while the cobalt blue glaze was applied to the brown glaze in a haphazard manner. One example had a distinctive decorative motif (Figure 15b). Two floral designs were incised in the vessel's body. In addition, two incised lines encircled the jug's neck.

CLAY TOBACCO PIPES

As on most English colonial sites, kaolin tobacco pipes were one of the largest artifact categories recovered from the seventeenth century structures. Over 2,000 fragments fell roughly within the 1650-1675 period. The vast majority of the pipes was of English manufacture, primarily from the Bristol area. Bristol examples included pipes produced by Robert Tippett ('RT', 1640-80), Philip Edwards ('PE', 1650-80), William Evans ('WE, IV', 1650-80), Lluellan Evans ('LE', 1661-88) and Jacob Prosser ('IP', 1662-80), (Camp 1980). A considerably smaller quantity of kaolin pipes manufactured in the West of England and London appeared in the study area. Two examples were those produced by Richard Syms ('ICHARD SYMS') in the West of England in the 1670's and unmarked London area pipe dating to c. 1650-80 whose maker is unknown (Camp 1980).

Figure 15. a. Probable north Italian marbelized slipware plate. Red body decorated with white slip and leadglaze. Recovered from S-2A. Probably mid to late seventeenth century. b. Flemish (?) stoneware jug. Surface decorated with brown and blue saltglaze and incised/stamped motif. Recovered from S-7 and southeast of road leading by cemetery. Early seventeenth century.
Some pipes manufactured in the Netherlands during this period were recovered. However, details concerning specific manufacturing sources are presently unavailable.

Of special interest was the presence of 254 fragments of red clay pipes. Their origin and function continues to baffle archaeologists. These pipes have been variously attributed to native, colonial and English producers. It is apparent that the red clay pipe has a wide distribution. Similarly small samples have been recovered from additional New England sites roughly contemporary with Pemaquid. They include the original Sheepscot settlement site in Sheepscot, Maine (Robert Bradley, personal communication, 1982); Arrowsic or Clark and Lake Site situated near the mouth of the Kennebec River (Emerson Baker, personal communication, 1981); Strawberry Banke, Portsmouth, New Hampshire (Stephen Pendry, personal communication, 1982) and Saugus Ironworks, Saugus, Massachusetts. Additional samples have been excavated from a number of seventeenth century English sites in Maryland and Virginia (Henry 1979:14-35).

Recent research by workers such as Susan Henry in Maryland and Virginia appears to be making considerable inroads in determining the manufacturing sources, production dates, and distributional patterns of these red clay pipes. Henry (1979) and others (Faulkner 1980; Mitchell 1976) have isolated a sizable quantity of pipes with stylistic and decorative traits similar to those utilized on English kaolin pipes. Henry's initial results suggest local production of red pipes in Virginia and Maryland during the seventeenth century (Henry 1979:33-35).

**LEAD CLOTH SEALS**

Thirteen cloth seals were recovered from the study area. It appears most, if not all, of the seals were English in origin. However, only three could be identified much further. Two were four-part alnager seals dated '1668' and '1669', and suspected to have originated from the counties of Devonshire or Yorkshire (Egan 1981:2). The obverse of the lower disc of both of these seals was marked with the word 'carsay' or 'kersey', in reference to the woolen cloth to which the seals were attached. Kersey appears to have been a popular item in the Anglo-Indian trade of New England during the seventeenth century. The account books of John Pynchon, the noted Springfield fur trader, contained numerous entries for kersey to be distributed to his sub-traders (Thomas 1979:457, 461, 463, 466, 467). The recovery of a 'carsay' seal in St. Mary's City, Maryland, identical to the "1668" Pemaquid seal, indicates this material was distributed to a considerable number of English communities on the eastern seaboard.

The third example consisted of the middle portion of another four-part alnager seal decorated with a lion passant. This cloth seal is thought to date from the 1670's or early 1680's and probably originated from the West of England, most likely Devonshire (Egan 1981:2).

**IRON KETTLES**

An extremely small amount of material from iron kettles (9 fragments) was recovered from the study area. Determination of their production sources was difficult largely because of the dearth of literature. None of the kettle fragments could be clearly tied to European manufacturing centers. However, three pentagonal kettle legs may be of colonial manufacture, probably produced in Saugus, Massachusetts at the Saugus Ironworks between c. 1646 and 1676, the facility's operating dates. The Pemaquid pieces were virtually identical to the approximately 15 pentagonal kettle legs recovered from the Saugus site. Examination of four kettles from the Clark and Lake Site revealed identical features. Their presence on the last site is not particularly surprising, considering the strong commercial ties between the owners of the Arrowsic and Saugus operations (Baker 1981:7-8).

**CUTLERY**

Cutlery recovered from the study area was restricted to three forks and three spoons. Manufacture of both of these artifact groups occurred in either England or continental Europe.
The three forks were similar in shape and design although two were iron while the third was steel. All of the forks were two tined. The central portion of the fork stems consisted of a baluster and knop followed by a slightly tapering tang. These pieces probably date to the English Restoration (1660-1685). The small number of forks was probably due in part to the fact that this item was not in common use as an eating utensil until the early eighteenth century. Until then, the knife served the dual function of cutting and carrying food to the mouth (Phipps 1974:365).

The three spoons were latten (copper and zinc alloy). The earliest was the handle of an apostle spoon dating between the early and mid seventeenth century (Homer 1975:26). The other specimens were fragments of trifid spoons, a style that occurred between the mid-1660's and 1700 (Homer 1975). The first was the upper portion of a trifid handle. The tin washed handle expanded rapidly from a thin stem to a tri-lobed spatula-like end. The letters 'I P' (probably initials of the owner) were stamped near the end of the handle. The second example consisted of an unmarked double clefted trifid spoon handle.

AXES

The small quantity of axes (9 fragments) was quite surprising, considering seventeenth century Pemaquid's involvement in Anglo-Indian trade. Only one of the handful of remains

was complete enough to warrant detailed examination. The axe was medium sized, measuring slightly less than 7 inches in length. The poll consisted of nothing more than a thin band which formed a triangular shaped eye. The upper portion of the back of the axe was battered, probably due to its use as a hammer. One side of the axe blade was marked, with two recessed square cartouches. Preliminary examination dates this axe to the mid-seventeenth century. Several axes with similar square touch marks were recovered from two mid-seventeenth century Onondaga burials in western New York (James Bradley, personal communication, 1981). The axe may have been manufactured in the Basque region of Spain or in Germany, two important seventeenth century axe production centers.

**GLASS BEADS**

Equally surprising was the small number of glass beads. Only thirteen were recovered from the study area. Of these, only one could be attributed to a specific manufacturing source with some degree of confidence. This bead was a "chevron" or "star" bead, probably Venetian in origin and dating to the second quarter of the seventeenth century (Bradley, personal communication, 1981) (Figure 16a). The bead was drawn, and measured 7/16 inch in length and 1/4 inch in diameter. Under the Kidd's typology, the Pemaquid specimen was classified as a IVK4 star bead (Kidd and Kidd 1970:61, 82-83). To date, this example is only one of a handful of chevron beads recovered from seventeenth century English sites in New England.

The second category of beads included seven tubular opaque shadow blue Ia16 glass beads. These examples were drawn and had tumbled ends. They had an average length and diameter of 3/8 inch and 1/16 inch, respectively. This set and a single opaque white Ia5 version appear to be European counterfeits of the native wampum officially recognized by the English as currency in the second and third quarters of the seventeenth century (Gibson 1980:119). Although not clearly documented, production of the Pemaquid specimens likely occurred in continental Europe, particularly Italy or the Netherlands.

The final group of beads removed from the Lower Village study area consisted of five small opaque circular light aqua blue IIa37 beads. These beads were also drawn and tumbled. Determining their manufacturing locale and date was difficult since the 'seed' bead was produced throughout the seventeenth and eighteenth centuries in several European locations.

The small number of beads found at Pemaquid is not an isolated phenomenon. Current research by James Bradley of the Massachusetts Historical Commission appears to indicate that this situation is common on pre-1675 English trading sites in New England. To date, excavation at the Clark and Lake Site have failed to turn up a single bead (Baker, personal communication, 1981). Few, if any, beads have been recovered in excavations at Plimoth Plantation, the Aptuxet trading post (Bourne, Massachusetts) and the Jiriah Bull site (South Kingstown, Rhode Island) (Bradley, personal communication, 1982). John Pynchon, the primary English trader in the Connecticut River Valley in the third quarter of the seventeenth century, did not make a single reference to glass beads in his account books (Thomas 1979:375).

**SPEARPOINTS**

The two remaining artifact groups are the most intriguing. The first included what originally had been identified as the remains of two iron knives. After re-examination, it appears more likely these objects were spear points possibly intended for Anglo-Indian trade (Bradley, personal communication, 1981). The first specimen consisted of a medium length (4 1/4 inch), narrow, symmetrical blade that tapered to a slightly rounded point (Figure 16c, left). A tang extended from the opposite end of the spear point. Originally, the tang was probably hafted to a wooden shaft.

The second object was an elongated oval blade slightly less than 3 1/2 inches long (Figure 16c, right). A long, thin tang (2 3/4 inches) with a portion of the artifact's wooden shaft still adhering to it extended from the base of the blade.
The simplicity of design of both of these "spear points" suggests they could have been just as easily produced by a local blacksmith as in England or continental Europe. Their manufacturing dates are unclear.

IVORY EFFIGY

The last item had the most exotic origin of any artifact included within the study collection. The artifact was a small (3 1/4 inch) human effigy carved from elephant ivory (Figure 16b). The effigy has been identified by Dr. Daniel McCall of Boston University as an African divination marker (personal communication, 1981). He suspected the marker or tapper was carved by Yoruba craftsmen situated on the western coast of Africa at the Niger River. This object could have been obtained by a local resident as a curiosity piece or may have been part of a stock of goods intended for the Anglo-Indian trade.

TRADE CONNECTIONS

The trade network that provided seventeenth century Pemaquid with access to this array of English, continental European and domestic goods was complex. Trade occurred on several levels and included international, English and domestic links. Generally, it appears Pemaquid's access to international commercial centers was indirect, as was common with most English colonial settlements. This situation was due primarily to three factors. First and foremost, trade between continental Europe and England's colonies was not extensive enough during this period to justify the direct exchange of goods (Murphy 1973:301). Second, the Navigation Acts initially implemented by Great Britain in 1651 and revised later in the seventeenth and eighteenth centuries required, in all but a handful of cases, the shipment of non-English trade articles in English or colonial vessels (Murphy 1973:296-297). Consequently, most non-English products were sent to England's North American colonies via a number of distribution points rather than arriving directly from the place of manufacture. Third, an indeterminate quantity of items utilized by the seventeenth century settlers was brought to their New World homes as personal possessions.

The first stage in the shipment of continental European articles to Pemaquid involved several possibilities. The two most likely situations were the transportation of the products to Great Britain on Dutch and English vessels. The carrying of non-English goods to Great Britain was common during the sixteenth and seventeenth centuries. Holland dominated the international carrying trade throughout this period because of her ability to build and operate merchantmen more cheaply than her competitors (Hunter 1935:126). Continental European products bound for England were carried from their countries of origin to Dutch ports such as Amsterdam, Ostend, Newport, Rotterdam and Middleburgh (Hunter 1935:131, 142). From these ports, the Dutch merchantmen sailed to Great Britain, especially to London, the primary English entrepot during the seventeenth century, or to the secondary ports of Bristol and Liverpool (Murphy 1973:312).

However, the shipment of continental European articles to Great Britain on English vessels was occurring with increasing regularity in the seventeenth century. By this time, the English merchant fleet was seriously challenging Holland's position as the primary international shipping power (Carroll 1973: 7-8). English merchantmen ranged throughout the Mediterranean and Baltic and as far as the Indian Ocean and the African coast.

In turn, a number of continental European vessels carried goods from the Continent to England. The 1651 Navigation Act specifically encouraged continental European countries other than Holland to transport their manufactures to Great Britain on their own ships (Hunter 1935:130).

Shipment of these goods from Great Britain to New England generally occurred through the previously mentioned ports of London, Bristol and Liverpool (Hunter 1935:312). Rather
than sailing directly to the Maine coast, the majority of the merchantmen shipped in to Boston (Clark 1970:34). There is evidence indicating some direct trade between Pemaquid and England, particularly Bristol, during the second quarter and probably into the second half of the seventeenth century (Camp 1975:X; Noyes et al. 1973:216; Winthrop 1944:III,277-278). However, it appears this trade route was secondary to the England-Boston connection mentioned above.

At this point, the cargo destined for Maine settlements was distributed in several ways. Most prominent was the coasting trade that originated from Massachusetts Bay, particularly Boston. Throughout the seventeenth century, ships departed Massachusetts Bay laden with continental European and English manufactured goods, wine and liquor and sailed for Maine settlements (Clark 1970:34). Either these vessels headed directly for coastal communities such as Pemaquid and discharged their cargoes or they shipped in to northern New England distribution centers.

In the latter case, the most likely entrepot would have been Portsmouth (formerly Strawberry Banke), New Hampshire, the primary northern New England port between c. 1640 and 1680 (Clark 1970:32-33). During this period, ships embarked from Portsmouth bound for Boston, the West Indies, Great Britain and southern Europe with Maine and New Hampshire timber products and fish (Clark 1970:55-56). These and other vessels returned with stocks of grain, meat and meat products, wool, indigo, English manufactured products and southern European and West Indian wine and liquor, items probably intended for consumption in both New Hampshire and Maine.

A second possibility was the commercial/industrial complex of Arrowsic. This operation, although not operating on as large a scale as that of the Portsmouth area, was actively involved in trade with the Boston area and Europe (Baker 1981:18-19). Local products were shipped out of Arrowsic to Boston and a number of other ports. Coasters probably returned with a variety of domestic and European manufactured items stockpiled in Thomas Lake's Boston warehouses (Baker 1981:12). (The Arrowsic area was owned by Thomas Clark and Thomas Lake, two well-to-do Boston merchants who had extensive commercial holdings throughout New England, New York, and the West Indies (Baker 1981:2, 6-8, 10, 11, 13).) Pemaquid would have provided a ready market for Arrowsic's owners given the value of these products to Pemaquid as local consumables and native trade goods, and the proximity of the two communities (approximately 25 miles by water).

A considerable amount of local trade was carried on between Pemaquid and French outpost/settlements situated on the northern Maine coast, particularly the Penobscot Bay area, from at least the mid-1630's into the late seventeenth century (Bradford 1976:279; Baxter 1901:VI, 96-97). This trade appeared to consist primarily of the exchange of Pemaquid's stocks of manufactured goods for animal pelts brought by the French (Baxter 1901,VI, 96-97). However, on some occasions Pemaquid probably turned to the French rather than English distributors for continental European products, due to factors such as greater accessibility and lower prices.

Least understood is the trade that took place between Pemaquid and the region's native population. The existing sources suggest Pemaquid's trade ties were strongest with the Eastern Abenaki, particularly those natives inhabiting the Kennebec River drainage (Baxter 1900:VI, 91-93). Once the English and continental European goods intended for the Anglo-Indian trade arrived in Pemaquid, it appears they were distributed to native customers in exchange for animal pelts within the confines of the settlement. The actual site of the pre-1676 Anglo-Indian trade is not clearly documented. However, in the later 1670's Pemaquid's New York administrators designated the area southeast of the fort compound as the official site of trade between the English and natives (Hough 1856:19-21). Therefore, it is highly likely this trade took place within the general confines of the study area and the fort compound during the period under examination.
The furs obtained from natives and the French, in turn, were probably sent south to Massachusetts Bay and then shipped out to the fur markets of England and continental Europe. Through the sale of these furs, Pemaquid was provided with another means of credit to be applied to the purchase of English and continental European manufactured products.

In conclusion, examination of the Pemaquid assemblage produced several results. The majority of the study items recovered from the Lower Village area reflected the English background of the settlement's inhabitants. Predominant were products manufactured in western England, particularly Devon, Somerset and Gloucester, along with some products of probable colonial manufacture. However, a substantial number of artifacts were produced in continental European locations including the Netherlands, Portugal, Spain and Germany. In addition, one artifact originated from the western coast of Africa. The presence of these non-English artifacts suggests the settlement's involvement in a much more extensive, complex trade network than has been traditionally assumed. Despite Pemaquid's distance from the commercial centers of southern New England, the settlement appears to have had access to many of the same domestic and international manufacturers as the English inhabitants of southern New England.

Preliminary results indicate Pemaquid's contact with English and continental European producers was basically indirect. The most likely sequence would have involved at least three stages of transport. Continental European products were generally transported from the manufacturer to Great Britain. From here, the goods were shipped on English or colonial vessels to the New England ports of Boston and Portsmouth. The final stage involved the shipment of these products to Pemaquid via local or regional coasting vessels. Probable local commercial contacts included Arrowsic and Castine. Once in Pemaquid, those items intended for Anglo-Indian trade were distributed to native purchasers in exchange for animal pelts.

The research presented in this paper has touched only the foundation of a complex distribution process. What should follow is an in-depth examination of Pemaquid's position in this trade network. Particular emphasis should be placed on investigating Pemaquid's domestic contacts, an area of study that has been long overlooked.

For example, did Massachusetts Bay, most notably Boston, exert as strong a hold on Pemaquid's economy as she did on many of the English settlements further south? It is interesting to note that several Boston area merchants and traders settled in Pemaquid during the early to late seventeenth century. Were these individuals sent north by Bay authorities, in an official or unofficial capacity, to act as agents for Massachusetts Bay in an effort to corner the Pemaquid market?

Even more poorly understood are Pemaquid's trade connections with English and French distributors situated in northern New England and the Maritimes. Despite Pemaquid's reliance on Massachusetts Bay for a large portion of her manufactured goods, it appears likely the community did a considerable amount of business with northern New England and Maritime merchants because of greater ease of access and the possibility of product availability and lower prices. The often bitter economic and political rivalry between Great Britain and France in the seventeenth century did little to stop many New Englanders from doing business with the French. New England documents contain a number of complaints referring to New England traders and merchants trading with the French during this period.

Most fascinating, and only briefly described in this paper, was Pemaquid's involvement in the Anglo-Indian fur trade. This important facet of the settlement's economy invites a host of investigations. Most basic would be reconstruction of the trade process. Was the trade between the two parties structured and formalized along lines of the system instituted by William and John Pynchon in the Connecticut River Valley (Massachusetts) or was it more loosely organized? Whom were the Pemaquid traders doing business with? Did the trade involve only the Eastern Abenaki of Maine, as suggested in several documents,
or did Pemaquid's native clientele include those of the Maritimes?

These questions and the paper as a whole point out the vast amount of work needed to be done in reconstructing not only the economy of Pemaquid, but that of Maine during the seventeenth century. Clarifying this picture will lead to a better understanding of the region's economic and political relationships with their southern New England counterparts and the French and natives of Maine and the Maritimes.

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NEW ENGLAND'S URBAN PREHISTORY:
EVIDENCE FROM TWO SITES IN NEWPORT, RHODE ISLAND

Stephen A. Mrozowski

INTRODUCTION

Over the past decade projects connected with urban renewal and the expansion of mass transit systems have afforded archaeologists the opportunity to conduct investigations in many of New England's cities (Rubertone and Gallagher 1981; Bower and Rushing 1979; Graffam and Rosebrock 1981; Mrozowski, Gibson and Thorbahn 1979; Mrozowski and Rubertone 1980; Pendery et al. 1982). Because these cities owe their existence to European expansion into the New World, the major emphasis of these studies has understandably been on colonial development. However, contrary to what one might assume given the scope of urban development, New England's cities hold much for the interested prehistorian. (see Dincauze 1973, for example). The Boylston Street fishweir (Johnson et al. 1942) represents one of the few, but perhaps most widely known examples of a prehistoric site unearthed in an urban context. This paper will present a discussion of two prehistoric sites found in another city, Newport, Rhode Island, and what their discovery suggests about the potential of New England's urban prehistory.

SITE HISTORIES

Between 1977 and 1980, the Public Archaeology Laboratory in Providence, Rhode Island conducted archaeological examinations at two locations in Newport, Rhode Island. In both instances, prehistoric materials were discovered during the excavation of historic period sites. At Queen Anne Square (Figure 17) (Mrozowski, Gibson and Thorbahn 1979), Late Archaic period materials were found in association with eighteenth century privy deposits. During investigations of the Isaac Rice House (Mrozowski and Rubertone 1980), a Late Archaic site was discovered in association with (and a mere 10 centimeters below) a late eighteenth century occupation level. The circumstances surrounding these discoveries in each case suggest that similar sites in similar contexts can provide information relating to the prehistory of the region.

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QUEEN ANNE SQUARE

The Queen Ann Square project involved an intensive documentary and archaeological examination of a three-block area of Newport's waterfront. This section of the city was one of the initial areas settled by Newport's founders (circa 1650). Thames Street, or "The Strand," as it was known in the seventeenth century, functioned as the main thoroughfare for the city as it still does today. The street itself runs north/south along the edge of the harbor, with streets or lanes running perpendicular to it. In many cases, these streets coincide with the boundary lines of the original tracts of land made available to the earlier settlers. This process of subdividing property into long tracts, perpendicular to the waterfront, was apparently designed to maximize frontage for wharf space. For whatever reason, it certainly was a strategy of land division used often in England (Ackerman 1976) as well as in other New England communities (Pendery 1978: Gibson et al. 1979).

The waterfront area adjacent to Queen Anne Square was characterized by an extensive salt marsh which was subsequently drained and filled as part of the city's early development (Downing and Scully 1967; Rudolph 1978). This marsh proved to be beneficial to Newport's initial growth. Since animal husbandry was the chief economic pursuit of the community, grass was needed for feed. Marsh grass, although not as nutritional as the English strains which were introduced later, was used as an early substitute. To fulfill this need each household was allotted four acres of meadow for its cattle (Rhode Island Colonial Records 1:88).

Estuarine salt marshes, which provided the husbandman with feed for his cattle, were no less important to the aboriginal populations of the region. In fact, many feel that salt marshes are among the most productive ecosystems found in the Northeast, and often functioned as focal points in aboriginal settlement patterns (Barnes 1972; Thomas et al. 1975; Braun 1974; see Cox and Thorbahn 1982 for an alternative view).

Although the sample is quite small (1 projectile point, 28 pieces of debitage, 2 ceramic fragments) the material does provide some worthwhile information. Analysis of

Figure 17. Project Locations.
the privies suggests that each was filled quite rapidly, probably as a single event tied to processes linked with household transition such as property transfer by sale or in some instances change of ownership through inheritance (Mrozowski 1981; Mrozowski and Brown 1982). By correlating the size of European ceramic sherds with the mean date of their manufacture, it has been possible to quantitatively distinguish between primary and secondary refuse (Schiffer 1972). Based upon this analysis, and interpretation of the circumstances contributing to the formation of the Queen Anne Square privies as archaeological features, it is suggested here that the prehistoric material was either swept in with the other yard debris or was inadvertently deposited as part of the privies' original construction. This, of course, does not preclude the fact that prehistoric artifacts found on other historic sites may have been collected by their European inhabitants.

On typological grounds the material from Queen Anne Square indicates a possible Late Archaic affiliation. The presence of quartz, argillite, felsite and rhyolite debitage is consistent with types of lithic material found on other sites from this period in the area (Cox and Thorbahn 1982). However, the presence of a Small Stemmed point and early ceramic fragments may indicate that the site dates to the transitional period, or that perhaps the site is multi-component. If the first interpretation is accepted it would be in accord with Dincauze, who asserts that among the "definitive traits" of the early Woodland adaptive patterns were "the shift of settlement to the coastal fringe and the increasing reliance on shellfish as a dietary staple" (Dincauze 1974:50).

THE ISAAC RICE HOUSE

The Isaac Rice House is located at the corner of Williams and Thomas Streets in what is known today as the "historic hill" district of Newport (Figure 17). In November of 1979, in response to the owner's concerns that restoration activities might disturb subsurface deposits, the Public Archaeology Laboratory agreed to investigate an area underlying the ell of the house. The ell itself was a nineteenth century addition to the late eighteenth century core of the house.

The ell was constructed without the benefit of a foundation; the sills were set on top of the ground. Beneath the ell a large trash pit and stone pier were discovered. The pier supported a lean-to which had stood prior to the construction of the ell. The original roof line of the lean-to was also visible in the attic of the core building.

In addition to the stone pier and trash pit (which dated to the late eighteenth century), a late eighteenth century occupation level was found below two layers of fill (Figure 18). At the interface of this eighteenth century occupation level and the yellow clay sub-soil below was found the remains of what appears to be a Late Archaic period living surface. Most of the material was recovered from a single two-by-two-meter excavation unit, within a level roughly 10 to 20 centimeters in thickness. Given the nature of the historic period deposits, this would have placed the prehistoric occupation level approximately 15 to 25 centimeters below the original surface.

The bulk of the prehistoric assemblage consisted of quartz debitage; apparently the residue of primary reduction. A number of the quartz fragments contains cortex remnants as well as evidence of possible heat treating as a step in the reduction sequence. The wear evident on cortex fragments suggests that glacial cobbles were the main source of lithic material. In addition to the debitage, one quartzite and five quartz Small Stemmed points were recovered. The quartz assemblage included 5 projectile points, 3 bifaces, and 312 debitage fragments.

In addition to the large quantity of quartz material discussed above, the assemblage also contained a large argillite cobble fragment, one flake which appears to be Onondaga flint and a small quantity of burned rock.
The predominance of Small Stemmed points and the extensive use of quartz suggest a Late Archaic, Small Stemmed point tradition affiliation for the site. However, the lack of extensive testing or the discovery of large subsurface features leaves such an interpretation speculative.

WHERE HISTORY AND PREHISTORY MEET

Although cross-cultural comparisons are seldom drawn between the aboriginal and European populations of New England, such comparisons can prove enlightening. Ritchie's (1980) discussion of the relationship between historic land use and sample bias, and its bearing upon the present state of knowledge concerning settlement patterns, suggests the potential this approach holds for New England research. In addition to the obvious contributions this approach can make to cultural resource management, it also bridges the gap between history and prehistory, thereby enriching our knowledge of both. The adaptations employed by each group to a similar if not identical environment provide a unique opportunity to study the effects of different exploitation strategies upon the New England landscape.

Examination of the productive efficiency of early European agriculture, for example, may furnish data germane to the problem of why New England's aboriginal populations failed or were reluctant to adopt agriculture until quite late. Conversely, a knowledge of late prehistoric land-use patterns may furnish important insights into early colonial development. The choice of Narragansett Bay for an early European settlement was due in large part to the fact that local Indians had
cleared many of the islands in the bay for their own use (Bridenbaugh 1974). It is also no surprise that aboriginal farming methods were readily adopted by Newport's early settlers. The combination of cleared land and the adoption of aboriginal agriculture methods proved to be crucial factors in the development of European husbandry in Narragansett Bay.

Shellfish utilization is another point of comparison which may provide insightful parallels between European and aboriginal populations. From excavations in Newport, it is clear that the European diet included oysters, quahog and soft shell clams (Mrozowski, Gibson and Thorbahn 1979). However, evidence from Queen Anne Square suggests that a possible shift in consumption patterns from oyster to quahog may have resulted from over-exploitation or habitat degradation (Mrozowski, Gibson and Thorbahn 1979). Whether similar shifts in shellfish use can be recognized from prehistoric sites remains to be seen. But, the European experience represents a model which might be applied to a prehistoric situation.

The use of history and prehistory to illuminate one another in no way lessens the importance of either discipline. There are of course areas of inquiry where cross-cultural comparisons are ill-advised (i.e., ideological comparisons). However, by viewing New England's development as an historical/ecological continuum, we can not only gain important insights into the processes of adaptation, but we may also move closer to eliminating the analytically sterile dichotomy between historical and prehistoric archaeology.

CONCLUSION

Material discovered from both sites in somewhat less than pristine conditions has provided data relating to Late Archaic settlement patterns, as well as the type of information necessary for discussing lithic reduction (Ritchie 1982). The excavations at the Rice House, which produced the bulk of the material discussed here, involved an area only 2 x 6 meters square. The density of quartz chipping debris from a 10 by 20 centimeter cultural level may indicate a larger and/or more complex site.

Interestingly enough, because the inhabitants of most of the region's urban centers were involved in economic systems which were structured around either industrial or maritime activities, the cities have been located along major drainages or at their mouths on the coast. If these river systems were integral parts of the settlement systems and economies of the region's aboriginal populations, as they appear to have been, then high site densities can be anticipated in today's urban areas. Therefore, vehement efforts should be made to conserve these sites, while at the same time archaeologists should be working to improve techniques of locating, defining and interpreting urban sites. This, coupled with more problem-oriented research strategies, should go far toward insuring the protection of the vast treasures of information which lie beneath our city streets and in our own back alleys.

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