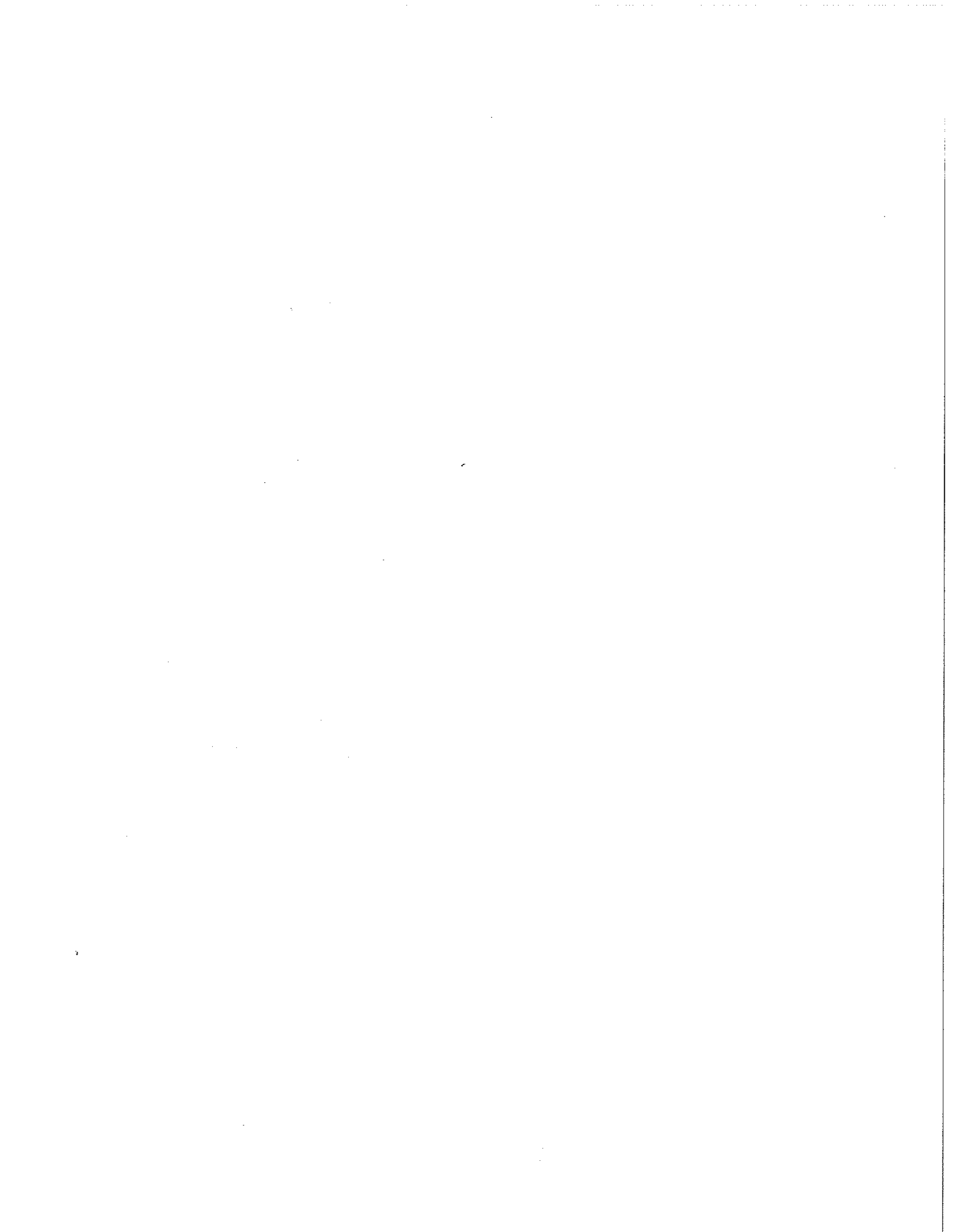


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NANTUCKET: AN ARCHAEOLOGICAL RECORD FROM THE FAR ISLAND

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ABSTRACT

An overview of prehistoric and Contact period archaeology at Nantucket Island is presented as a survey of excavated sites and artifacts collected over the past 100 years. The Marshall Midden, a Contact period component of the Marshall site excavated by the University of Massachusetts/Amherst is presented in detail. Findings demonstrate that a number of site collections are available for study concerning research problems from the Paleo-Indian period through Historic period Native Americans.

ENVIRONMENTAL BACKGROUND

Nantucket Island is located 38 miles or 23.8km southeast of Wood's Hole, Massachusetts (Figure 1). It is a remnant of end moraine and outwash plain presently above sea level. It is the easternmost island in Nantucket Sound and its shoals form the southern boundary of the Gulf of Maine. Bedrock is more than 450m below the surface (Oldale 1969). Atop bedrock the island consists of sand, gravel, silt, and clay deposited during episodes of high stands of the sea and glaciation. According to the recent work of Robert Oldale (1976, 1981, 1985, 1986), the Cape Cod Bay lobe of the last Wisconsinan ice sheet at its maximum extent covered most of the island. The ice front, in retreat by 16,000 B.P., and meltwater laid down a sequence of outwash plains and ice-contact deposits. A readvance produced a thrust moraine across the island (Woodworth 1934; Oldale and O'Hara 1984). This moraine appears to be related to the Ronkonkoma Moraine of southern Long Island and the Martha's Vineyard Moraine. Deglaciation occurred soon after as the ice retreated to the position marked by the Buzzard's Bay, Sandwich, Charlestown, and Harbor Hill moraines (Schafer and Hartshorn 1965:102).

The soils which developed on the post-glacial surface (Langlois 1977) show the influence of the glacial substrate. For example, the sand and gravel outwash deposits are very porous and the clay and silt deposits have poor drainage. Correlations between soils, vegetation, and prehistoric land use are strong (Little 1983a).

When the ice front was at its maximum advance, sea level was perhaps 100m lower than today, and a large amount of the continental shelf was dry land. This is suggested by mammoth and mastodon teeth dredged up by fisherman on Georges Banks and elsewhere; some may be riverine outwash, however (Oldale 1976, 1986; Barber 1979:163). As the ice melted, sea level rose and the sea transgressed the land. Nantucket, once a high place on the mainland with fresh water lakes to the north, is today only a small unstable sandy island surrounded by the sea. Storm winds and waves have been eroding the island's shoreline for about 5000 years (Oldale 1985; Gutman, et al. 1979). Storms, however, also bring useful resources such as live surf clams, scallops, quahogs, fish, lobsters,

drift whales, and driftwood to island beaches (Little and Andrews 1982, 1986).

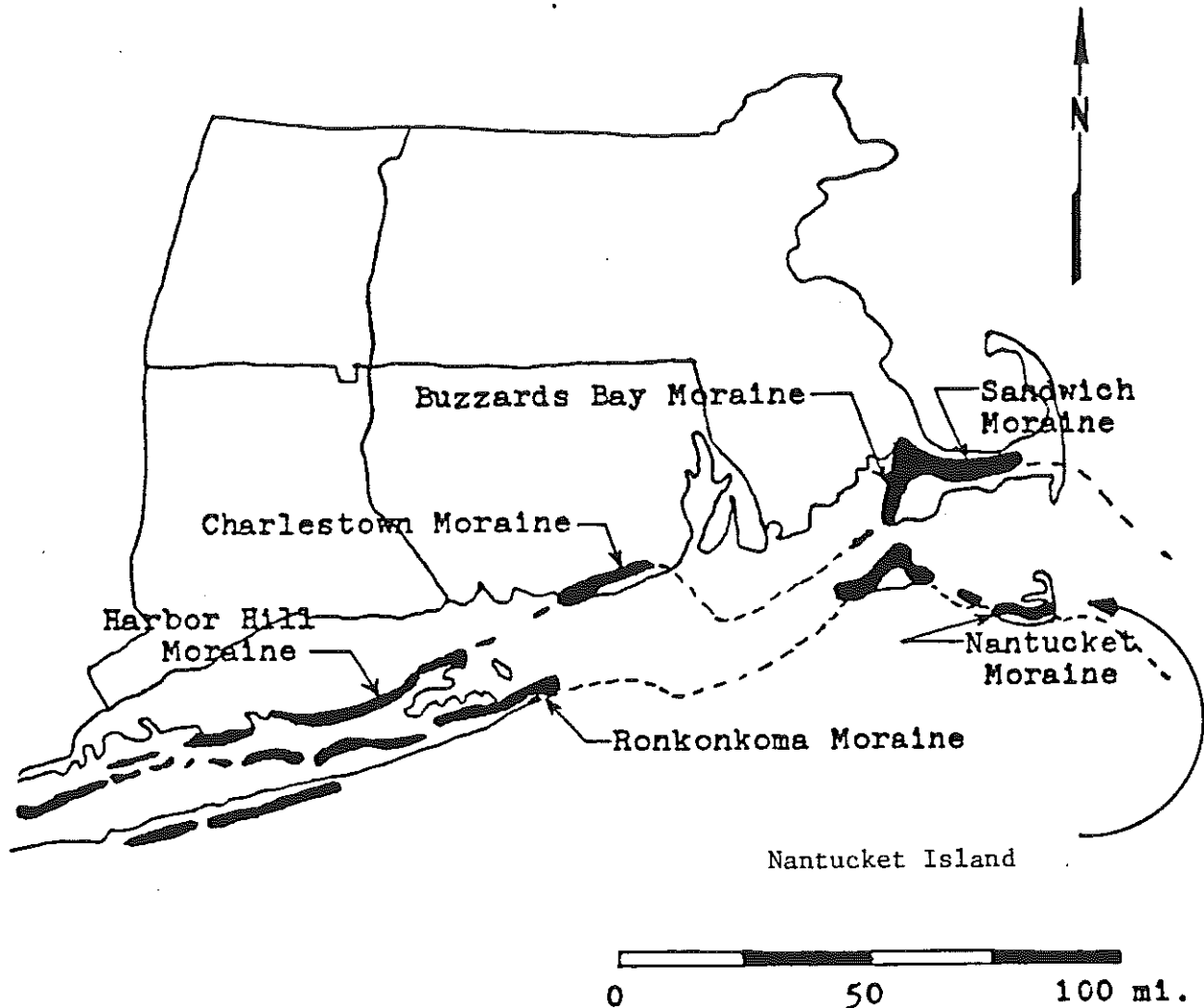


Figure 1. Nantucket Island location moraine system of Southern New England (After Schafer and Hartshorn 1965).

ARCHAEOLOGICAL BACKGROUND

Valuable collections have been made over the past hundred years by college professors. In addition, the Shawkemo Chapter, the first Massachusetts Archaeological Society chapter, carried out several well documented excavations under the direction of Edward Brooks and Ripley Bullen between 1939 and 1949. A number of islanders have extensive artifact collections with provenience records. In 1978 the Nantucket Historical Association, supported in part by a Survey and Planning Grant from the Massachusetts Historical Commission, undertook a survey of archaeological records, sites, and collections in conjunction with a site survey and field school being conducted by Barbara Luedtke at the University of Massachusetts Quaise Field School (Little 1979a, 1980; Luedtke 1981).

The 1978 survey provides a substantial data base for further research. The artifact styles observed in island collections -- Woodland triangles, Jack's Reef Corner Notched, Greene, Fox Creek, Lagoon, Rossville, Meadowood, Orient Fishtail, untyped side notched, Susquehanna Broad, Squibnocket Triangles, Small

Stemmed, Brewerton Eared-Notched, Stark, Neville, and bifurcate base -- are radiocarbon dated on the mainland from about 350 - 9000 years B.P. We have since identified additional Early Archaic styles and five fluted points, one of which has provenience and has been identified as a reworked Clovis point (Dena Dincauze, personal communication 1983). Artifacts from the Middle Woodland and other periods, some of which are untyped, often are made of high quality lithics. Pottery, bone tools, and heavy tools are well represented.

Although the data are limited and biased, Table 1 shows the distribution of artifact styles for five collections catalogued by D.F. Dincauze in 1978, compared to data from Ritchie's Martha's Vineyard sites.

Table 1. Distribution of Styles for 644 Nantucket Points Catalogued by D.F. Dincauze in 1978. For comparison, in parentheses are the percentages for the 429 points identified by Ritchie (1969) at six Martha's Vineyard sites (Little 1979b).

Levanna-like:	47%	(15.0%)
Jack's Reef, Greene, Fox Creek, Rossville:	20%	(13.0%)
Lagoon, Meadowood, Orient:	5%	(10.0%)
Untyped Side-Notched, Susquehanna:	9%	(13.0%)
Small Stemmed, Squibnocket Triangle:	11%	(47.0%)
Brewerton:	2%	(2.0%)
Middle and Early Archaic:	8%	(.5%)

These data show that at Nantucket the percentage of (usually quartz) Small Stemmed and Squibnocket points is lower and the percentage of (usually felsite) Levanna-like points is higher than at Ritchie's six Vineyard sites (Ritchie 1969).

Study of 106 inventoried sites revealed that the 56 prehistoric shell midden sites all lie within 1km of sheltered shellfish habitats. The distribution can be related to the availability of shellfish beds in estuaries and to the erosion which takes place on unprotected beaches; it shows that people did not carry shell any farther than necessary (Little 1983b, 1986; Little and Andrews 1986:23). Transgression of the land by the rising sea would have been larger at Nantucket with her shallow waters than at Martha's Vineyard with deep adjacent waters. The drowning of vast areas of coast may account for the paucity of Late Archaic shell middens and artifacts at Nantucket as noted.

Another determinant of site location is the prevailing northwest winter wind, which strongly biases site aspects to southeasterly directions. It is proposed that winter sites must face southeasterly (Little 1984, 1985). Recent shell seasonality data from Cape Cod support this hypothesis. Collection dates for prehistoric quahog shells show that all winter Late Woodland shell concentrations face southeasterly (McManamon 1984:391; Little 1986).

Because mariners tried to avoid the dangerous shoals near the island, there were few early contacts with Euro-Americans. Historic records provide little information about Nantucket during the Contact period. According to an 1807 report, Nantucketers did not coin wampum and most clothing consisted of "coarse mats, made of grass", because deer were scarce (Freeman 1807:35). Settled by English families in 1659, by 1750 Nantucket had an English town with framed houses and a number of Indian settlements consisting of both wigwams and framed dwelling houses (Little 1983a, No.4)

PROSPECTS FOR FUTURE WORK

Peter Dunwiddie of the Massachusetts Audubon Society at Nantucket has been studying plant succession and pollen cores, and Robert Oldale of the United States Geological Survey, Woods Hole, has an ongoing interest in glacial and periglacial effects. Elizabeth Little and Clinton Andrews, with the Nantucket Historical Association and the Maria Mitchell Association, continue their work on use of marine foods.

The archaeology committee of the Nantucket Historical Association does not encourage excavations other than those for survey or salvage. Too many sites at Nantucket have been excavated without publication (McDowell-Loudan 1978). Material in storage from a number of sites could help to answer current questions as well as formulate future research strategies. The Nantucket Historical Association will make this material available to qualified researchers and students under strict guidelines and supervision. An example of the analysis of previously excavated material and how it can relate to our understanding of the past is presented in the remainder of this paper.

THE MARSHALL MIDDEN: A FORGOTTEN PAGE IN THE CHRONOLOGY OF NANTUCKET

INTRODUCTION

The Marshall site was investigated as part of the University of Massachusetts/Amherst 1966 summer field school. Dr. William Harrison was the professor and the field crew was based at the University of Massachusetts Nantucket Field Station. The Marshall site is located between Shinno and Pimny points on the south shore of Nantucket Harbor, in the hollow between two stabilized sand dunes (Figure 2). Excavation consisted of five units: Data A, Sections A and B; Datum B; Datum C and test pits amounting to over 2500ft² (153m²). Datum point A was established in the swale and Datum B was established on top of the west ridge. Excavation at Datum B yielded a cremation burial and a separate primary burial associated with pottery. A charcoal sample from the primary burial at Datum B produced a radiocarbon date of 960±80 yrs B.P. or A.D. 990 (GX-1577). Datum A, Section B evidenced Late Archaic and Late Woodland workshop sites. The material also indicated a high degree of mixing with a Colonial dump site located to the south of the section. Two 5x5ft (1.53m square) test pits placed northeast of the ridge at Datum C produced further evidence of the Colonial dump. The shell midden, the subject of this report, was designated Datum A, Section A.

Midden excavation methodology incorporated standard practices for the time and was essentially pre-metric. The excavators layed out an area of 375ft² (46.8m²) in 5ft (1.53m) grid squares located by north and west coordinates. All soil removed was sifted through a 1/4 inch screen. Excavation was by trowel in 5 inch (12.7cm) arbitrary stratigraphic units.

STRATIGRAPHY

At the 5 inch (12.7cm) level, three lateral differences in soil configuration were noted (Figure 3). The shell midden was designated soil Facies A and consisted of black organic soil mixed with shell particles. While mainly homogeneous, two shell lenses were noted during excavation. Lens 1 consisted of several large whelk shells (*Busycon* sp.) in the northeast corner of excavation unit N2W10. Lens 2 appeared as trench of denser black earth and shell. It ran

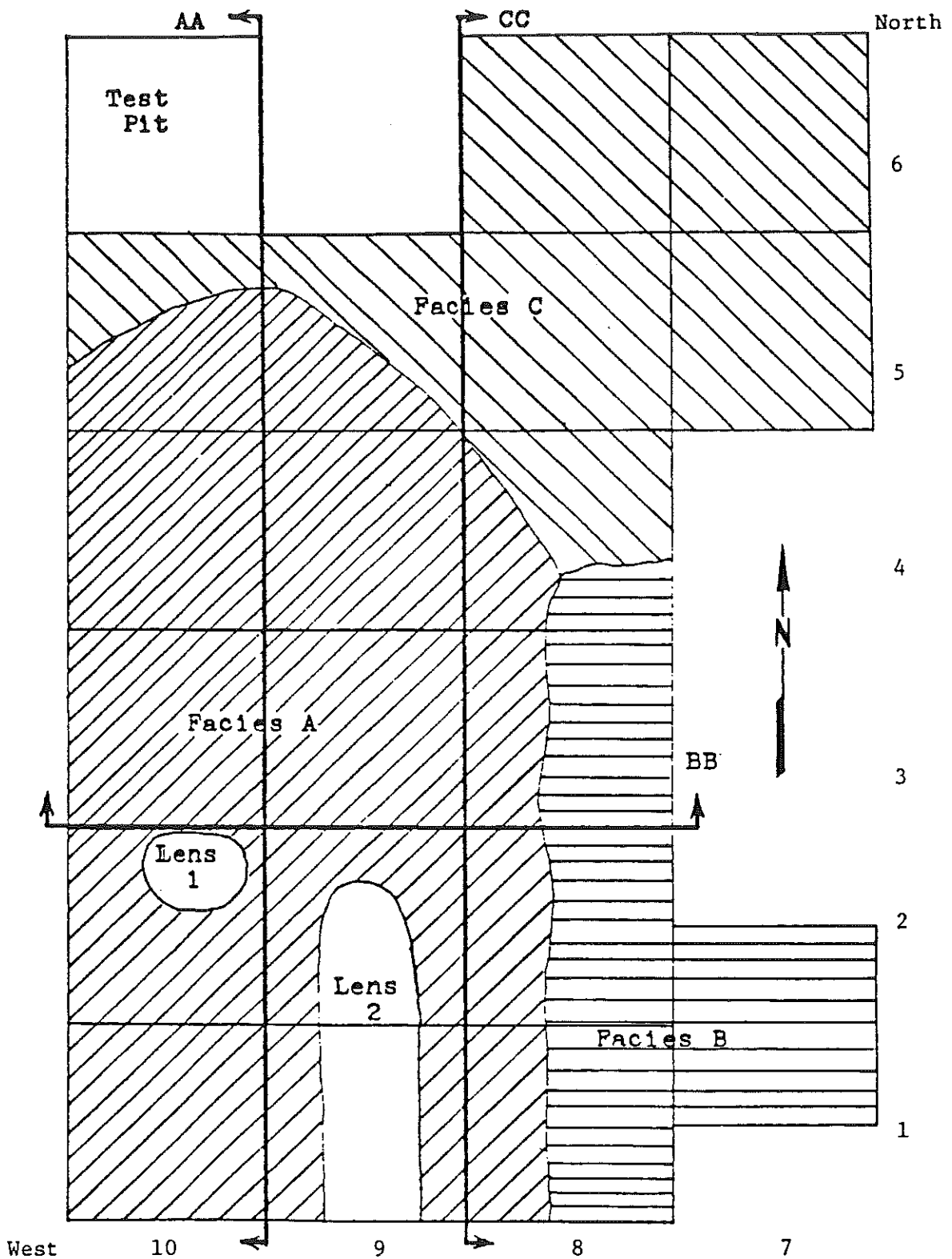


Figure 3. Datum A, Section A, Stratum I, 5-10 in. Facies A: Dark organic shell midden soil; Facies B: "Cocoa brown" soil with some shell; Facies C: Dark mottled yellow sand; Lens 1: Whelk shell concentration within midden; Lens 2 Dense black earth and shell concentration within midden.

through the center of units N2W9, N1W9, and into the unexcavated area. The midden appeared to have a flat floor at the 10 inch (25.4cm) level. The top 10 inches of the site was designated Stratum I. Facies B was identified as a "cocoa brown" soil horizon to the east of Facies A. It contained some shell, but not as much as in the midden proper. In the northeast section of the excavation, Facies B interfingered with a dark mottled yellow sand designated Facies C.

Stratum II occurred below the 10 inch (25.4cm) level. It was composed of a clear yellow sand that was approximately 5 inches (12.7cm) thick and appeared to slope to the south. Stratum III consisted of a dense pale yellow sand (Figure 4).

CULTURAL STRATIGRAPHY AND FEATURES

Interpretation of the midden is complicated by the effects of down slope movement from components above, Colonial dumping, and possible curating of artifacts by the inhabitants themselves. Generally, Stratum I indicates an Early Contact midden occupation. Strata II and III give testimony to Middle and Early Woodland occupation beneath the midden.

The two component dichotomy is mirrored in feature distributions. Three features in addition to the midden lenses were identified (Figure 5). Feature 1, a pit yielding a shell radiocarbon date of 385±95 B.P. or A.D. 1565 (GX-1870) was identified near the bottom of Facies A (Figure 6). Feature 1 served as a storage pit lined with a 6 inch (15.2cm) layer of whole scallop shell with edges pointing upwards. This was superimposed on a smaller, earlier pit designated 1b. After removal of its contents, Feature 1 was refilled with organic rich soil mixed with shell. Later another small pit was dug into the feature and refilled in several episodes, each capped with a layer of sterile yellow sand.

This technology for filling empty storage pits with trash is typical of Contact period sites and reported at the Fort Hill site in Hinsdale, New Hampshire, and also at the Fort Hill site in Springfield, Massachusetts (Pretola, 1985; Thomas 1979). Several artifacts were recovered from this feature including a fragment of sheet brass, a quartz Levanna point, and a dense accumulation of faunal material.

Features 2 and 3 were detected 2 inches (5cm) into Stratum II. They consisted of a complex of postmolds and fire reddened hearth areas associated with scrapers and mammal bone. The features suggest an occupation predating the formation of the shell midden.

ARTIFACTS

At present, artifacts from the Marshall midden are being curated by the Anthropology Department of the University of Massachusetts/Amherst. Stratum I yielded the bulk of the artifacts. Thirteen Levanna points predominated, but earlier points such as a Brewerton Eared Triangle, Rossville, Bare Island, Jack's Reef Pentagonal, and a broadspear were also recovered (Figures 7 - 11). Some of these forms may have been curated or have such a great time depth that they were still in use in Contact times. Alternatively, the earlier point types may represent admixture from other components due to cultural disturbance or downslope movement (discussed above). Stratum II yielded a Meadowood-like projectile point (Figure 12), reinforcing the idea of a two component site. Non-projectile point artifacts from Stratum I included preforms, bifacial and flake blades, choppers, awls, drills, scrapers, utilized flakes, possible bone point, bone needle, and shell piercing tool (Figure 7). Ground stone objects included hammerstones and grinding stones as well as a gorget and

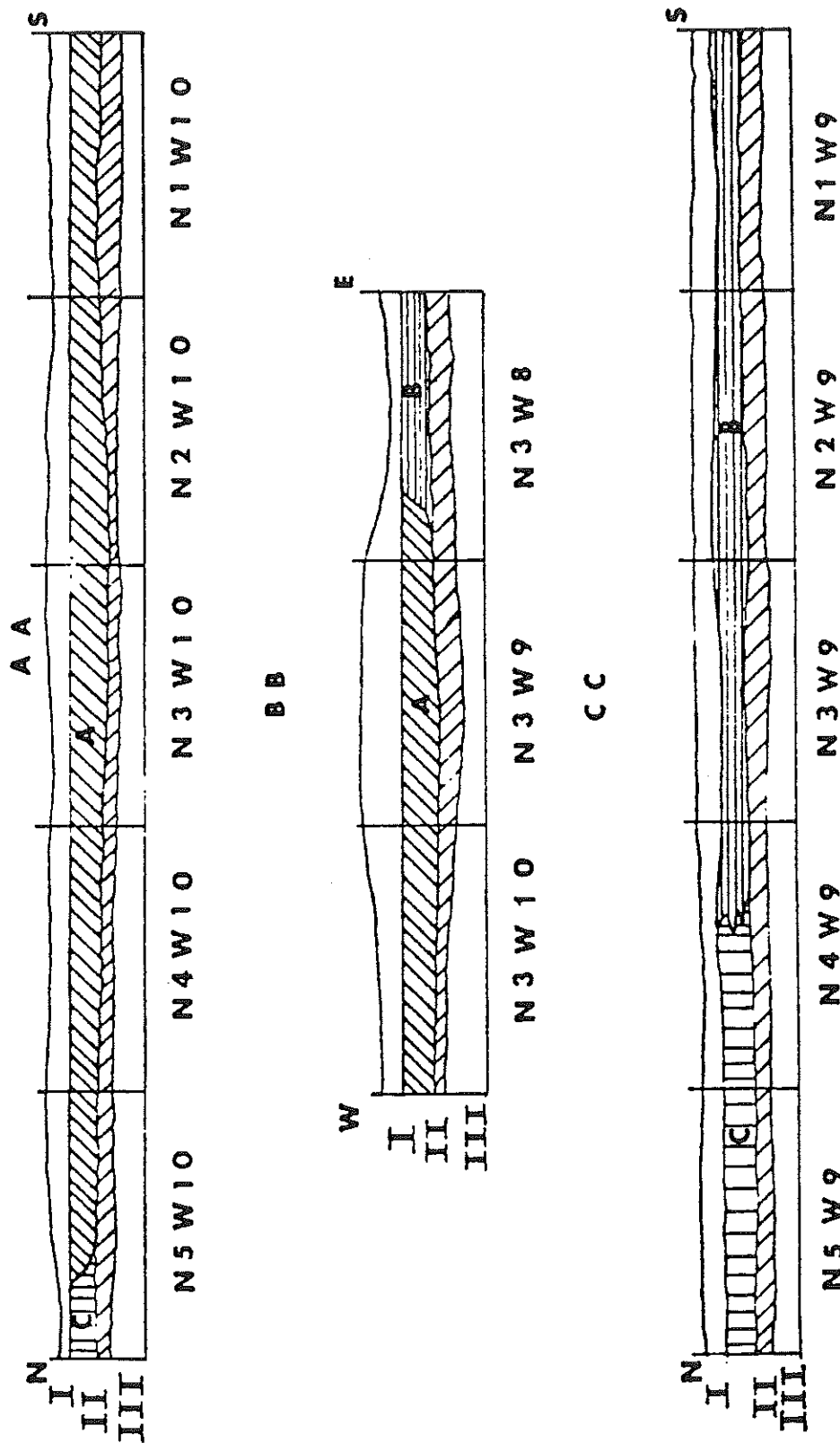


Figure 4. Midden cross section, Datum A, Section A.

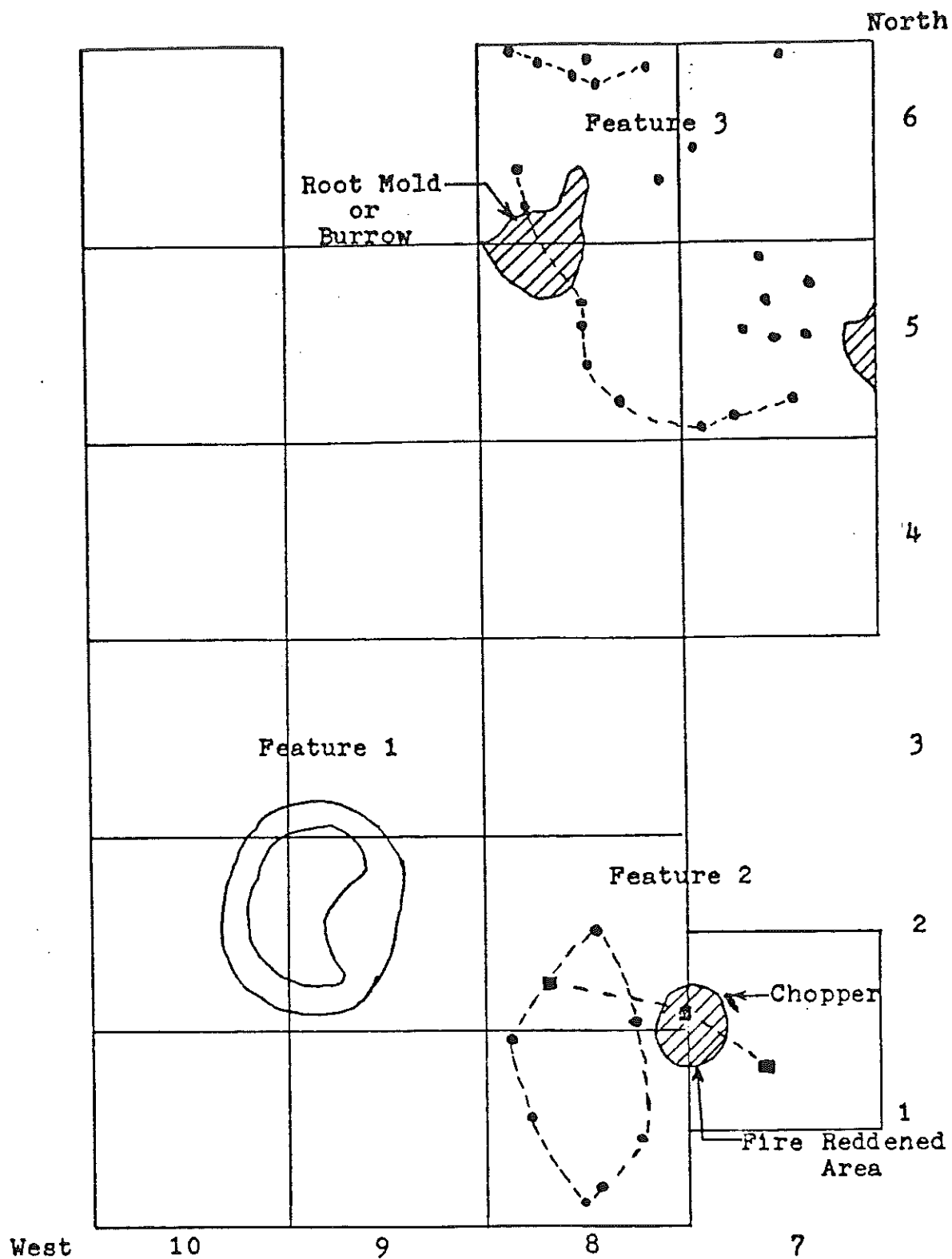


Figure 5. Locations of features.

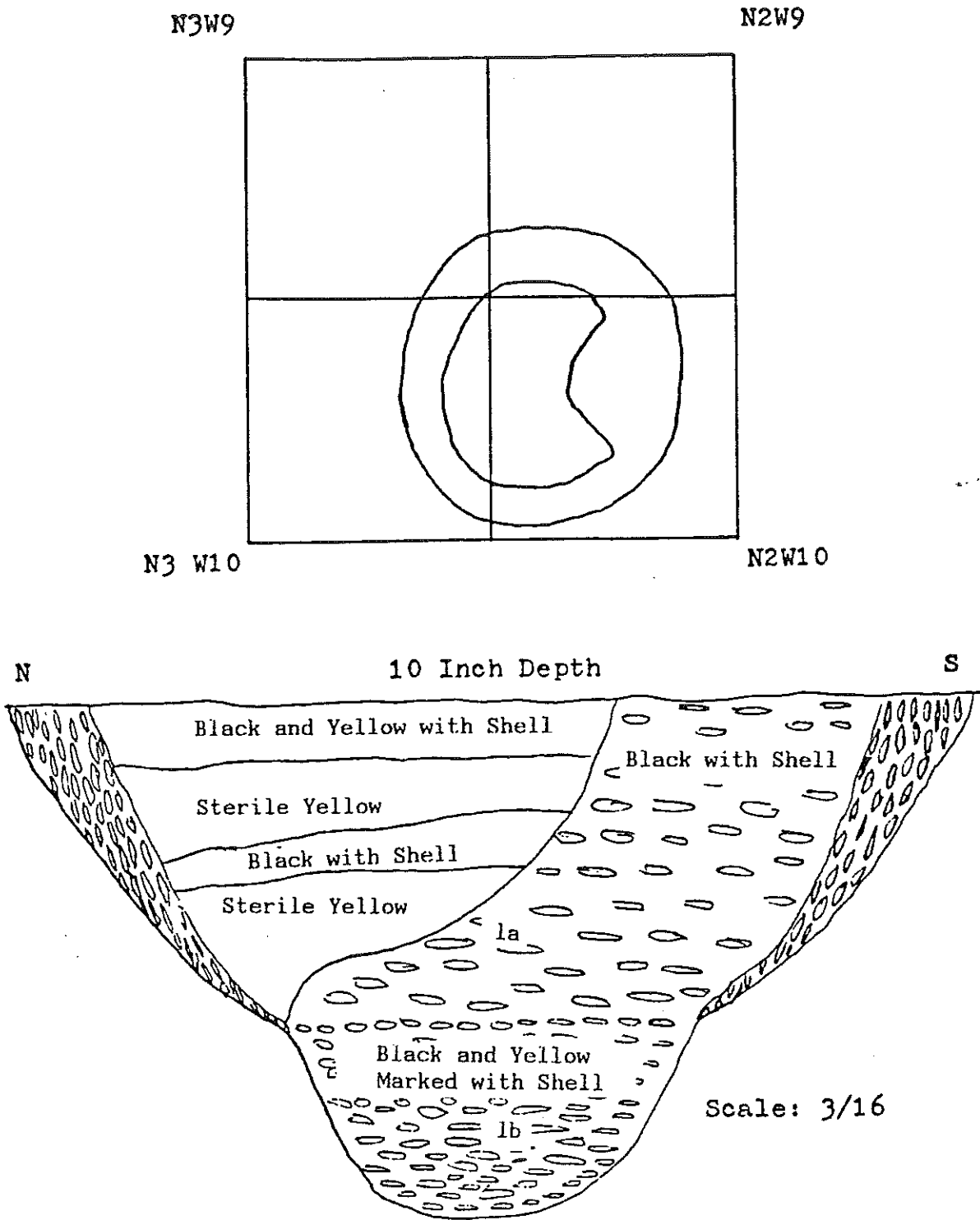


Figure 6. Feature 1 location and profile.

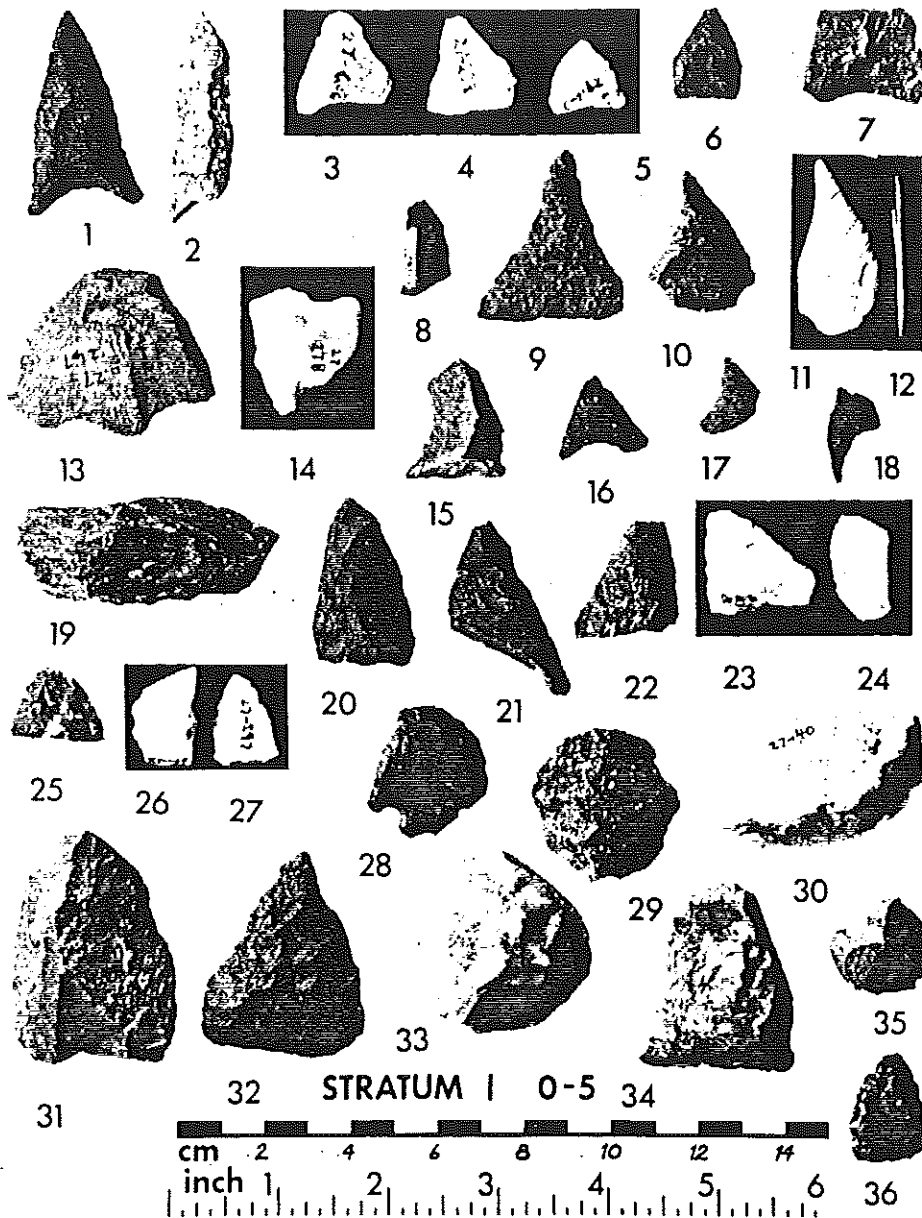


Figure 7. Artifacts, Stratum I, 0 - 5 in.

Artifacts: 1. Brewerton Eared Triangle point; 2. bone point; 3 - 5, 7: Levanna points; 6. Jack's Reef Pentagonal point; 8, 11 undifferentiated piercing tools; 9. awl; 10. drill; 12. bone needle fragment; 13 - 18. denticulate tools; 19. chopper fragment; 20 - 23. trianguloid blades; 24. scraper fragment; 25. oval blade tip; 26, 27. blade fragments; 28. side scraper made from a bifurcate base point; 29, 35. oval scrapers; 30 - 34. end scrapers; 31, 32. preforms; 33. core nucleus; 36. side scraper.

Materials: 7, 10, 15 - 18, 20 - 22, 25, 28, 29, 34 - 36. porphyry; 1, 6, 8, 9, 13, 31, 32. felsite; 3 - 5, 14, 23, 24, 26, 27, 30, 33. quartz; 12. bone; 11. shell.

a polishing stone (Figures 8 and 11). In all, there were 154 artifacts manufactured from locally available porphyries, felsites, quartz, quartzites, and exotic jasper. The flake count demonstrates the relative frequencies (Figure 13).

The pottery sample from the Marshall Midden, though small, also demonstrated a two component site (Figure 14). Sherds from Stratum I (designated pottery class A) appear to be Late Woodland and Contact period ceramics on the basis of associations, shell temper, and fine paste. Sherds from Stratum II and III (pottery class B) were coarser in texture, appearing similar to Middle Woodland Point Peninsula Plain pottery as described by Ritchie and MacNeish (1949:103).

European items represented problematic Native American use (Figure 15). Unlike Feature 1 where the association cannot be questioned, objects from other parts of the midden could represent mixing. Glass bottle fragments suggest an early to mid-18th century date (Noel Hume 1961:99-100).

FAUNA, FLORA AND GEOGRAPHY

Only the faunal remains from the undisturbed Feature 1 can be studied with some confidence because of mixture with the Colonial dump. Feature 1 floral and faunal remains included white-tailed deer, sturgeon, striped bass, white perch, winter flounder, and unidentified seed, fish, mammal, and bird remains. Striped bass can be found inshore all summer, although they are especially liable for capture during the spring and fall migration runs. They winter in deep water and are hard to catch at that time. The white perch (*Morone americana*) are available except for winter when they retreat into deep bays and become torpid. Winter flounder (*Pseudopleuronectes americanus*) is available in spring and fall, less so in summer, and are absent from the coast in winter. The sea sturgeon (*Acipenser sturio*) spawns in fresh water in spring, can summer in fresh water, then runs back to the sea in September (Bigelow and Schroeder 1953).

As these faunal remains would seem to indicate, the feature was probably filled during the spring, summer, or most likely, fall. On the basis of floral and faunal material, a mild weather habitation is likely.

Shell analysis suggests an almost equal dependence on bay scallop and quahog followed by oyster and soft-shell clam with a very small amount of other shell species. All are available in the area today. Shell midden lens 1 yielded several whelk shells. This is most likely to happen in summer when whelk are available in summer when they come inshore to spawn, but they can be cast up by storms in fall and winter as well (Little and Andrews 1986). Geographic aspects of the Marshall Midden demonstrate that the site is protected from the north and west winter winds and so could have been occupied in winter and early spring.

INTERPRETATIONS OF THE MARSHALL MIDDEN

The Marshall Midden contains an Early Contact Native American occupation on the south shore of Nantucket Harbor. The radiocarbon date and undisturbed association of sheet brass conclusively date Feature 1 to the early Historic period. The artifact assemblage consists predominantly of Levanna points, various blades, preforms, gravers, and piercing tools. Lithic studies suggest that porphyry and jasper were the favored chipping materials with felsites, quartz, and quartzite used to a lesser degree (Figure 13). There were faint traces of earlier Woodland occupation below the midden and intrusions from a nearby Colonial dump.

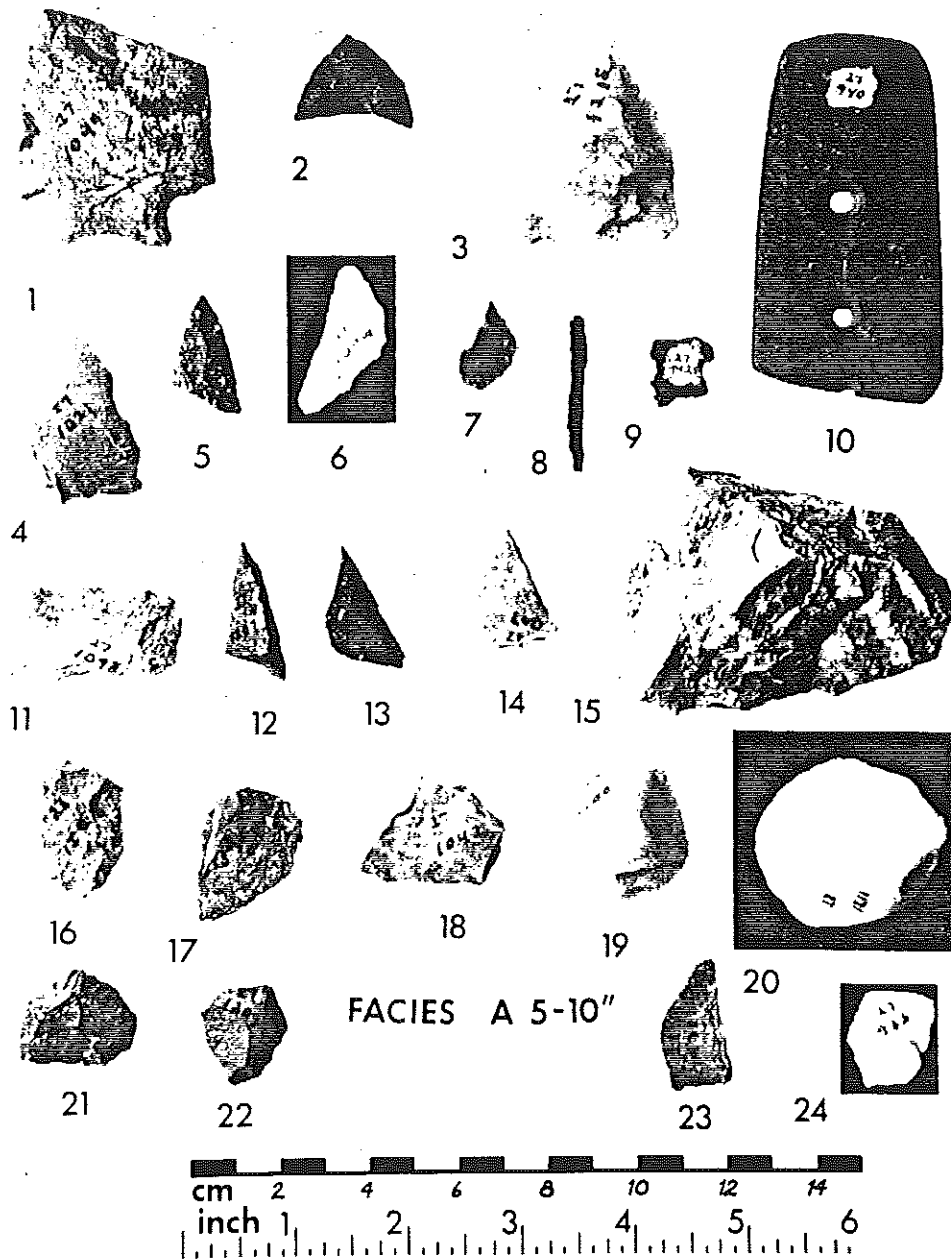
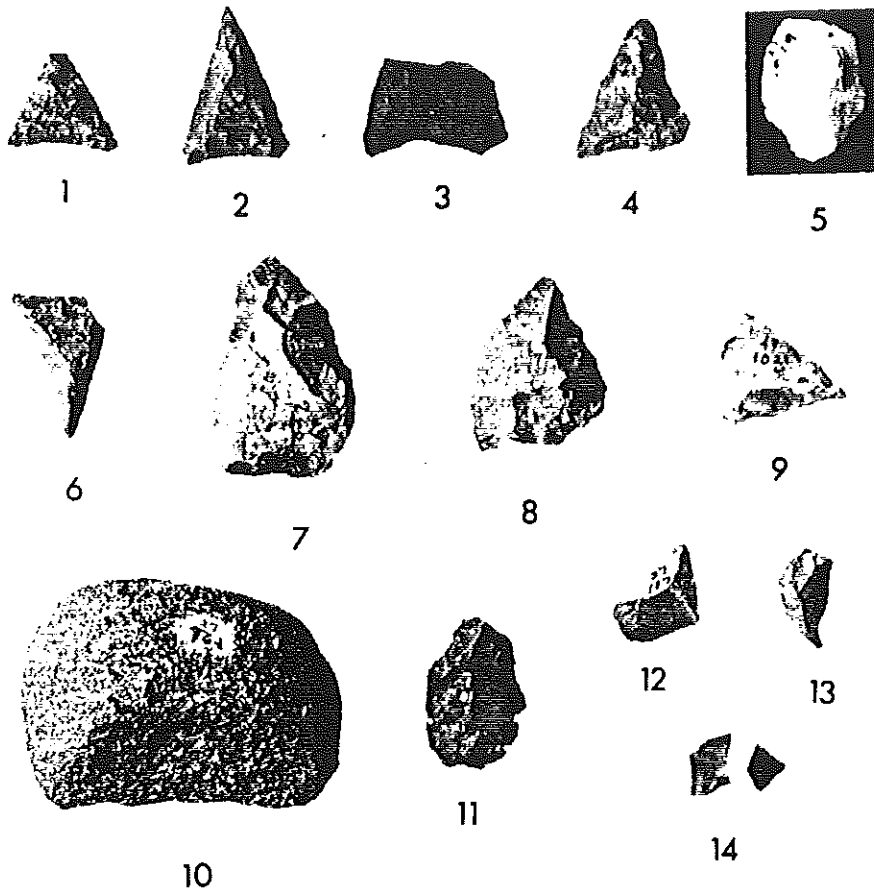


Figure 8. Artifacts, Stratum I, Facies A, 5 - 10 in.

Artifacts: 1. corner-notched blade; Levanna point; 3. preform; 4. retouched flake; 5. lanceolate blade fragment; 6. retouched Levanna point; 7. end scraper fragment; 8, 9. iron fragments; 10. gorget; 11. blade fragment; 12, 13. awls; 14. drill; 15. chopper; 16, 18, 23, 24. side scrapers; 17, 19 - 22. end scrapers.

Materials: 2, 5, 7, 11 - 13, 16, 17, 21, 23. porphyry; 1, 4 felsite; 3, 6, 14, 19, 20, 24. quartz; 10. shale; 15. metamorphosed porphyry; 18. jasper.



FACIES B 5-10"

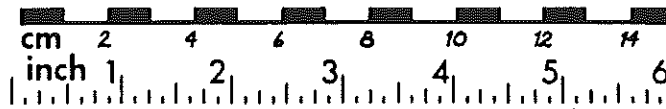


Figure 9. Artifacts, Stratum I, Facies B, 5 - 10 in.
Artifacts: 1, 3, 4 Levanna points; 2. Madison point; 5. Rossville point; 6. Awl;
7, 8. preforms; 9. drill; 10. grinding stone; 11. end scraper; 12, 13. retouched
flakes; 14. sheet brass fragments.
Materials: 1 - 4, 6 - 9, 11 - 13. porphyry; 5. quartz; 10. diorite.

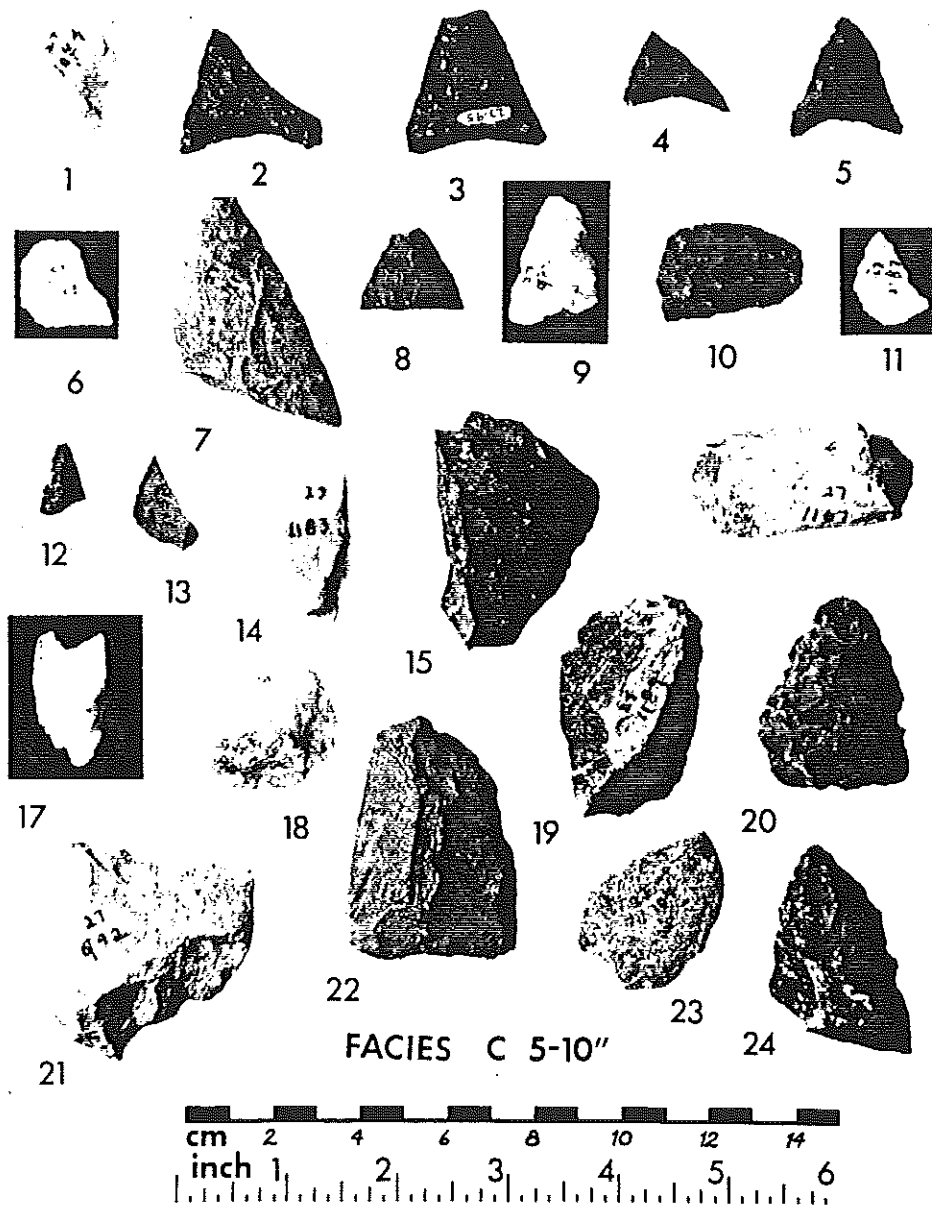
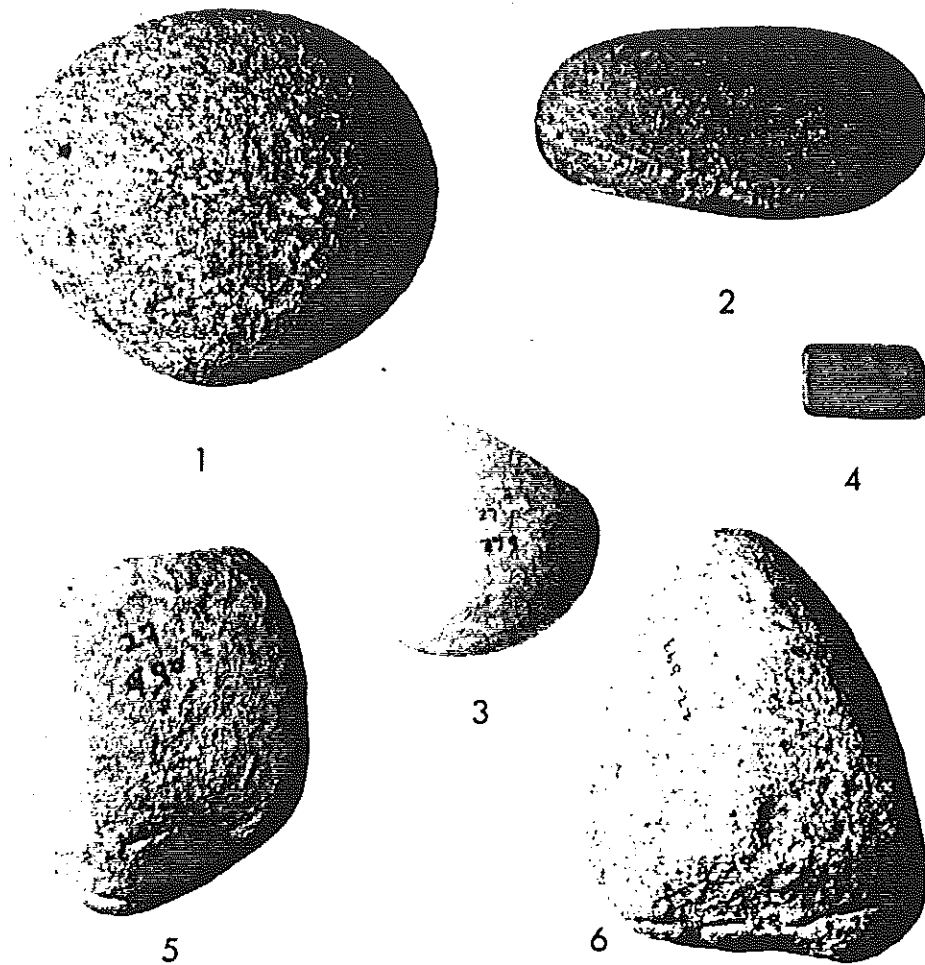


Figure 10. Artifacts, Stratum I, Facies C, 5 - 10 in.
 Artifacts: Bare Island point; 2 - 4, 11. Levanna points; 5. unfinished Levanna point; 6, 10, 16, 19. side scrapers; 7, 8, 9. blade fragments; 12. drill tip; 13. graver; 14, 18. end scrapers; 15. chopper; 20 - 22, 24. preforms; 17. denticulate tool; 23. ground stone fragment.
 Materials: 2 - 5, 8, 10, 12, 15, 16, 19 - 21, 24. porphyry; 7, 13. felsite; 1, 6, 9, 11, 17, 18. quartz; 22. quartzite; 23. granitic gneiss.



GROUND STONE OBJECTS 0-10"



Figure 11. Ground stone objects, Stratum I, 0 - 10 in.
Artifacts: 1, 3, 6. hammerstones; 2, 5. grinding stones; 4. polishing stones.
Materials: 1. diorite; 2. quartzite; 3. quartz; 4, 5. metamorphosed sandstone;
6. porphyritic granite.

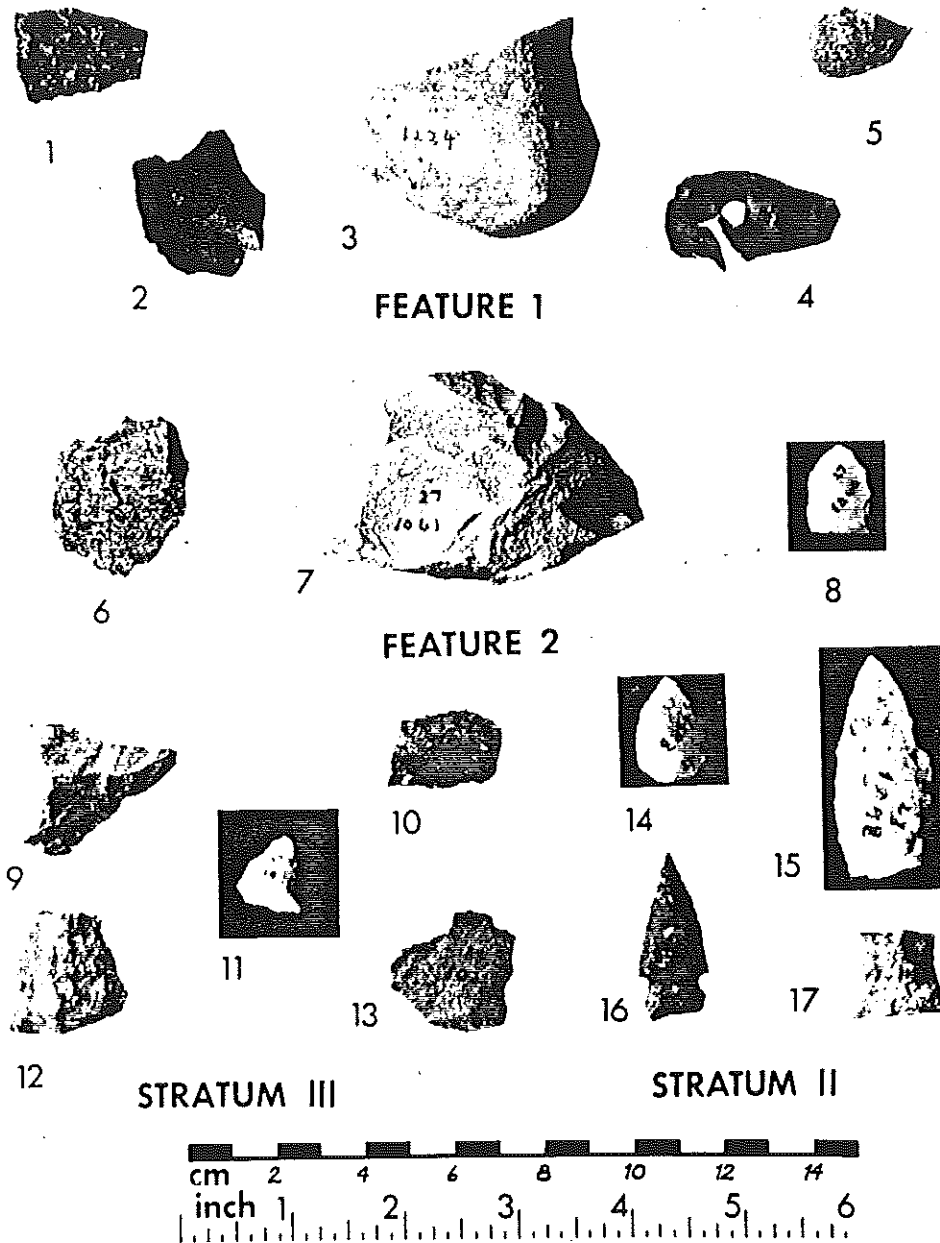


Figure 12. Artifacts from Features 1 and 2 and Strata II and III.
 Feature 1: 1. side scraper; 2. retouched flake; 3. grinding stone fragment; 4. sheet brass fragment; 5. end scraper.
 Feature 2: 6, 8 end scrapers; 7. chopper.
 Stratum II: 10. side scraper; 14. polished scraper; 15. unfinished lanceolate blade; 16. Meadowood-like point; 17. blade fragments.
 Stratum III: 9. awl; 11. retouched flake; 12, 13. utilized flakes.
 Materials: 1, 5, 6, 9, 10, 12, 13, 16, 17. porphyry; 2, 3, 7. fessite; 4. brass; 8, 11, 14, 15. quartz.

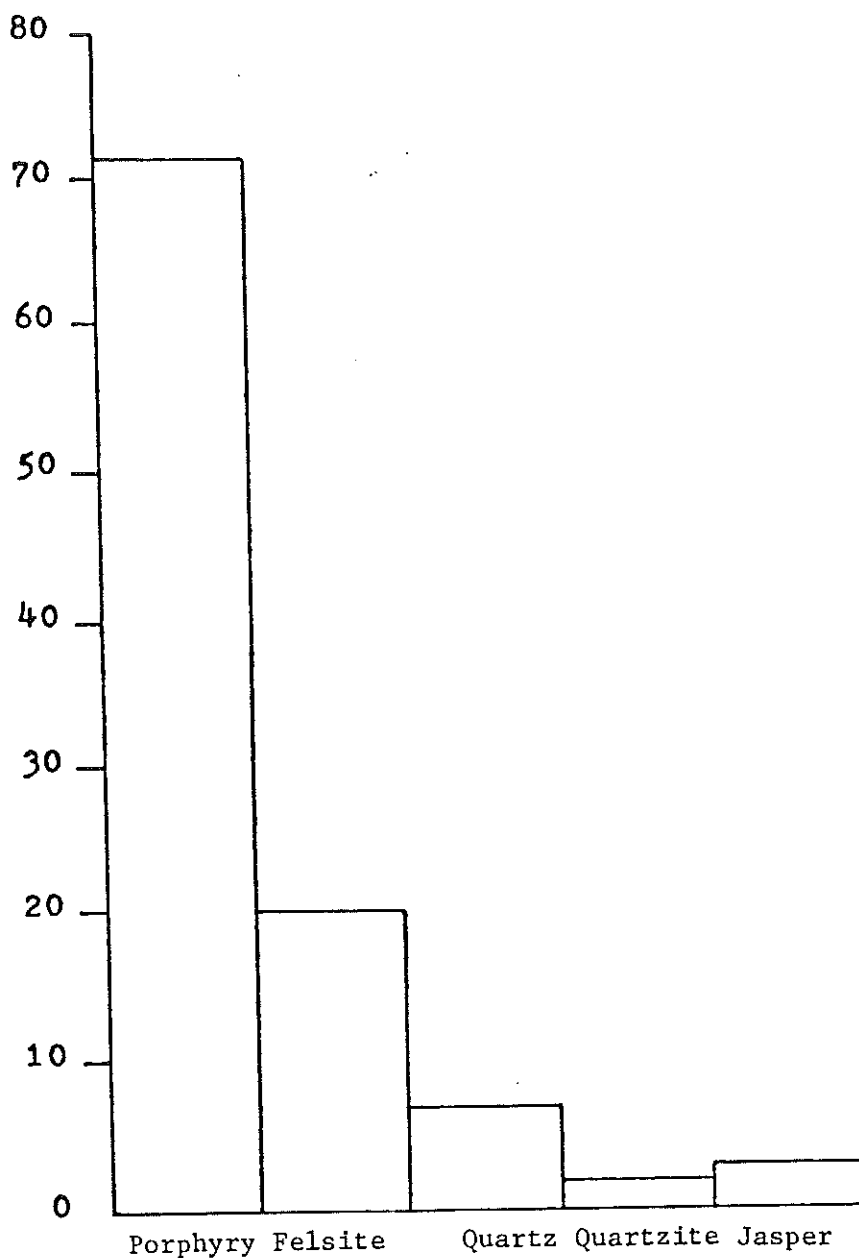
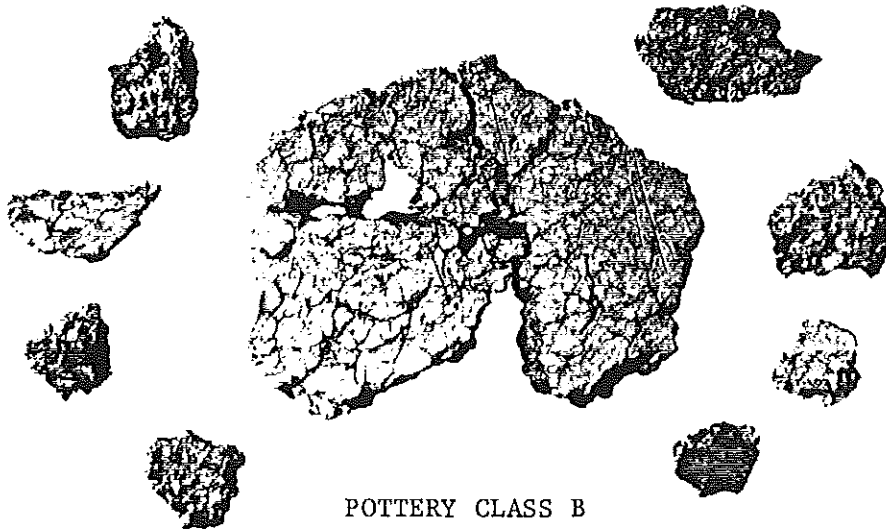


Figure 13. Percentages of flake raw material.

White-tailed deer was the major game food. Fish such as the striped bass, white perch, winter flounder, and sturgeon were also caught. Shellfish made up another fraction of the diet. There was slight evidence for fowling and possibly, gathering plant materials. The Marshall Midden appears to be the shell heap, dump, and storage area for an adjacent coastal Native American residence and could have been utilized during several or all seasons of the year.



POTTERY CLASS A



POTTERY CLASS B

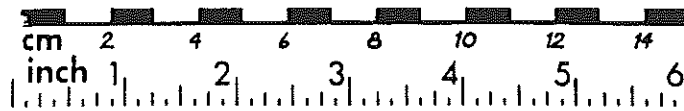


Figure 14. Marshall Midden pottery.
Stratum I: Pottery Class A; Stratum II and III: Pottery Class B.

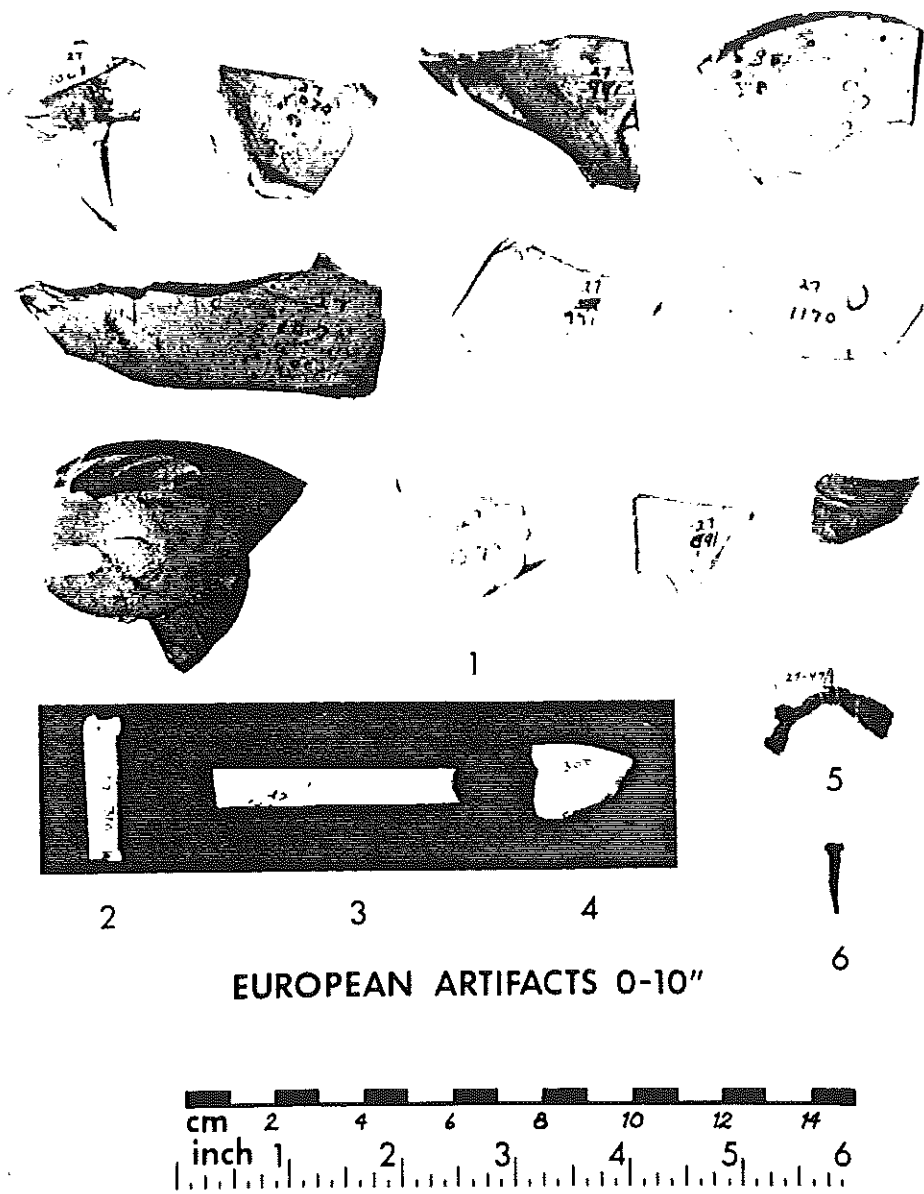


Figure 15. European Artifacts, Stratum I
 1. glass fragments; 2 - 4. kaolin pipe fragments; 5. iron fragment; 6. small hand wrought iron nail (brad).

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