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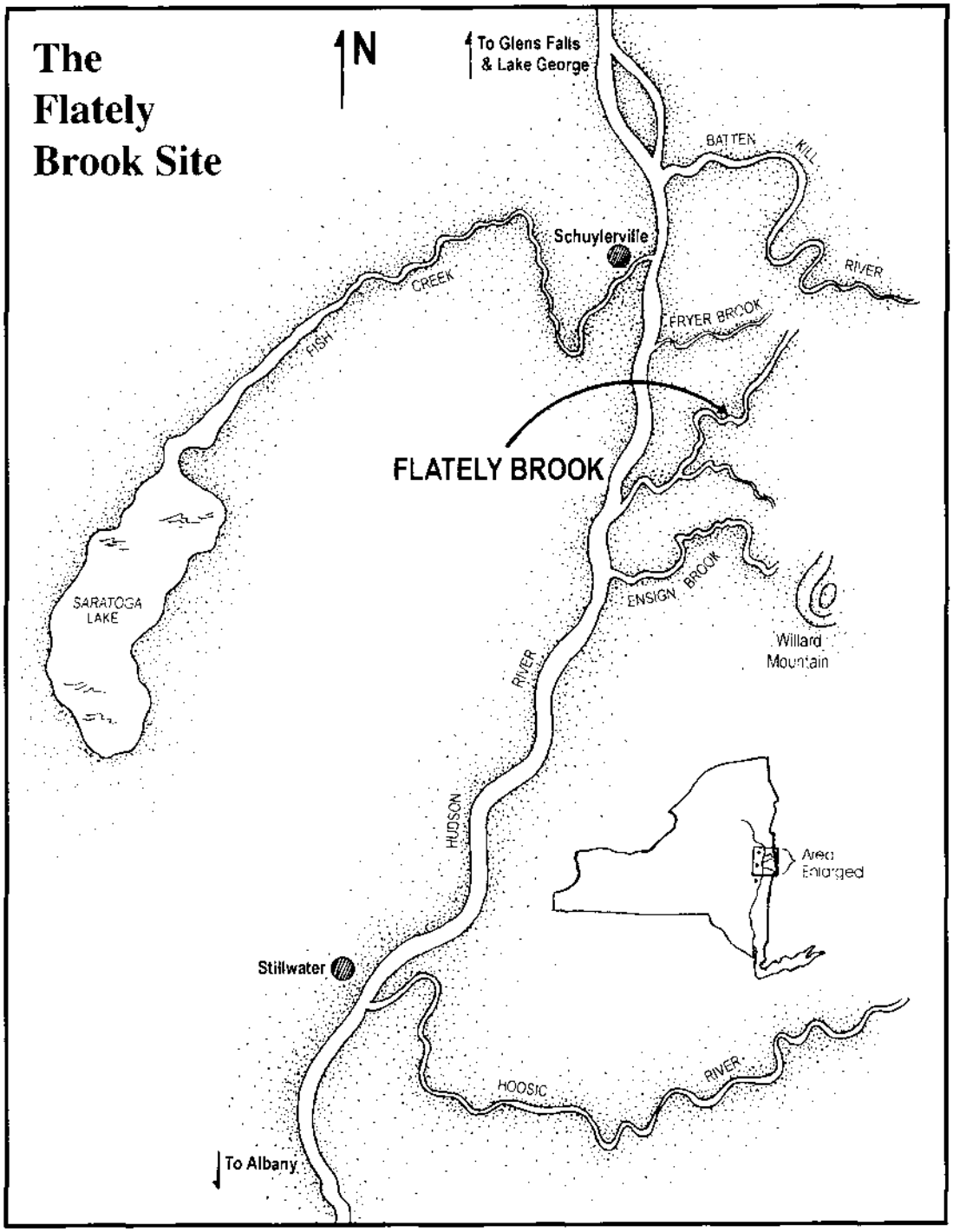

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Archaeological Investigations at the Fresh Pond Locus on Shelter Island

John Charles Witek, Incorporated Long Island Chapter; NYSAA

Since the late 1920s, when it was explored casually by Roy Latham and other members of the Incorporated Long Island Chapter, NYSAA, Fresh Pond and its environs have yielded artifacts ranging from prehistoric lithics and ceramics to contemporary domestic refuse. Reporting upon studies and field work conducted between 1987 and 1990, this paper presents an overview of recent findings at Fresh Pond based on informant interviews, institutional research, surface and underwater surveys, and the testing of six hitherto unreported buried and submerged sites. Artifacts, features and burials associated with these sites support the thesis that Shelter Island prehistoric people practiced a dispersed homestead settlement system, with relatively sedentary homesteads containing a few family units. During the Late Woodland period, Fresh Pond appears to have served as a permanent or intermittent residential base for several family units whose diets were heavily adapted to shellfish, and who exploited resources there and at tidal creeks nearby.

Introduction

Fresh Pond on Shelter Island in Suffolk County, New York, is the only deep kettlehole lake on an island where archaeological sites are abundant, and its ecozone diversity suggests it as a likely locus of archaeological significance. Finds of prehistoric cultural remains over many years by property owners, relic collectors, and avocational archaeologists confirm this assumption.

Unfortunately, the archaeological record here has suffered from property development and pot hunting - threats that encouraged me to investigate Fresh Pond before more information was lost. The challenge was to recover as much data as possible, while being as non-intrusive as possible. Since I didn't want to damage sites by excavating, I decided in favor of surface and underwater surveys, personal interviews, institutional research, preliminary analysis of artifacts and faunal remains, and occasionally, the use of systematic shovel probes. This report presents my findings, and by bringing the sites at Fresh Pond to light, seeks to encourage future professional investigation.

Geography and Cultural History

Shelter Island was formed by one or more Wisconsin glacial episodes, and it is located within the bay systems between Long Island's two eastern forks (Figure 1). Its geography is morainal. Dry and marshy kettles are common here, as are kettles near shorelines where saltwater has intruded in relatively recent times.

Fresh Pond is Shelter Island's only deep, freshwater lake of glacial origin; its coordinates are 42 3' 30" / 72 20' 10" on the USGS Greenport Quadrangle. Its shape is an irregular oval measuring approximately 625 ft north-south by 800 ft east-west (191 m x 244 m). Hills bordering the pond to the north and southeast rise to elevations of 40 ft (12 m) above sea level, while an undulating and more gradual slope occurs to the south and west. Large saltwater tidal creeks also occur south and west of the pond, about 700 ft (213 m) distant. Fresh Pond lies at about mean sea level, and its own level varies with the area's water table.

Land surrounding Fresh Pond is privately owned, while the pond itself belongs to the Town of Shelter Island, which maintains a small access road to it west of Lake Drive. Prior to recent property development, large tracts of land to the south and west were planted in beans and wheat, and had apple and pear orchards (Neal Dickerson, personal communication April 1988).

Currently, the pond serves residents as a recreational facility. Before 1940 it was also a source of ice, with ice houses located on the south and northwestern shoreline. Ice was conveyed by horse and wagon, and traces of dirt roads leading to the ice houses are still discernible.

Until Shelter Island opened a landfill in the 1950s, Fresh Pond was a favorite dumpsite. Its shallows are littered with domestic artifacts and waste dating from the present to the eighteenth century. Long-term residents relate that large objects such as cars and refrigerators were hauled to the center of the frozen pond in winter in order to disappear the following spring by melting through the ice.

Exploring Fresh Pond can be risky. While the underwater slope to the south is gradual, the angle becomes acute to the

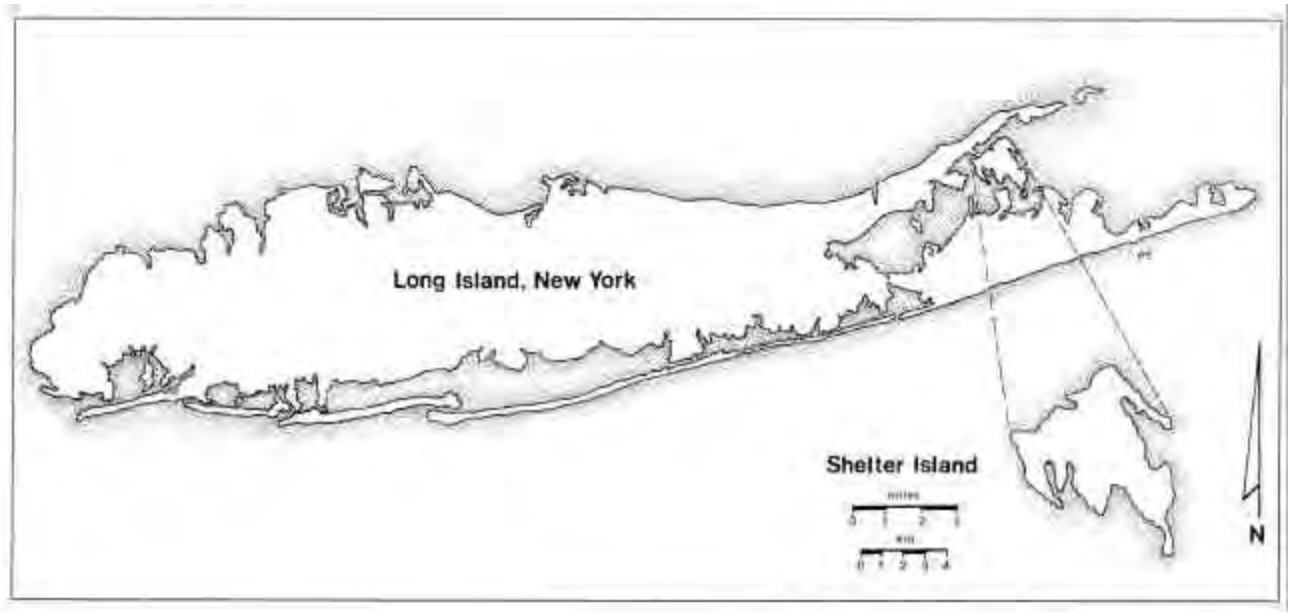

Figure 1. Shelter Island, New York.

north. Depths of up to 50 ft (15.2 m) have been recorded, and the tapering bottom is cold, black, and thick with organic silt. Pesticides (probably Temek) were dumped here before they were known to be carcinogens.

Fresh Pond and its environs were explored in the late 1920s by the avocational archaeologist, Roy Latham, and by other members of the Incorporated Long Island Chapter, NYSAA. Unfortunately, their notes and correspondence reveal little except to observe that there were sites and burials at the pond (Latham 1974). In the 1930s and 40s, the area around the pond was scoured by relic hunters, who encountered ceramics, stone artifacts, shell-filled pits, and at least one human burial.

Site Survey

Our discoveries at Fresh Pond were made as the result of interviews with local residents and property owners, ground search surveys of about thirty percent of potential site locations, limited random shovel probes at potential sites, underwater surveys of the entire pond to a depth of approximately 15 ft (4.6 m), and limited random shovel probes at submerged sites. These operations were facilitated by the use of Suffolk County tax maps and property markers which served as datums for pacing, measuring, and map orientation (Figure 2).

Six sites were located as a result of these procedures, and they are described below, together with the methods for finding and studying them. Their coding is a refinement of a site code I used in reporting cultural remains at Fresh Pond in a previous overview of Shelter Island's prehistory (Witek 1990).

Site SI-4-l A: Residential Base

This partially submerged site is located at the extreme northeastern corner of the pond. Broken shell is visible on the surface at the shore, and the site continues in a southwesterly direction under water to a depth of about 30 in (.76 m). The submerged portion of this site measures about 75 ft north-south by 55 ft east-west (23 m x 17 m). While the site continues an unknown distance to the east, it is confined to a narrow strip bordered by a sharply rising elevation to the north, and by a heavily dredged marsh to the south.

The submerged soil profile at this site consists of a layer of sand to a depth of 6 in (15.2 cm), which serves as a rooting

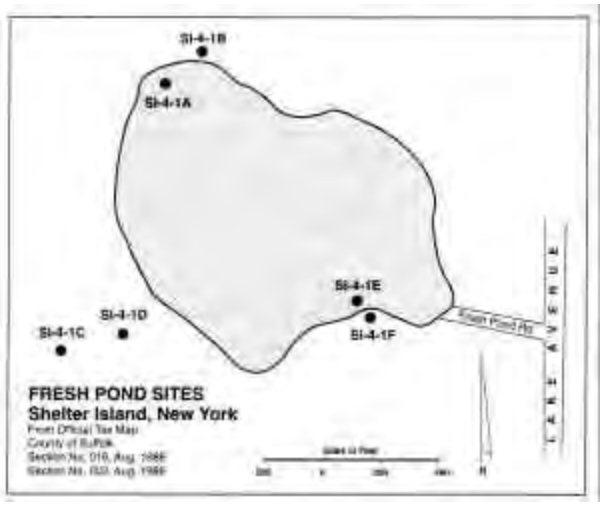

Figure 2. Late Woodland sites at Fresh Pond.

medium for pondweed (*Potamogeton foliosus*). Beneath is the original occupation floor of tightly packed sandy loam, the surface and first inch (2.5 cm) of which are littered with fire-shattered stones, broken shell and amorphous charcoal (alkaline charcoal and shell probably account for the 15 readings of pH 8 that were obtained at this site using Helige-Taurog reagents). Sandy loam continues for 2.5 in (6.3 cm), followed by sterile sandy clay. Most artifacts from this site were obtained from a loose layer of sand above the occupation floor, where they lay in a very disturbed state together with modern refuse including bottles, barrel staves, scrap metal, bullets, fishing lures, wire, machine-made nails, and a car battery. Dead leaves and branches, the horny scute from a turtle's plastron, and canine bones were also encountered.

Lithic artifacts from this site are inventoried in Table l. Their quantity and variety suggests that the site served as a residential base during the Late Woodland period. Settlement here was probably similar to the pattern proposed for other Shelter Island sites of this period - one of multiple occupations by a few families, spanning perhaps all seasons (Lightfoot et a1.1987:125-126).

The possibility of multi-seasonal use of this site is suggested by the variety of shellfish that were found. These had to be transported to the site from tidal creeks about 700 ft (213 m) distant. Different seasons might have produced conditions favoring the harvesting of one kind of shellfish over another.

To study the site under several feet of water, I used a portable 5 ft (1.5 m) grid square which allowed me to record the relative positions of features and artifacts. While the positions of chipped stone artifacts had been disturbed, many soot-covered shattered stones and broken bivalves lay in situ, revealing that particular species of bivalves predominated where individual cooking episodes occurred. Shellfish obtained included soft clam (*Mya arenaria*), hard clam (*Mercenaria mercenaria*), bay scallop (*Acquipecten irradians*), Virginia oyster (*Crassostrea virginica*), and a single New England dog whelk (*Nassarius trivittatuis*).

Fifteen shovel probes amounting to 225 lbs (102 kg) of material were taken at 5 ft intervals (1.5 m) from west to east through the center of the site. Each probe obtained a rough core approximately 9 in (23 cm) in diameter and 8 in long. Samples were washed, sifted through 0.25 in mesh and dried prior to analysis. The recovered materials include: four small, shattered mammalian bone fragments and a molar (possibly a pig's), eight small, thin, grit-tempered ceramic fragments, and shellfish remains, some of which are noted below.

Site SI-4-1B: Individual Activity Area

This small site was located 4 ft (l.2 m) above the pond at the base of a hill about 70 ft (21.3 m) northeast of the center of Site SI-4-1 A. It was discovered by a property owner while constructing a small flight of steps. Five shovel probes and a 2 sq ft (.6 m) test pit were dug revealing a small activity area approximately 4 ft (1.2 m) in diameter. This feature consisted of about 1 in of black, greasy soil, and primarily broken scallop shell and some hard clam shell sandwiched between a 4 to 8 in (10.1 cm - 20.3 cm) layer of dark loam, and one of tan, sandy clay. In addition to shell, one piece of bone, two quartz shatter fragments, a quartz pebble hammer, and six potsherds were recovered (inventoried in Table 2).

Site SI-4-IC: High Density Shell Concentration

This and the following site are located on property southwest of the pond and came to light during gardening and construction activities by the owners, who described uncovering dense layers of scallop shells in what subsequent research determined were pits and a midden area. Shells were described as ranging from intact to extremely crushed. They were visible on the surface, and were also concentrated at depths beginning at approximately 2.5 ft (.76 m) from the surface.

It should be noted that finding shell deposits on Shelter Island does not necessarily suggest its use by prehistoric Native Americans. Shell was used by farmers extensively to reduce soil acidity. It was and is widely discarded by baymen and householders alike. On one occasion we encountered an exposed shell pit on a bank at Fresh Pond that looked prehistoric, until we saw that it contained an admixture of modern brick fragments.

Site SI-4-1D: Shell Concentration

While building a garage, the owners of the property mentioned above struck a concentration of shell approximately 3 ft (.9 m) from the surface. I examined some of the displaced material and noted the presence of many complete scallop valves (*Acquipecten irradians*), some knobbed whelk (*Busycon carica*), two quartz pebble hammerstones, one partially worked stone, and a small pebble core.

In 1955, an amateur archaeologist excavating one of the numerous shell pits within this site encountered the burial of a subadult female from the Late Woodland period.

Probe l:	35% soft clam	30% oyster	25% scallop	10% hard clam	Total: 241 g.
Probe 2:	50% oyster	49% hard clam	1% soft clam		Total: 340 g.
Probe 3:	8% bay scallop	48% soft clam	2% hard clam	2% oyster	Total: 312 g.

Notes covering probes 4 through 15 are unavailable for this preliminary report.

Table 1. Lithic Artifacts, Site SI-4-1 A, 1987.

Specimen	Artifact	Material	Remarks
FP-87-2	Griddlestone fragment	Basalt	—
FP-87-3	Chopper	Quartzite	
FP-87-4	Adze preform	Basalt	—
FP-87-5	Whetstone	?	—
FP-87-6	Hammerstone	Quartz pebble	—
FP-87-7	Hammerstone	Quartz pebble	—
FP-87-8	Hammerstone	Quartz pebble	
FP-87-9	Hammerstone	?	
FP-87-10	Celt or adze	?	Fragment
FP-87-11	Celt or adze	?	Fragment
FP-87-12	Drill	Slate ?	Expanded base
FP-87-13	Paintstone	Hematite	—
FP-87-14	Paintstone	Hematite	—
FP-87-15	Gorget	?	Polished fragment
FP-87-16	End scraper	White quartz	Denticulate
FP-87-17	Perforator	Taprock ?	Triangular, crude
FP-87-18	Knife	White quartz	Stem fragment
FP-87-19	Knife	Smoky quartz	Stemmed
FP-87-20	Biface blade	White quartz	—
FP-87-21	Biface blade	White quartz	—
FP-87-22	Biface blade	White quartz	Fragment
FP-87-23	Biface blade	White quartz	—
FP-87-24	Biface blade	White quartz	—
FP-87-25	Biface blade	White quartz	—
FP-87-26	Biface blade	White quartz	
FP-87-27	Biface blade	White quartz	
FP-87-28	Graver	White quartz	Pickup tool ?
FP-87-29	Endscraper	White quartz	Pickup tool ?
FP-87-30	Scraper	White quartz	Denticulate
FP-87-31	Point blank	White quartz	Triangular
FP-87-32	Point blank	White quartz	Triangular
FP-87-33	Point blank	White quartz	Triangular
FP-87-34	Point blank	White quartz	Triangular
FP-87-35	Point blank	White quartz	Triangular
FP-87-36	Point blank	White quartz	Triangular
FP-87-37	Levanna point	White quartz	Concave base
FP-87-38	Levanna point	White quartz	Concave base
FP-87-39	Levanna point	White quartz	Concave base
FP-87-40	Levanna point	White quartz	Concave base
FP-87-41	Levanna point	White quartz	Concave base
FP-87-42	Levanna point	White quartz	Concave base
FP-87-43	Levanna point	White quartz	Fragment
FP-87-44	Levanna point	White quartz	Fragment
FP-87-45	Levanna point	White quartz	Fragment
FP-87-46	Levanna point	White quartz	Straight base
FP-87-47	Levanna point	White quartz	Straight base
FP-87-48	Levanna point	White quartz	Fragment
FP-87-49	Levanna point	White quartz	Fragment
FP-87-50	Levanna point	White quartz	Fragment
FP-87-51	Madison point	White quartz	—
FP-87-52	Narrow stemmed point	Crystal quartz	—
FP-87-53	Narrow stemmed point	Crystal quartz	—
FP-87 (unnumbered)	8 Pebble unifaces	White quartz	—
FP-87 (unnumbered)	19 Split pebbles	White quartz	—
FP-87 (unnumbered)	18 Cores	Quartz and quartzite	—
FP-87 (unnumbered)	50 Spalls	Quartz and quartzite	—
FP-87 (unnumbered)	110 Secondary flakes	White quartz	—
FP-87 (unnumbered)	18 Secondary flakes	Crystal quartz	—

Table 2. Fresh Pond Ceramic Subsets.

SI-4-1A

Vessel	**A**	**B**	**C**	**D**	**E**
Specimen(s)	FP-88-1	FP-87-61-3	FP-87-64-5	FP-87-66	FP-87-67
Rim Sherds	0	0	0	0	0
Body Sherds	1	3	2	1	1
Connecting Sherds	0	0	0	0	0
Total Sherds	1	3	2	1	1
Thickness (mm)	10	7 to 9	5 to 7	10	7
Temper	grit	shell	shell	shell	?
Paste	crumbly	fair	fair	hard	solid
Core	90% black	?	brown	75% black	gray
Mohs Hardness	1.5	2	2	2.5	2
Munsell color	?	?	?	?	?
Rim stance	?	?	?	?	?
Rim diameter (mm)	?	?	?	?	?
Body	?	?	?	?	?
Base	?	?	?	?	?
Height (cm)	?	?	?	?	?
Exterior finish	smooth	brushed(?)	smooth	?	brushed
Interior finish	smooth	smooth(?)	smooth	?	brushed
Decoration	--	—	—		—

SI-4-1E

Vessel	**A**	**B**	**C**	**D**	**E**	**Various**
Specimen(s)	FP-89-A1-A46	FP-89-B1-B14	FP-89-C1-C38	FP-89-D1-D5	FP-89-E1-E11	FP-89-V1-V45
Rim Sherds	7	5	2	1	0	5
Body Sherds	39	9	36	4	11	40
ConnectingSherds	36	10	30	2	0	0
Total Sherds	46	14	38	5	11	45
Sherd Thickness (mm)	7 to 10	10	5	7 to 10	5	5 to 10
Temper	grit	shell	grit	?	shell	mostly grit
Paste	hard	laminated	hard	chalky	fair	?
Core	black	black	black/uneven	black	black	?
Mohs Hardness	2	2	3	1.5	2	?
Munsell soil color	10YR 5/2	5YR 5/4	2.5YR 6/6	10YR 4.5/2	7.5YR 5.5/4	7.5YR 6/3, 5 YR 4.5/4
Rim stance	everted	straight	straight	everted	?	?
Rim diameter (mm)	23	c. 20	c. 23	?	?	?
Body	inverted pyriform	?	inverted pyriform	?	?	?
Base	round	?	round	?	?	?
Height (cm)	c. 38	?	c. 38	?	?	?
Exterior finish	brushed	brushed	cord marked	brushed	brushed	mostly brushed
Interior finish	scallop-channeled	burnished	smooth	scallop-channeled	smooth/brushed	?
Decoration	Parallel vertical stab and drag incisings from rim to shoulder.	2 parallel horizontal bands stab marks at neck and shoulder.	Cord-wrapped. stick-stamped neck with incipient collar.	2 parallel horizontal jab and drag bands at shoulder. Vertical jab and drag marks at rim.		?

Table 2. Fresh Pond Ceramic Subsets (continued).

SI-4-1B		
Vessel	**A**	**B**
Specimen(s)	FP-87-60	FP-87-69-73
No. rim sherds	0	0
No. body sherds	1	5
Connecting sherds	0	0
Total sherds	1	5
Sherd Thickness (mm)	10	7
Temper	grit	shell
Paste	solid	solid
Core	brown	brown
Mohs Hardness	2	1.5
Munsell soil color	7.5YR 5/3	5YR 5.5/4
Rim stance	?	?
Rim diameter (mm)	?	?
Body	?	?
Base	?	?
Height (cm)	?	?
Exterior finish	brushed	smooth
Interior finish	scallop-channeled	smooth
Decoration	–	–

SI-4-1C		
Vessel	**A**	**B**
Specimen(s)	FP-55-A1	FP-55-B1
No. rim sherds	0	0
No. body sherds	1	1
Connecting sherds	0	0
Total sherds	1	1
Sherd Thickness (mm)	10	4 to 5
Temper	grit(?)	grit
Paste	pocked	hard
Core	brick	75% dark
Mohs Hardness	2	2
Munsell soil color	5YR 5/4	2.5YR 6/4
Rim stance	?	?
Rim diameter (mm)	?	?
Body	?	?
Base	?	?
Height (cm)	?	?
Exterior finish	brushed	brushed
Interior finish	scallop-channeled	smooth
Decoration	—	—

SI-4-1F	
Vessel	**A**
Specimen(s)	R-89-C1
No. rim sherds	0
No. body sherds	3
Connecting sherds	0
Total sherds	3
Sherd Thickness (mm)	7
Temper	shell
Paste	hard
Core	brick
Mohs Hardness	2
Munsell soil color	?
Rim stance	?
Rim diameter (mm)	?
Body	?
Base	?
Height (cm)	?
Exterior finish	brushed
Interior finish	smooth/ brushed
Decoration	

According to notes taken at the time, the pit yielded a broken pestle, a smooth shell or stone disk, a broken bone awl, a large quartz knife or point, and thick and thin sherds of grit-tempered, exteriorly brushed pottery (Table 2: FP-55-A1 and FP-55-B1).

The skeleton was found at a depth of about 3 ft, lying on its left side and facing west with its knees drawn up under the chin and the hands under the head. The excavator noted that a complete turtle shell vessel had been found right side up at the base of the spine." From cranial and postcranial measurements (see Appendix A), it would appear that this person was a short, gracile young female who had a rather long face with a broad nose and narrow eyes.

Site SI-4-lE: Submerged Ceramic Scatter

This unusual site was discovered 60 ft (18.3 m) from the pond's southeast shore in water from 5 to 10 ft deep (1.5-3 m). It produced 173 potsherds, representing at least 25 individual vessels, scattered on a sandy declivity measuring approximately 20 ft east-west by 10 ft north-south (6 m x 6 m).

All of the ceramics lay within the sandy layer, and did not penetrate the firm soil beneath. Moreover, fragments of particular vessels lay close to one another, as though the pottery had crumbled where it lay. About one-half of each of two vessels were reconstructed, giving us a clear picture of their shape and dimensions. All of the pottery recovered here is included in the ceramic inventory itemized in Table 2. Only a few other cultural remains were associated with the pottery: a few chipped quartz pebbles, quartz decortication flakes, a broken Levanna triangle, and several triangular quartz preforms. Shell, present at every other site, was absent here.

The majority of pottery identified appears to belong to the Sebonac phase of the Windsor tradition. The single, distinct exception to this is the incomplete vessel inventoried as Vessel C, a pot belonging to the East River tradition, probably the Bowman's Brook focus (Figure 3). This pot's cordwrapped, stick-stamped neck and shoulder were heavily
soot encrusted, and the deposit was removed and preserved for carbon dating.

Collection of potsherds at site SI-4-1 E was conducted over two seasons, resulting in the recovery of all of the pottery present, including sherds only a few centimeters long. Most of the sherds that I found connected to one another,
but formed incomplete vessels.

Site SI-4-1F: Activity Area

I could not tell whether the artifacts from ST-4-1E indicated that the site was prehistoric, or had been discarded there in recent times. Since a contiguous site might shed light on the

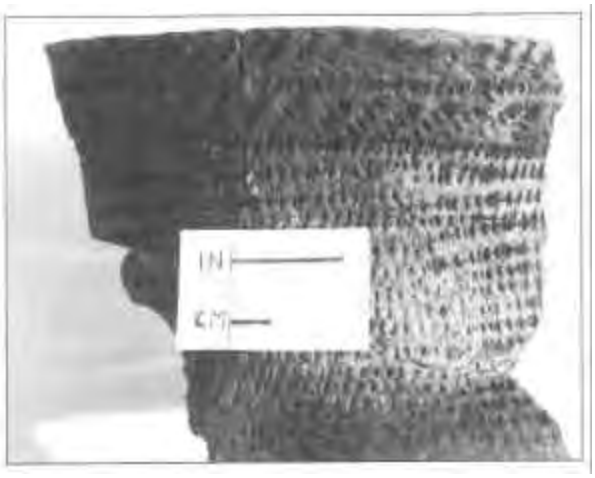

Figure 3. Vessel C: rim, neck, and shoulder with cord-wrapped stick stamping.

submerged ceramics. I felt it would be useful to determine if a buried site lay nearby.

Accordingly, after obtaining permission to proceed, seven shovel probes were taken at 20-ft (6.1 m) intervals along a north-south and east-west axis, on land immediately south of the submerged ceramic scatter. The elevation here is about 1 ft (.3 m) above sea level before rising higher to the south. Generally, the soil profile consists of a heavy mat of roots about .5 in (1.3 cm) thick. This is followed by an A layer of dark, sandy loam to a depth of 10 in (25 cm) overlying a B layer of tan sand into which water incurs at about 13 in (33 cm).

Shovel probes here revealed two archaeological strata. Stratum A lay at a depth of from 6 to 9 in (15-23 cm) from the surface. It produced a variety of nineteenth-century household refuse, including mammalian vertebral, metatarsal, and long bones which appeared to have been cleanly chopped or cut, glass bottle fragments, kaolin pipestem fragments, and sherds of brownware, redware, white porcelain, porcelain decorated with floral incisings, blue Staffordshire, and other European export ware (Figure 4-A).

Between 9 and 10 in (23-25 cm) from the surface, at the juncture of soil layers A and B, a thin layer of crushed shell began, which contained a small sampling of probable Late Woodland artifacts (Figure 4-B). This deposit of cultural and faunal remains forming the upper portion of B stratum soil was thin and fairly sparse wherever it was encountered; it was generally about 1 in (2.5 cm) thick. The shell consisted mostly of soft clam, hard clam, and oyster, with lesser amounts of scallop and knobbed whelk. A Levanna triangular point, a round quartz scraper, quartz and quartzite spalls and flakes, and three sherds of shell-tempered brushed pottery were recovered here.

Other than the proximity of this buried site to the submerged ceramic scatter offshore, and the fact that artifacts from both fall within the same broad period, no relationship between the sites was determined.

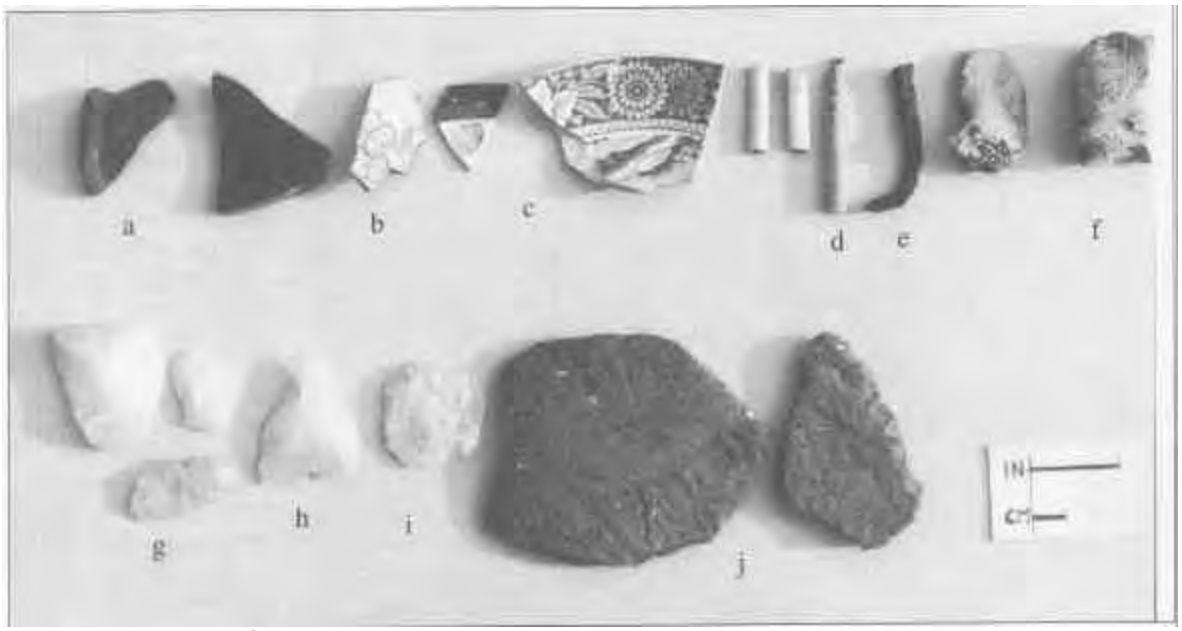

Figure 4. Strata A and B artifacts. Site SI-d-I F. Strata A: a. glass; b. incised ceramic; c. export ware; d. kaolin pipe stems: e. iron nail; f. mammalian atlas wings. Strata B: g. white quartz flakes; h. triangular preform: i. thumbnail scraper: j. Windsor ceramics.

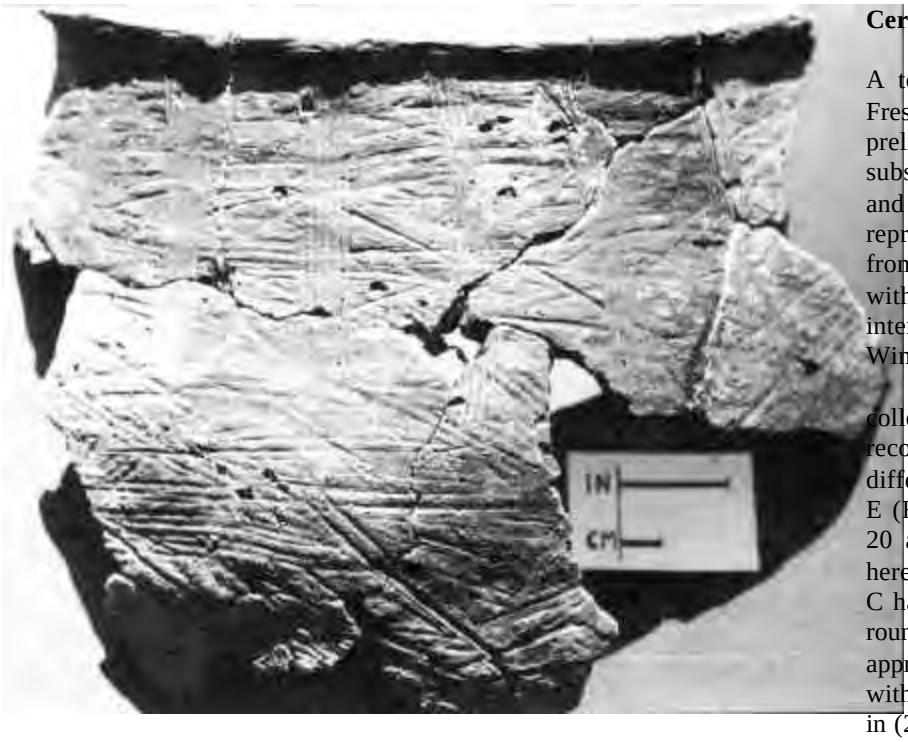

Figure 5. Vessel A, exterior. Brushed Windsor ceramic vessel with parallel "stab and drag" incisings.

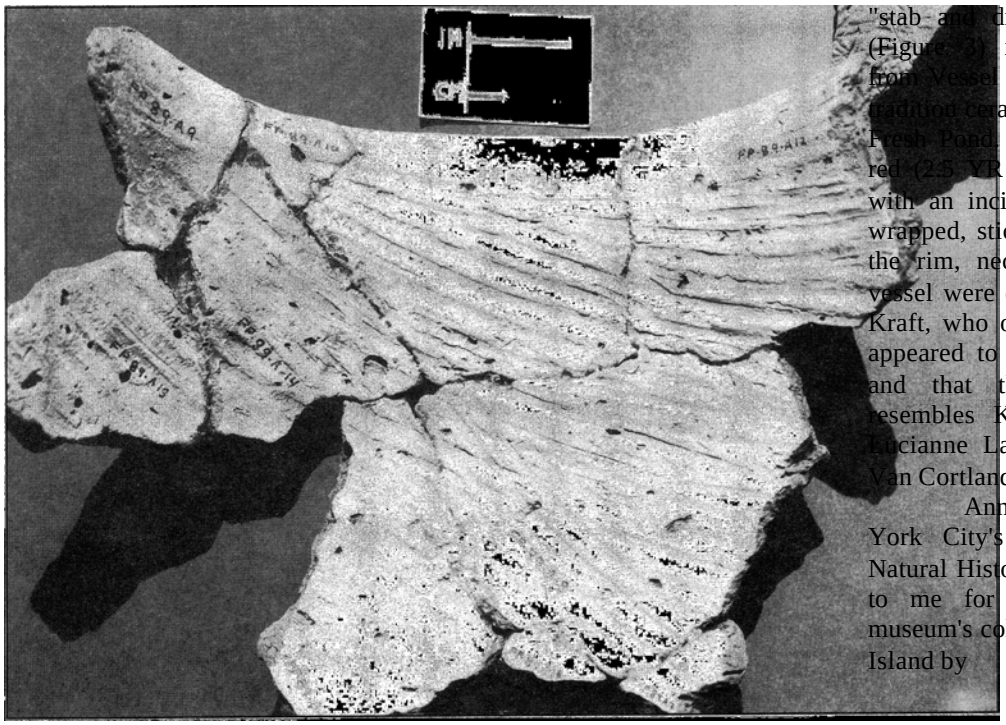

Figure 6. Vessel A, interior showing scallop shell channeling.

Ceramic Analysis

A total of 181 sherds from the six Fresh Pond sites were analyzed preliminarily with regard to 21 subsets. As shown in Table 2, both grit and shell tempered wares were represented. Sherds generally came from medium to thick-walled vessels, with both smoothed and channeled interiors. Most pottery belonged to the Windsor tradition.

Enough material was collected from site FP-4- 1E to reconstruct substantial portions of five different vessels designated A through E (FP-89 series) and parts of at least 20 additional vessels were collected here but not analyzed. Vessels A and C have inverted pyriform bodies with round bases, and measure approximately 15 in (38 cm) in height, with rim diameters of approximately 9 in (23 cm). Vessel A (Figures 5 and 6) has a brushed exterior and a scallop-channeled interior, and is decorated from rim to shoulder with parallel "stab and drag" incisings. Vessel C (Figure 3) is considerably different from Vessel A and the other Windsor tradition ceramics found in and around Fresh Pond. It is a thin-walled, light red (2.5 YR 6/6) cord-marked vessel with an incipient collar and a cord-wrapped, stick-stamped neck. Parts of the rim, neck and shoulder of this vessel were examined by Dr. Herbert Kraft, who observed that the temper appeared to be felsite and quartzite, and that the pot itself strongly resembles Kelso Corded ware. Dr. Lucianne Lavin noted similarities to Van Cortland stamped ceramics.

Annibal Rodriguez of New York City's American Museum of Natural History kindly made available to me for study ceramics in the museum's collection gathered on Long Island by

Harrington and others in the 1920s. While Harrington's Windsor tradition specimens from the Shinnecock Hills were not identical to Fresh Pond's Windsor ceramics, there was a striking similarity between Vessel C and a partially reconstructed pot in the museum's collection which had been obtained by David Foster in 1889 at Port Jefferson. Long Island (located about 40 mi (64 km) north-west of Fresh Pond). The eight connecting sherds forming the rim and neck of Foster's find are designated in the museum's Terry Catalog of artifacts as T24050. The principal difference between this specimen and Vessel C is a 1 in-long (2.5 cm) lug that has been applied to the neck, and brush marks inside the rim.

Vessel C and its Port Jefferson counterpart are East River tradition pottery. As Rouse observes, "sherds of this tradition do not predominate in any Connecticut site" (Rouse 1947:12-14), and the same is true for eastern Long Island.

As with many archaeological comparisons between Shelter Island and nearby central Connecticut (in this case concerning the relative scarcity of a ceramic type), parallels between the two locales suggest strong similarities and, I believe, interconnectedness during the Late Woodland period.

Lithic Analysis

The majority of chipped and ground stone artifacts that I inventoried were recovered from the submerged sandy stratum at Site SI-4-1A. In addition, 20 quartz spalls, flakes, cores, and a spoiled quartz triangular preform were obtained from the shovel probes at this site: 8 triangular quartz blanks were found submerged near the pottery at SI-4-1E (Figure 7). Only 12 artifacts were made of materials other than white or crystal quartz - these were of basalt, smoky quartz, diabase, graphite, hematite, chert, shale, and two unidentified dark rocks (Figure 8).

With the exception of a narrow-stemmed and a lanceolate-shaped point and two possible Madison triangular points, all of the diagnostic projectile points from Fresh Pond are either straight-based or concave-based Levanna points. A single triangular point of gray chert is the only one that might suggest the burgeoning of trade networks involving exotic materials during the Late Woodland period, as proposed by Feder (1984:104). Many of the stone artifacts inventoried were recovered during our first season of field work in 1987, and are itemized in Table 1.

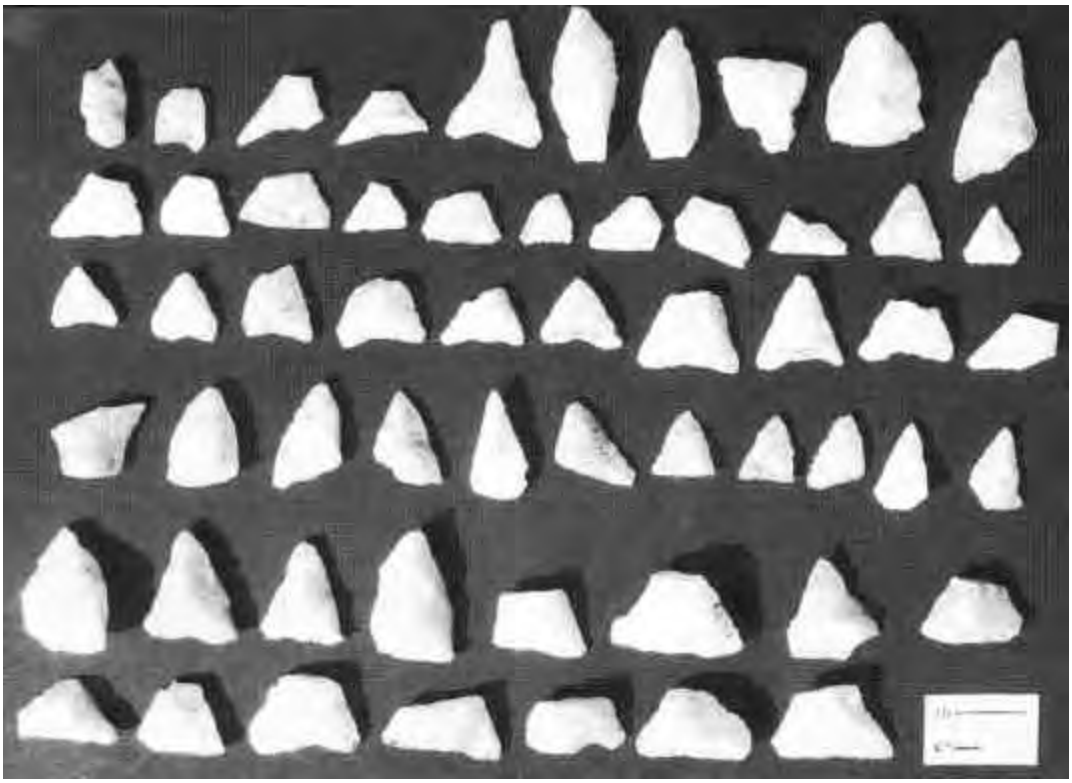

Figure 7. Quartz artifacts, Site SI-A-1A.

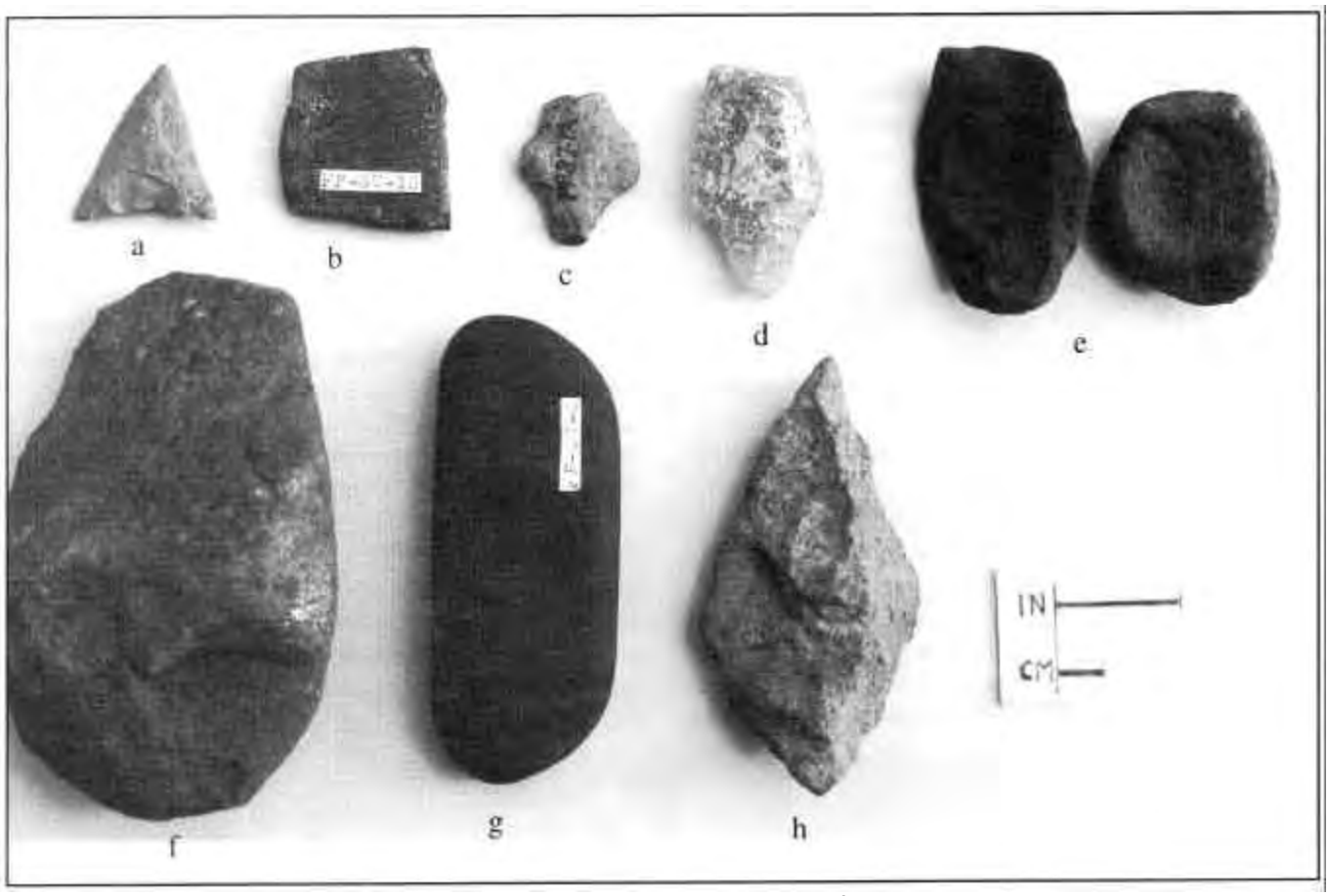

Figure 8. Lithics, Site SI-A-1A. Top: a. chert triangular point: b. polis hed gorget fragment c. shale expanded base drill: d. lanceolate blade of smoky quartz: e. hematite paintstones. Bottom: f. crude chopper; g. basalt abrading stone: h. traprock(?) perforator.

Discussion

In his archaeological study of Shelter Island's Mashomack Preserve, Kent Lightfoot and his colleagues argue that local prehistoric people "did not aggregate into large communities, but rather practiced a dispersed homestead settlement system" (with) "relatively sedentary homesteads containing a few family units" (Lightfoot et al. 1987:131). Our investigations suggest that the immediate environs of Fresh Pond supported similar homesteads occupied intermittently or, perhaps, year-round by several family units.

Evidence suggesting permanent occupations or frequent repeated occupations by small bands include: an abundance of refuse pits described by several informants; burials in areas where the pits were reported; a variety of shellfish remains including scallop, which is subject to seasonal availability: large quantities of ceramics; and a wide variety of lithic artifacts including remains from every phase of the pebble reduction process - evidence that tool making was carried out at this one location.

Together with our ceramic finds, the diversity of stone artifacts at Fresh Pond suggests the variety of tasks that would be associated with a residential base. Tools for hunting, cutting, woodworking, hideworking(?), digging, and cooking, as well as graphite and hematite for ceremonial use, indicate this wide range of activities.

While the bones of deer and other vertebrates are not uncommon at archaeological sites on Shelter Island, the preponderance of shellfish among the faunal remains at Fresh Pond and at other island sites support Lynn Ceci's argument that the diet of eastern Long Island's prehistoric peoples was heavily adapted to shellfish, with little reliance on horticulture until a later date (Ceci 1982). Together with evidence obtained at other Late Woodland sites on Shelter Island, it would appear that a distinct settlement pattern prevailed here during this period - residential bases supplied with fresh water connected to shellfish harvesting and processing sites in and around nearby embayments (Lightfoot et al. 1987:127-128).

Presently, evidence connecting the Fresh Pond sites to the Late Woodland period is based almost entirely on finds of diagnostic lithics and ceramics - ceramics that, with one striking exception, correspond to southern Connecticut's geographically extensive Windsor tradition. Since there is no evidence on Shelter Island for earlier wares such as Vinette I and II, it may be demonstrated someday that settlement on Shelter Island resulted from an expansion from southern Connecticut. Future studies suggesting such an expansion may show that the gathering of shellfish as a dietary staple on Shelter Island could have been more suited to the lifeways of extended families, rather than to village life with its dependence upon horticulture.

Conclusion

To date, Shelter Island's archaeological record appears to show that, in spite of a modest human presence during the Archaic, more widespread and extended occupations began in earnest during the Late Woodland period. It is not known whether migration to Shelter Island was largely the result of movements down the Connecticut and Thames rivers or, perhaps, derived from nearby Montauk on Long Island's south shore. Regardless of what brought people to the island. However, life existed here at a distance from the region's major aboriginal population centers, but developed along a parallel course.

I had hoped to remain on Shelter Island studying settlement pattern,, involving Late Woodland residential bases linked to shellfish procurement stations, but events proved otherwise. Before leaving in January of 1994, I noted the presence of five such complexes, the analysis of which could lead to more accurate settlement models concerning, coastal adaptations here and elsewhere on Long Island. If these notes and the artifacts I recovered from Fresh Pond can advance such work. I hope that archaeologists will make use of them. They have been donated to the Southold Indian Museum administered by the Incorporated Long Island Chapter of the New York State Archaeological Association.

Acknowledgements

For their kind assistance in the preparation of this paper I would like to thank Annibal Rodriguez of The American Museum of Natural History, and Shelter Island residents and property owners Mr. and Mrs. Anthony Cicale, John Davis, James and Linda Eklund. Jerry Fregoe, Priscilla McDonald, and Norman Sandwald. I would also like to thank Drs. Martha Sempowski and Lorraine Saunders, Research Fellows at the Rochester Museum & Science Center, and Charles F. Hayes III, NYSAA Bulletin Editor, for their assistance in preparing this paper for publication.

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Appendix A: Fresh Pond Burial Osteometrics (in mm)

Cranial Measurements*

Maximum cranial length, 187; Maximum cranial breadth, 133; Basion-bregma height, 131; Total facial height, 110; Bizygomatic breadth, 122; Nasal height, 5l; Nasal breadth, 32; Orbital height, 35; Orbital breadth, 37; Maxilloalveolar breadth, 63; Bicondylar breadth, 105; Bigonial breadth, 78; Symphisis height, 25; Length of ascending ramus, 55; Minimum breadth of ascending ramus, 30.

*Insufficient data for calculation for Maxilloaveolar Length and Palatal Length.

Cranial Indices*

Cranial index, 71.12; Cranial Module, 150.33; Breadth Height Index, 98.49; Total Facial Index 90.16; Nasal Index, 62.34; Orbital Index 94.59.

* Insufficient data for calculation for Maxilloaveolar Index and Palatal Index,

Dentition

All teeth present and in good condition, except for upper right canine, probably broken in excavation. Mandibular lower left canine also broken. One small cavity on lingual surface of upper left second molar. Lower central left and right incisors narrow, each measuring only 4 mm across occlusal surface. Bite is end to end. Occlusal wear only somewhat evident across two lower central incisors, less so across upper central incisors. Slight shoveling appears in all four upper incisors. All four third molars have begun to erupt, but none has done so completely. Cusps of first molars somewhat worn, especially on right. Second molars show hardly any signs of wear. All four mandibular molars appear to have +5 cusps. First maxillary molars seem to possess four cusps. Second maxillary molars each have three large and one small cusp.

Postcranial Measurements (Sub-adult, for reference only) Clavicles: (slight disintegration at distal ends) length left, 115 ; right, 111; circumference at middle of bone left, 20; right, 20. Humeri: (both heads deteriorated) maximum length (to top of greater tubercle) 224. (+ head): maximum diameter midshaft left, 13; right, 12.5; minimum diameter midshaft, 9: maximum diameter of head (insufficient data); least circumference of the shaft 39; biepicondylar width, 41; articular width, 29. Femora: (epiphyses absent, only diaphysis measured) maximum length, 333: anterior-posterior diameter of midshaft, 16 mm; mediolateral diameter of midshaft, 15; maximum diameter of head (estimate. 31+); circumference of midshaft, 52; subtrochanteric anteriorposterior diameter, 16; subtrochanteric mediolateral diameter, 21. Ulnae (measurements taken of left, only) maximum length, 200; physiological length 184; least circumference of shaft, 22. Tibiae (epipyses absent: deterioration at superior and distal ends) maximum length 272; anterior-posterior diameter at nutrient foramen 21; medio-lateral diameter at nutrient foramen, 14; circumference at nutrient foramen, 56;

The Flately Brook Quarry: A Source of Normanskill Chert Located in Washington County, New York

John D. Holland. Buffalo Museum of Science
Roger L. Ashton, Van Epps-Hartley Chapter, NYSAA

The Flately Brook Quarry should be considered an important center for the acquisition and processing of chert in the upper Hudson Valley. Because of the sheer volume of lithic reduction performed here, the site should rank with Flint Mine Hill (Parker 1925), Pleasantdale (Brumbach 1987), and Cherry Valley (Funk 1989).

Introduction and Site Description

During a reconnaissance of the upper Hudson River Valley, a zone of over-thrusting folded structures was disclosed, which extends to the Province of Quebec. Assuming the appearance of a broad graben, the valley is bounded by normal faults on the west and over-thrusts on the east. (Woodworth 1907:5-28). This physiographic feature is part of New York State's Washington County and is responsible for the appearance of lithic materials used prehistorically for stone toolmaking purposes.

Three regions comprising Washington County are the Adirondack mountains, the Hudson-Champlain lowland, and the Taconic upland. Of concern in this report is the Taconic upland covering 55% of the county. Compression from the east has caused low angle faults called "thrusts" extending the length of the county from south of the village of Greenwich to north of Whitehall. These rocks, consisting of the Normanskill Shale Group among others of the Ordovician period, overlie the rocks of the valley in the vicinity of the thrust faults (Wray 1948; Cushman 1953; Broughton 1967).

Two of the Normanskill Group formations found in Washington County are chert bearing: Normanskill and Mt. Merino. Their raw color range includes gray, grayish-green, grayish-blue, and dark gray to black. Both weather white to grayish-green. Although microscopically similar, the two chert types are indistinguishable except for the bright green variety of Normanskill that Mt. Merino chert lacks. Pleasantdale chert, also known as Mt. Merino chert from the Pleasantdale quarry site excavated by Hetty Jo Brumbach (1987: 59-83) and located near Troy, New York, was contrasted visually and a color difference determined, (not noted in thin sections).

White weathering Normanskill chert outcrops occur at and near the top of Willard Mountain (Cushing and

Figure 1. The Flately Brook Quarry, Washington County, New York.

Ruedemann 1914: 84-86) located 4.80 km (3 mi) southeast of Flately Quarry. This outcropping may be seen from a considerable distance when not masked by foliage on the southwest side of the mountain. Streams draining the area in the vicinity of Willard Mountain flow westerly and empty into the Hudson River. In so doing they have down-cut the overriding, great thrust sheets of the Taconic sequence, exposing Normanskill rocks. In the fail of 1991, John D. Holland and Roger Ashton investigated the area along one of these streams, Flately Brook (Figure 1), long known to have harbored a chert quarry. This stream in Easton Township, one of the streams meandering towards the Hudson, has worn through a black shale bed and encountered a stratum of Normanskill chert (Figure 2). The resistant chert, exhibiting an occasional vein of quartz, has withstood further erosion of

Figure 2. The Flately Brook Quarry. Precipice lace revealing the Normanskill stratum.

Figure 3. The Flately Brook Quarry. Stefana Paskoff and John D. Holland examining a chert cobble in the plunge pool area of the waterfall.

the stream bed creating a waterfall with a nearly vertical drop of 6.4 m (21 ft) into softer shale below. A northeast strike of 40 degrees along the base of the waterfall disappears abruptly into the aides of the narrow ravine. Excessive water flow from heavy spring run-offs, torrential rains, and frost shattering have resulted in cobbles and boulders of shale and chert filling the usual plunge pool of the waterfall (Figure 3). Some of the chert boulders measure an impressive 2.7 m thick. It was this alluvium on the northeastern hillside away from the creek that likely served as the main source of the high quality material which prehistoric flintknappers used. Some traces of quarrying this fine grade Normanskill chert also appear on the eastern lateral extension of the precipitated outcropping. Here, great amounts of chert debitage blanket the surface, accompanied by glacially-derived hammerstones of quartzite and gneiss. The less appealing, steep nature of the opposite hillside apparently prevented its use. Excepting periods of extreme precipitation, the alluvial area would also have served as a suitable lithic reduction area.

Test Unit

A small bench near the base of the eastern lateral slope was selected as the locus on which to excavate a 1 sq m test unit. Testing began on the leaf littered surface and continued to a depth of 65 cm (26 in). A solid mass of Normanskill chert flake debitage interspersed with an acidic (6.2) clay humus soil was encountered immediately, continuing to the juncture with a sticky clay Hudson type soil (Winkley 1972). At this point, the abundant chert refuse dwindled considerably. The consistency of the clay precluded further troweling and necessitated the use of a soil auger. Test borings with the auger reached a total unit depth of 108 cm (39 in) where a few flakes were recovered and excavation ceased.

No diagnostic artifacts were found within the test unit, which contained three biface preform fragments and 19 hammerstones. Bits of charcoal were scattered throughout the excavation, as well as numerous pieces of fire-cracked rocks. Three hearths were indicated by the presence of fire-reddened slabs of chert and hammerstone fragments. All debitage was carefully weighed, resulting in an astounding 798 lbs (Figure 4). Of the hammerstones excavated, 13 were classified as small with weights ranging from 130 to 380 g. Two of intermediate size (560 to 840 g) occurred. The two largest weighed 1700 to 3060 g respectively. Moderate to heavy battering was indicated

on both ends of the hammerstones with a few displaying peripheral battering extensions. None of the hammerstones were of the pitted variety. A small oval quartzite pebble served as both a hammerstone and sinewstone.

An indication of the quarrying technique used at Flately Brook Quarry for obtaining Normanskill chert from the over-thrust interface is implied by the presence of peripherally battered ovoid and disc-shaped quartzite tools. These devices may have served as wedges to be driven into naturally occurring joints and other fracture seams to pry loose large slabs of chert. Such a method would provide selective quarrying of the desirable material.

A small amount of the surficial and excavated chert debitage exhibited fire reddening likely caused by hearths used for food preparation, heat, and illumination. Forest fires could also be responsible for thermal alteration. Given the fine quality of Normanskill chert as toolmaking raw material, it is unlikely that heat was applied to improve knapping characteristics.

Conclusions

With the enormous quantity of reduction flakes present at the Flately Brook Quarry, a corresponding ratio of complete, broken, and rejected bifaces was expected. This was not the case. Other Northeast region quarry workshops are littered with the frustrations of prehistoric toolmakers. Perhaps the lack of such artifacts is due to the fine quality of Normanskill chert and the expertise of the flintknappers. Also, the majority of the stone workers may have limited the reduction stage to early preforms, thus lowering the possibility of premature breakage. The production of such quarry blanks would eliminate transportation bulk and weight disadvantages. Additionally, time restraints, weather, security, and home site proximity may have influenced procurers to finish the manufacturing procedure elsewhere. In response to the problem of biface artifact paucity, extraction prevailed and reduction was limited.

An intensive biface industry is disclosed on the north side of the ravine by large deposits of flake debitage, broken bifaces, and hammerstones. Glacial pebble hammerstones of quartzite and gneiss, both shattered and intact, litter the ground. No temporally diagnostic artifacts were recovered during controlled surface collection and excavation of the single one meter test unit. Consequently, no on-site discoveries can be used to reliably date the site's occupation. However, artifacts of Flately Brook chert excavated at the Weinman Site (Glf-17), Warren County, New York are described by Robert Funk (1976: 20-22). He states that Flately Brook chert existed in most or all cultural levels representing Archaic and Woodland occupations (Funk 1976).

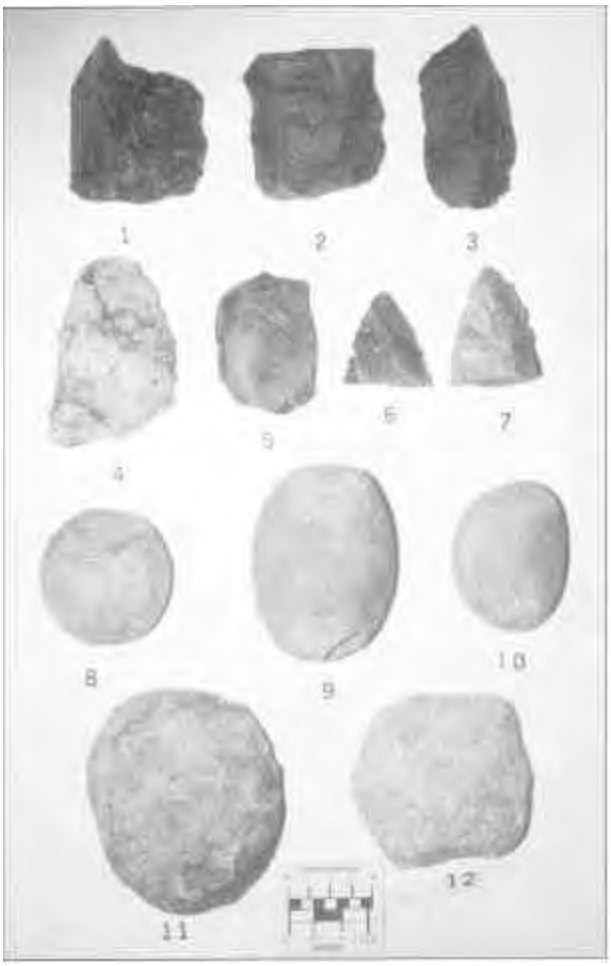

Figure 4. Artifacts from the Flately Brook Quarry. 1, 2, 3, 5: crude bifaces, Normanskill chert: 4: crude biface, quartz: 6-7: broken finished biface tips, Normanskill chert; 8-10: hammerstones, quartzite; 11-12: peripherally battered disc-shaped tools, quartzite.

Ashton has observed several Late Archaic points from a small back country site in close proximity to the Flately Brook Quarry. These were fashioned from a material analogous to that from the Flately Brook Quarry Site. Sites in southern Washington County abound with Laurentian, River, and Batten Kill phase points, as well as sparser representation of points from later cultures made of chert microscopically identical to that of Flately Brook.

The Flately Brook Quarry workshop is small in comparison to the larger quarries such as Flint Mine Hill in Greene County (Parker 1925) and West Creek located near Cherry Valley, Schoharie County, New York (Funk 1989). Lithic reduction at Flately Brook is clustered densely in one locale and not dispersed over a large area. Regardless of the failure to assign any on-site cultural affiliation directly, to this quarry, the site should, nonetheless, be considered an important

center of Normanskill chert acquisition and processing. The sheer volume of lithic reduction performed at Flately Brook ranks it as a prominent and important prehistoric quarry serving the upper Hudson River watershed.

While Flately Brook is somewhat vulnerable to side hill erosion and periods of high water, the alluvial debitage accumulation and the test pit locus could provide an undisturbed stratified deposit. More work is needed to confirm this. Its isolated location and topography are not conducive to ancient or modern day activities and disturbances. It is a unique locus displaying little change since its workers departed.

Acknowledgements

The writers are most appreciative to the landowners of the Flately Brook Quarry. Their cooperation was outstanding. Thanks are also extended to several local people for their advice and assistance.

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Archaeological Survey of the Becker Property, Rensselaer County, New York

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Subsurface survey was conducted on property owned by Robert and Lynn Becker in Rensselaer County, New York. Private artifact collections made on the property indicate an occupation during the River phase of the Late Archaic (4,000-3,500 B.P. [years before present]). The subsurface survey covered 15,000 sq m (49,000 sq ft) of the Becker property (April-August of 1995), and an area of high artifact density (1,800 sq m [6,000 sq ft]) produced several River phase diagnostics. Phosphate levels were measured in this area during the spring of 1996. This site (Becker Site, HO-101) is significant in that it represents one of few predominantly River phase sites, and aside from past cultivation is relatively undisturbed. The subsurface survey indicated that there is a high potential for intact prehistoric features beneath the plow zone. Six 1 m by 1 m in test units have been excavated to further examine this site. The results of this testing will be made available at a later date.

Introduction

I was contacted by Robert Becker during the spring of 1995 as the result of another project that I was conducting near his property in Rensselaer County, New York. Artifact collections made by the Beckers and John Bradley (a former resident) contained an overwhelming majority of Normanskill projectile points, the hallmark of the River phase of the Late Archaic (4,000-3,500 B.P. [years before present]). The subsurface survey was conducted on portions of the Becker property in order to locate the River phase occupation area, determine its vertical and horizontal extent, and assess its integrity. Fieldwork was conducted during the spring and summer of 1995 by volunteers and students from Union College and SUNY Albany. Subsurface testing delineated an area of high artifact density (1,800 sq m [6,000 sq ft]) that produced several River phase diagnostics. Phosphate levels were measured in this area for a sample of shovel test pits during the spring of 1996.

Area of Investigation

Environmental Context and Physical Setting

The Becker property is located along the Hudson River in Rensselaer County, New York. The soils that are present on the property were formed in lacustrian sediments deposited by Glacial Lake Albany. Although the property borders the Hudson, it is unlikely that any substantial flooding has occurred, since it is situated 30 to 40 ft above the current level of the river (Mark Silverman, personal communication 1996).

Two distinct areas (designated as Areas A and B) are present on the property (Figure 1). Area A is approximately 90 ft above sea level and ranges from well-drained to moderately well-drained soil. The better drained portion is maintained as a lawn, while the other is wooded. Area A contains a house and several other structures used

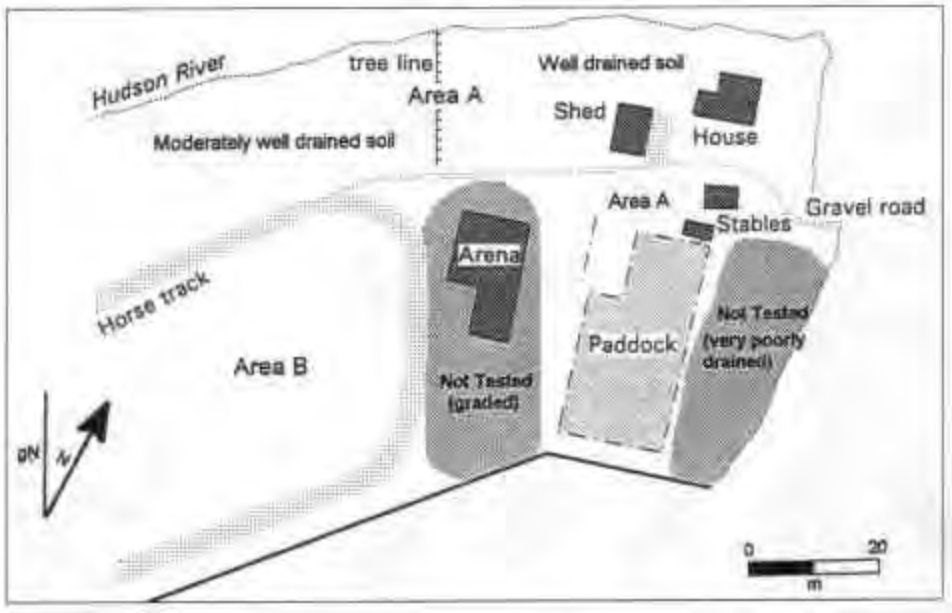

Figure 1 Environmental and physical setting of Areas A and B at the Becker Site.

for stabling horses. Aside from prior cultivation, there has been minimal disturbance north of the gravel road which bisects the property. The only major disturbance is grading in the vicinity of the arena. Area B ranges from 90 ft to 110 ft above sea level and consists of a shallow, somewhat excessively drained soil that developed in glacial till (USDA Soil Conservation Service 1988). Area B is encircled by a horse track. It is currently used for pasture although it has been cultivated in the past.

Prehistoric Context

All of the temporally diagnostic projectile points that have been recovered on the Becker property date to the Late Archaic (6,000-3,500 B.P.). The majority date to the River phase of the Late Archaic (4,000-3,500 B.P.). Manifestations of the River phase, recognized primarily by the presence of Normanskill projectile points, are confined to the Middle and Upper Hudson drainages (Funk 1976:255; Snow 1980: 227). Although Normanskill projectile points are common in the Upper Hudson drainage, they are usually found along side projectile points from other time periods. As a result, the phase is known primarily from the results of excavations conducted at two locations which contain discrete River phase occupations: the Bent Site (Ritchie and Funk 1973:52-70) and the River Site (Ritchie 1958:34-53). Both sites contained features (e.g., hearths and roasting beds) and heavy concentrations of artifacts. Regarding the settlement patterns of the River phase, Funk (1976:288) states that central base camps were located along major rivers and that task groups would travel seasonally from these camps to acquire inland resources.

Extant Site Information

A prehistoric site was reported on the Becker property by avocational archaeologists Kirby and Sundler. The site, Kirby's HR-2 (NYSM# 915), is on record at the New York State Museum. The only information available is that the site is located behind a house and barn, and that it contains "chips and dark soil." A barn previously stood in the present location of the shed (John Bradley, personal communication 1995).

Several artifact collections have been made on the property. John Bradley, a former resident, collected artifacts during the 1930s. The collection is currently in the possession of Mr. Bradley and the Beckers. The portion of the collection held by Mr. Bradley, shown in Figure 2, contains 25 artifacts, including 19 Normanskill projectile points. The Becker's collection contains 37 artifacts, including 10 Normanskill projectile points, 5 knives or preforms for Normanskill projectile points, and 2 curved Normanskill knives (Table 1). A similar implement was recovered from another River phase site (Pickle Hill [Weinman et al. 1967: Plate 2, Figure 27]). A neighbor also collected artifacts in the 1930s. In addition to projectile points and other chipped stone tools, his collection contains between 2 and 4 netsinkers (Raymond Robinson, personal communication 1996).

Field Investigations

Subsurface Testing

A subsurface survey was conducted between April and August of 1995 by volunteers and students from Union College and SUNY Albany. Two areas (A and B) were defined for testing purposes (Figure 1). Shovel test pits were circular, 45-50 cm (1820 in) in diameter, and excavated in natural levels to the greatest depth possible. Initially, shovel test pits were excavated at a 20 m (65 ft) interval to locate areas of prehistoric activity. Additional

Figure 2. The Bradley Collection from the Becker Site.

Table 1. Summary of the Becker Collection.

Quantity	Artifact class	Comments
1	Utilized flake	—
15	Projectile points	10 Normanskill, 1 Otter Creek, 1 Brewerton Eared-Triangle, 3 *untyped Late Archaic*
5	Knives/Preforms	Normanskill (?)
8	Bifacial knives	2 on preforms, 2 curved Normanskill
4	Projectile point/knife fragments	—
2	Pestles	—
1	Gouge	—
1	Unidentified ground stone	—

shovel test pits were excavated at a 10 m (32.5 ft) interval within the primary area of prehistoric activity. A total of 82 shovel test pits were excavated (Figure 3). Soil from the first 8 shovel test pits excavated was screened through ¼ -in mesh. The soil from the majority of shovel test pits was screened through 1/8-in mesh.

In Area A, 69 shovel test pits were excavated in an area of approximately 11,000 sq m (36,000 sq ft). Prehistoric artifacts were recovered from all but two of the shovel test pits (Figure 3). The average depth was 78 cm (31 in). Area A is bounded by the Hudson River to the north and east. Artifact density in the western portion of Area A decreased markedly, although the western boundary of Area A is arbitrary and could be extended in the future. The 10 m testing interval was not completed in the paddock because of increased use for horse training. Area B is approximately 3,700 sq m (12,100 sq ft). Thirteen shovel tests were excavated. Prehistoric material was recovered from only one of these tests (Figure 3). The average depth was 19 cm (7 in). Testing was not completed in this area due to its increased use for pasture.

Phosphate Testing

Phosphate is an element that occurs naturally in soil. Levels of phosphate increase as a result of human occupation (e.g., from human excrement and organic refuse), and remain constant after the time of deposition (Eidt 1973:206). The analysis of phosphate levels is used to locate and delineate sites as well as to interpret intra-site relationships. To examine levels of phosphate as they relate to prehistoric occupation, samples must be taken from beneath the plow zone since modern fertilization increases phosphate levels.

During the spring of 1996, phosphate levels were measured in Area A to examine the relationship between artifact density and phosphate level (phosphate levels were not measured in Area B due to the absence of subplow zone deposits). A stratified random sample of shovel test pits was selected; two sampling strata were defined based on flake density. Fifty percent of the shovel tests in each stratum were included in the sample. A soil core was used to collect samples from beneath the plow zone (30 cm [12 in] below surface) immediately adjacent to the shovel tests pits in the sample. A commercially available colormetric method was used to measure phosphate levels.

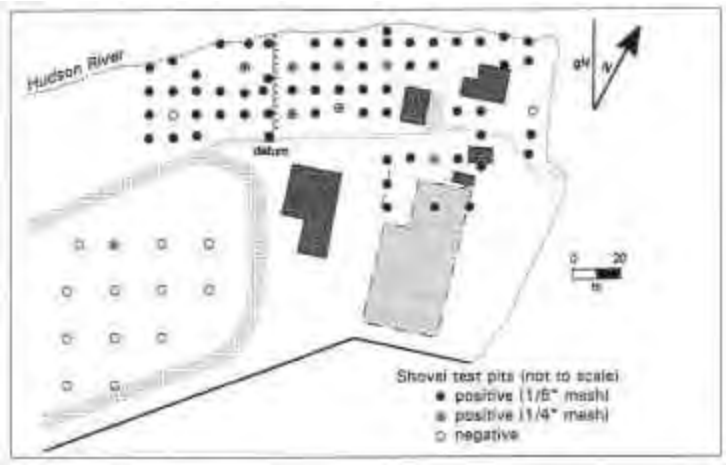

Figure 3. Shovel test pit locations at the Becker Site.

Results

Artifact Classification

A total of 4,763 prehistoric artifacts and 309 historic artifacts were recovered. All of these artifacts, except for a Normanskill projectile point base and a single flake, were recovered from Area A. A brief summary is provided in Table 2. Selected artifacts are shown in Figure 4. Several classes of artifacts that were recovered are discussed below.

Flakes

Since the manufacture of stone tools is a reductive technology, the attributes of the tool are retained on the flakes (or debitage) that are removed. Debitage is used to examine prehistoric site use because of its abundance, association with a wide variety of activities, and the fact that it is often not removed from the place of manufacture. Smaller flakes are less likely to be removed than larger ones. As a result, their horizontal distribution provides a more reliable indication of stone tool manufacturing areas and a means to distinguish between primary and secondary refuse.

Another issue addressed with debitage analysis is the examination of site or activity area function (Jefferies 1982; Magne 1989; Raab et al. 1979). Based on experimental tool manufacture, a variety of morphological attributes of flakes associated with stages of reduction have been isolated (e.g., Magne and Pokotylo 1981; Raab et al. 1979). Based on the stages of manufacture represented, assemblages are classified as the result of either multiple or special use. Multiple use sites (e.g., residential areas) contain debitage from all stages of manufacture, while special use sites (e.g., hunting camps or stone quarries) contain only a portion of the reduction sequence.

Debitage was classified into two stages of biface manufacture (initial reduction and bifacial thinning) based on the attributes listed in Table 3. The striking platform angle is considered to be the most accurate indication of reduction stage (Magne 1985) and, therefore, flakes that do not have a striking platform are classified as shatter. For this reason, quartz flakes are not classified by reduction stage since they usually do not exhibit identifiable striking platforms.

Table 3. Select Attributes of Bifacial Reduction Flakes.

	Initial Reduction	Bifacial Thinning
Platform angle	60°-90°	<60°
Platform facets	1-2	>2
Dorsal scars	few	complex pattern
Bulb of percussion	prominent	diffuse

Note: based on Magna 1985: Magne and Pokotylo 1981: and Raab et al. 1979.

Table 2. Summary of Artifacts Recovered from Subsurface Survey.

Quantity	Artifact class	Comments
3866	Chert flakes	415 reduction flakes 1278 thinning flakes 2173 shatter flakes
26	Quartz flakes	—
40	Utilized flakes	
9	Bifacial knives	—
6	Projectile points	5 Normanskill, 1 untyped Late Archaic
5	Preforms/knives	Normanskill (?)
2	Projectile point/knife fragments	—
1	Drill	tip only
10	Biface fragments	—
1	Scraper	—
3	Spokeshaves	—
1	Hammerstone	fragment
793	Fire-cracked rock	43,672 grams (1,540 ounces)
25	Historic ceramic sherds	22 whiteware, 2 redware, 1 porcelain
269	Nails	—
7	Miscellaneous iron pieces	—
4	Glass fragments	—
2	Buttons	—
2	Bullet casings	—

Utilized Flakes

Utilized flakes result from the expedient use of unmodified flakes as cutting or scraping implements. Utilization is recognized by the presence of microflaking along one or more edges. Since microflaking can also occur in a random fashion from other processes (e.g., trampling), only those flakes that exhibit systematic microflaking are classified as utilized (Tringham et al. 1974).

Bifacial Knives

Bifaces are a class of chipped stone artifact that exhibit flaking on both faces of the tool. The edges of bifacial knives are acute and exhibit evidence of use as a cutting implement. Use is recognized by systematic microflaking.

Projectile Points

Projectile points are a type of biface that is modified for hafting to either a spear or arrow shaft. Although associated with hunting, projectile points are not necessarily limited to this use and may also be used for cutting tasks. Of the six projectile points recovered during subsurface survey, five are diagnostic of the River phase. Four of these were recovered from Area A and one from Area B. The sixth projectile point, although not generally identified with the Late Archaic, was found beneath the plow zone, stratigraphically above a Normanskill projectile point.

Preforms/Knives

The term preform refers to bifacially worked blanks from which projectile points are produced. The function of the triangular bifaces found at the Becker Site is not entirely clear. Their shape is consistent with that of preforms although some also exhibit evidence of use as a cutting implement. Similarly shaped implements were recovered from other River phase sites, including the Bent Site (Ritchie and Funk 1973: Plate 20) and the River Site (Ritchie 1958: Plate 15). Continuing

Figure 4 Selected artifacts recovered from subsurface survey of the Becker Site. Top row, bifacial knife fragments, from left to right: HO-101-97-5, 136-1. 107-4. and 20-4, Middle row, preforms/knives, from left to right: HO-101-94-4, 98-4, 94-5, 85-4, and 49-6. Bottom row, Normanskill projectile points, from left to right; HO-101-41-3, 58-4, 81-7, 49-5, 52-5, and untyped Late Archaic projectile point HO-101-52-6.

analysis will address the function of these bifaces and the potential use of them as River phase diagnostics.

Projectile Point/Knife Fragments

This classification is used for proximal fragments of bifacial tools that, based on flake scar morphology, appear to be projectile point tips. These artifacts cannot be classified as projectile points since the presence of a hafting element cannot be confirmed.

Drills

Drills are a type of bifacial tool used to drill or perforate. The drilling element is long and narrow and is often manufactured on a projectile point base.

Biface Fragments

This includes portions of bifacial implements that cannot be classified by function, given their fragmentary state.

Fire-Cracked Rock

Fire-cracked rock is the byproduct of cooking. Prior to the advent of steatite and ceramic vessels, food was cooked by placing heated stones into containers that could not be placed directly in a fire. Fire-cracked rock is characterized by reddening, cracking, and spalling.

Scrapers

Scrapers are either bifacial or unifacial (worked on only one face of the tool) and are used for a number of tasks including the preparation of animal hides. The edges are obtuse and show signs of use.

Spokeshaves

This artifact class describes flakes that have one or more intentionally manufactured notches along the edge. One of their possible functions is the straightening of shafts to be used with projectiles.

Hammerstones

Naturally rounded cobbles that exhibit pitting on one or both ends are classified as hammerstones. They are used in the manufacture of chipped stone tools as well as in activities such as cracking open nuts.

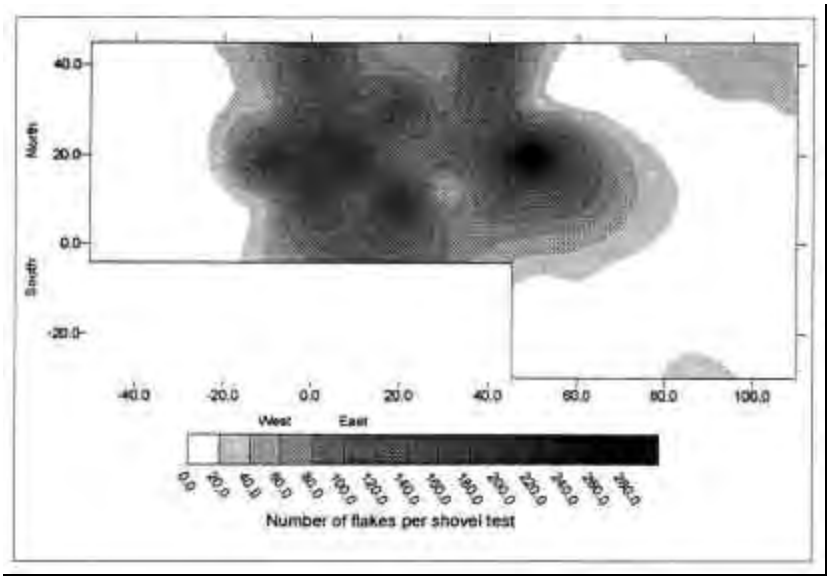

Figure 5. Density plot of all flakes recovered per shovel test, Becker Site.

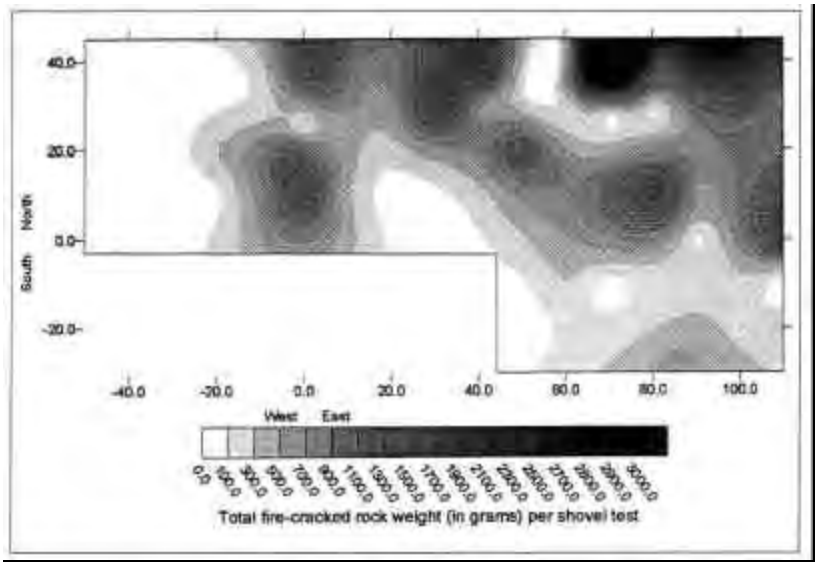

Figure 6. Density plot of fire-cracked rock (by weight) per shovel test, Becker Site.

Artifact Distributions

Although many shovel test pits were excavated to a meter or more in depth, the majority of artifacts were found within the first 50 cm (20 in) below the surface. Flakes were recovered from almost every shovel test in Area A. A density plot based on the total number of flakes recovered from each shovel test pit is presented in Figure 5. The area of high flake density is bounded by the moderately well-drained soil and the area that was largely untestable due to standing structures. The gravel road corresponds to the southern boundary of high flake density. This correspondence appears to be coincidental rather than due to road construction, however, since there was no evidence for significant disturbance in adjacent shovel test pits.

Although not as ubiquitous as debitage, other artifacts (utilized flakes, bifacial knives, and biface fragments) were also found throughout Area A. All of the Normanskill projectile points and preforms/knives were found within the area of high flake density. Flake density is low in the northeastern portion of the property (north of the structures), although several tools were recovered. These include two spokeshaves, three bifacial knives/fragments, and several utilized flakes. This portion of the property also contained the highest density of firecracked rock (Figure 6). When flake and fire-cracked rock quantities are plotted by excavation levels (either within or beneath the plow zone) they exhibit similar distributions.

As discussed previously, debitage analysis can be used to examine site and activity area function. The quantity of thinning flakes is related to the extent of late stage tool manufacture or resharpening. Therefore, the distribution of thinning flakes may indicate discrete activity areas. As shown in Figure 7, the distribution of thinning flakes is virtually the same as that of all flakes. There do not appear to be any spatially discrete areas of late stage lithic reduction.

Evidence of Features

Several shovel test pits contained evidence of possible prehistoric features (Figure 8). Four postmolds were detected in shovel test pit walls. Initially, only the two postmolds in the eastern portion of Area A seemed likely to be historic in age (due to their proximity to the structures). While speaking with John Bradley, I was informed of the vineyard that once stood in the vicinity of the other two postmolds. Consequently, it seems likely that all of the postmolds are historic in age. Other possible features include several soil profile anomalies, charcoal associated with a Normanskill projectile point, and a cluster of relatively large flakes in the wall of a shovel test pit.

Phosphate Levels

Two sampling strata were defined for phosphate testing (Figure 9) based on the flake density plot presented in Figure 5. Half of the shovel tests pits in each stratum were selected randomly for phosphate testing. Stratum 1, the high flake density area, had tow to moderate levels of phosphate. Stratum 2 corresponds to the low flake density area. The western portion of Stratum 2 had the lowest levels of phosphate while the eastern portion had the highest levels (particularly to the north). As discussed previously, this area exhibited low flake density, high firecracked rock density, and several stone tools.

The increased phosphate levels in Stratum 2 may be related to prehistoric activity, although this is also the area of the greatest historic/contemporary activity. Sub-plow zone deposits are not expected to be altered by the deposition of phosphate on the surface (i.e., fertilization)

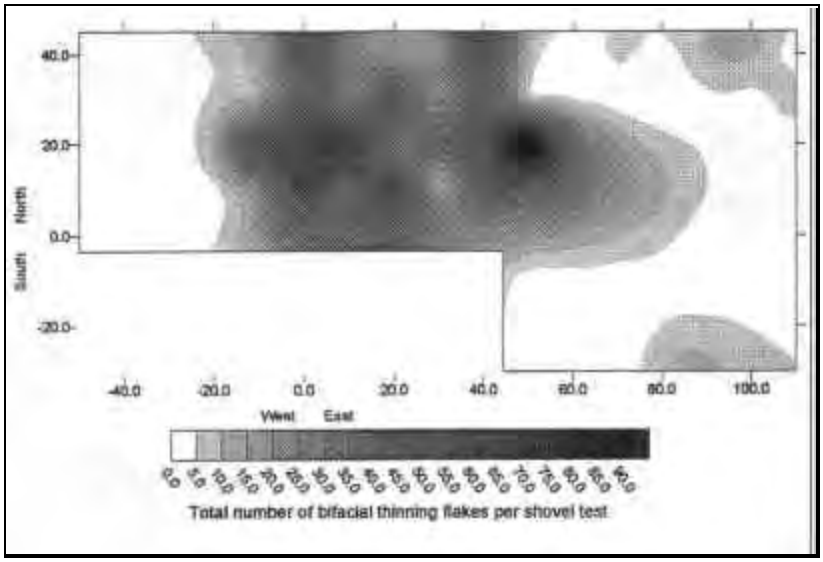

Figure 7. Density plot of thinning flakes per shovel test, Becker Site.

because phosphate is usually a highly insoluble element (Walker 1992:67-68). Nonetheless, leaching does occur. The extent of leaching is largely dependent on soil texture (with finer grained soils retaining the most phosphate) (Walker 1992; 62-63; Hamond 1983:51), but soil texture does not vary markedly within Area A. As shown in Figure 9, phosphate levels decrease as the distance from the historic structures increases. The distribution of high phosphate levels with regard to the structures seems to indicate a relationship to historic activity. In addition, the high density of firecracked rock could also be the result of historic activity.

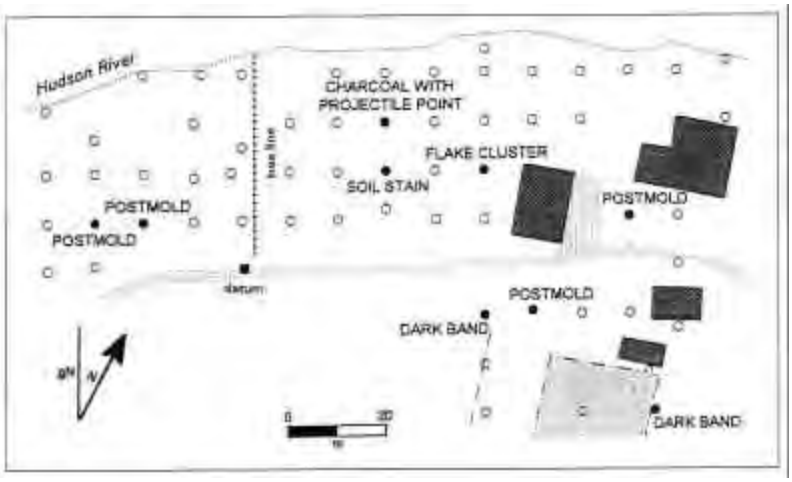

Figure 8. Possible feature locations, Becker Site.

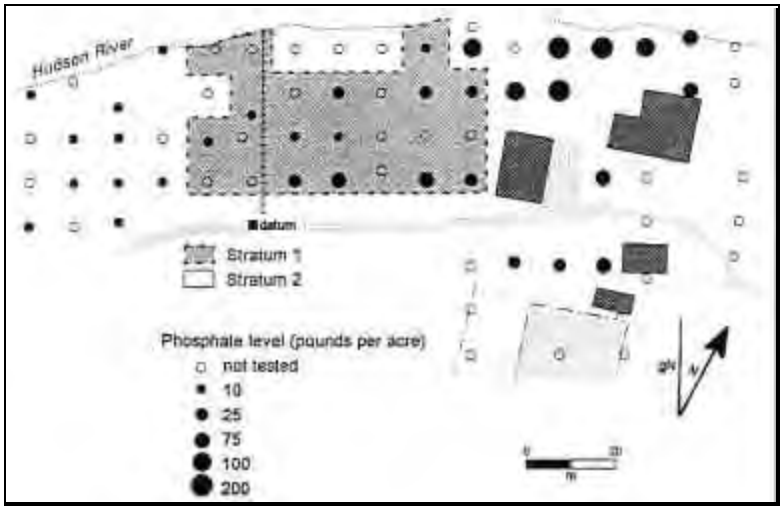

Figure 9. Phosphate survey design and results, Becker Site.

Conclusions

Summary of Subsurface Testing

A subsurface survey was conducted on portions of the Becker property. Two areas were defined for testing. In Area A, 11,000 sq m were tested at a l0 m interval. An area of high artifact density (1,800 sq ft) that produced evidence of prehistoric occupation during the River phase of the Late Archaic was delineated. In Area B, 3,700 sq m were tested at a 20 in interval. The only material recovered was a Normanskill projectile point base and a flake.

Phosphate levels were measured for a stratified random sample of shovel test pits in Area A. The stratum that contained the high flake density produced low to moderate levels of phosphate, whereas the stratum that was defined by low flake density produced the highest phosphate levels. Close proximity to the presently standing structures suggests that these levels may be the result of historic activity.

Based on the data generated thus far, the Becker Site (HO-101) appears to be the result of fairly extensive occupation(s) during the River phase. The quantity of artifacts, along with the diversity of artifact types recovered, is consistent with expectations for a central base camp assemblage.

Fieldwork in Progress

Six 1 m by 1 m test units were excavated at the Becker Site during the fall of 1995 and the summer of 1996. Excavation units were placed to examine potential features and areas of high artifact density. The material recovered is currently being processed. Analysis will address the relationship of the Becker Site to River phase settlement patterns as a whole.

Acknowledgements

My thanks go to Robert and Lynn Becker for their invitation to conduct fieldwork, and to John Bradley and Raymond Robinson for sharing their recollections of the property's history. The fieldwork discussed in this report was conducted as part of my dissertation research. I would like to thank my doctoral committee; Dean Snow (chair), Gary Wright, Michael Smith, and Charles Cobb. I am also grateful to Edward Curtin for his advice and expertise on the Late Archaic, and to Mark Silverman (Saratoga County Natural Resource Conservation Service) for providing information on environmental issues. Fieldwork could not have been completed without the efforts of numerous students and volunteers, including Union College students enrolled in Introduction to Archaeology during the spring of 1995, as well as Michael Kennedy (SUNY Albany), Todd Stuber (SUNY Albany), James Schryver (Boston University), and Jason Degnan (Hudson Valley Community College) who participated in fieldwork during the summer of 1995. Special thanks go to Michael Kennedy and Steven Hanny (SUNY Albany) who assisted in the production of the figures. Steven Hanny is also thanked for conducting phosphate testing during the spring of 1996.

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Archaeological Investigations at the McCauley Site, Strong's Neck, Long Island

Alfred G. Cammisa, TRACKER-Archaeological Services
William Goldsmith, lithic analyst
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Small parcels of land are often overlooked as containing any significant information on past lifeways. However, on a small, half acre, formerly plowed parcel of land in Setauket, New York, TRACKER-Archaeology Services discovered a prehistoric site that eventually led to a Phase III investigation and the recovery of well over 1,000 artifacts. In addition, a prehistoric house floor was recorded within the plow zone. The McCauley Site is important for reminding archaeologists that significant information can still be recovered from these small pieces of property, as well as from plow zones. In addition, this particular prehistoric site may be important because few lithic workshops are evidenced in this area, despite the many recorded prehistoric sites here.

Environment

The project area is located in the southeastern portion of New York State, in the north-central part of Suffolk County. This portion of New York lies within the Atlantic Coastal Plains physiographic province. The coastal plain slopes gently eastward and is actually a strip of recently emerged sea bottom. The soils in this region consist largely of sand, clay, and marl (a mixture of clay, finely fragmented shell, and calcite). This region of Suffolk County, on Strong's Neck, lies on the Harbor Hill Moraine, which extends from Orient Point through Brooklyn. West of Port Jefferson, including the study area, it forms the heads of bays on the north shore as far west as Lake Success (Schuberth 1968: cover map, 9, 184-186).

The predominant forest community inhabiting the coastal plain in this vicinity (Cape Cod to the Carolinas) is the Northern Pine-Oak Forest which belongs within the larger Xeric Forest category, occurring on sandy or otherwise poor soils that are overly dry.

These forests are maintained largely by the effects of frequent fires. Were it not for the fires which the pine have adapted to, these forests would slowly change to Mesic Forests, dominated by oaks, hickories, and red maple. All coastal plains of eastern North America are Xeric Forests, and generally have lower species diversity than bottomland forests (Kricher and Morrison 1988:16, 17, 65, 66). The reason that the forest soils and surfaces are so dry in this moist region is due to the excessive drainage of overly sandy soils on the Coastal Plain.

The study area is situated in the northeastern section of Brookhaven Town. It is bounded by Cedar Lane to the southeast, Conscience Bay to the northwest and residential properties on either side. Elevations range from 9 to 14 ft above mean sea level. The property itself is located at a point of land that juts out into the bay just before the bay begins to narrow. Conscience Bay drains into Port Jefferson Harbor which drains into the Long Island Sound (Figure 1).

Figure 1. Location of project area on portion of U.S.G.S. 7.5 minute series, Port Jefferson, New York quadrangle map.

Soils in the project area consist of Riverhead sandy loam and Haven loam with 8 to 15 percent slopes. The Riverhead soils are deep, well drained, and moderately coarse textured. These soils are found in rolling to steep areas on moraines and in level to gently sloping areas on outwash plains. The lot may have been graded to some small degree (Warner et al. 1975:82, 84; Soil Conservation Service, personal communication 1994). The soil in the project area has been formerly plowed. It has been previously noted that the plow zone here seems deeper than normal in spots, and that this could represent the edge of a former agricultural field where farmers occasionally piled extra topsoil (Cammisa and Cammisa 1994:9).

Prior to the intensive utilization of the area by European-American populations, the primary floral cover in the general area consisted of pitch pine, Virginia pine, bear oak, blackjack oak, chinkapin oak, scarlet oak, post oak, black oak, and eastern cedar. The understory probably consisted of bearberry, huckleberry, inkberry, broom crowberry, lowbush blueberry, sheep laurel, and wild raisin (Kricher and Morrison 1988:65). At the time of the Phase III operations, the study area consisted primarily of a young, 25 to 30 year old maple forest, with black cherry and alder and an understory of sassafras. In some corners of the property near Cedar Lane, the vegetation consisted of briars, vines, and weeds. The property was also the scene of dumping activities, mostly grass and tree clippings (Cammisa and Cammisa 1994:2; Kalin 1994:4). The edge of the property bordering the bay consists of an 8 to 10 ft high bluff. The bluff has a 45 degree or greater slope and is badly eroded. The small sandy and cobble strewn beach nearly disappears during high tide.

Previous Work

Phase I archaeological investigations were conducted by TRACKER-Archaeology Services in 1994. Archival research at this time revealed that the property held a high potential for the recovery of prehistoric remains. There was low to medium potential for encountering historic remains. The Phase I field investigations consisted of the excavation of shovel test pits at approximately 50 ft intervals across the project area. Nine shovel test pits were attempted and seven actually completed. All seven shovel test pits revealed prehistoric evidence. Prehistoric artifacts were also collected from the ground surface at this time. Forty-four recovered artifacts include: chert debitage, a utilized flake, bifaces and fire-cracked rock. Most of the artifacts were contained within the formerly plowed soil horizon. The site appeared to have extended throughout the entire property. Conclusions were that this site (designated the McCauley Site) was that of a small fishing camp with a possible lithic workshop. A Phase II study was recommended (Cammisa and Cammisa 1994:13).

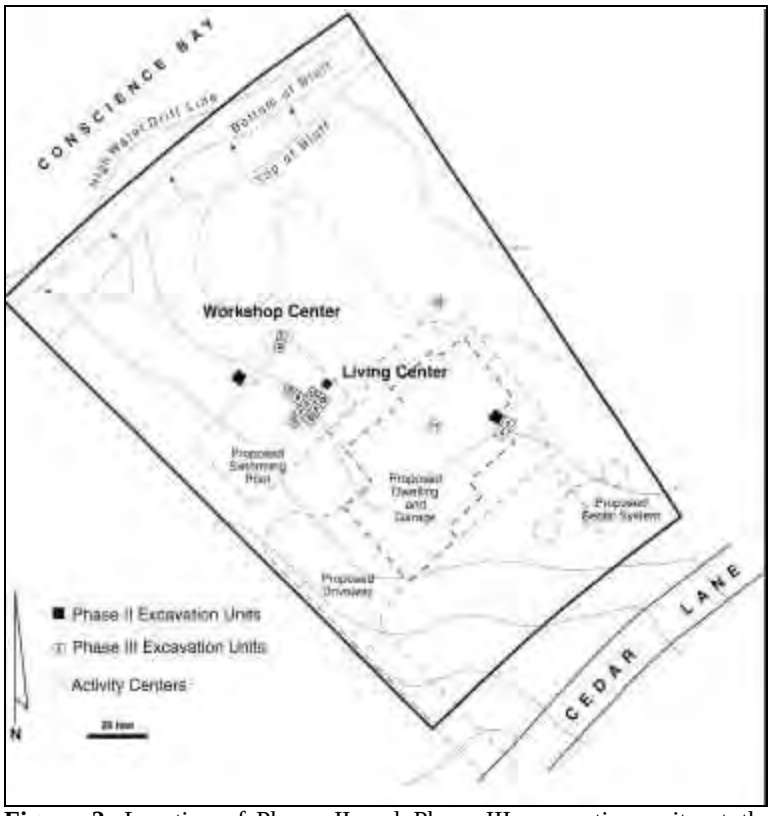

Figure 2. Location of Phase II and Phase III excavation units at the McCauley Site.

Phase II archaeological investigations were conducted by TRACKER-Archaeological Services, Inc. Field investigations included the excavation of 20 shovel test pits across the prehistoric site as well as three 1 sq muare units (see Figure 2). Artifacts recovered from this phase included bifaces, "turtlebacks," preforms, a spent core, broken triangular projectile points, and fragments of stemmed projectile points. Two projectile points were identified: a Wading River and a Levanna. Other prehistoric remains included chert debitage, fire-cracked rock, shatter, and one ceramic fragment. Again, most of the artifacts were found within the plow zone. No intact features were encountered, but artifact density was high. Recommendations were made at this time for a Phase III investigation (Cammisa et al. 1995).

Sites in the Surrounding Area

The prehistory on Strong's Neck is long indeed, extending as far back as the Paleo-Indian Period, and representing all of the subsequent prehistoric cultures through to the Contact Period. A site file search, utilizing a 3 mi radius around the study area, was conducted at the New York State Historic Preservation Office and the New York State Museum. It was sometimes difficult to assess site types because of the frequently scanty information encountered in the field or reported to the state, as well as to differences in definitions by the archaeologists who recorded the information. The following is a summary, and interpretation of recorded site information:

- At least 27 prehistoric sites are recorded within a 3 mi radius, including the Strong's Neck Site.
- Seven of these are base camps (as is the McCauley Site).
- Twelve sites included shell middens.
- Two burial areas are recorded, both associated with base camps.
- Nine of the 27 sites were diagnostic, eight ranging from the Archaic to the Woodland Period (as does the McCauley Site). One Paleo-Indian site was encountered.
- Of the 27 sites, only one appeared to be a possible lithic workshop (Mumay Site). This interpretation was based on our minimal parameters for a lithic workshop (i.e., bifacial tools and dense tertiary debitage, including bifacial thinning flakes). It is located on the opposite (east) shore of Strong's Neck peninsula, and appears to be a Late Archaic site.

Field Methods

Fifteen 1 sq m units were excavated across the study area (see Figure 2). These were initially placed in areas that seemed to show the most potential for recovering intact features (i.e., fire-cracked rock, etc.) and areas of the heaviest artifact concentrations. Each excavation unit was dug by natural stratigraphy. Arbitrary 10 cm levels were excavated once the subsoil (B horizon) was reached. Excavation ceased at 10 cm into culturally sterile subsoil. Since the p roject area contained plowed soil (Ap horizon), this was excavated as one stratum. Arbitrary levels within the plow zone were occasionally employed when it was thought necessary. All soils were screened through ¼ in wire mesh screen and analyzed for artifa cts and ecofacts. At the bottom of the excavated unit, a bucket auger and soil bore were taken, extending about two additional feet into the subsoil, to test for the continuance of the B horizon, as opposed to a flooding episode.

In addition, surface collection was conducted: however, because of heavy leaf cover and dumping debris, this was limited to approximately 30 percent of the property. Surface collection was aided by moving portions of the leaf cover to the side with shovels and/or feet. Surface finds were initially flagged for the purpose of mapping them, but due to theft of the flagged surface items, we collected the remaining surface artifacts and designated them with a general area location.

Field Results

Stratigraphy

O Horizon (3 to 6 cm)	root mat, leaf litter, and humus
Ap horizon (22 to 39 cm)	sandy loam, 10YR3/3. This level appeared deeper than customary in various portions of the property. Most artifacts came from this level.
B horizon	sandy loam, 10YR5/4 to 5/6.

Features

No intact features were encountered during the Phase III investigations. However, one area within the site contained compacted soil within the plow zone (Figure 3). A darkened soil, slightly sandier, covered part of this compacted Ap horizon. Virtually all of the prehistoric ceramics were recovered from units containing this "plowed feature." No charcoal remains were evident within this area, the soil being darkened for other reasons. Also, no postmolds were discovered

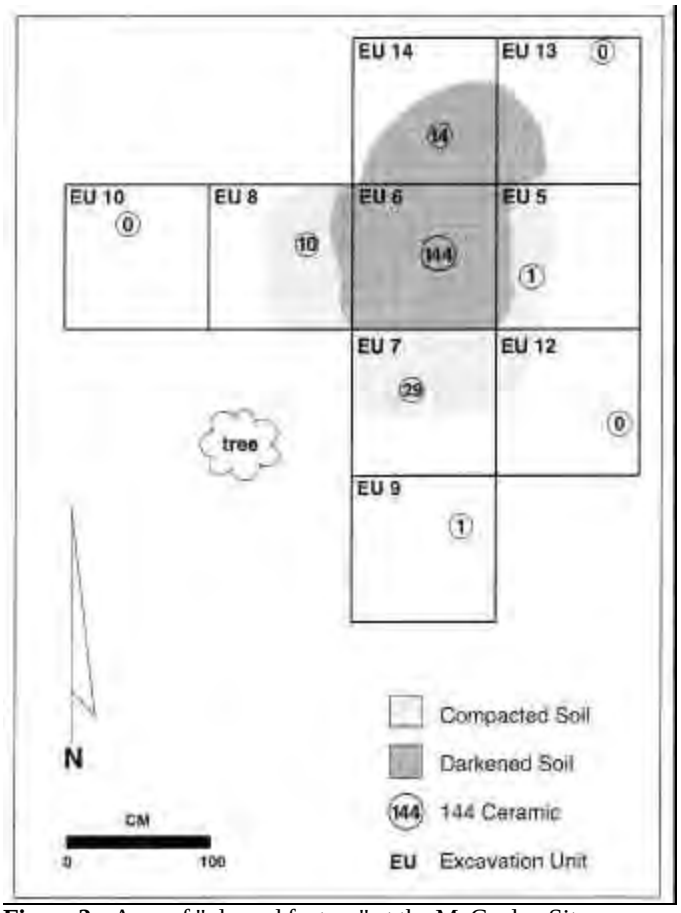

Figure 3. Area of "plowed feature" at the McCauley Site.

around the compacted areas. After excavating this area, it was determined that this was, in all probability, a prehistoric house floor that had somehow remained, at least partially intact. The thickness of the compacted and darkened soil was 6 to 9 cm.

It is our conclusion that this area, containing the "plowed feature" (Units 5, 6, 7, 8, 12, 13, and 14), had escaped the heavier amounts of plowing that must have occurred around it. A prehistoric house floor of similar thickness had been previously reported from the Strong's Neck Site - a Woodland Period site on the west shore of Strong's Neck (Werner in Truex 1982:205-206).

Laboratory Results

Phase III excavations resulted in the recovery of 1004 artifacts. Of these, 809 were lithic artifacts and 195 were prehistoric ceramic fragments. Only 3 pieces of historic ceramics were collected and these included blue transfer print and slipware. Stone tools included: 8 projectile point remnants (including 1 argillite Poplar Island point, 2 quartz Levanna points, and untyped points of quartz and chert), 1 quartz chopper (hand axe), 1 quartz mano/hammerstone, 2 preforms, 1 quartz blade, 1 chert knife, 2 quartz scrapers, 1 quartz hammerstone, 16 quartz bifaces, 5 quartz utilized flakes, 3 retouched flakes (quartz, quartzite, and argillite), 4 quartz cores (bifacial, pebble, double-ended, polymorphic). Sixteen pieces of fire-cracked rock (quartzite, quartz, and 1 chert) were also recovered.

Lithic Analysis: Conclusions

The largest lithic artifact category was debitage. Materials consisted of quartz, quartzite, chert, schist, and sandstone. The debitage from the McCauley Site is indicative of a full range of lithic reduction strategies.

Tertiary flakes, including pressure flakes and thin, low-intensity, percussion flakes, which are involved in the final stages of tool manufacturing, dominate the assemblage. The tools used to remove these flakes are deer antler and/or bone. Thin, low intensity flakes can also be removed by smaller hammerstones and this may be the case for some biface production at the site.

Primary and secondary decortication flakes are well-represented at the site. These larger flakes, all having cortex remaining on them, are the by-product of cores and some biface production. Primary and secondary thinning flakes are also well represented at the site. These flakes are representative of thinning strategies and not initial reduction.

Some flake discards from this site were utilized. There are also some broken bifaces that were not utilized, probably because they broke during production and were discarded. With an abundance of natural resources (beach cobbles), there was no need to use "leftovers." The shoreline quartz gravels are probably the source of many of the lithics at the site. The majority of lithic artifacts were of quartz. These lag gravels were probably a bonus for the prehistoric occupants, but not the major attraction to this site.

The presence of chert and argillite artifacts indicates contact with outside influence. The chert was most likely transported from upstate New York, down the Hudson to coastal New York. The argillite artifacts probably came from New Jersey or Pennsylvania and were traded to native inhabitants of western Long Island, Manhattan or Staten Island before making their way to the study area in eastern Long island (Rutsch in Stone 1978). The closest source of argillite is the Newark series (Lockatong formation), not too distant from western Long Island. These argillites include gray argillite (Schuberth 1968:125-126). One projectile point (Poplar Island) from the McCauley Site is of gray argillite.

Crabtree (1972:1-6), in his heat treatment experiments, suggests that uneven heating and cooling will crack and "craze" thick nodules. The fire-cracked rock recovered from the McCauley Site was mostly from small cobbles, and

indicates cracking and crazing. This seems to imply that the rocks were used during the process of boiling water as opposed to hearth-cracked.

In conclusion, the lithic artifacts from this site indicate a full range of reduction strategies with a specialization toward lithic refinement. The representation of many tools, such as, projectile points, scrapers, choppers/hand axes, ground stone, unifaces, bifaces, blades, utilized flakes, as well as cores, firecracked rock, and the full range of flake debris (dominated by tertiary flakes) indicates that this site is a base camp with a lithic workshop component. The time range and cultural groups represented by the diagnostic projectile points indicate Late Archaic through late Woodland periods.

Prehistoric Ceramic Analysis: Conclusions

Most of the ceramic fragments have grit temper. Only 14 (out of 195) ceramic sherds are shell-tempered, and most of them are badly preserved.

Grit-Tempered Sherds

All of the pottery remains exhibit cord-marking, horizontally for the majority, but also criss-cross on a few, as well as some vertical. Some cord-marking is spaced at wider intervals, while other examples of cord-marking have virtually no spacing between cord-marked rows. Rim sherds are also cord-marked along the top edge of the straight rims. Interiors of the grit-tempered items show smoothing lines, and there is some evidence for coil construction (Wyatt, personal communication 1995).

Shell-Tempered Sherds

Shell-tempered pieces are also all cord-marked. In addition, one fragment seems to exhibit fingernail impressions (Wyatt, personal communication 1995), although these markings could also be from scallop shell impressions. Most (10 pieces) of the shell-tempered ceramics came from one unit (unit 14), with only several pieces scattered in with the grit-tempered ceramics. Rim sherds are slightly in-sloping from the shoulder and exhibit short vertical cord-markings along the top. Cord-markings are vertical, horizontal, and diagonal, but not criss-crossed. Cord-markings are spaced evenly apart.

The grit-tempered, cord-marked ceramics from the McCauley Site appear to be East River cord-marked (Ronald Wyatt, personal communication, 1995), the same pottery type reported at the Strong's Neck Site (Werner in Truex 1982:208). The age and cultural group represented by the pottery is Late Woodland. The shell-tempered ceramic rim sherd could possibly be Van Cortland stamped, also representing the Late Woodland period, although further study is needed.

Historic Ceramic Analysis: Conclusions

Only three historic ceramic sherds were recovered. Two are identified as blue transfer print, and the third as slipware. These were located within the plow zone, and were probably associated with nineteenth-century plowing of the area.

Site Interpretation

Any cultural interpretations gathered from the McCauley Site should be tempered by the fact that the site originally extended beyond the project area boundaries. The range of prehistoric artifacts gathered from Phase I, Phase II, and Phase III archaeological investigations extends to all corners of the property (Cammisa and Cammisa 1994, Cammisa et al. 1995; Kalin 1994). This fact, plus the artifact density on the site, indicates that the remainder of this prehistoric site lies buried under the neighborhood houses and streets. A portion of the site has also undoubtedly eroded into Conscience Bay. The exact bounds of the site, as well as its size, complete artifact inventory, and spatial distribution, will probably never be known. In addition, plowing of the area and probable localized grading associated with surrounding development have further modified the integrity of the site, making interpretations tentative.

Artifacts collected at the McCauley Site indicate a full range of activities. Such activities include:

- Hunting: projectile points
- Hide and Food preparation (initial stage): animal meat (chopper/hand axe, scraper, uniface, utilized and retouched flakes).
- Food preparation (initial stage): vegetal or grain (mano)
- Food preparation (final stage/cooking): (fire-cracked rock, ceramics)
- Tool production (initial reduction): (primary and secondary decortication flakes, larger hammerstones, cores)
- Tool production (final stages/shaping): heavy amounts of tertiary flakes, bifaces, preforms, smaller hammerstones)

The native inhabitants who camped here were hunting, eating animal meat, and preparing the hides for use. They also ground and ate local plant food and/or grain, and produced tools on site. Surprisingly, no fish scales, shell middens, bone or stone hooks or barbs were recovered. Two of the projectile points recovered were untyped, and possibly unfinished.

These unfinished points seem not to be very aerodynamic; however, they may have been utilized as small spear points for spearing of smaller fish. This is conjecture, but it seems unlikely that the prehistoric people represented here did not try to take fish or shellfish. Shell midden sites are common throughout this ecological niche. Also, the site is located on a "point" of land where Conscience Bay begins to narrow within sight of the property. A fish weir could easily have been placed there. Perhaps the remains of fish and shellfish processing are located nearby just off this property. Another attraction of the bay were its alternate transportation routes to the surrounding harbors, inland, or the coast of the Long Island Sound.

The "plowed feature" itself, we believe, represents the remainder of a prehistoric - Late Woodland - house floor. We believe that the prehistoric feature may have been saved from destruction by plowing because it was located at the end of an old agricultural field where farmers piled surplus topsoil. This may have later been graded flat with surrounding development activities. A higher than normal Ap horizon was noticed in some portions of the property including the location of the Late Woodland house floor.

Spatial distribution of artifacts indicates that the focus and living center of the McCauley Site is situated around Units 5, 6, 7, 8, 9, 10, 12, 13, and 14. This was the location of the prehistoric house floor. Virtually all of the pottery was recovered on or within the house floor. The heaviest amounts of firecracked rock per unit were also located within the units containing the house floor. Also, the two Levanna points were recovered from here, in Units 6 and 10. All of the previously mentioned site activities are represented here.

The preponderance of tertiary and thinning flakes on the site, along with bifacial tools, seem to indicate that the site contained a lithic workshop for stone tool refinement (last stages of lithic production). The workshop center is based on the greatest number of tertiary flakes, formal tools, and bifaces found per unit. It appears to be centered around Units 1 and 2, which were located side by side. Phase II excavations also yielded the densest amounts of debitage and tertiary flakes from its unit 1, which is also included as part of the workshop center. The workshop is located about 15 ft west of the living floor.

No signs of postmolds were found. Most likely they were plowed into oblivion. There is, of course, the speculation that, if the site were occupied for short periods during the warmer months, no shelter might be needed. Also, some types of shelters, such as lean-tos or stacked leaf huts, would need no set posts (thus leaving no postmolds) (Brown 1984:27-33).

Current evidence suggests that the site functioned as a recurrent seasonal base camp, from the Late Archaic through the Late Woodland, with a strong emphasis on the Late Woodland period. The prehistoric peoples who inhabited the surrounding areas show a marked proclivity for choosing "necks" (peninsulas), "points" of land (along the shore) and tidal marshes to occupy/utilize. Unfortunately, these areas are often the first to be settled, and the information on the original inhabitants is lost. The same hold true for much of Long Island's south shore.

Not many lithic workshops are on record for this area (a 3 mi radius). Only 1 possible site out of about 27 recorded sites is thought to be a workshop. This workshop was from the Archaic period. Interestingly, the one Archaic projectile point recovered from Phase III investigations was encountered in Unit 1 within the workshop center. It was argillite while the preponderance of lithics were of quartz. Thus, the McCauley Site would seem to offer some potential for debate regarding workshop sites and settlement patterns on Long Island.

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Theodore Whitney Commendation for Gordon C. DeAngelo

Annual Meeting NYSAA 1998

This is the very first time that the New York State Archaeological Association Theodore Whitney Commendation is being given. The Awards Committee decided at last year's Annual Meeting that such an award should be instituted to recognize exceptional, lifelong, devoted service to the pursuit of the archaeology of New York State. The award was enthusiastically endorsed by all of the chapters at the General Business meeting.

It seemed particularly fitting to name this award after Ted Whitney, a school teacher of mathematics who devoted his life to the selfless furtherance of the archaeology of New York State. Ted was held in such high esteem that when he was elected Fellow, the entire audience stood and applauded. There wasn't a dry eye in the house.

The Awards Committee could think of no one more deserving of this award than our beloved and highly esteemed friend, Gordon C. DeAngelo. Gordon has assiduously dedicated his life for over 40 years to assisting professionals, avocationals, indeed people from all walks of life, including children, in their archaeological needs, of whatever legitimate character. These services have a range that is truly legion, and so must sadly, be only abbreviated here.

They include Gordon's informational assistance to Dr. Ritchie in his last researches in central New York. They include Gordon's mapping and field work for Jim Tuck in his monumental study of the Onondaga, as well as his expert reading and critiquing of Jim Bradley's much lauded study of the evolution of that nation. Gordon's schematic mapping of Louise Basa's Boucher Site was, correspondingly, invaluable. So too has been his surveying and research assistance to Carolyn Weatherwax in the nomination of an historic graphite mine to the National Register of Historic Places. Ellie McDowell-Loudan's yearly archaeological field school has enjoyed marked benefits from Gordon's cartographic talents - not only in the mapping of her sites, but in his teaching elements of surveying to her students. At Fort Stanwix, Gordon did all of the archaeological surveying, over the course of two years, as a volunteer, for the National Park Service excavations by Dick Ping Hsu and Lee Hanson. Within recent years, Gordon has been David Starbuck's right arm in mapping at Fort Edward, Fort William Henry, and Mount Independence. There, Gordon was ably complemented by his equally dedicated spouse, Barbara, in ceramic analysis. Moreover, Gordon wrote the valuable contribution "Surveying Roger's Island: Techniques and Training" for David's *Archaeology in Fort Edward.*

Over the past 35+ years, Gordon has been personally invaluable to Marjorie and me by serving as an exceptionally versed archaeological supervisor on SUNY-Oswego Spring and Fall digs. As he did for Jim Bradley, Gordon ably critiqued my doctoral dissertation on the culture history of the Oneida. He also made a wonderful contribution to it on the ecology of that nation. Gordon has given a variety of lectures on historic archaeology to our laboratory classes, and has trained our teachers in surveying, as well as having made maps on a series of sites (a kindness shared in recent years by Barbara). Gordon's expertise in Euro-American items ranging from barbed wire and ceramics to beer bottles has been a boon to Marjorie and me.

In so many other dimensions, too, Gordon, has excelled. These include his gathering of archaeological data from local residents regarding cultural resources in adjacent Thousand Islands State Park as well as Adirondack State Park. He is the founding father of the William M. Beauchamp Chapter of the NYSAA, one of the founders of the Chittenango Landing Canal Boat Museum, and director of excavations and restoration at the landing. In addition, Gordon has been an active participant in public education programs regarding the landing.

The list of wonderful things Gordon has done and is doing is clearly prodigious. One must not overlook the fact that he instigated the field work in search of the dramatically historical Jesuit mission of Ste. Marie de Gannentaha - and found it!

He is presently President of the Beauchamp Chapter of the NYSAA and is past President of the NYSAA. In his other life as a landscape architect for NYS DOT, he worked tirelessly to sensitize that agency to the importance of archaeology and cultural resources.

As Bob Funk in the latest NYSAA *Bulletin* article "An Introduction to the Prehistoric Archaeology of New York State," noting Gordon's publication of the 1992 "Avocational Archaeology in New York State" and of the 1996 "Archaeology in the Future: The Role of the Avocational" remarked, "...(Gordon) has been so energetic in support of New York State Archaeology in so many ways, in so many places, at so many times, especially in the assistance freely given to professionals, that he needs no further introduction here."

We humbly thank you Gordon - for being you.

Peter P. Pratt

In Memoriam
Donald A. Rumrill (1925-1996)

Donald A. Rumrill, a familiar participant at New York State Archaeological Association annual meetings and many other avocational and professional conferences, died on June 2, 1996, in Gloversville, New York. As a member of the Van Epps-Hartley Chapter, NYSAA, Don was a serious researcher of seventeenth-century Mohawk sites and was instrumental in establishing a chronological sequence for these sites in the same manner in which Charles Wray did for the Seneca in the Genesee Valley. Glass trade beads and firearms were the focus of his attention. In the study of glass beads, he made major contributions recognized by bead researchers throughout the Northeast. As an avocational archaeologist, he exemplified the ideal relationship between the avocational and professional archaeologist.

Donald Rumrill was born in Gloversville and graduated from Gloversville High School in 1942. Except for military service in the Pacific in World War II and in the Korean War he lived in Gloversville as a steamfitter, plumber, and often supervisor for a number of contractors both in New York State and Massachusetts. He was a member of the First Presbyterian Church in Gloversville.

In 1986 Don was elected a Fellow of the NYSAA for his outstanding research in the Mohawk Valley. Over the years he also served as Van Epps-Hartley Vice-President and a trustee and served as well on several committees. He was also active in the Fulton County Historical Museum as a trustee, the Fort Plain Museum, and acted as a consultant to the New York State Museum in the development of its exhibits on the Iroquois and the Central Mohawk Valley. A considerable amount of Don's major research on Mohawk chronology, iron awls and vent picks, glass beads, molded lead and pewter effigies, firearms, and a number of other diagnostic Iroquois artifacts was published in several issues of The Bulletin, NYSAA, and Beads, Journal of the Society of Bead Researchers. Along with Dean Snow, formerly of SUNY/Albany, he contributed to the Mohawk Country section of a publication entitled Historic Contact by Robert Grumet of the U.S. National Park Service.

His wife, Mary C. Rauer Rumrill, whom he married in 1946, continually encouraged his research and survives him along with a son, Donald M. Rumrill of Apalachin, New York, one daughter, Barbara Dahn of Cazenovia, New York, and three grandchildren.

We will all miss Don Rumrill and his reputation for careful research. It is unfortunate that he did not have the opportunity to continue his valuable investigations into the archaeological history of the Mohawk Valley and to add to his growing list of publications.

Charles F. Hayes III
Lewis Henry Morgan Chapter; NYSAA

In Memoriam
Theodore R. Whitney (1905-1996)

One of the New York State Archaeological Association's longstanding members, Theodore Roosevelt Whitney, passed away in Norwich, New York, on July 28, 1996. New York lost one of its dedicated avocational researchers and one whom both professional and avocational archaeologists had been for years consulting for reliable information on Central New York. Ted's knowledge of ceramics, lithics, and sites was retained not only in his head, but also in his many published papers over the years.

It was my good fortune and privilege to have been associated with Ted Whitney early in my career in New York in the late 1960s and early 1970s when he was, at various times, NYSAA's Vice-President and Chair of its Awards Committee. The NYSAA's expansion during those years and the increasing strength of its Chenango Chapter, of which he was the last charter member, was the direct result of Ted's influence and vision.

Theodore Whitney was born in the town of Columbus, New York, on November 15, 1905, and lived there until 1974 when he moved to Norwich. He received a bachelor of arts degree from Oneonta Normal and, except for World War II military service in the Pacific from 1943-1945, was a teacher for 45 years in area district public schools. He retired in 1969 at which time he began to devote his time to many organizations including the Chenango County Historical Museum, as President, trustee, and exhibit preparer; the Columbus Community Church; and the Boy Scouts of America. Throughout his life he also took many academic courses to supplement his education. He was also an accomplished artist.

Ted married Mercian E. Spurr in 1930. All throughout his life she enthusiastically supported his endeavors. Besides Mercian, Ted was survived by a sister, Cora Whitney Johnson and several nieces and nephews.

Elected a Fellow of the NYSAA in the early 1970s in recognition of his archaeological research, Ted participated in many major excavations in Central New York with archaeologists such as William Ritchie, Robert Funk, Peter Pratt, James Tuck, and Marian White. Of particular significance was his editorship of the *Chenango Chapter, New York State Archaeological Association Bulletin* consisting of 97 issues. He authored over one-half of the papers in this publication as well as contributing to *The Bulletin*, NYSAA.

One of Ted Whitney's closest associates, Monte Bennett, in a note to me about his death, said that "Ted will always be with me - I am glad that we walked together along life's pathway for awhile." I believe that this sentiment speaks for all of us who knew Ted Whitney.

Charles F. Hayes III
Lewis Henry Morgan Chapter, NYSAA

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The Achievement Award

Charles M. Knoll (1958)
Louis A. Brennan (1960)
William A. Ritchie (1962)
Donald M. Lenig (1963)
Thomas Grassmann O.F.M. (1970)
Paul L. Weinman (1971)
Robert E. Funk (1977, 1994)
Peter P. Pratt (1980)
Herbert C. Kraft (1989)
Lorraine P. Saunders (1999)
Martha L. Sempowski (1999)

Theodore Whitney Commendation

Gordon C. DeAngelo (1998)
Charles F. Hayes III (1999)

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Charles F. Wray
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