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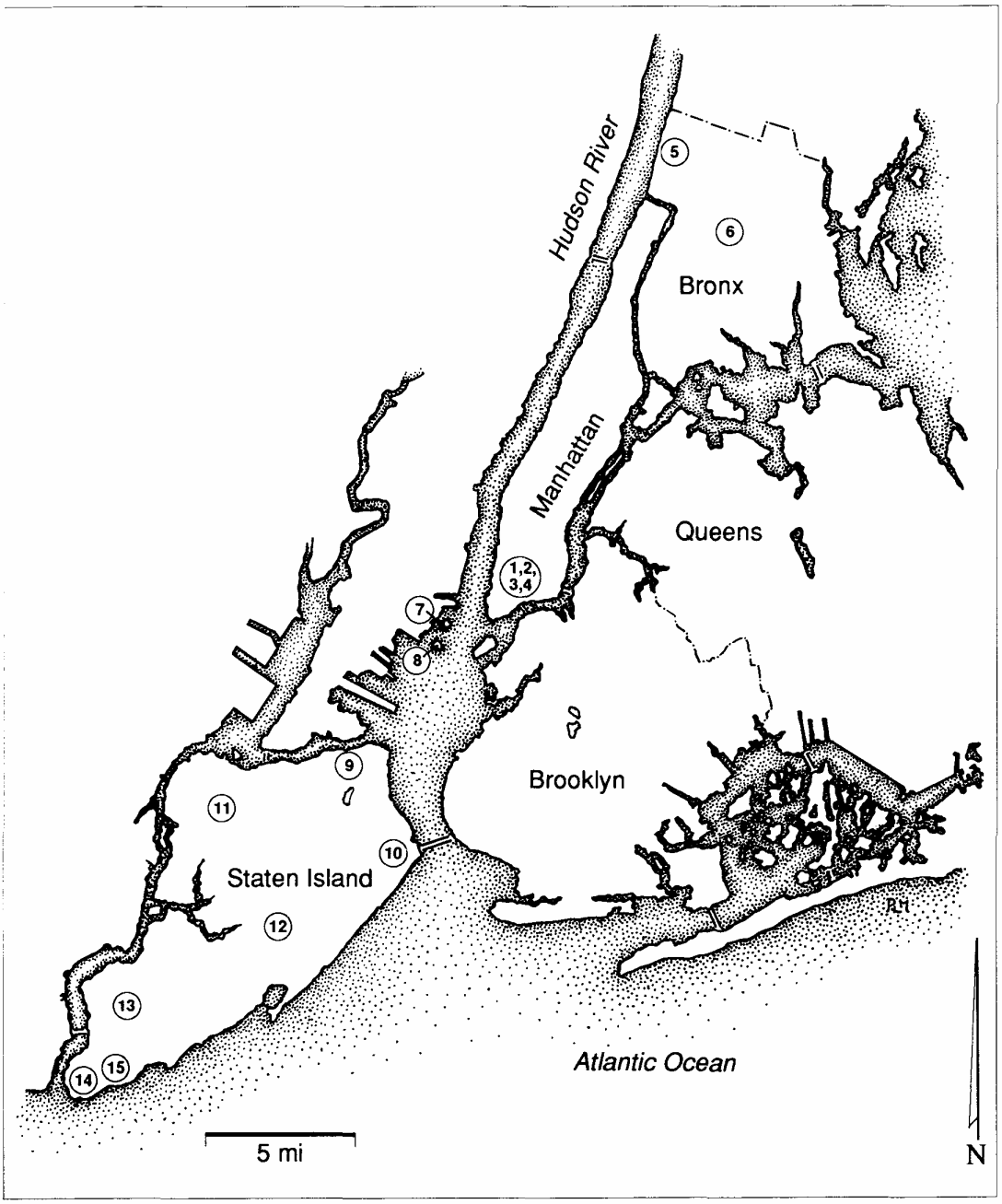

Location of Archaeological Sites within New York City

Number 103

Spring 1992

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The Clay Tobacco Pipes of New York State (Part IV)

John H. McCashion, Secretary, NYSAA

At the International Conference of the Society for Clay Tobacco Pipe Research held the weekend of September 22 and 23, 1990, in Liverpool, England, a discussion arose concerning the further improvement of the clay tobacco pipe already one of the best dating indicators in post-medieval archaeology. The question was asked if there were any that could be dated closer than the usual ten to twenty year brackets assigned to many pipe types published in the extant twelve volumes of British Archaeological Reports on the subject?

It was suggested that some of the Dutch and perhaps some of the English pipes excavated in New York State could he dated closer than ten years. It was pointed out that one Dutch pipe heelmarked with the cross and orb could be dated closer than ten years in New York State. If this could be accomplished the status of the clay tobacco pipe as one of the best dating indicators in archaeology would be improved.

This, then, is the account of one such pipe.

Introduction to the Cross and Orb

On March 19, 1972, a meeting was called at the Amsterdam home of John and Hazel Swart, now deceased. Those present were asked to comment on his large and well-displayed multi-site collection from seventeenth-century contact Mohawk Native American sites. After much discussion, a conclusion was reached that a definite dating problem existed which could impact two sites, the newly recorded FDA-20, which Swart called "Gandagaro," and Caughnawaga, the headquarters of the Van Epps-Hartley Chapter. Dates for Caughnawaga, in 1972, were 1667-1693 based on the excavations conducted by Reverend Grassman, Director of the Mohawk Caughnawaga museum. Gandagaro (FDA-20) was dated by Swart. Caughnawaga's dates encompassed the Baptism of Kateri Tekakwitha and the erection of St. Peter's chapel. To advance the dates would nullify Franciscan claims and risk eviction of the tenant Van Epps-Hartley Chapter, NYSAA. A moratorium was declared at the Swart meeting to withhold date changes affecting Gandagaro and Caughnawaga. Publication and research on the Native American Mohawk sites was to continue (McCashion 1972; NYSAA Field Notes, Vol. 10, pp. 34). The first encounter with the seventeenth-century Amsterdam-born clay tobacco pipe heelmarked with the cross and orb came from the Swart Collection (Figures 3 and 4).

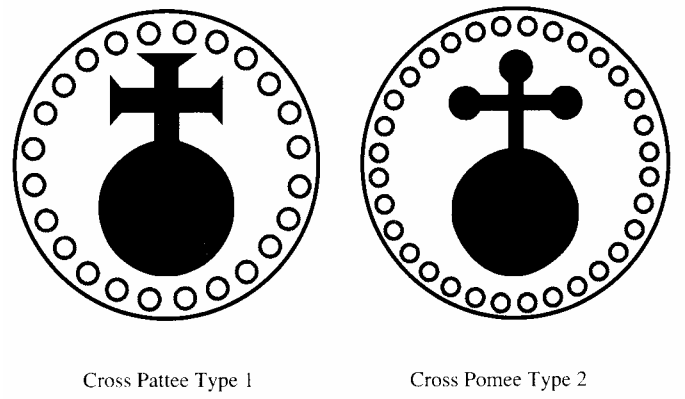


Figure 1. Cross and Orb clay tobacco pipe heelmarks.

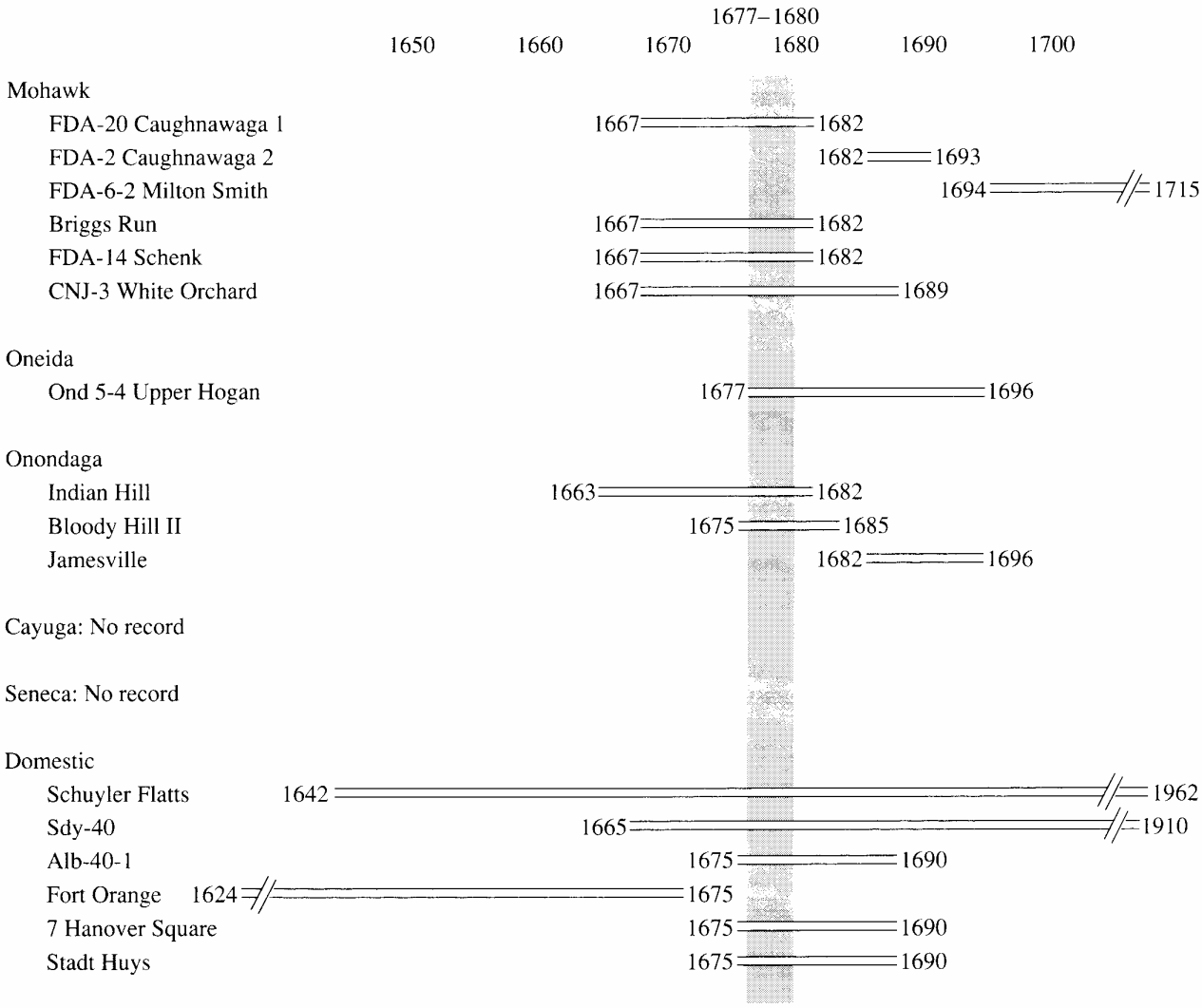
Description of the Cross and Orb

Attribute analysis is one of the keys to accurate dating. The more artifact attributes recorded from the pipe, the better the description for comparative analysis and dating by those not familiar with or privy to the artifact thus resulting in fewer phrases such as "almost like," "quite like," "nearly like," "somewhat like," and "probably like" rather than the more desirable "exactly alike" or "completely different."

The Amsterdam-made clay tobacco pipe with the cross and orb heelmark (Figures 3-6) probably never exceeded 20 cm. No whole specimen has been excavated either here or in Holland. However, what has been recovered from the twelve New York State sites (Table 1) should be sufficient, temporally speaking, to satisfy the most ardent skeptic. The remnants are replete with consistent attributes, and most of the site contexts in which they occur are fairly well dated.

Compared to the larger and thicker trade pipes of Edward Bird, which appeared on sites with the cross and orb, the latter is thinner overall and represents a technological change in the manufacturing process. Bowl fragments indicate a less bulbous bowl with a slightly smaller capacity. The maximum thickness of the bowl near its junction with the stem does not exceed 3.5 mm compared to Bird's EB pipes which exceed 4.0 mm. Most of the non-weathered fragmentary bowl and stem specimens show evidence of having been superficially polished but not with an agate wheel. They were generally made

Table 1. Distribution Chart: Cross and Orb. 1677-1680



from white ball clay. Two specimens exhibit completely gray interiors encapsulated by a fine white exterior less than 1.0 mm thick. This implies the use of clays of Germanic origin which were substituted periodically when good English ball clays could not be imported.

The thickness of the stem at stem-bowl junction consistently measured along the mold seams of eight specimens averages 11.2 mm. Maximum thickness is 11.7 mm; minimum is 11.0 mm. These minor variations were caused by the action of the smoother or trimmer during the manufacturing process and exposure from having been in the ground. The lower mold seams on the eight specimens are slightly raised beginning at the heel and continuing down the stem for an indeterminate distance.

Stem decorations on twelve specimens were analyzed using the top mold seam as the main reference point. Descending along the stem from the bowl toward the smoker at approximately 26 mm is a 1.0-mm milled line which encircles the stem once (Figure 2). Some 2.0-2.5 mm further down the stem from the milling is the first of two stamped fleurs-de-lis (Figure 2). The second milled line as it encircles the stem overruns the border of the first fleur nearest the smoker and barely separates this fleur from the second. If there are only two fleurs-de-lis atop the entire stem, then 7 mm from the border of the second nearest the smoker is the third and final milled line. These milled lines were not always applied evenly around the stem.

While there is a distinct possibility that two molds were being used at the same time, only one fleur-de-lis stamp was employed (Figure 2). Each stamp contained an exterior dia-

mond border within which were four diamond bordered fleurs-de-lis. The interior border formed an X within the exterior diamond. The *key attribute* on all fleurs is the upper left border of the X which extends through the outer border (see arrow on Figure 2). There is no exception, and this *key attribute* does not occur on any other four-in-diamond fleurs-de-lis observed in New York State. Therefore, this key attribute allows us to recognize the cross and orb pipe regardless of missing bowl, heel, or bit end.

There is little variation in the size of the fleurs-de-lis. Two samples from White Orchard (CNJ-3) measure 11.0 mm in length by 9.0 mm in width. The remaining nine measure 12.0 mm in length by 9.0 mm in width. The leaves of the four fleurs-de-lis are always separated from the main stem, and the lower leaves run into the borders without fully curling (Figure 2).

There is little variation in the thickness of the stem measured from the middle of the fleur-de-lis. The thickest stem measured 10.9 mm and the thinnest, 10.4 mm.

Two types of heelmarks have been observed: an orb with cross whose arm-ends flare out, and an orb with cross whose arm-ends contain a pellet (Figure 1). The former is classified as Type 1, cross pattee; the latter is classified as Type 2, cross pomee. Cross pattee and cross pomee are excellent British numismatic loan terms (Seaby 1989:350-35l) most appropriate for application to products of English-born pipemakers who lived and worked in Amsterdam. It appears that some of the marks and mintmarks on the coins of James I and Charles I, which certainly circulated in Holland as well as on our New York Native American sites, were also used as heelmarks on their pipes, a subtle reminder of their English origin. Measured stem-bore diameters show only minor variations from the following sites (see Table 2):

The position of the hole in the stem looking towards the bowl in all specimens is always in the upper right quadrant. Three specimens from FDA-20 were "pelletized." Pellet, a circular boss, is again an excellent descriptive loan-term borrowed from long standing British numismatic publications and may be defined for our purposes as a raised dot or series of dots applied to a clay tobacco pipe by mold or stamp. In the case of the three specimens from FDA-20, each has a mold-imparted pellet on the right side of the stem just above the heel at the stem-bowl junction. The other cross and orb specimens are free of this pelleting, which confirms the use of two molds. Pelleting exists on several heels at Caughnawaga (McCashion 1975:Plate 3), and in the Amsterdam excavations several pipes dating c. 1660 also contain single and multiple pellets on the right sides of their heels. The purpose of some pelleting was certainly not decorative, and this practice may have been carried over to Gouda where it was mold-imparted alone or was used in combination with other devices to indicate quality.

The heel of the pipe extends roughly 2.0 mm to 2.5 mm below the stem-bowl junction. This variability is due to the heel not being parallel to the stem and the position from which the heel measurement was taken. Thus we have heels which ranged from medium (1.0 mm to 2.0 mm) to high (2.0 mm+) (Bradley and De Angelo 1980:Figure 1). Heel sizes vary slightly. The smallest measures 7.0 mm by 7.0 mm (Upper Hogan specimen K-26, Bennett Collection, Plate 4), and the largest measures 9.9 mm in length by 8.2 mm in width (FDA20-26, Figure 3). The remaining five observed specimens average about 9.0 mm in length by 8.0 mm in width. The impressed cross and orb heelmark contains a 3.0 mm by 3.0 mm cross atop a 3.0 mm by 3.0 mm orb. Six marks are Type 1, cross pattee, while K-26, from the Upper Hogan Oneida Site,

Table 2. Stem-bore Diameters.

Site		Number Present	Measurements		
			6/64"	7/64"	8/64"
White Orchard (CNJ-3)	Mohawk	8	1	7	
Brigg's Run (FDA-X)	Mohawk	1		1	
Niskayuna (SDY-40)	Domestic	1		1	
Wellings (ALB 40-1)	Domestic	1		1	
Schuyler Flatts (H-TRY-1)	Domestic	1		1	
Upper Hogan (OND-5)	Oneida	1	1		
Indian Hill	Onondaga	1		1	
Bloody Hill II	Onondaga	2		1	1
Stadt Huys	Domestic	2	2		
Hanover Square	Domestic	3		3	
Total sites: 10		21	4	16	1

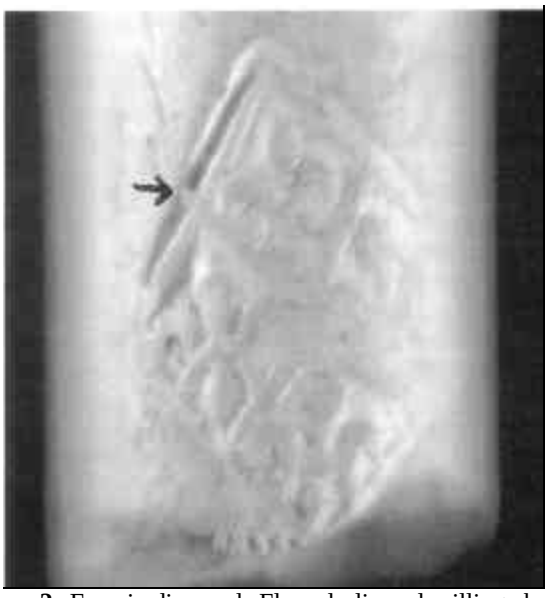


Figure 2. Four-in-diamond. Fleur-de-lis and milling shown. Key attribute marked by arrow. FDA-20 Specimen No. 30. Fox Farm 1667-1682.

Figure 3. Cross and Orb heelmark. Cross Pattee Type I. FDA 20 Specimen No. 26. Fox Farm 1667-1682.

is the sole Type 2, cross pomee. The cross and orb heelmark is encircled with about 26 pellets in six samples observed. One contains slightly more, K-26 from Upper Hogan, Type 2, cross pomee, and those line-drawn by De Angelo belonging to Type 1, cross pattee exceed 26 pellets (Bradley and De Angelo 1980: Figure 4b).

Mark sizes show great consistency. Out of nine samples, eight measure 6.0 mm by 6.0 mm, and one weathered specimen (SDY-40-13. Type 1, cross pattee) measures 5.5 mm x 5.5 mm.

The origin of the cross and orb mark is ancient and speculative. In England, the cross and orb surmounted the crown of each ruler depicted on English coinage from roughly the time of Henry VII (1485-1509) through that of Charles I (1625-1649). As a seventeenth-century clay tobacco pipe heelmark, it was used more frequently by the Dutch than the English. In Holland, the Type 1, cross pattee seemed to flourish during the 1660s (Duco 1981:250, No. 127). Duco stated that his specimen "is a less well finished Gouda product dating between 1660-1680" (Duco 1981:458). Application of the Friederich formula to Duco's No. 127 1/1 line drawing using Line 2, early Dutch pipes, yields a date of 1650 (Friederich 197.5;77, line 2). Friederich did not include this mark in his publication. Krommenhoek and Vrij illustrated several heelmark variations which indicate an even earlier date for the cross and orb. Krommenhoek and Vrij's (1986) Photos 378 and 379 *vaguely* resemble the Upper Hogan example (Figure 6): those shown in Photos 380, 728, and 729 show similarity to our Type 1 and Type 2 marks but are eighteenth-century sidemarks rather than heelmarks. Their dating of these marks, apparently not derived from well-dated archaeological contexts, ranges from 1630-1759/1768 for all illustrated samples (Krommenhoek and Vrij 1986:329). A mark which is somewhat similar to the Upper Hogan specimen K-26 (Figure 6) was illustrated by Duco in *Merken van goudse Pijpenmakers* (1660-1940), page 59, No. 138. The dates he assigned this type are 1670/1680-1760 (Duco 1982:59, No. 138). The original guild records (1660-1724) illustrated the cross and orb heelmark as No. 72, cross pomee atop orb, and described it as *De Wereld Kloot* (Sphera Mundi) with no religious significance attached to it. This mark also appeared on the later Gouda guildboard, and the last Gouda pipemaker who used the mark appeared to have been Barend Vale, active in 1759, but not listed in 1768 (Laansma 1960). The best dated context of the cross and orb (Type 1) appeared amongst the pipes recovered from the wreck of the Kennemerland in 1664. While the line drawing was almost identical the stem mark was different (Hartin 1987:213. Figure 2). Thus, the various types of the Holland cross and orb have been dated from 1630-1768 and they enjoyed a long life there but not in New York State.

Impact

The moratorium for date changes affecting Caughnawaga and the Fox Farm (FDA-20) ceased with the publication of an article by Donald Rumrill (1985). His date change for Caughnawaga (1667-1693) was based on a median date of 1688 "with a time span of 1683 to 1693" (Rumrill 1985:33). This change nullified Caughnawaga as the baptismal place of

Figure 4. Cross and Orb heelmark. Cross Pattee Type 1. FDA-20 Fox Farm 1667-1682.

Figure 5. Cross and Orb heelmark. Cross Pattee Type l. CNJ 3-2 White Orchard Site (Mohawk).

Kateri Tekakwith and the original site of St. Peter's chapel. If his reasons for changing the dates were based on historical documentation, it was not cited in the text. If his reasons for changing the dates were based on the beads, specific sites for comparative dating purposes were not cited, nor were personal communications from Dr. Peter Pratt, a New York State authority on beads, who is presently upgrading the bead dating sequences. Rumrill indicated, "The trade beads are in direct correlation with other Mohawk, Oneida and Onondaga villages" (Rumrill 1985:33). However, there is no other Mohawk village that exactly matches Caughnawaga in all artifact categories on either side of the Mohawk River that has been positively identified, excavated or tentatively dated. And many of the beads from Caughnawaga can be compared to any Mohawk, Oneida, or Onondaga site dating from 1630. Rumrill missed the greatest opportunity to closely examine the clay tobacco pipes from Caughnawaga which would have added some legitimacy to his date changes. Rather, he stated, "However, as explained elsewhere, I prefer not to use pipe stem bores as a criteria for dating purposes" (Rumrill 1985:12). A sufficient explanation was not found "elsewhere." Then he stated, "I have read and been informed by persons dealing in the Harrington charts and Binford formula that stem bores can be fairly well relied upon in the Mohawk's country toward the end of the seventeenth century" (Rumrill 1985:34). If he really believed that, he would have noted that the Binford median pipe date for Caughnawaga, 1689.95 (1690) (McCashion 1975:10) did not agree with his median date of 1688.

What impact did the cross and orb pipe have on the dating of Caughnawaga? It had a negative impact since it was not recorded there. Neither was it recorded at Fort Orange (1624-

Figure 6. Cross and Orb heelmark. Cross Pomee Type 2. OND 5-4 Upper Hogan Site (Oneida).

1675), nor Jamesville (Onondaga) (1682-1696), nor Sullivan (Oneida) (1660-1677). The short time span of the cross and orb (Table 1) definitely moves the beginning date of Caughnawaga past 1677. How far past now depends upon the new breakthrough comparing certain historical documentation to the published site-date bracketing by artifact analysis or other means. The relationship between treaties and site movement

has never been explored or even mentioned in Iroquoian studies. This theory was discussed in detail in a previous article (McCashion 1991). There appears to be some "continuity of change" affecting site movement based on historically documented treaties particularly involving the Oneida and the dating of these sites by other means, and it appears that both the Onondaga and Mohawk were also affected. The postulated date is 1682 for the movement of the Mohawks from the Fox Farm (FDA-20) a short distance east to present Caughnawaga based on the pipe analysis and the treaty that was in effect at that date. The clay pipe material shows the last pipe to arrive on Fox Farm to be English (McCashion 1979:116) and the earliest pipe on Caughnawaga also English (Catalogue No. 2411GT). Both pipes can be dated to the 1680s. It may be presumed that these fragile pipes were given to the representatives of the Five Nations who met in Albany on August 4, 1682, with Colonels Coursey and Lloyd, themselves representatives of Lord Baltimore. Complaints had been lodged that some of the Iroquois had been marauding in Maryland and Virginia. A meeting of this importance usually concluded with presents being exchanged. On this occasion, the Native Americans received three kegs of rum, three rolls of tobacco and three dozen pipes. (Leder 1956:65-66). The presumption is that the 36 pipes given were English, and this is reinforced by the fact that the eight extant examples recovered from FDA-20, FDA14, Brigg's Run, CNJ-3, and Caughnawaga all date from 1680. This plus the fact that "these presents were most exactly subdivided to every Indian of their Nation" (McCashion 1975:7, 13), coupled with the treaty which was in effect at the time, supports the belief that the Mohawks moved three sites in September of 1682. With only one representative for the Five Nations present at Montreal, an Onondaga, this left the "aggressors-supreme" home in relative safety to effect these moves, or to quote that superb English strategist, Lord Nelson, who before the Battle of Trafalgar was reported to have said in all practicality, "You can't sail the ship without the crew."

Another Englishman, Wentworth Greenhalgh, who liked to travel, figured into the story of the cross and orb. Beginning May 28, 1677, he journeyed through Iroquoia until July 14, 1677. While passing through the Mohawk valley, he noted four Mohawk villages, Cahaniaga, Canagora, Conajorha, and Tionondogue and described each (Brodhead 1853 [III]:250-251). With the cross and orb dated between 1677-1680, could it identify Greenhalgh's Mohawk villages with some certitude?

The easternmost or first Mohawk village visited by Greenhalgh was called Cahaniaga, or for the purpose at hand, Caughnawga I or FDA-20 (Fox Farm). He noted that, "it contained about 24 houses, is situated upon the edge of a hill about a bow shot from the (Mohawk) River." Besides the beads, gunparts, gunflints, brass, and the late Jesuit rings, there are pipes, the ubiquitous EB, the more delicate bell heelmarked pipe, the CDP, the cross and orb, and the last pipe to arrive, the English London Type C dating between 1680-1690 (Atkinson 1962:

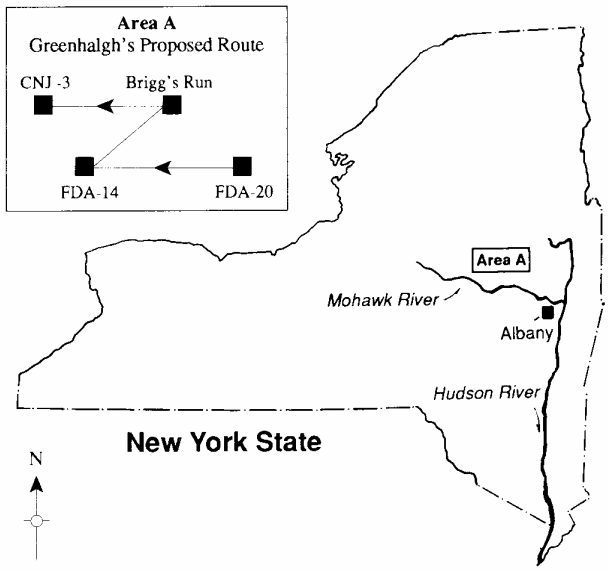


Figure 7. New York State.

183) (all artifacts Swart Collection). No EB funnel elbow angled trade pipes were recovered, and the HG products of Hendrick Gerdes are also absent. Gerdes married the widow of Edward Bird on July 6, 1668, and was already listed as a pipemaker (McCashion 1979:68). It was well known that Edward Bird was quite successful in his many ventures, and Gerdes appears not to have been one to swim against the tide of prosperity which abounded in seventeenth-century Amsterdam if one can believe the slightly exaggerated statement of Rene Descartes who stated, "In this great town, where apart from myself dwells no one who is not engaged in trade, everyone is so much out for his own advantage that I should be able to live my whole life here without ever meeting a mortal being" (Geyl 1961:248). Good business sense was not defined by the destruction of a perfectly good EB mold or stamp until failure to prove its worth. Besides Gerdes had to deal with Edward Bird II who continued the business. Thus, Hendrick Gerdes, although he married Bird's widow in 1668, did not have his own HG molds for about fourteen years or at least until 1682, although the earliest HG-marked trade pipe appears on the Sullivan Oneida Site (OND 3-4) (Oneida) dated by Pratt to 1660-1677. On Mohawk sites, it has only been recorded from present day Caughnawaga II. While the EB and HG are important dating indicators, the cross and orb is the key dating indicator and helps seal the date of Cahaniaga, Caughnawaga I, or Fox Farm (FDA-20). The location of the site described by Greenhalgh is quite correct. This was the first village visited by Greenhalgh and may be dated 1667-1682.

Canagora was the next village visited by Greenhalgh. Of it, he stated, "It consisted of *about* 16 houses, is situated on a flat which is a stone's throw from the (Mohawk) river." This

site is approximately 4.6 miles (2 leagues?) west of FDA-20 (Cahaniaga or Caughnawaga I) and was recorded as the Schenk or County Home Site (FDA-14). It compares favorably to Greenhalgh's location and in artifacts to FDA-20. Bead types are similar, the EB pipes are of the bulbous variety only, and the English pipes are present as is the cross and orb. There are no EB or HG funnels reported. This site was certainly occupied in 1677 and was also moved in 1682.

The third site visited by Greenhalgh "consisted of as many houses as Canagora only it was located 2 miles from the (Mohawk) river." This site has never been recorded thus causing eternal problems for historians who lack the ability to discard the east-west syndrome while trying to establish the route Greenhalgh took and the Mohawk sites he visited. The site was not in the east-west order but northeast from FDA-14, two miles to Brigg's Run (Figure 7). Concerning the recorded site at Brigg's Run (FDA-9) (1118), Rumrill gave the location as "six-tenths of a mile from the Mohawk River" and assigned it to the 1620-1640 tempora (Rumrill 1985:8). Accompanied by the late Gilbert Hagerty and the late John Jackowski, I visited this unrecorded site several times with the resulting summary published by Hagerty.

> The Briggs Run Mohawk site has yielded significant numbers of black, white and blue beads exactly like those from the Yates site (FDA 33-I, located on the south side of the Mohawk river) with a 45% presence of black beads along with some pea sized globular opaque brick colored beads more comparable to the Dungey Site (MSV 6-2 1650-1660) (Oneida) and the Sullivan Site (OND 3-4 1660-1677) (Oneida) [Hagerty 1985:264].

Being more interested in sites on the south side of the Mohawk river, Hagerty omitted the pipe data. The pipes recovered were the bulbous EB, the familiar English terminal London Type C, and of course, the cross and orb. Again there were no EB or HG funnels. The pipes as well as the other material correspond exactly to that from FDA-20 and FDA-14, and this site may also be dated 1667-1682, and is in the location indicated by Greenhalgh. This was the third site visited not by heading on an east-west course but by being directed two miles northeast *from* Canajorha (FDA-14). And it provided an easier route to the fourth site, Tionondogue.

Tionondogue was the fourth and last *major* Mohawk village to be visited by Greenhalgh. Of this he wrote, "Tionondogue is double stockaded round, contains *about* 30 houses and is situated on a hill a bow shot from the (Mohawk) river." This last line requires interpretation. What Greenhalgh actually did was to use the overland rather than the river route, thus estimating the distance from Tionondogue to the Mohawk River. The only candidate for this site was the *old* site CNJ-3, White Orchard, known apparently to everyone but Rumrill who assigned it "Site X," an indication that it was an undiscovered, thus a *new* site. These sites have been known for quite some time and they are CNJ-3, CNJ-10, CNJ-11 , CNJ-20, CNJ-21 and CNJ-65 all located within or near what the "oldtimers" affectionately referred to as the "golden triangle" because so many sites were located between the three converging roads which formed the triangle.

Besides the predominate "monotonous red bead" found on CNJ-3, the site was replete with clay tobacco pipes (350+) (Ballard Collection). Again the EB bulbous pipe predominated, but it along with the CDP heelmark (also at FDA-20 and Stadt Huys), the cross and orb, and several English pipes, many of which were heelless, falls with the 1680-1690 English tempora. There were no EB funnels or HG-marked pipes. The reason for this lack of EB funnels may or may not have to do with the wreck of an unknown inbound merchant vessel which sank at Monte Cristi in the Dominican Republic. Aboard the ship was a considerable number of clay tobacco pipes of both funnel and bulbous variety fabricated by Edward Bird, William Hendricks, and others (Hall, personal communication 1990). Therefore, based on the consistent attribute and comparative analysis of the clay pipe material with FDA-20, FDA14 and Brigg's Run, the date of 1667 for the beginning occupation at CNJ-3 may be permanently set but with the addition of the smaller EB bulbous bowl types whose styles were not found on the other three sites but approximate those of Caughnawaga, White Orchard (CNJ-3)is the old site referred to at the meeting of the Mayor, Aldermen and Justices of the Peace held at Albany, September 2, 1689, via:

> The Mohawks desire by Arnouts Letter that the Magistrates of Albany and Schenectady would be pleased to assist them with two or three pair of horses and five or six men to ride the heaviest stockadoes for their new Castle of Tionondage which they remove an English mile higher up and they will pay for it in due time [Grassman 1969:484].

That this was accomplished in September is evident not from the historical data which confirmed the assistance asked for, but from the pipe material which does not conform to 80% of that excavated at Caughnawaga (McCashion 1975:Plate 3). It is concluded that the 80% difference at Caughnawaga is attributable to the last "presents" to arrive there, June 6, 1692, before it was destroyed in 1693. The terminal date for CNJ-3 is September, 1689.

In his summary of his Middle Mohawk Period, Grassman quoted Father Pierron, who, in 1667, stated that "all six villages of the Mohawks assembled at Tionontoguen" (Grassman 1969:657). There are, however, two other sites worthy of mention: IF2, Turtle Pond, dated by Rumrill at 1666-1680 (Rumrill 1985:31) and the Jackson-Everson Mohawk site (NYSM 1213). The Turtle Pond Site, discovered by the late Les Wager, was originally known as "One House." Upon Wager's death some of the collection from IF2 was incorporated into that of John Jackowski along with the pipe material which while not in abundance was datable enough to terminate IF2 about 1675 and confirm that it existed in 1667. The clay tobacco pipe material from the Jackson-Everson Site also contains Edward Bird's EB pipes, one of which is duplicated at FDA-20, another

EB funnel elbow angled trade pipe. Kuhn stated, "The Binford date on the Jackson-Everson site was 1650" (Kuhn, et al. 1986:28). These early dates were consistent for Mohawk sites with Dutch trade pipes on them between 1645-1675. Trade pipes do not conform to Binford's or Friedrich's formulas. Their bore-stem diameters increased rather than decreased, and the trade pipes were larger than Friederich's domestic Dutch counterparts whose pipe bores decreased rather than increased but not at the same rate as the English.

The fact that the cross and orb was not recovered from Jackson-Everson, and that some of the specimens are identical to those of FDA-20 suggests that a terminal date of 1675 would not be unreasonable. If Father Pierron stated that all six Mohawk villages met at Tionotoguen, and Tionontoguen was considered one of the six, the addition of IF2 and Jackson-Everson to the four major Mohawk villages, FDA-20, FDA-14, Brigg's Run, and CNJ-3, seem consequent with his statement.

Can the cross and orb be relevant to dating Oneida sites? In the analysis of the clay tobacco pipes from the Upper Hogan Site (ONDS-4) (Oneida), the cross and orb (Figure 6) appears as the earliest pipe on the site which reinforces the beginning date of 1677 established by Pratt, et al., but the terminal date based on the appearance of the Bristol products of Joan Tippet, flourishing in 1696 (Bennett Collection K-87), and Robert Tippett (Hagerty Collection), and the occurrence of every mark considered to be part of the June 6, 1692 shipment which was recorded at Caughnawaga extends to at least 1696. Bloody Hill II Onondaga (1675-1685) materials also contain most of the marks recorded at Caughnawaga as well as the cross and orb, and the suggested terminal date for Bloody Hill II should be at least 1693. Unfortunately, the cross and orb mark has not yet been reported from Cayuga or Seneca sites.

Two cross and orb marks were reported from Nan Rothchild's excavations at the Stadt Huys in New York City associated with the subfloor of the Lovelace Tavern which also yielded a funnel elbow angled trade pipe marked on the lower stem side near the stem-bowl junction with a pelleted "man and woman" mark and a crowned HG atop the stem. The Binford date was 1687 (Dallal, personal communication 1990). Diana Wall's excavation at 7 Hanover Square in New York City yielded three cross and orb marks in association with a Mulberry decorated pipe probably similar to that from the Customs House (McCashion 1977:No. 6). A date of 1680 for that pipe would not be unreasonable (Dallal, personal communication 1990).

This, then, has been the account of the cross and orb and its impact on New York State archaeology.

Acknowledgments

Personal thanks are gratefully extended to Gordon and Graydon Ballard for permission to catalogue and publish the material from White Orchard; to my esteemed colleague, Diane Dallal, an expression of sentiment for supplying the information on the Stadt Huys and 7 Hanover Square; to Holland associate Pieter Tengnagel, particular thanks are in order for supplying valuable information and specimens from the Amsterdam excavations; to Jerome Lynn Hall for the most valuable information on the Monte Cristi Pipewreck; to Monte Bennett for years of friendship and the loan of the material from Upper Hogan; to my son, John C. McCashion for being there when the financing was needed; and last, but certainly not least, the gentleman and scholar whose company I had the pleasure of sharing and to whom this work is dedicated, the late Fellow of the New York State Archaeological Association, Gilbert W. Hagerty.

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Educational Archaeology: Historical Archaeological Investigations at Schoolhouse 12 in the Town of LeRay, Jefferson County

Elizabeth S. Pena, Hartgen Archeological Associates, Inc.

In June of 1990, Hartgen Archeological Associates, Inc. conducted excavations at Schoolhouse 12 in the Town of LeRay, Jefferson Count v, New York, prior to a construction project that entails moving the schoolhouse from its original location to a nearby site. While the historic structure of the nineteenth-century, vernacular schoolhouse will be saved, scheduled construction will disturb the potential archaeological site of the schoolhouse's original grounds. The archaeological investigations focused on identifying the structure's builder-'s trench and determining a construction date for the schoolhouse, which had been dated to the middle part of the century based on architectural details. Excavations also attemp ted to define features in the schoolyard in order to compare this small, vernacular schoolhouse with other nineteenth-century schoolhouses, including both mainstream Victorian examples such as the Letchworth Park School in Genesee Falls and other vernacular structures. In addition to archaeological field work, this project relied upon evidence derived fom libraries and other archives as well as oral history. Since Schoolhouse 12 was in operation during an important period of educational reform (c. 1855 to 1915), research focused on identifying traces of these .shifts in philosophy in the physical plant of the schoolhouse. The project results indicate that a rural, vernacular schoolhouse such as Schoolhouse 12 existed within a different context than slightly larger-, more sophisticated schools, and the Victorian norms and subsequent shifts in educational practices had little or no effect.

Introduction

The archaeological literature contains very little about schoolhouses, perhaps because they are considered to exhibit low archaeological visibility. An article concerning the Letch worth Park School in Genesee Falls, New York, however, was published in *The Bulletin* in 1987 (Bigelow and Nagel 1987). In that case, the researchers had a considerable amount of documentary information about the school, and excavation focused on locating and identifying the schoolhouse foundation and other features. Schoolhouse 12, in contrast, was extant at the time of the archaeological excavations, yet very little specific historical documentation about the school was available. While some school records have been destroyed or misplaced through the years, it would seem that the school was never well documented; it was one of many small local schools. Archaeological research aimed to uncover physical evidence that would shed light on the schoolhouse in several different aspects: as a locus of activity in itself; as a focal point of the community; and, in a broader sense, as an element of nineteenth-century cultural mores and beliefs on the American frontier, and the extent to which these practices diverged from the patterns established by the prevailing Victorian culture.

Schoolhouse 12 is located in Jefferson County, New York, on the north side of Route 11 in the Town of LeRay, midway between the Village of Evans Mills and the Town of Philadelphia (Figure 1). The New York State Office of Parks, Recreation and Historic Preservation reports that Schoolhouse 12 is "historically and architecturally significant as a highly intact, surviving example of a mid-19th century vernacular one-room rural schoolhouse," and as such is eligible for the State and National Registers of Historic Places (NYSOPRHP 1990). The schoolhouse site will be affected by the widening of Route 11, which will occur in conjunction with the construction of a new waste management facility by Champion International Corporation. When Route 11 is enlarged, Schoolhouse 12 will be moved across the roadway. In this way, the historic structure, which will be donated by Champion to the Indian River School District for use as a museum, will be saved.

Before moving the schoolhouse, archaeological excavations were conducted to recover any associated remains. From June 18 to 22, 1990, Hartgen Archeological Associates, Inc. conducted archaeological excavations at the schoolhouse site. The archaeological investigations consisted of three 3 ft x 3 ft excavation units, four backhoe trenches, and five shovel-test pits. In addition to the excavations, documentary research was conducted at the Flower Memorial Library and the Jefferson County Historical Society in Watertown. Local town offices were contacted, as were a number of long-time community residents. This research aimed to provide a better picture of life around a rural schoolhouse during the last half of the nineteenth century and the early years of the present century.

Documentary Research

Town of LeRay

The Town of LeRay was founded by James LeRay de Chaumont in 1806. LeRay offered settlers land at the price of one to three dollars per acre, with seven years to pay. He

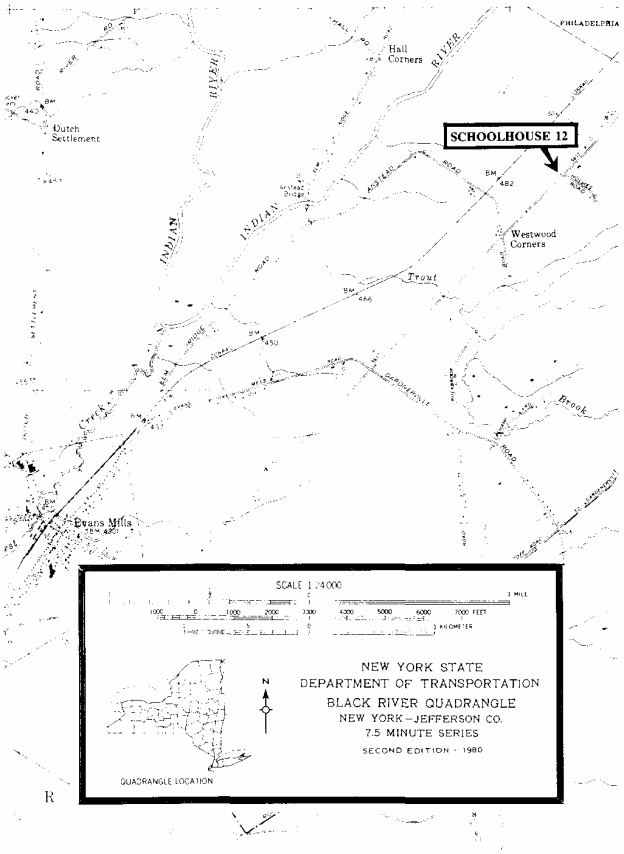

Figure 1. Location of Schoolhouse 12 on USGS topographic quadrangle.

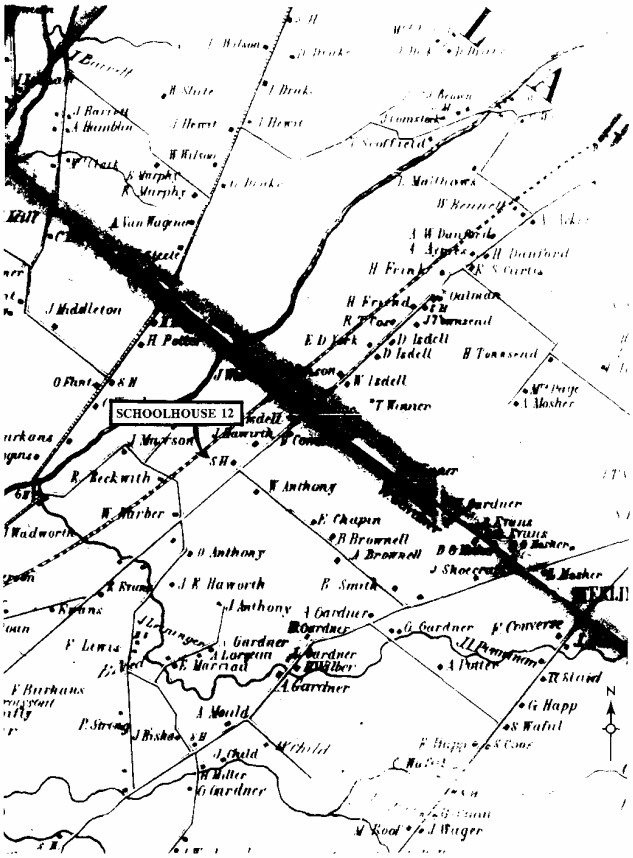

Figure 2. Location of Schoolhouse 12 on map of Jefferson County by Morris Levey, 1855.

stipulated that settlers must dear four out of every 100 acres annually, and construct a log building of a specified size within a certain time of their arrival (Durant and Peirce 1878:420). The Town of LeRay's first act associated with education occurred in 1813, when a special town meeting established a school committee and a school inspector (Child 1890:520). According to Spafford's *Gazetteer* of 1813, there were two schoolhouses in LeRay at this time (Spafford 1813 in Child 1890:521). Durant and Peirce, however, reported that no account of schools exists for LeRay prior to 1815, when the town school was housed in a small, hip-roofed frame building in the Evans Mills area of LeRay (Durant and Peirce 1878:431). In 1835, the Jefferson County Education Society was formed for the promotion of improvements in common schools (Hough 1854:397). The "free school" act was adopted in 1849, and money borrowed from the state for common schools (Hough 1854:398). At this time, the student population of LeRay was at its height of 1186 (Emerson 1898:686). By 1877, the number of students had been further reduced to 476 (Child 1890:521), although it rebounded to 571 one decade later (Emerson 1898:686). Schoolhouse 12 may have been built to meet the needs of the community in the mid-nineteenth century, when the "free school" act had been passed and the student population was at its peak.

Schoolhouse 12

A study of the condition and relocation of Schoolhouse 12 conducted by Bernier, Carr and Associates, P.C., suggests that the existing schoolhouse, which dates to the mid-nineteenth century based on construction techniques and architectural details may be a replacement of an earlier structure. This suggestion was based on a title search that located an 1822 reference to the property being transferred to the District 12 School Board, "as long as the said school district shall occupy said lot for the school house" (Liber 1-3, p. 525 in Bernier, Carr and Associates 1990). The school was certainly standing by 1855, as it appears on Levey's Map of Jefferson County from that year (Figure 2), and it continued in use until the 1940s. This timespan was one of considerable importance in the history of education in the United States. In the mid- to late nineteenth century, boys and girls were commonly separated at school.

Not only were there separate entrances to the classroom for boys and girls, but sometimes even the playgrounds were physically separated, with separate privies for boys and girls at the back of each yard (Figure 3):

> When the boys leave the school-house, they enter at once upon their play-ground in the rear, away from the road, while the girls enter at once upon their play-ground, and can use the conveniences connected therewith in that Seclusion which the natural delicacy of the sex requires, and should not only be observed, but encouraged [Barnard 1876 in Bigelow and Nagel 1987:23].

By the early twentieth century, many of these practices of segregation had been discontinued, and some of these alterations were reflected in the physical plant of the school. Play ground fences were removed, and separate cloak rooms were combined. In many schools, although not in Schoolhouse 12, the introduction of electricity and plumbing caused significant physical changes.

In the Victorian era, schoolhouse architecture often followed designs established by pattern books such as Samuel F. Eveleth's 1870 publication, *Victorian School-house Architecture.* In these books, building plans and details of ornamentation were compiled in order, from simple to elaborate. Schoolhouse 12, however, was not designed by an architect, but rather was a vernacular structure. According to Bernier, Carr and Associates, P.C., it is a single-story, wood-frame structure with a gable roof, measuring 22 ft 6 in by 28 ft 8 in and standing about 22 ft high. The front of the schoolhouse is the southeast facade, which is a gable end with three bays. The six-paneled wooden door with arched surround is situated at the center bay, and a lunette decorates the gable peak. The bays on either side of the door have 6/6 double-hung windows, also with arched surrounds. Each side of the building has two windows, while the rear of the structure (its northwest facade) is windowless (Figures 4 and 5).

The schoolhouse has a rectangular floor plan with an entrance vestibule across the front, with one door at each end leading into the classroom. Henry Barnard, in his 1876 *American Journal of Education,* noted that the advantage of placing the entrance doors at the front of the classroom is "that the pupils face the school upon entering it, thus causing less interruption than where the entrance is at the back of the pupils already seated who cannot be constrained from at each opening of the door from turning to look at the incomer" (Bigelow and Nagel 1987:23). Schoolhouse 12's windowless rear wall, however, would not have met with Barnard's approval, as windows behind the student provided the "benefit of light over his shoulder" (Bigelow and Nagel 1987:23).

The vestibule's two entrances may have been intended as separate entrances for boys and girls. Similarly, the two small closets in the front corners adjacent to the vestibule may have been designed as separate cloak rooms for boys and girls.

A portion of the blackboard remains attached to the front wall; part of a stove pipe protrudes from above the blackboard,

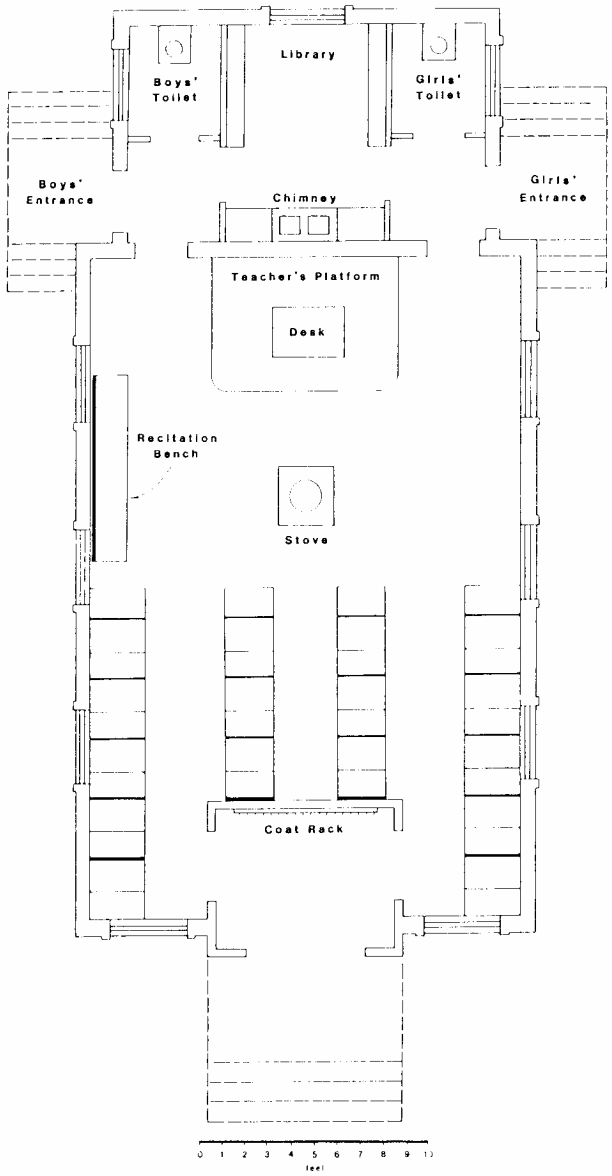

Figure 3. Letchworth Park School, Genesee Falls (Bigelow and Nagel 1987:14).

indicating that the schoolhouse was heated in this manner. Traces of a built-in recitation bench are visible in the back wall. "Spoke pieces" were a standard part of nineteenth-century education, with samples chosen from texts such as the *Columbian Orator* (Durant and Peirce 1878:431).

` If Schoolhouse 12 followed standard schoolhouse design, the playground would have been located behind the building. The 1922 *Rural School Survey of New York State* mentioned one acre as the appropriate-sized parcel for the school building, walks, lawns, and play areas (Butterworth 1922:89). Privies were often located to the rear of the playground, although an early twentieth-century report recommended that privies be

Figure 4. Schoolhouse 12 facade. View northwest.

completely hidden from the playground if possible, or at least made less conspicuous by camouflaging them with vines and latticework (Dresslar 1911:61). According to this United States Bureau of Education report, which cited the "urgent necessity for immediate relief from the vile outhouses so often found in connection with country schools, not to mention country homes" (Dresslar 1911:62), each privy was to contain a bin with dust or ashes to scatter over the privy pit to reduce odors.

No former students or teachers of Schoolhouse 12 were located in the Watertown area. Several people, however, had relatives who had connections with the school. Mrs. Gwen Acheson (personal communication 1990), historian for the Town of Philadelphia, reported that her mother-in-law, whose last name was Fraley, attended the school through the eighth grade. She lived on a nearby farm, which appears on an 1887 atlas (Robinson 1887). Her two sisters and her brother also attended Schoolhouse 12. Fraley died in 1966 when she was in her 80s: therefore, we conclude she probably was a student at the school in the 1890s (G. Acheson, personal communication 1990).

Bertha M. Lawton (Adderly) was the last teacher at Schoolhouse 12. A souvenir booklet from 1915 picturing Miss Lawton was printed by Schoolhouse 10, which was located in Evans Mills. Since Lawton moved to Schoolhouse 10 after teaching at Schoolhouse 12 (M. Wilson, personal communication 1990), it appears that Schoolhouse was closed by 1915. Shortly thereafter, Lawton was married and gave up teaching (F. Adderly, personal communication 1990).

The schoolhouse continued to be used sporadically after it was closed. According to Mr. Lorne Hudson (personal communication 1990), who owns the neighboring farm, the school house served as a community meeting place until it was decided that it was too dark and cold (it remained without

Figure 5. Schoolhouse 12, east side. View southwest.

electricity) to be convenient. Exactly when the community stopped using the schoolhouse remains unclear, but it seems likely to have been sometime in the 1930s or 1940s.

Archaeological Excavations at Schoolhouse 12

Prior to excavation, an archaeological research design was formulated which would examine the function of the schoolhouse and its role in the community. For example, documentary research shows that the schoolhouse parcel was given over to the schoolboard as early as 1822; however, the first known map depicting the structure dates to 1855, and the extant structure itself has mid-nineteenth-century characteristics. Although parts of the foundation have been disturbed (Bernier, Carr and Associates 1990), it was hoped that excavation next to the schoolhouse foundation would reveal the original building foundation trench. Datable artifacts recovered from the foundation trench could be used to test the theory that a schoolhouse existed on this site as early as 1822.

Excavations behind the schoolhouse were planned with the goal of revealing information about the changing use of space and activity areas during the last half of the nineteenth century, a period of significant educational reform. While fence lines, which could yield information about the division of the playground, often prove archaeologically elusive, it was hoped that more substantial features, such as the school's privy, would be found. Privies were often filled in with debris after they had gone out of use; such artifacts may have been of interest to the Indian River School District for display in their museum.

Research questions focused upon the extent to which a vernacular structure such as Schoolhouse 12 followed typical nineteenth-century schoolhouse design. For example, according to the pattern books, privies should be located to the rear of the playground. Defining the playground limits and locating the privy (or privies) at Schoolhouse 12 might yield informa

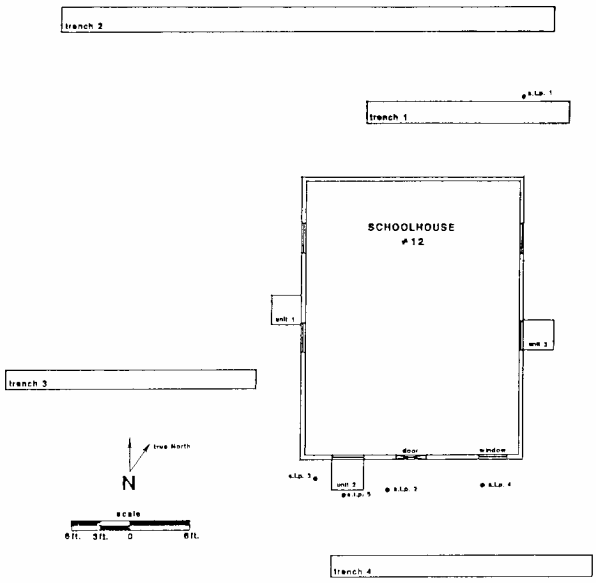

Figure 6. Site plan.

tion on the extent to which a small, rural schoolhouse and the community it served participated in the expanded context of the established Victorian order. In general, rural schoolhouse structures were far simpler than the designs illustrated in the pattern books, often consisting of simple, rectangular stone or wooden buildings, some with attached woodsheds and privies. There was often no playground as such; rather, children played tag-like games, such as "palm-palm fool away" in nearby fields and pastures (Wilson, personal communication 1990). Some schools were used as churches on Sundays (Lawton 1966), and some retained a public function as community meeting houses when they were no longer used as schools (Hudson, personal communication 1990).

The archaeological investigations at Schoolhouse 12 consisted of three 3 ft x 3 ft units, four backhoe trenches, and five shovel-test pits (Figure 6). Each is discussed below.

Test Unit 1

This 3 ft x 3 ft unit was situated on the west wall of the schoolhouse where the limestone foundation remained intact. Three strata were identified (Figure 7). The uppermost was a very dark grayish brown (10YR3/2) silt topsoil. Stratum II consisted of mottled dark yellow brown (10YR3/4) very dark grayish brown (10YR3/2) silt. The lowest layer encountered, Stratum III, was a dark yellow brown (10YR4/6) sandy silt. The lower two strata were cut by the schoolhouse foundation trench, which appeared rather steep and narrow. The top of the trench appeared as a line of rocks, which were referred to as Feature 1, while the foundation trench itself was called Feature 2. Feature 2 contained little datable material with an assemblage consisting primarily of window glass.

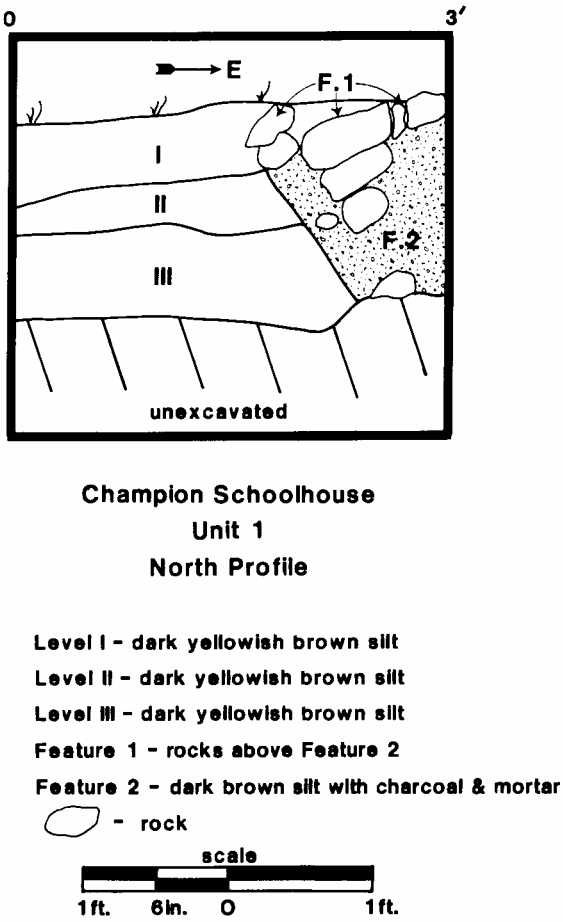

Figure 7. Unit 1, north profile.

Excavation continued to a depth of 16.5 in to 22 in below the modem surface, where the foundation trench bottomed out on subsoil, Stratum III. The balk separating the excavation unit from the foundation was then removed in order to examine the limestone foundation.

Test Unit 2

Test Unit 2 was located along the south facade (the front) of the schoolhouse beneath the west window. This excavation exhibited a more complicated stratigraphy than the other units and thicker soil deposition, perhaps because greater activity occurred in front of the building than at the sides (Figure 8). Stratum I consisted of very dark brown (10YR2/2) silt covering a scatter of window glass and machine-cut nails. Stratum II, a dark brown (10YR3/3) fine sandy silt, contained buttons, slate fragments, six slate pencils, a bone inlay for a handle, and a pearlware cup fragment, in addition to window glass and

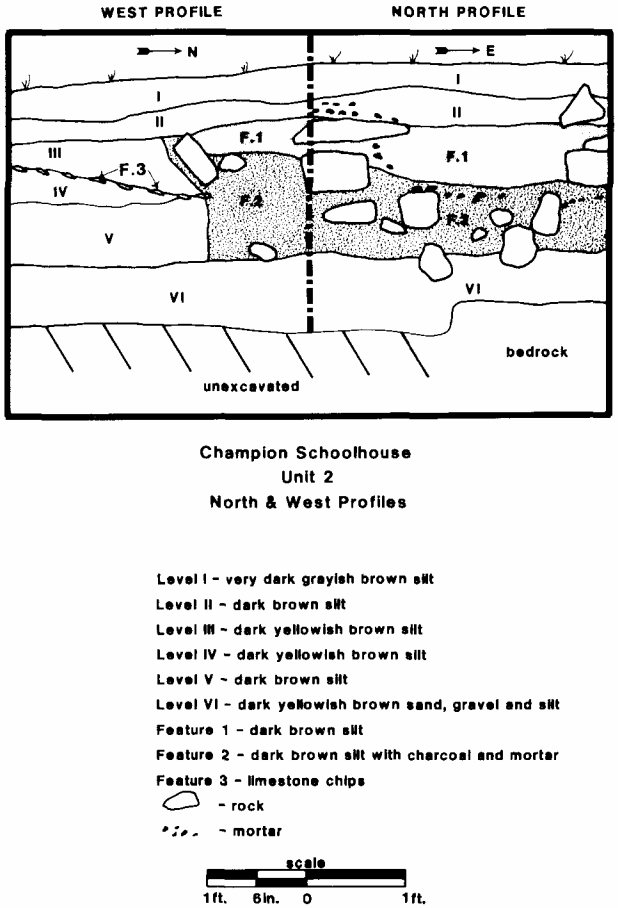

Figure 8. Unit 2, north and west profiles.

machine-cut nails. This soil level covers the top of the builder's trench, which was referred to in this unit as Features 1 and 2. Feature 1 was dark brown (10YR3/3) clayey silt with a concentration of rocks. While the positioning of these rocks suggested the possibility that they represented an earlier foundation, further excavation indicated that, as in Unit 1, the rocks simply outlined the schoolhouse foundation trench, which was called Feature 2 and was also characterized by dark brown (10YR3/3) clayey silt. The foundation trench in this unit was much wider and less well defined than it appeared in Unit 1. The datable artifacts in Feature 2 included several items with unexpectedly early dates such as a fragment of Jackfield-type redware with black glaze and a pipestem with a wide bore (6/ 64 in) dating to the mid-eighteenth century. There was also one cut nail, which pushes the date up to at least the 1830s. At the base of the trench was a concentration of limestone chips. This foundation trench cut through Stratum Ill, Feature 3, and Strata IV through VI. Stratum III consisted of a mottled dark brown (10YR3/3) silt and dark yellow brown (10YR4/4) sandy silt, and the artifact assemblage from this stratum included brick, plaster, and charcoal fragments as well as window glass, nails, a piece of Jackfield-type black glazed redware, and handblown green glass ink well fragments (Figure 9). Stratum III came down upon a surface of limestone chips, 1 in to 2 in in thickness, referred to as Feature 3. Several nails were also compacted into this surface, which seems to have been associated with the schoolhouse construction. The excavation of Feature 3 revealed Stratum IV, which is a redeposited subsoil of mottled dark yellow brown (10YR3/6 and 4/6) sandy silt. Stratum IV may have been deposited in order to level Stratum V, which appears to have been an original topsoil of very dark brown (10YR2/2) silt. Excavation of Stratum V revealed subsoil (Stratum VI), a mottled dark yellow brown (10YR3/4-3/6) gravelly sandy silt and bedrock. Removal of the soil balk against the wall exposed the limestone foundation.

Test Unit 3

Unit 3 was a 3 ft x 3 ft excavation located on the east wall of the schoolhouse under the southern window. This unit was sheltered from the wind and remained very wet throughout the week of field work. Stratum I, the topsoil, was very dark brown (10YR2/2) silt. This stratum contained window glass, nails, and a slate pencil (Figure 10). Excavation of Stratum I revealed a large flat rock and several pieces of brick lying adjacent to the west balk (near the schoolhouse). This rock and associated brick fragments were referred to as Feature 1. Immediately beneath Feature 1 was a collection of iron hardware including nails, a bolt, and a ring, as well as window glass, and a shaving from a string-wound pencil. The foundation trench, Feature 2, was cut into Stratum II, a level of very dark grayish brown clayey silt. The artifact assemblage from Stratum II included window glass, brick fragments, and kaolin tobacco pipe fragments, including a molded pipe bowl (Figure 11). This bowl displays a basketweave decoration which appears to date to the 1890s or early 1900s (Duco 1986:95; Zorn c. 1892/1989). Feature 2 itself consisted of dark brown (10YR3/3) silt.

Backhoe Trench 1

Backhoe Trench 1 was a trench of 20 ft x 2 ft located immediately to the north of and behind the schoolhouse. The stratigraphy of the trench consisted of three strata. Stratum I was a dark brown (10YR3/3) silty topsoil, Stratum II was a dark yellow brown (10YR3/4) silt, and Stratum III was a subsoil of dark yellow brown to brown (10YR3/4-5/3) silt stained with a strong brown color (10YR4/6) at the base of excavation, which encountered bedrock at the east end of the trench. Two features were identified in Trench 1. Feature 1 was a stain of reddish brown (10YR4/4) silt; its excavation recovered no cultural material. While its ephemeral nature makes it difficult to ascertain its function, Feature 1 seems to have been produced by burning. The fact that the feature was not deeply buried suggests that it may have been formed during the time

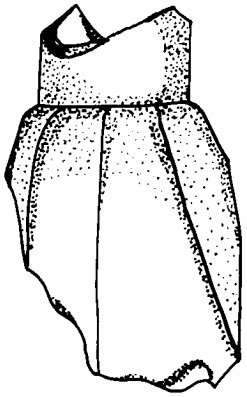

Figure 9. Green glass bottle (619.82) from Unit 2, Level 3.

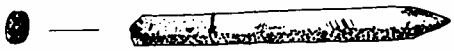

Figure 10. Slate pencil (619.89) from Unit 3, Level l.

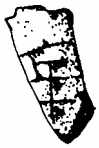

Figure 11. Kaolin pipe bowl with basket pattern decoration (619.89) from Unit 3, Level 2.

the schoolhouse was in operation; perhaps a small fire occurred in the schoolyard at some point. Feature 2 was a pit feature with dark yellow brown (10YR4/4) silty soil containing no artifacts. Again, its use is difficult to pinpoint, and it may simply represent a hole dug for a tree or another planting.

Backhoe Trench 2

Like Trench 1, Trench 2, placed approximately 7 ft north of Trench I, included three strata. None contained cultural material.

Backhoe Trench 3

Trench 3 was located to the west of the schoolhouse. Its stratigraphy consisted of two soil strata overlying bedrock. Stratum I, dark brown (10YR3/3) silt, was very thick compared with other sections of the project area. Stratum II was a mottled grayish brown (10YR5/2) dark yellow brown (10YR4/4) silty clay subsoil. Bedrock was encountered at approximately 2.5 ft below the ground surface. One feature (Feature 1) was identified in Trench 3 as a mottled dark brown (10YR3/3) dark yellow brown (l0YR4/4) silt. Feature 1 cut through both Strata I and II, and contained modern materials including a cigarette filter. It probably represents a recent fence post marking a property boundary around the school. This fence post was located approximately six feet west of the schoolhouse foundation. The slope of Trench 3 from west, near the building, to east, indicates that the schoolhouse was built on a slightly elevated area. Several red bricks were found in Trench 3, probably from the schoolhouse's dilapidated brick chimney.

Backhoe Trench 4

The stratigraphy in Trench 4 is somewhat more complicated than that of the other trenches, reflecting the more complex nature of soil deposition to the south (front) of the schoolhouse, as seen in Unit 2. No remnants of walkways or pathways leading to the front door of the schoolhouse were visible in the trench profile. Stratum I was a very dark grayish brown (l0YR3/2) silt topsoil. This stratum covered Stratum II, a dark brown (10YR3/3) silt and Stratum III, a redeposited subsoil of dark yellow brown (10YR4/4) silty sand. Strata II and III were in the western area of the trench only. Strata IV and V extended across the entire length of Trench 4. Stratum IV was a very dark gray to black (10YR3/1-2/l) silt, while Stratum V was subsoil, a dark yellow brown (10YR3/4-4/6) silty clay. On the east side of the trench, a lens of black (10YR2/1) silt with charcoal was identified and referred to as Stratum VI. While the meaning of this charcoal remains unclear, it is possible that it represents dumping from the schoolhouse wood stove or simply another fill layer, transported from an area rich with organic remains.

Shovel-Test Pits

Four shovel-test pits (STPs) of 1 ft x 1 ft were excavated to the south (front) of the schoolhouse in order to test for the compacted limestone surface defined as Feature 3 in Unit 2. STPs 2 and 3 consisted of the same three strata found elsewhere on the site. STP 4, located to the west of Unit 2, did contain the Feature 3 surface at a depth of 13 in below the ground surface. Its presence here and its absence in the other test units indicate that the feature continued beyond the walls of Test Unit 2 to the west, but not to the east or the south. This area was also augured to check for the presence of the Feature 3 surface.

A single shovel test pit (STP I) was placed north of the schoolhouse to test for buried deposits. Artifacts such as glass and nails were encountered in Stratum II. This area was later investigated by Trench 1.

Figure 12. Watertown Central School 6 (not in its original location). Photograph by Mrs. Margaret Wilson.

Figure 13. Schoolhouse 17 facade. Photograph by Mrs. Margaret Wilson.

Summary

The results of the archaeological excavations indicate that the activities carried on in the vicinity of Schoolhouse 12 lacked archaeological visibility. Unlike the schoolhouses of more advanced design as described in the pattern books (e.g., Eveleth 1870/1978) or as seen in the Letchworth Park Schoolhouse (Bigelow and Nagel 1987), Schoolhouse 12 belongs to a category of small rural schoolhouses with few amenities. No playground features, walkways, fences, or privies were found.

While the archaeological investigations revealed no schoolyard features, artifacts pertaining to the schoolhouse were recovered, including several pencils, both slate and lead, chalkboard fragments, and a glass ink well fragment. No marbles, dolls, or other toys were found, but fragments of a single clay tobacco pipe were uncovered.

The only features recovered related to the construction of the structure itself. The profile of Trench 3 suggests that the school was built on a slightly elevated terrain, possibly topsoil fill brought to the site for that purpose. The foundation trenches excavated in Units 1-3 indicate that narrow trenches existed on the sides of the building (east and west), while a deeper and wider trench was found at the front (south) of the schoolhouse. Below grade, the limestone foundation was dry laid and extends to a depth of 1.5 ft below the present ground surface. The compacted limestone chip surface referred to as Feature 3 in Unit 2 probably represents the ground surface at the time of schoolhouse construction.

Too few diagnostic artifacts were recovered from the foundation trench to yield a firm date for the schoolhouse's construction. The foundation trench in Unit 2 (Feature 2) is dated to the 1830s or later based on the presence of a "modern" machine-cut nail, but a wire nail in the foundation trench of Unit 1 (Feature 2) dates to at least the 1850s. This information fits with the mid-nineteenth-century construction date mentioned by Bernier, Carr and Associates (1990). There is no archaeological evidence that a previous structure existed on this foundation or in the immediate area, as was considered because of the school district's 1822 deed to the property.

Comparanda: Nineteenth-Century Vernacular Schoolhouses in Watertown

Several other one-room schoolhouses from the mid- to late nineteenth century remain extant in the Watertown vicinity (M. Wilson, personal communication 1990). School 6, also known as the Watertown Central School, was built c. 1805-1810 (Figure 12). This structure was moved twice before being relocated to its present location. Its original location is indicated on Beers' 1864 atlas of Watertown (Figure 14). Its board-and-batten siding was originally bright green but is now painted red. The interior has been substantially remodeled but retains horsehair plaster and lath construction details. A front entryway and rear offices have been added to the original building. The original structure had a woodshed attached to the rear with access to privies through the woodshed. Boys' and girls' privies were separated by a partition. Schoolhouse 6 remained in use through the 1940s before consolidation of Town of Watertown schools made it obsolete.

Schoolhouse 17 is also depicted on Beers' 1864 atlas (Figure 14). Now painted red, the structure is a simple rectangular frame with clapboard siding (Figure 13). It has recently been used as a playhouse, and still contains an old ping-pong table and a pool table. Schoolhouse 17 is similar to Schoolhouse 12 in its simple, rectangular plan, but it does differ in a number of respects. In Schoolhouse 17, the blackboard is on the wall opposite the front door so students would have been facing the blackboard upon entering the building. In the center of the blackboard was a door leading to a narrow room running the width of the building. This room had a cobbled floor and a window in the back and one at the side, now both sealed by boards. Perhaps this area was set aside for the woodshed or privies.

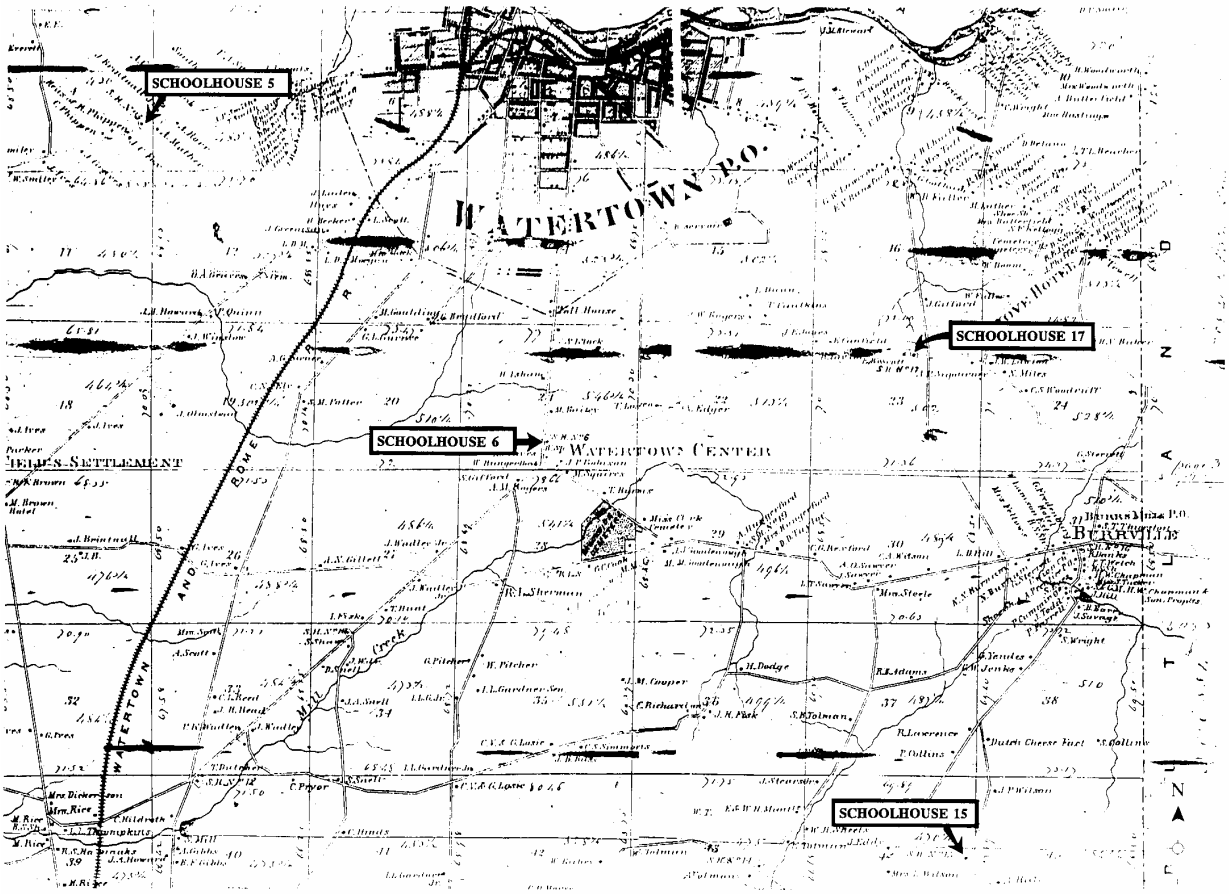

Figure 14. Location of schoolhouses on map of town of Watertown, Atlas of Jefferson County, S. N. and D. G. Beers 1864.

Bathrooms have been added to the front corners of the schoolroom near the entrance. Their framing overlaps the window frames, showing that the bathrooms were a later addition.

Today, the structure of Schoolhouse 5 is gone, but its foundations remain in a wooded area off Arsenal Street in Watertown, and it is marked on Beers' 1864 map (Figure 14). Beneath a more recent concrete foundation lie stones which may represent the original nineteenth-century foundation. The plan appears to be a simple rectangle comparable to that of Schoolhouse 17 or 12.

Summary

Schoolhouse 12, as well as the other vernacular schoolhouses described above, was a simple structure with little refinement. It was one of many similar schools in the area which served the needs of the rural community throughout the nineteenth and into the twentieth century. Though contemporary with the schoolhouse designs seen in Victorian-era pattern books, as exemplified by the Letchworth Park School in the Town of Genesee Falls (Bigelow and Nagel 1987:Figure 1), the schools described above stand apart. Rather than embodying the current Victorian notions of separation and structure, these schoolhouses were unelaborated vernacular buildings designed for teaching small numbers of students of many ages. Their open, rectangular plans allowed for flexibility, while the number of schoolhouses in the area ensured access to education for a large segment of the rural population. It would seem that, in matters of educational reform, the prevailing Victorian ethic failed to penetrate this part of the American rural frontier.

Acknowledgments

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took the time to share their knowledge with me. I am appreciative of the assistance provided by Mr. Keith Bowden of Champion International Corporation. Finally, I would like to thank Karen S. Hartgen for her helpful comments on this article.

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Personal Communications

Mrs. Gwen Acheson, Town of Philadelphia Historian, whose mother-in-law attended Schoolhouse 12.

Mr. Fred Adderly, whose mother, Bertha Lawton, was the last teacher at Schoolhouse 12.

Mr. Lorne Hudson, who owns the farm just east of the schoolhouse and who, until recently, owned the schoolhouse property.

Mrs. Margaret Wilson, former Town of Watertown Historian and former student and teacher in Watertown Central School 6.

Native American Archaeological Resources in Urban America: A View from New York City

Edward J. Lenik, Incorporated Orange County Chapter, NYSAA

Contemporary American urban archaeology seems to presume that Native American sites do not exist in urban areas because of extensive development and landscape alteration. As a result, data recovery excavations in cities have been focused almost entirely upon sites of the Historic Period. During the 1980s, a large number of archaeological mitigation projects were conducted in New York City. A review, of cultural resource survey reports covering the period fom 1980 to 1989 indicates that prehistoric resources were found at fifteen sites in New York City. The data presented indicate that prehistoric occupation in the region occurred fom Late Archaic times through the Contact-Historic Period on a broad range of geomorphic surfaces. The sites analyzed were small short-term procurement-processing sites.

The CRM reports clearly indicate that prehistoric sites within our cities do exist; their presence can he predicted. Analysis of the prehistoric data presented in the reports show's that they are uneven in quality and quantity. A call is made for a stronger- commitment to include prehistory in the development of research designs and for better documentation and analysis.

Introduction

Contemporary American urban archaeology seems to presume that our densely settled and highly technological society has destroyed all evidence of Native American cultures in urban centers. The emphasis in mitigation or data recovery excavations in cities has been almost entirely upon the Historic Period. This point is made abundantly clear when one examines the recent cultural resource study reports conducted within the City of New York.

During the 1980s, a large number of archaeological mitigation projects were conducted in New York City with 17 of these occurring in the Borough of Manhattan. The primary research topics of the 17 archaeological projects in Manhattan focused on subjects such as the nature of landfilling, seventeenth- and eighteenth-century Colonial Dutch and English settlement, land use patterning, and commercial and residential activities from the seventeenth through nineteenth centuries. Only one project, the Broad Financial Center, specifically included a research question relating to Native American lifeways, namely "the identification and evaluation of potential contact period indigenous artifacts" (Grossman et al. 1985:IC-1). Another project, the 60 Wall Street Site, considered the recovery of Indian material a possibility, but a Native American component was not a research issue or question (Bianchi and Rutsch 1987:15). A third notable example was the Block 2172, Lots 68 and 78 project in the Inwood section of upper Manhattan, the primary research goal of which was to locate Native American and Revolutionary War period sites; regrettably none were found.

The search for prehistoric sites within our cities deserves more attention. They do exist, and their presence can be predicted. Urban research strategies should include a search for Native American sites based on a program of environmental analysis and reconstruction as well as documentary research. It is extremely important to try to determine the predevelopment configuration of the landscape in order to assess the likelihood of prehistoric occupation. In addition, an attempt should be made to reconstruct the physical changes that have taken placed in the study area as urbanization proceeded. For example, analysis of the number, type, and size of buildings, depths of cellars, and the filling or enclosing of former streams or wetlands can reveal areas which may retain archaeological deposits in spite of later development. In sum, the reconstruction of the physical landscape over time combined with a study of the historical development of the site will result in the generation of a model which can predict the likely presence and types of prehistoric archaeological deposits.

An important adjunct in the search for Native American sites in our cities is the need for more paleoenvironmental research on a local level. We need to develop new information on changes in coastal landform and environments prior to A.D. 1600. One recent and notable example of such an effort was the study of sea level over the past 12,000 years along the Hudson River in lower Manhattan and an examination of the paleoenvironment as reflected in the chemistry of core samples. This study was undertaken as part of the Westway cultural resource survey and resulted in the reconstruction of the prehistoric shorelines in the area including adjacent topographic features and the delineation of potential zones of prehistoric occupation (H.C.I., Inc., 1983:13-70, 392-408).

At a conference on the Prehistory of the Lower Hudson Valley held in 1988, Salwen (1988) observed that since 1950, most archaeological research in the region "has served primarily to corroborate or illustrate" Carlyle Smith's prehistoric cultural-historical sequence (Smith 1950). Salwen described

the research situation as "static" and called for the identification of new and meaningful research questions. The cultural resource survey and data recovery work in New York City can and should be an important vehicle in such an effort.

In the following discussion I will present a synthesis of the prehistoric cultural resources found at 15 sites in New York City as documented in CRM reports covering the period from 1980 to 1989. My review of these data revealed another significant shortcoming in the reports, namely that the analysis of the prehistoric material was in most cases perfunctory and superficial. While historic material was extensively detailed and analyzed in the reports, prehistoric artifacts barely received mention. Again, a call is made for a stronger commitment to better documentation and analysis.

The 1980s were the highest point of cultural resource management studies in New York City. These surveys facilitated identification of new prehistoric sites and form the basis for the regional interpretation of prehistory which follows. The archaeological efforts in the past decade have included small site surveys and major data recovery excavations. The available data are uneven in quality and quantitatively biased toward the larger sites. However, despite the obvious shortcomings and caveats, what follows is an attempt to synthesize the data and present a regional interpretation of prehistory.

The Sites and Their Settings

Most archaeologists know or recognize, often intuitively, what they believe are good locations for containing evidence of possible prehistoric occupation. However, all too often the characteristics of the environmental setting of prehistoric sites have not been documented and quantified. As a result, the patterned relationship of humans to their environment has gone unrecognized. The study of landforms on which archaeological sites are known to exist can reveal settlement patterns which may indicate the site selection decisions made by prehistoric peoples. By recognizing landscape variables that may have been attractive for human habitation, archaeologists may predict the presence of a prehistoric site in a place where no sites have been recorded. This is particularly important in urban New York where the almost total development of the landscape has obliterated the surface indicators of prehistoric sites.

During the 1980s, 15 prehistoric sites were located and documented in New York City, four in lower Manhattan, two in the Bronx, two in upper New York harbor, and seven in Staten Island (Figure l). Regrettably, no new prehistoric sites were discovered in the boroughs of Brooklyn and Queens. The distribution of these sites indicates that certain environmental settings were preferred for occupation by Native American groups in the region. Most sites were located on or very close to the East River or Hudson River-New York harbor shorelines (Table 1). One interior site, a petroglyph, was found on an ele-

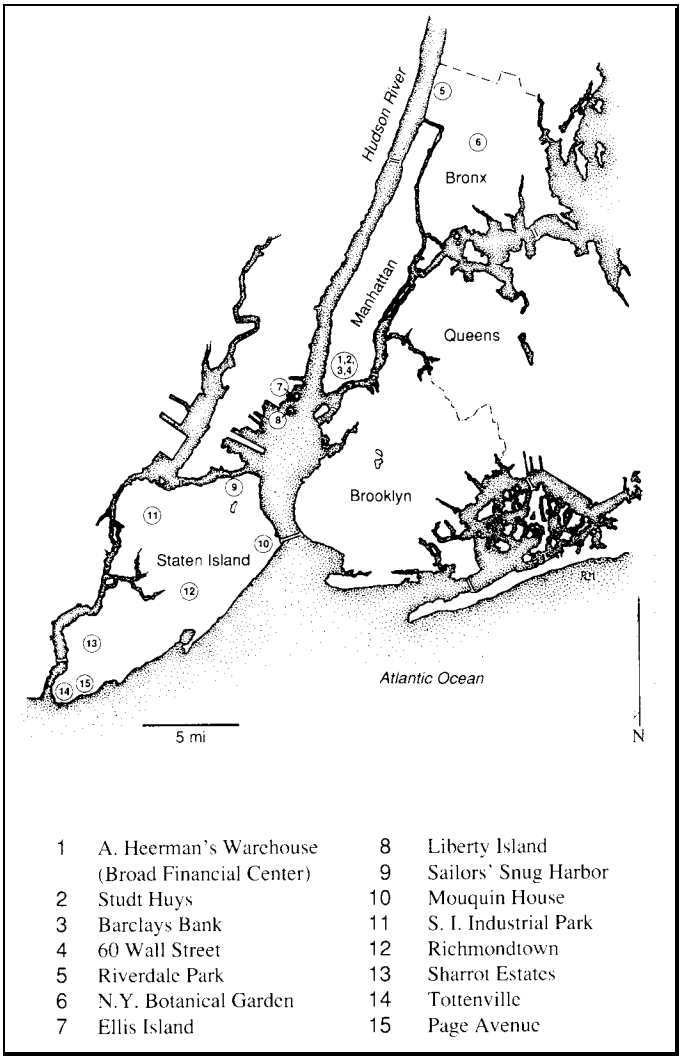

Figure l. Location of archaeological sites within New York City.

vated terrace along the Bronx River within the Bronx Botanical Garden (Lenik 1988:17-20). This suggests that proximity to the rivers and harbor was an important site selection criterion.

The data indicate that other natural features were also important for site selection. The prehistoric Sharrott Estates Site on Staten Island was located on a flat well-drained upland near a small glacial pond. The sites at Sailors' Snug Harbor and Richmondtown Restoration on Staten Island are located near fresh water creeks and springs. The other Staten Island sites (i.e., Tottenville, Industrial Park, and Page Avenue) were attractive for habitation due to their flat topography, and well-drained soils. Their locations near wetlands suggest that abundant food resources made these areas attractive. The lower Manhattan sites were located near a former fresh water source known as Collect Pond as well as the nearby river.

Table 1. Summary of Native American Resources Found in New York City, 1980-1989.

Site/Reference	Geomorphological Setting	Artifacts	Quantity	Cultural Chronology
Barclays Bank, Manhattan (L.B.A. 1987)	East River shoreline Landfill	Triangular projectile points	2	Late Woodland
		Projectile point fragment	1	
		Plummet	1	Late Archaic
		Biface fragments	2	
		Scraper	1	
		Core fragments	3	
		Flakes	59	
		Potsherds (diagnostic)	5	Late Late Woodland
		Potsherds (unidentified)	40	Woodland Period
A. Heerman's Warehouse, Manhattan (Grossman et al. 1985)	East River shoreline	Basket/cask	1	Contact Period, post 1675
		Fish bones	36	Contact Period, post 1675
		Nails	20	Contact Period, Post 1675
		Marbles	16	Contact Period, post 1675
		Wampum beads	4	Contact Period, post 1675
		Glass beads	3	Contact Period, post 1675
		Iron key	1	Contact Period, post 1675
		Lead shot	1	Contact Period, post 1675
		Thimble	1	Contact Period, post 1675
		Hook	1	Contact Period, post 1675
		Board (wood)	1	Contact Period, post 1675
		Delftware fragment	1	Contact Period, post 1675
		Pipestem	1	Late Woodland
		Potsherds (diagnostic)	2	Late Late Woodland
			1	Late Middle Woodland
		Potsherds (unidentified)	7	Woodland Period
		Awl or graver	1	
		Scraper (thumb)	1	
		Cores	5	
		Flakes	14	Contact Period, post 1675
		Flakes	10	
60 Wall Street, Manhattan (Bianchi and Rutsch 1987)	Near original East River shoreline	Biface	1	
		Flakes	4	
Stadt-Huys, Manhattan (Rothschild et al. 1987)	East River shoreline	Potsherd	1	Woodland Period
		Utilized flakes	2	
		Flakes	12	
Bronx Botanical Garden (Lenik 1988:17-20)	Terrace, Bronx River	Turtle petroglyph	1	Prob. Late Woodland
Riverdale Park, Bronx (De Carlo, n.d.; 1987; 1989)	Hudson River shoreline	Projectile points (e.g. Lamoka, Levanna)	10	Late Archaic and Late Woodland
		Potsherds	98	Early and Late Woodland
		Scrapers	13	
		Bifaces	28	
		Tools	20	
		Utilized flakes	6	
		Cores	2	
		Flakes	1001	
		Block/shatter	6	
		Fire-cracked rock	383	
		Oyster shells	numerous	
		Unidentified	74	
Ellis Island (Pousson 1986; 1990)	Hudson River estuary	Brewerton Projectile Point	1	Late Archaic
		Orient Fishtail Projectile Points	2	Terminal Archaic
		Snook Kill Projectile Point	1	Terminal Archaic - Early Woodland
		Rossville Projectile Points	2	Terminal Archaic - Early Woodland

Site/Reference	Geomorphological Setting	Artifacts	Quantity	Cultural Chronology
Ellis Island *(continued)* (Pousson 1986; 1990)	Hudson River estuary	Projectile Points, untyped	6	
		Bone projectile points	2	
		Projectile point fragments	3	
		Potsherds, Vinette I	7	Early Woodland
		Potsherds (diagnostic)	5	Late Woodland
		Potsherds (unidentified)	1419	Woodland
		Knives	11	
		Scrapers	32	
		Gravers	2	
		Burin	1	
		Drills/frags.	5	
		Bone awls	3	
		Bone combination tool	1	
		Stone combination tools	3	
		Choppers	3	
		Bifaces/fragments	4	
		Cores	21	
		Abrader, grindstone	2	
		Flakes	822	
		Debitage	2675	
		Fire-cracked rock	numerous	
		Shell	numerous	
Liberty Island (Moore 1986:664; Boesch 1990)	Hudson River estuary	Levanna Projectile Point	unreported	Middle - Late Woodland
		Potsherds	unreported	Woodland
		Flakes	unreported	
Sailors' Snug Harbor, S.I. (Cotz 1984; Baugher et al. 1985; Baugher and Baragli 1987; Baugher and Lenik 1987)	Upland near shoreline and shoreline; freshwater stream nearby	Triangular projectile point	1	Late Woodland
		Utilized flake	1	
		Biface	1	
		Flakes	12	
Richmondtown Restoration, S.I. (Baugher et al. 1989)	Upland and shoreline of tidal and freshwater creek, nearby springs marshes	Cores	3	
		Flakes	2	
Staten Island Industrial Park (Lenik 1983)	Upland; adjacent to marsh	Knife	1	
		Core	1	
		Flakes	2	
Tottenville, S.I. (Winter 1985)	Remnant bog/swamp	Flakes	3	
Mouquin House, Ft. Wadsworth, S.I. (LBA 1985)	Terrace/shoreline	Bifaces	3	
		Utilized flakes	2	
		Flakes	16	
		Core	1	
		Potsherds	3	Middle - Late Woodland
		Bead (untyped)	1	
Page Avenue Development, S. I. (Roberts and Stehling 1987)	Upland	Potsherd (untyped)	1	Woodland
		Mano (grinding stone)	1	
		Hammerstones	2	
		Utilized flakes	2	
		Flakes	68	
		Fragments (debitage)	7	
Sharrott Estates, Sandy Ground, S.I. (Lenik 1987:26-33; Cotz et al. 1985)	Upland, near pond	Triangular projectile points	3	Late Woodland
		Utilized flake	1	
		Flakes	771	

Cultural Chronology

The prehistoric sites found in New York City during the 1980s are datable from the Late Archaic Period through the Contact/Historic Periods (i.e., from c. 4000 B.C. to A.D. 1700). This long cultural chronology has been determined primarily through cross-dating of artifacts on the basis of morphology and style. Several of the sites in this study are dated on the basis of single diagnostic artifact finds such as projectile points or pottery rather than entire artifact assemblages or absolute dates obtained from radio carbon samples. It must also be noted that several sites (e.g., Barclays Bank, Augustine Heerman's Warehouse, 60 Wall Street, Sailors' Snug Harbor, Page Avenue Development) contained disturbed deposits which makes standard relative dating techniques by superposition useless.

No Paleo-Indian artifacts have been recovered from the sites reported in this study. However, the Archaic Period is represented by diagnostic artifacts which were found at several sites. De Carlo (1989) reports that projectile points datable to the Late Archaic Period (c. 4000-1700 B.C.) have been found at the Riverdale Park Site in the Bronx. The Late and Terminal Archaic Periods (c. 4000-1000 B.C.) are more abundantly represented and better understood in the prehistory of New York. Projectile points of the Lamoka culture were found at Riverdale Park, and a single Brewerton point was recovered from Ellis Island. Several components of the Terminal Archaic Period (c. 1700-1000 B.C.) were also found on Ellis Island including two Orient Fishtail projectile points, two Rossville points and one Snook Kill point. The presence of these new and radically different broad-bladed projectile points of the Terminal Archaic Period seems to suggest expanded cultural interactions in this region.

The Early Woodland Period (c. 1000 B.C.-A.D. 1) diagnostic artifacts include exterior and interior cordmarked pottery fragments known as Vinette I, which were found on Ellis Island and the Riverdale Park Site. The Rossville and Snook Kill projectile points found on Ellis Island may also date to the Early Woodland Period. The introduction and use of Vinette I type pottery awaits research and explanation, but its appearance in the Hudson River estuary suggests cultural contact outside of this immediate area.

Middle to Late Woodland (c. A.D. 1-1600) components are the most numerous of all found in New York City. Pottery fragments of these cultural periods have been found on sites in the Bronx, Manhattan, and Staten Island (Table 1). However, in general the pottery fragments have not been identified by type in the cultural resources reports and thus await additional analysis. Triangular projectile points of this time period have been recovered from the Barclays Bank Site within a late seventeenth-century landfill in Manhattan, the Riverdale Park Site in the Bronx, from the Sharrott Estates and Sailors' Snug Harbor sites on Staten Island, and from Liberty Island in the Hudson River. The relative abundance of these materials, compared to prior cultural periods, seems to suggest more frequent and longer use of these sites or an increase in population.

Evidence of the Contact-Historic Period is sparse and limited to just one site, Augustine Heerman's Warehouse in Manhattan. The careful excavation and stratigraphic dating of this site resulted in the recovery and identification of several artifacts that can be clearly attributed to this cultural period. The following European-made materials which were utilized by the Indians were recovered from this lower Manhattan site: a basket-cask, nails, marbles, glass beads, a iron key, lead shot, a thimble, a hook, and a fragment of Delftware ceramic. Also found at this site, were wampum beads, fish bones, and a wood board fragment.

Settlement and Subsistence Patterns

The data considered in this report indicate that a variety of landscapes was selected for occupation by prehistoric peoples. The sites in this study are located on a range of geomorphic surfaces, from shorelines to terraces to interior uplands. All are located on or near the East or Hudson River shorelines or near fresh water streams, ponds, or springs.

The Archaic Period sites (i.e., Barclays Bank, Riverdale Park, and Ellis Island) are located along the East and Hudson rivers. During the Archaic Period, Ellis Island was not an island but was part of the western shore of the Hudson River. Subsequently, the rising sea level created salt marshes along the western shore, and this inundation of the shoreline resulted in Ellis Island. It is also likely that the Barclays Bank Site was dry land during the Archaic Period and was subsequently inundated as well. The selection of these sites for occupation may indicate that fish, particularly anadromous fish, were extracted from these major waterways. The recovery of a plummet from the Barclays Bank Site seems to support this suggestion. Numerous oyster shells were recovered from the Riverdale Park and Ellis Island sites which indicates that shell fish resources were exploited by Archaic peoples as well. De Carlo (1987) describes the Riverdale Park sites as "shellfishing camps." The recovery of projectile points from these sites indicates that hunting was certainly a part of the subsistence strategy of these people. However, the introduction and use of broad-bladed points during the Terminal Archaic Period seems to indicate a multipurpose function for these tools. It has been suggested that the broad-bladed points may also have been used as knives or generalized cutting tools (Custer and Mellin 1986:1-20).

The hallmark of the Woodland Period is the appearance of ceramics in the material culture of these people. Pottery fragments have been found at the Barclays Bank, Augustus Heerman's Warehouse, and Stadt Huys sites in Manhattan, at

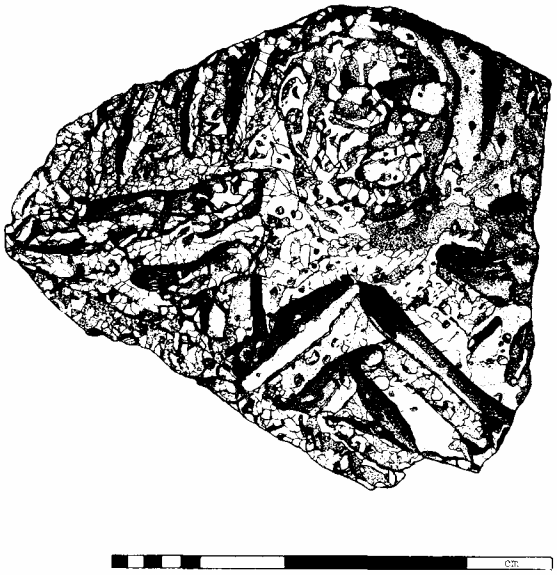

Figure 2. Munsee Incised rimsherd with effigy face at top center.

the Riverdale Park sites in the Bronx, on Ellis and Liberty Islands, and at the Mouquin House and Page Avenue sites on Staten Island. The presence of ceramics at these sites indicates that Woodland peoples were selecting and utilizing the same types of site locations as their predecessors. It also indicates a new and evolving technology of food preparation during this time period, while ceramic variability may reflect differing spiritual and aesthetic values of a growing and perhaps more sedentary population.

A prominent artifact example of cultural values of the Woodland Period was a rimsherd containing an effigy face design from the Barclays Bank Site. This pottery fragment is a type known as Munsee Incised and dates from the Late Woodland to Historic Periods (c. A.D. 1400 A.D. to 1735) (Kraft 1975:138-145). The effigy face on the rimsherd (Figure 2) represents the mesingw, a spiritual being or spirit of the Lenape or Delaware Indians who occupied this region (Kraft 1986:169-171). This spiritual being is referred to as the "Living solid face" or "Masked being" or "Keeper of the game" who looked after the animals of the forest. The mesingw was made visible in other artistic forms and media such as masks and stone (Kraft 1975:169-171). Unfortunately, its original context cannot be determined since this specimen, along with others, was recovered from a late seventeenth-century landfill.

Another example of the spiritual or cultural values of Late Woodland people in the region was a turtle petroglyph discovered on a boulder located along the Bronx River within the grounds of the New York Botanical Garden (Figure 3). This carved design of a turtle may represent the turtle phratry or clan of the Munsee-speaking Delaware Indians who occupied this

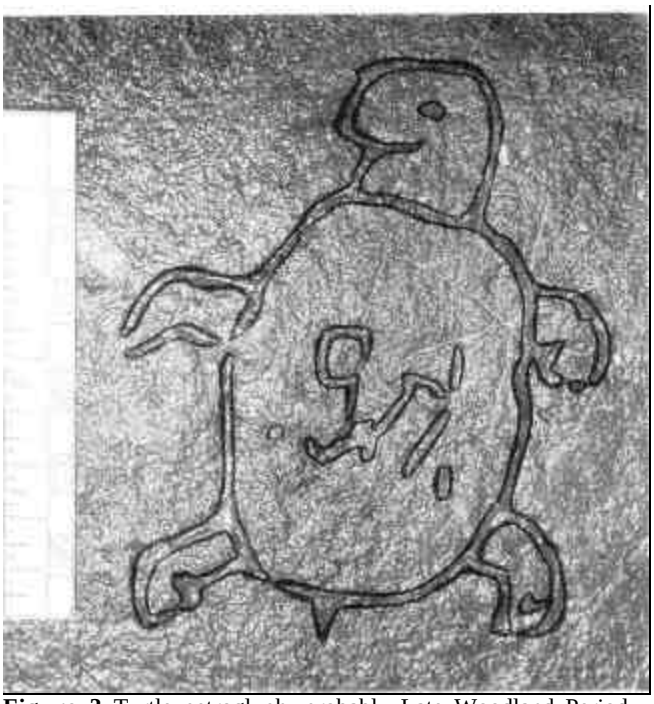

Figure 3 Turtle petroglyph, probably Late Woodland Period. New York Botanical Garden, Bronx, New York. Design enhanced for clarity. (Courtesy of Daniel Pagano, New York City Landmarks Preservation Commission)

area prior to the coming of the Europeans (Goddard 1978a, b). The turtle petroglyph may also represent a trail marker or designate a hunting territory (Lenik 1988:13-19).

The traditional hunting and gathering lifestyle continued throughout the Woodland Period. While no terrestrial faunal remains have been found within the sites of this study, fish and shellfish were sought and procured as food resources (De Carlo n.d., 1987; Moore 1986; Poussin 1986).

Site Function

On the basis of the archaeological evidence presented in the cultural resource reports, several conclusions can be drawn with regard to the function of the sites. The sites are small and probably short-term occupation sites. There is evidence of successional utilization at several of the sites (i.e., they are multiple occupation campsites).

The limited range and diversity of the artifacts represented at the sites indicate that they are short-term sites which were utilized by small bands of hunters and gatherers for the purpose of procuring locally available resources and processing them for consumption. Thus, the sites were procurement-processing sites at which the subsistence needs of the occupants were addressed.

The nature and extent of the procurement-processing-consumption activities which were carried out at the sites can

be determined by the types of tools which were found and the ecofacts recovered. In general, the range and diversity of functional tool classes are very limited and indicate that the activities which were performed at the sites were also very limited.

The tool kit of the occupants of the Barclays Bank, Riverdale Park, Ellis and Liberty Islands, Sailors' Snug Harbor and Sharrott Estates sites included projectile points, scrapers, and utilized flakes which were expedient tools used to process food resources. The presence of flakes at all of the sites and of bifaces and cores at many of the sites indicates that tool manufacture and repair was a major activity. In fact, the available data suggest that several of the sites may have been single special-activity sites such as workshops or fishing/ shellfish gathering stations.

The Ellis Island Site, on the other hand, contained a broader range of tools, which suggests that more diverse activities took place at this site. In addition to projectile points and scrapers, this multicomponent site contained knives, gravers and burins, drills, bone awls, choppers, and abraders. These functional tool classes may reflect such activities as butchering, tool sharpening, the perforation of soft materials such as skins and hides, and in the case of the gravers and burins, an aesthetic function.

Lithic Technology

The primary data recovered from all of the sites discussed in this study consist of stone tools and lithic debitage. Table 2 shows the breakdown of lithic raw materials, including tools, which were recovered from the sites. This table clearly shows that quartz was the predominate raw material utilized in toolmaking in the study area amounting to 36 per cent of the total recovered from all sites. Argillite and chert were equally important raw materials used by the prehistoric toolmakers with each accounting for approximately 22 per cent of the total recovered. Jasper was also commonly used in the region and amounts to slightly more than 9 per cent of the total recovered.

The current petrological data appear to be in agreement with a previous study of projectile point collections (i.e., specimens found within the City of New York). In 1970, an analysis of the lithic materials used in the manufacture of projectile points was conducted. This study indicated that quartz, chert and jasper, and argillite were the most common lithics employed by prehistoric knappers who occupied sites in the Bronx , Manhattan and Staten Island (Rutsch 1970:188). Rutsch's study also suggested that quartz and argillite were more commonly used for making projectile points in the "pre-Woodland" period. However, the 1980s data are too sparse (i.e., only a few points were found) to permit us to draw any conclusions in this regard. The use of quartz, a high quality stone, may simply be attributed to its abundance in the glacial soils of the region.

Table 2. Analysis of Lithic Raw Materials.*

Lithic Material	Quantity	% of Total
Quartz	1035	36.2
Argillite	627	21.9
Chert	620	21.7
Jasper	266	9.3
Slate	170	5.9
Sandstone	50	1.8
Limestone	30	1.1
Quartzite	20	0.7
Shale	15	0.5
Chalcedony	12	0.4
Basalt/traprock	6	0.2
Schist	6	0.2
Granite	1	0.0
Total	2858	99.9°Io

* Based on available data from all sites.

The analysis of the stone tools and debitage indicates that primarily late-stage lithic reduction, manufacture of tools, and reworking of tools took place at the sites. The evidence for primary-stage lithic reduction is minimal.

Several non-local or exotic lithic materials were used in making stone tools by prehistoric people in the region. They were apparently obtained from distant sources and transported to sites in New York City. For example, a green colored chert called Normanskill was found at the Sailors' Snug Harbor and Richmondtown sites on Staten Island. Normanskill chert or "flint" is found in abundance in outcrops in the central and northern Hudson River Valley. This suggests that this material was obtained by the local Indians who traveled to the sources and quarried the stone, or was secured through trade with other cultural groups. Brown or yellow jasper was obtained in a similar manner from deposits in eastern Pennsylvania, and argillite was obtained from northeastern New Jersey (see Lenik 1989: 25-32 for a broader discussion of cultural contact and trade).

Rutsch (1970:190-191) has observed that exotic materials were more frequently used in the manufacture of projectile points during the Woodland Period which suggests increased travel and trade. Once again, however, our current data are too sparse and incomplete to permit us to draw any similar conclusions.

Concluding Observations

The observations made in this study suggest that certain environmental settings were selected for prehistoric occupation and exploitation, namely the Hudson and East River

shorelines and uplands adjacent to wetlands and ponds. Although Woodland component sites are slightly more widely distributed over the landscape, no significant distinctions are evident between Archaic and Woodland Period site locations. While these prehistoric people apparently preferred certain environmental settings, site locations do not change significantly over time. This may reflect long established and stable resource procurement patterns.

Forty years ago, archaeologist Carlyle Smith wrote, "the encroachment of metropolitan New York has now obliterated most of the archaeological sites on Manhattan Island, Staten Island, western Long Island, and the adjacent mainland" (i.e., the City of New York) (Smith 1950:101). Referring to central and eastern Long Island, Smith stated that nearly all "permanent" sites are located "on tidal streams and bays on the second rise of ground above the water" (Smith 1950:101). The present data clearly indicate that Smith's generalizations are not entirely accurate. The sites examined in our New York City study were in contrast short-term procurement-processing sites; no "permanent" settlements or villages are indicated by the available data. Furthermore, our study has shown that prehistoric sites in the City of New York have not been entirely obliterated and that they were located on a broader range of geomorphic surfaces than those previously described by Smith.

In a recent study of coastal adaptations by prehistoric peoples in southern New York (again, not New York City) and New England, Lavin (1988:104) found that Archaic Period shell middens were temporary special-purpose processing camps. Lavin further stated that Archaic Period base camps were seasonal habitations which were situated near interior lakes and streams. Sites dating to the Archaic Period in New York City, however, were situated on large coastal rivers (i.e., the Hudson and East Rivers).

Lavin (1988:105-106) also stated that a major population shift occurred at the end of the Archaic Period from interior lakes and streams, which were drying up as a result of the thermal maximum, to large river drainages where reliable water and food resources were available. Lavin (1988:114) further added that during the Early to Middle Woodland Period, there was an increase in the size of camp sites and sedentism which developed into large semi-sedentary villages during the Late Woodland and early Historic Periods. However, there is no evidence of this trend or development in the New York City data.

Paleo-Indian sites were not found at the sites considered in this study. This may be an indication of several factors, among them low population density during this period and the location of these older sites seaward of the present shoreline. Archaic Period components were found at three sites, but most of the prehistoric habitation deposits, eleven in number, date to the Woodland Period.

In summary, it is critical for archaeologists working in New York City to understand the geomorphological and environmental setting of archaeological sites in order to be able to interpret sites, reconstruct settlement and subsistence patterns, recognize changing relationships between sites and their settings through time, and discover new sites.

The biases inherent in this analysis are obvious. Many of the sites discussed in this study were intensively excavated while others were simply shovel tested. Thus the amount of data retrieved and subsequently reported was varied. The data presented in the cultural resource reports were also of varied quality. That is, some studies detailed and discussed their findings to a detailed extent while others simply tabulated their artifact recoveries. A common element in most reports is that they lack descriptive details of the prehistoric finds including analysis and interpretation. Since the CRM reports are the only available data source for other researchers and scholars, there must be a greater commitment to include prehistory in the development of research designs, a greater awareness and sensitivity to the potential for recovering evidence of prehistoric occupation, and better reporting of the results. Despite these shortcomings, the reports included in this study have contributed important new information on the prehistory of New York City.

Acknowledgments

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Implications of Lithic Scatter Components from a Shelter Island Terminal Archaic Special-Purpose Site

John Charles Witek, Incorporated Long Island Chapter

Prehistoric scatters of rocks shattered by fire and percussion in coastal New York and southern New England have remained unaddressed by archaeologists, for the most part, thus evading interpretation. This report proposes that one such manifestation reflects the gathering, sorting, testing, use, and reuse of lithic resources for a variety of purposes by a close succession of hunter-gatherer- task groups processing faunal resources. Findings are based on the analysis of a buried special-purpose site on Shelter Island, New, York, where Susquehanna Tradition artifacts were found in an archaeological stratum with narrow-stemmed points-circumstances which, in this case, lend weight to the hypothesis that broad-blade manifestations in southern New England represent migrations into the region of a complete cultural system.

Located at some distance from probable residential bases in the river valleys of southern Connecticut, the Shelter Island Site would have been taxing to reach, and sojourners there organized activities to conserve energy; reusing lithics from prior occupations simplified subsistence and procurement operations, thereby reducing calories that might otherwise be expended. Such behavior under-scores the importance of the principle of least effort in the lives of mobile foragers, and might reflect the mindset of people who were accustomed to a wider-ranging round of resource exploitation than has been proposed genet-all y for northeastern Terminal Archaic groups. Since activities at the site by the several cultural groups involved appear to have been similar, competition for resources between the groups might be a possibility.

Introduction

"A riddle wrapped in an enigma surrounded by a mystery." Winston Churchill's daunting epigram for Soviet Russia serves to describe as well the perplexing site examined in this report: a frustrating jumble of rock-some of it burned, spalled, shattered, worked, unworked, weathered, unweathered; some of it heaped into enigmatic clusters mistakable for hearths but utterly lacking residual charcoal; all of it originating during a period that provokes controversy among archaeologists who argue, variously, that Terminal Archaic broad-blades in New England represent a technological subsystem of the narrow-stemmed tradition that evolved locally, or that such artifacts represent migrations into the region of a complete cultural system (Pagoulatos 1988).

My preliminary report concerning this site emphasized the discovery there of 20 large Susquehanna Tradition preforms of types common in New England, but which had not yet been reported for coastal New York (Witek 1988). At this time I was reluctant to commit myself to analyzing thoroughly the lithic scatter in which the preforms occurred and hoped that published literature would help fill the gaps I was contemplating leaving in my research. When it became evident, however, that past investigators had failed to publish thoroughgoing studies of the kind of scatter with which I was involved, I decided not to throw in the trowel. As it developed, this decision was rewarded. The prosaic nature of the site proved stimulating in itself, and it tended to amplify questions it provoked. If occupations there had been brief, why was the scatter so extensive and intense? Why had so much burning left so little charcoal, and what was burned and why? Why had some stones been sorted carefully by size and shape, while others were heaped into random piles, and still others were strewn about? And, most puzzling of all, what was represented by the broad, corner-removed blades found within the very midst of a narrow-stemmed occupation? Such questions encouraged me to reconsider data obtained in 1985-1986, and to be more scrupulous during three subsequent seasons of field work.

Gradually, I saw that activities at the site had been conducted methodically and that the seeming chaos excavation revealed actually reflected how very systematic resource exploitation there had been. Spatial relationships between features indicated that tasks had been organized so that several operations could be accomplished in single activity areas. The scatter itself suggested that raw lithic materials obtained at the site also were used methodically and selectively, and also revealed economical uses of fire for multiple purposes.

This dovetailing of prehistoric lithic and pyrotechnologies strongly underscored for me how the principle of least effort is evident in the record of the behavior of those who had processed resources at the site for transport back to southern New England. To succeed in these undertakings they needed to expend calories frugally and, primarily, upon essential tasks. In consequence, they consolidated their activities - a finding that has led me to a more comprehensive interpretation than I might have ventured otherwise.

If this report succeeds in helping to clarify life and work in southern New England during the Terminal Archaic, it will

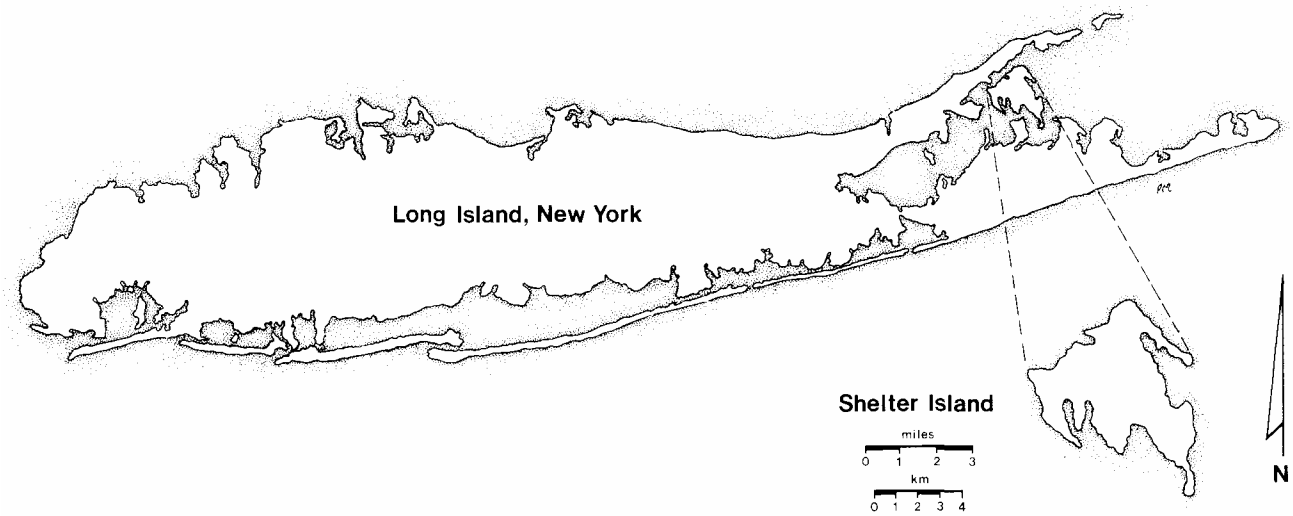

Figure I. Shelter Island. New York.

do so at a time when conflicting hypotheses bracket our understanding of the period. Hopefully, it may serve to encourage the development of additional scenarios, which will be needed if it is shown that archaeologists have tended to support a favorite hypothesis with evidence obtained from sites too limited in number and variety and have not taken into account information concerning functions, seasonality, and durations of occupations in areas outside of the regions they have studied.

The Site

Shelter Island (Figure 1) is located 11.8 mi (19 km) south of the mouth of the Connecticut River, between the north and south "forks" of Long Island, where 72° 25' west longitude crosses 40° 05' north latitude. An area of 3200 hectares incorporating numerous embayments and tidal wetlands, the island was formed by one or more advances of the late Wisconsin glacier. Its topography is morainal with kames, kettleholes, rolling hills, erratic boulders, and terrain that is level to strongly sloping consisting generally of Montauk-Haven-Riverhead Association soils. Post-glacial rises in sea level have submerged much of the land available for occupation during the post-Pleistocene.

The site with which we are concerned is located on the southwestern shore of Shelter Island, where a small low-lying peninsula protrudes into a lagoon that was probably formed by the intrusion of saltwater into freshwater kettles. It has been designated SI-2-1 in an inventory of sites published previously (Witek 1990), but its precise location remains undisclosed at the owner's request.

The absolute limits of SI-2-1 are 800 ft (243.3 m) east-west by 125 ft (38.1 m) north-south. An area of intensive activity was encountered within these boundaries measuring 200 ft (61.0 m) east-west by 100 ft (30.5 m) north-south. Here, excavation disclosed a core of 19 features. The site, which is sheltered from prevailing northwest winds, rises only 8 ft (2.4 m) at its highest elevation above mean high water, and extends into an adjoining marsh to a depth of 12 in (30 cm) under the salt peat.

The mixed deciduous vegetation here consists mainly of black oak (*Quercus velutina*), mockernut hickory (*Carya alba*), and sassafras (*Sassafras albidum*). Most of this appears to have resulted from the regrowth of woodlands destroyed by hurricane in 1938.

Site soil is Plymouth loamy sand (PLB), which has a 3 to 8 percent slope. No plow zone is evident, and the soil appears to have been undisturbed by agricultural activities. Stratification consists of (AO), a mat of roots and organic material 1-2 in thick (2.5-5 cm); (A), a zone of dark brown humus and sand 1-3 in thick (2.5-7.5 cm); and (B), light tan sandy loam originating generally 3-4 in from the surface (7.5-10 cm) and continuing to an undetermined depth. Thirty Hellige-Truog pH tests from several depths within 20 excavation units registered from 5.0 (strongly acid) to 4.5 (extremely acid), conditions that probably account for the absence of osseous remains.

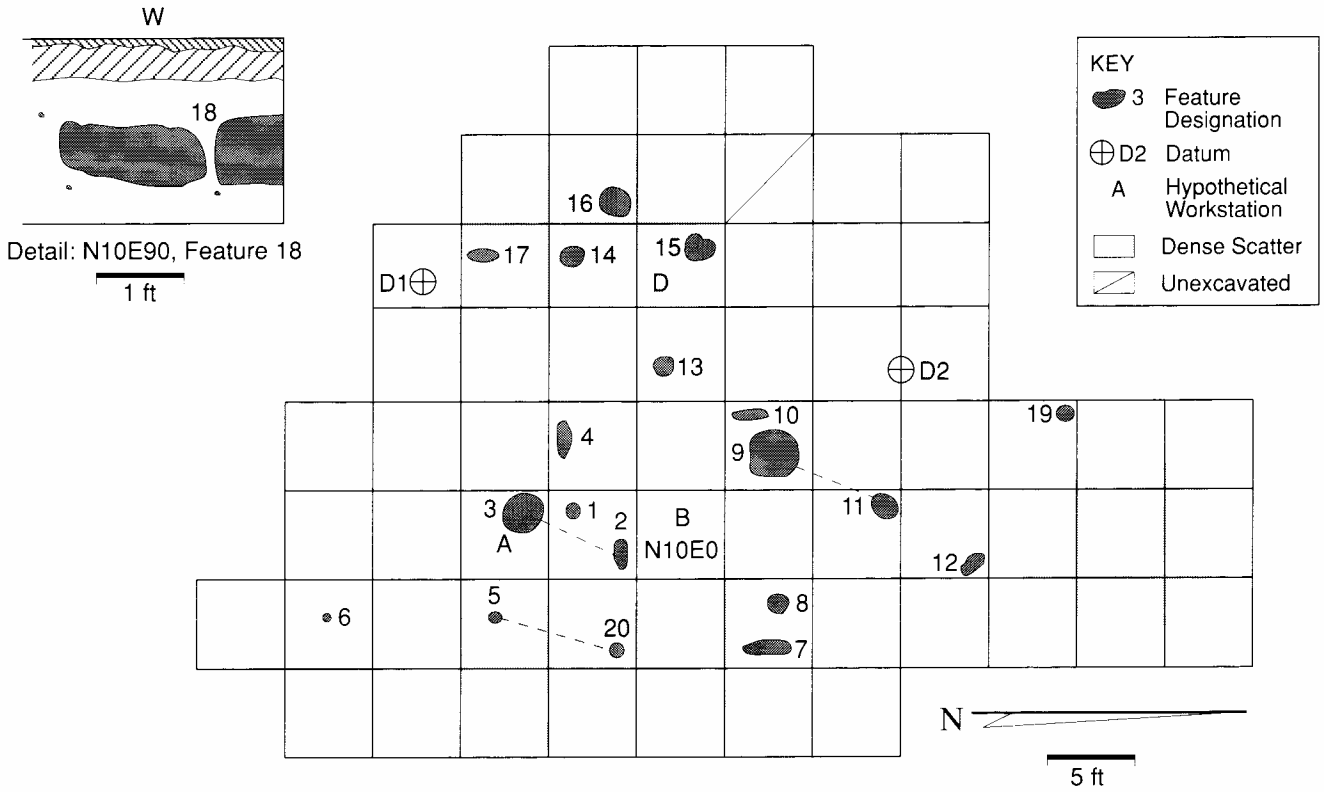

Figure 2. Excavation plan, SI-2-1, 1985-1989.

Work at SI-2-1 was undertaken initially in 1985 and consisted of systematic shovel probes to determine the extent and nature of the scatter. The decision to excavate was made when a shovel probe disclosed Feature 1, the blade cache. Ultimately, 1475 sq ft (137.03 m sq) were excavated and sifted during 24 months of field work conducted from 1986 to 1989. Excavation proceeded by arbitrary levels of 0.5 in (1.3 cm), within units 5 ft square (1.5 m), on a grid oriented along north-south and east-west baselines.

The most characteristic aspect of the site was the scatter itself, which appeared in profile as a single, poorly defined stratum within B zone soil, generally at a depth of between 5 and 9 in (12.7-22.8 cm) from the surface. Shattered stone found very occasionally between 12 and 20 in (30.4-50 cm) from the surface raises the possibility of an earlier occupation.

Features

Excavation revealed 20 probably associated features within the intensive portion of the scatter (Figure 2). In the following descriptions "small" is used to designate pebbles up to 1.5 in in length (3.8 cm); "medium" indicates lengths to 3 in (7.6 cm); and "large" pebbles measure up to 5 in (12.7 cm). "Cobbles" are stones exceeding 5 in.

Feature 1 (N10E0)

Twenty basalt Susquehanna Tradition preforms in several stages of completion, stacked horizontally and pointing in several directions, were recovered. The topmost blade occurred 5.5 in from the surface (14 cm), and the cache terminated 13 in from the surface (33 cm). No pit outline was discernible. Eight large basalt flakes were found within 8 ft (2.4 m) of Feature 1.

Feature 2 (N10E0/N15E0)

The feature was defined by a mass of 98 medium-sized, fire-reddened quartz and quartzite pebbles interpreted as boiling stones, originating 7 in from the surface (17.8 cm) and terminating at 12 in (30.5 cm). Three quartzite cobbles were associated with this feature as were heat shatter fragments and a large ferruginous conglomerate.

Feature 3 (NSE0)

This feature was defined by a flat layer of 67 medium-sized stones arranged in a rough circle approximately 30 in (76.2 cm) in diameter interpreted as a "platform hearth". Like

the nearby blade cache, this feature originated in B zone soil 5.5 in from the surface (14 cm). No charcoal was associated with this or any other feature, although traces of fire-reddened soil surrounded it, and two of the fire-cracked stones within it connected.

Feature 4 (Nl0W0)

This feature was defined by a cluster of 63 mostly medium-sized pieces of granite including small quantities of schist, quartz, quartzite, and a piece of hematite. Approximately 14 in (35.6 cm) in diameter, it appeared at a depth of 9.5 in (24 cm) and continued to a depth of 19 in (48.3 cm). Eight quartz decortication flakes and one of gray-green argillite were found atop or within Feature 4, and a contracting-stemmed point (CC-86-43) lay near the uppermost stones. Two thin soil layers were observed within this feature, and much quartz debitage lay nearby as did quartz biface blade fragments, quartz pebble hammerstones, cores and an anvilstone.

Feature 5 N5E5)

This feature was defined by an amorphous spread consisting of three broken quartzite cobbles and 148 medium-sized fragments of quartzite, granite, quartz, diabase, and conglomerate deposited between 5 and 8 in (12.5-20 cm) from the surface. A flake of gray-green argillite, a mineral commonly occurring in Susquehanna Tradition sites, was found here. An argillite expanded base drill (CC-86-23) was found about 4 ft (1.2 m) northwest of this flake at the same depth in unit N10E0. Argillite is not usually found on Shelter Island.

Feature 6 (S5E5)

This feature was a postmold 4 by 5 in (10.2 x 12.7 cm) in horizontal cross section, originating at a depth of 5.5 in (14 cm) from the surface and tapering to a termination point 22.5 in (55.9 cm) deep. Three quartz bifaces, two pebble hammerstones and quartz decortication material lay near its point of origin.

Feature 7 (N20E5)

This feature was defined by an ovoid cluster of 157 stones measuring about 20 in (50.8 cm) north-south by 10 in (25.4 cm) east-west, commencing 4 in (10.1 cm) from the surface and continuing to a depth of 11 in (27.9 cm). It contained 12 large unworked quartz pebbles, 27 small unworked quartz pebbles, 67 medium quartz and quartzite cores and shatter fragments, 38 granite shatter fragments, 14 unidentified shatter fragments and one piece of hematite. No shattered material connected. No flakes were encountered. Feature 7 gave the distinct impression that the material comprising it was quite simply heaped in a pile.

Feature 8 (N20E5)

The second feature in this unit was located about 18 in (45.7 cm) west of Feature 7, 9.5 to 11.5 in (24.1-29.2 cm) from the surface. This was an irregular cluster of 172 small to medium-sized stones of which 37 were unworked quartz and quartzite pebbles, 49 were core fragments of the same materials, and 86 were small percussion and heat-shattered fragments, of which 10 were granite. Two pebble hammerstones, two unifaces, and decortication flakes-all of quartz-occurred near the perimeter.

Feature 9 (N20W0)

This feature was defined by a round cluster of stones about 30 in (76.2 cm) in diameter, originating 7 in (17.8 cm) from the surface and terminating at 11 in (27.9 cm). Most stones were fire-reddened and were loosely arranged in two vague concave layers containing 43 small to medium unmodified quartz and quartzite pebbles, 30 of the same kind of stones with a flake or spall removed, 52 medium-sized quartzite and granite shatter fragments and 42 pieces of shattered granite cobble. Quartz unifaces, hammerstones and debitage were located near Feature 9, and a projectile point (CC-87-34) was found within it, 9 in (22.8 cm) from the surface.

Feature 10 (N20W0)

Occurring 9 in (22.8 cm) from the surface, this feature lay only 15 in (38.1 cm) west of Feature 9, and appeared to be a small stockpile of stones spread in a single layer (Figure 3). It contained four unworked pebbles, three spalled pebbles, a pebble uniface, two spalls, and nine flakes - all of quartz.

Feature 11 (N25E0/N30E0)

This feature was defined by a cluster of 84 medium-size, fire-reddened quartz and quartzite boiling stones beginning 7 in (17.8 cm) from the surface and terminating at a depth of 15 in (38 cm). Feature 11 averaged 15 in (38 cm) in diameter. No pit outline was evident.

Feature 12 (N30E0)

Found between 6 and 8 in (15.2-20.3 cm) from the surface, Feature 12 was a 10 by 20 in spread (25.4 x 50.8 cm) of 26 unworked medium-size quartz pebbles, which appeared to be a stockpile.

Feature 13 (N15W5)

This feature was defined by a cluster of 32medium to large heat-shatter fragments plus two large core fragments and an

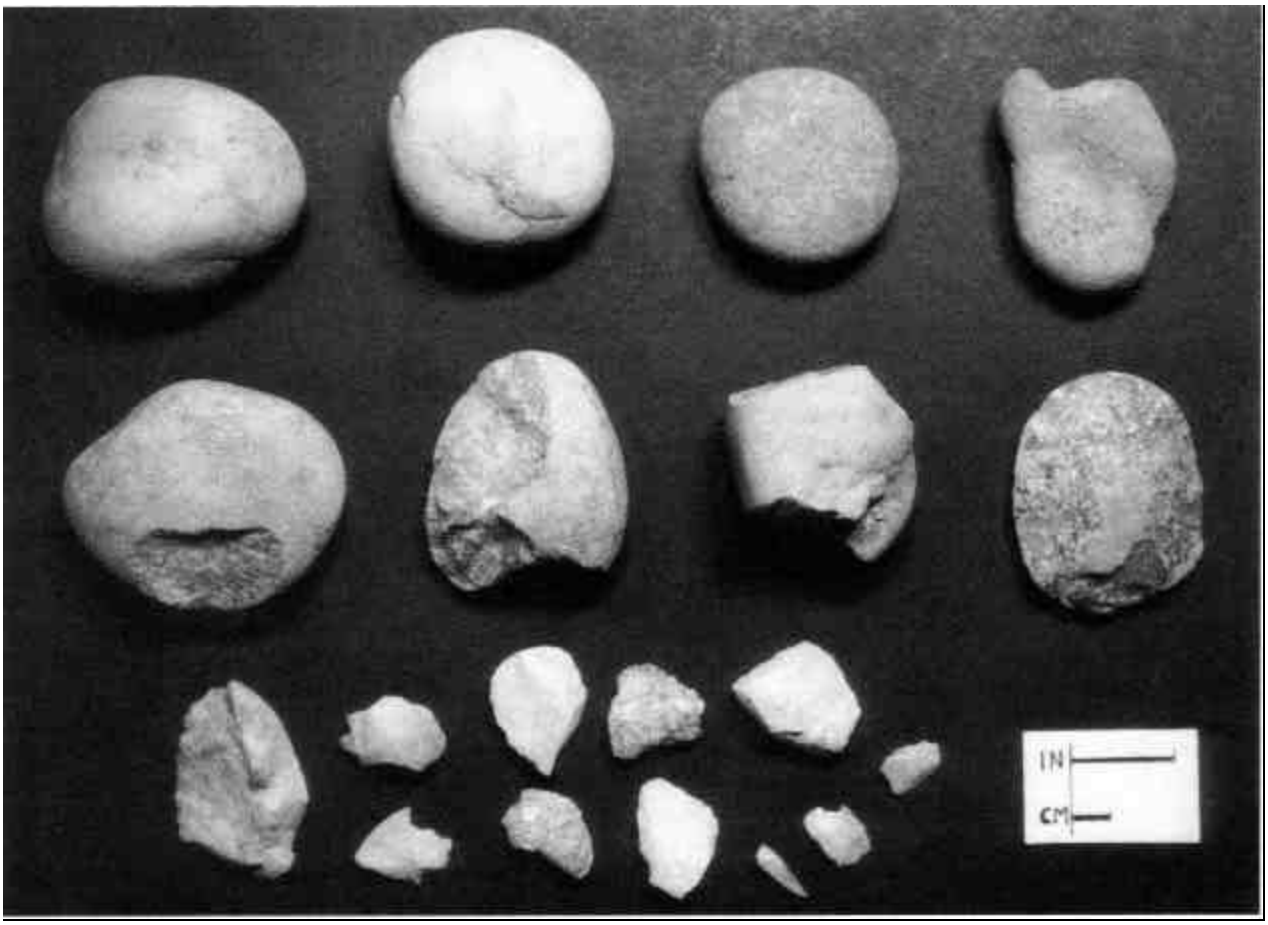

Figure 3. Feature 10 components. Material: quartz.

associated cobble. This occurred at a depth of between 6 and 12 in (15.2-30.4 cm) and was, perhaps, a hearth, although this interpretation is tentative owing to soil disturbance by a fallen tree.

Feature 14 (N10W10)

This unique feature was a small, fire-altered pit with an orifice diameter of 15 in (38.1 cm) originating 4 in from the surface at the juncture of soil zones A and B. Gradually insloping walls terminated 16 in (40.6 cm) from the surface. The ashy gray soil within Feature 14 contrasted strongly with its tan B zone soil matrix, although both registered the same pH reading of 4.5. At 8 in (20.3 cm) from the surface a small quartzite cobble, six scorched quartzite cores, and six unidentified fire-cracked rocks formed a semicircle contacting the northeast portion of the feature.

A knife or point blank (CC-87-80) and a projectile point (CC-87-83) were found in Feature 14. A black diorite pestle bearing traces of red pigment (CC-87-84), and a rubbed ochre paintstone (CC-87-85) were found near the feature, 10 to 12 in (25.4-30.4 cm) from the surface.

Feature 15 (N15W0)

This feature was defined by a rock cluster - an irregular mass located between 6 and 10 in (15.2-25.4 cm) from the surface, containing 37 medium unworked quartz and quartzite pebbles of which only one was fire-reddened, and 58 cores and core fragments of the same material. One hammerstone (CC87-87) was recovered here.

Feature 16 (N10W15)

This feature was defined by a spread of 55 stones approximately 24 in across (61 cm) at a depth from the surface of 8 in (20.3 cm). All stones were medium to large heat-shattered quartz and quartzite.

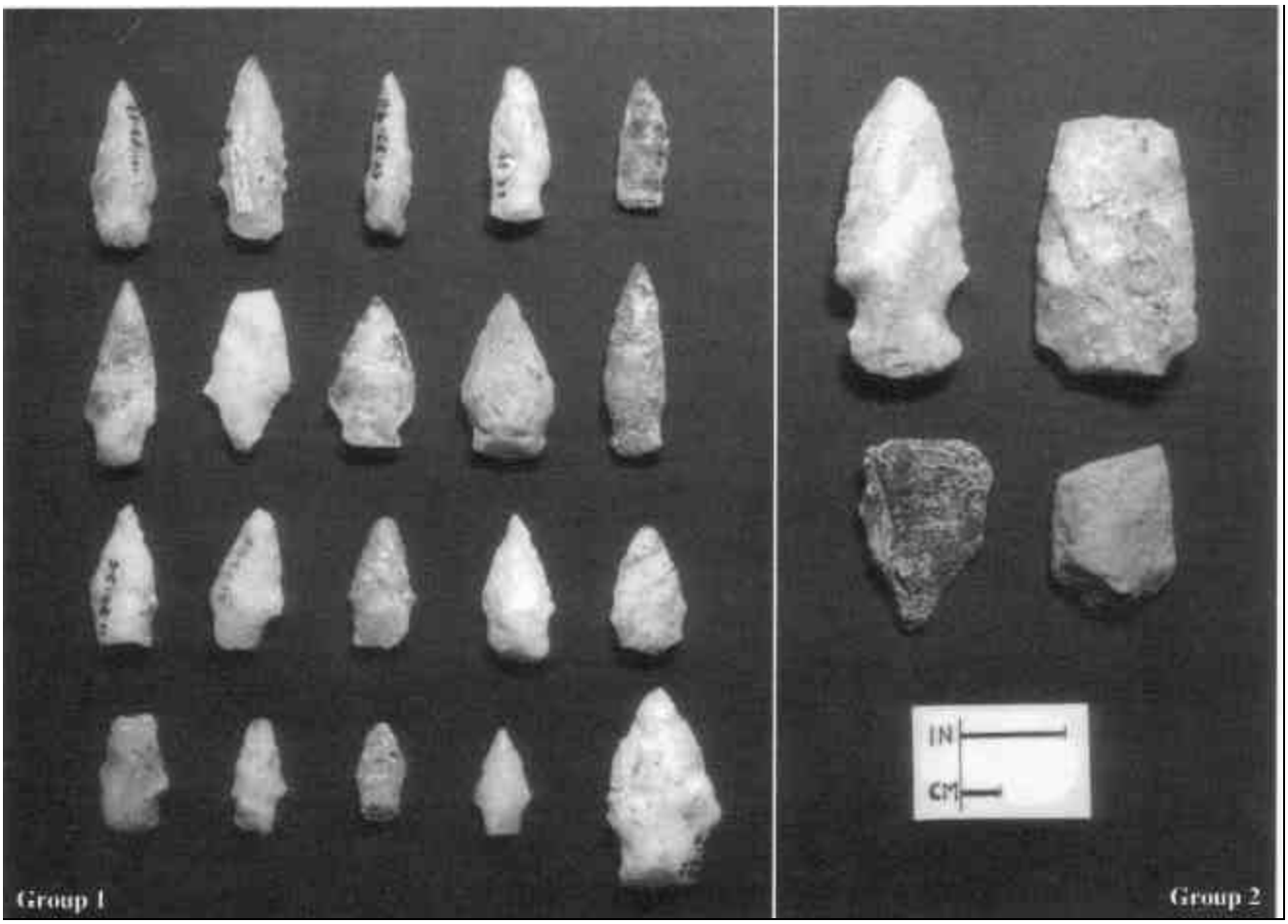

Figure 4. Selected traits. Group 1: Projectile points. Row One (top): 1-5. narrow-stemmed points; Row Two: 6 narrow-stemmed point (?), 7 contracting-stemmed point, 8 and 9 Susquehanna Broad or Orient Fishtail variants, 10 Orient Fishtail point; Rows Three and Four: "broad, narrow-stemmed" points. Group 2: Top Row: notched, stemmed blade; Boats or Mansion Inn blade; Bottom Row: Boats blades. Materials: all, quartz except 9 (quartzite); and Group 2, bottom (diorite,basalt).

Feature 17 (NSWl0)

This feature was defined by an amorphous, uninterpreted spread at a depth of 7 in (17.8 cm) containing 12 unworked and four split quartz pebbles and 20 unidentified shatter fragments.

Feature 18 (N10E90)

This feature was defined by an oval, basin-shaped shell pit located about 78 ft (23.7 m) east of the north-south baseline, where an acclivity levels off at 2 ft 10 in (86 cm) above Datum 1. It lay between 8 and 16 in from the surface (20.3-40.6 cm), had an orifice measuring about 2 by 3 ft (6l x 91 cm), and contained 23 pounds (10.4 kg) of degraded, mostly broken oyster, *Crassostrea virginica*, a single valve of hard clam, *Venus mercenaria*, and two fragments of bay scallop, *Angopectan irradians*. Black, granular, completely degraded shell occurred within and around the pit.

I assume that 50 per cent or more of the shell's original weight has been lost through dehydration and deterioration of its conchiolin. For discussion's sake, if the oysters had weighed 50 pounds (22.7 kg) when harvested, the edible portion would amount to no more than l0 lbs (4.5 kg) according to the one-to-five ratio of meat-to-shell employed by Salwen (1982:45).

Only 14 whole lower valves were recovered from the total volume of shell, which included 294 upper and lower hinges. The 14 intact specimens appeared to be channel oysters, which tolerate low salinities and grow randomly in shallow environments on sandy bottoms-conditions that still prevail, somewhat, around the site, although oysters are rarely found there today. To estimate approximately the harvesting season of the intact lower valves, Hematoxylin and Eosin stains were used to identify shell microgrowth patterns following the procedure outlined by Kent (1988:60-79). This indicated that the specimens were two and three years old and were harvested imme-

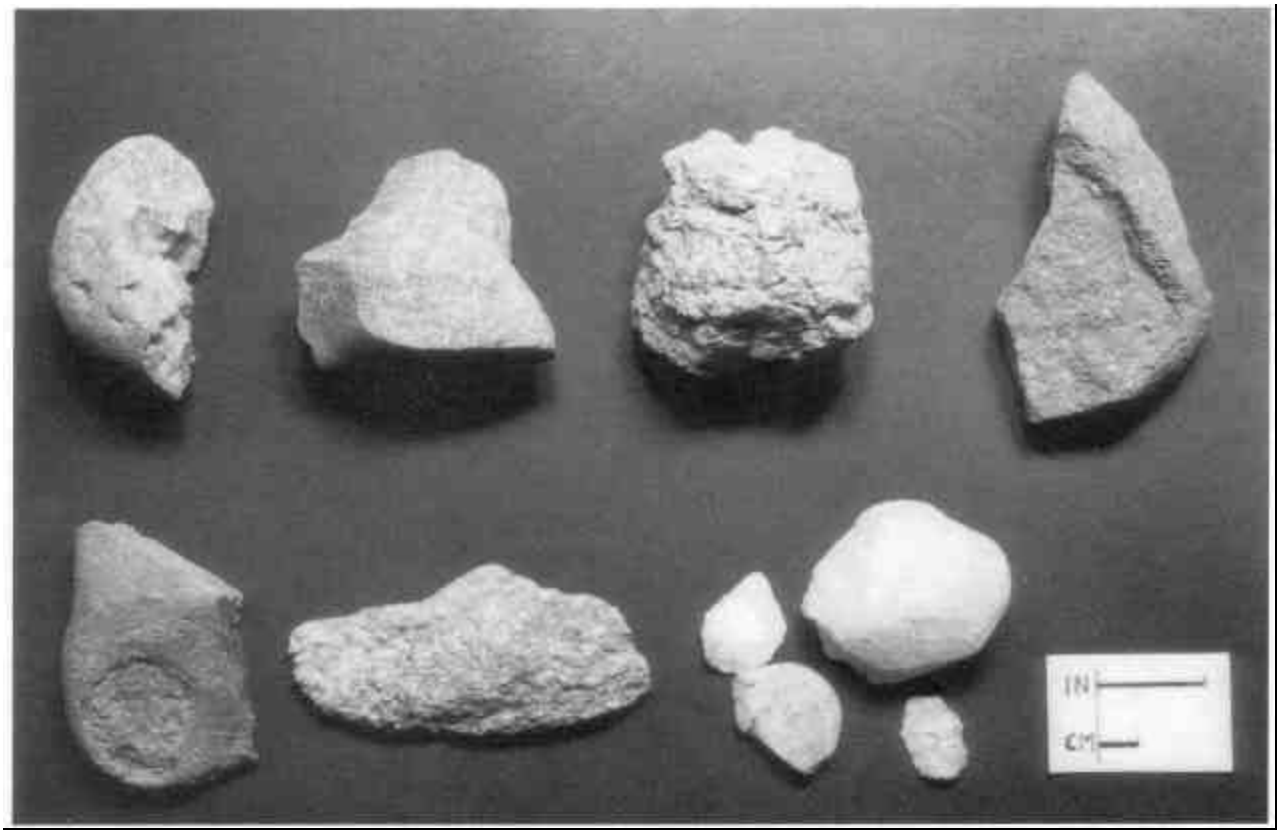

Figure 5. Scatter component lithics. Top: quartz, quartzite, granite, hematite. Bottom: diabase, schist, quartz spalls and flakes.

diately prior to the onset of winter.

Three quartz flakes, five shatter fragments, and a projectile point (CC-88-22) were recovered from Feature 18.

Feature 19 (N35W0)

This feature was defined by 18 medium-sized quartz pebbles and two unidentified pebbles in the form of a spread about 13 in (33 cm) in diameter, originating 7 in (17.8 cm) from the surface. It is interpreted as a stockpile.

Feature 20 (N10E5)

This feature was defined by a mass of 38 fire-reddened quartz and quartzite boiling stones in a compact arrangement originating 7 in (17.8 cm) from the surface. The feature was interrupted by tree roots, which were not disturbed, although it was clear that more boiling stones lay beneath.

Intrasite Relationships

Recognizing the spatial relationships between features at SI-2-1 is a useful key in helping to understanding past activities here. With the exception of Feature 18, the shell pit, no feature was located more than 7.5 ft (2.3 m) from its nearest neighbor. At the same time, features did not impinge upon one another as they might had they been formed during widely separated occupations. In light of their consistent and similar vertical and horizontal distribution, it is my strong impression that Features 1-20 were created during a single episode or, more likely, as the result of a rapid succession of a few brief episodes.

Activity areas where individuals sat, worked, ate and probably slept (Figure 2: A, B, C, D) are delineated by quartz debitage patterns in and around four groups of features. Scatter patterns also proved useful in relating features to each other, and in helping to approximate the living space individuals occupied.

In my opinion, the core of features excavated represents the working and living space of three or, perhaps, four people as indicated in Figure 2. Positioned as shown, individuals would have needed to move no more than 10 ft (3.1 m) in any direction to perform basic tasks and still be within reach of one another. Each would have had about 150 sq ft (13.9 sq m) of personal space.

One unit appears to be formed by Features 1, 2, 3, and 4. The boiling stones, Feature 2, were probably heated at Feature 3, the hearth, which provided warmth around Feature 4, a rock cluster, where the Feature 2 boiling stones might have been

Table 1. Dimensions of SI-2-1 "Broad, Narrow-stemmed" Projectile Points.*

Specimen no.	vertical dist.	thickness	length	width	tip to shoulder length	stem length	stem width	basal cortex	basal thinning	stem shape
CC-86-44	3.5	5	25	14	19	8	9	no	yes	straight
CC-87-83	7.5	8	35	18	25	11	12	yes	yes	tapered
CC-87-34	9	6	27	14	19	8	10	no	yes	?
CC-88-22	9.5	7	33	14	20	11	14	yes	yes	straight
CC-87-75	4.5	7	36	19	25	11	14	no	no	convex
CC-89-03	6	10	37	19	25	12	15	yes	yes	straight
CC-89-11	4.5	6	24	13	14	10	10	yes	yes	straight
CC-89-14	6	13	50	29	35	15	20	yes	yes	straight

* Measurements in mm except vertical distribution (in).

originally sorted out. The location of Feature 1, the blade cache. seem,, to have been chosen in relation to 2, 3, and 4 - possibly to facilitate retrieval.

A second unit of features might include the Feature 20 boiling stones. Feature 5, which was spread about but might have been a hearth originally, and rock clusters 7 and 8. A third person might have heated the Feature 11 boiling stones atop Feature 9. and also used stockpiles 10 and 12. Rock clusters 13, 15, and 16 and the fire pit. Feature 14, might comprise a fourth activity area.

Obviously, a variety of permutations are possible. All the same, it is worth noting that the three groups of boiling stones were all located between 12 and 22 degrees northeast of features where they may have been heated, and their distances from these features were also relatively consistent-6.5 ft (1.9 m) in one case, 7.5 ft (2.3 m) in the other two instances.

Artifacts

Although the site's weak to negligible archaeological stratification appeared to reflect a single deposition, the recovery of several types of projectile points plus evidence that lithic resources had been reused suggest that a series of brief occupations occurred here. Most artifacts were recovered from B zone soil between 4 and 10 in (10.2 and 25 cm) from the surface. Tools were concerned primarily with hunting, butchering, stone knapping and woodworking. Absent were clay pottery, stone mortars, nutting stones, net sinkers, and plummets, which suggests that seine fishing and nut harvesting probably were not performed here.

Projectile Points

Thirty points were recovered. Ten of these, of which three were found within features, are similar enough in style and method of execution to comprise a hypothetical "type" (Figure 4, Rows 3 and 4). Depending upon the predilections of the typologist, these points could be dismissed as "narrow-stemmed", "Wading River", or "Bare Island" points, but this would not be precise because they correspond only generally to these familiar designations. Flint "Sand Hill Stemmed" points correspond more closely, but information concerning this type is scant (Fogelman 1988:192). The ten points are bifacially flaked, with incipient to pronounced shoulders above a somewhat broad straight or tapering stem.

Blade profile between tip and shoulder is straight and generally symmetrical. Well to poorly defined barbless shoulders slope away from the base. Stems are basally thinned; most retain some pebble cortex; grinding does not occur. To facilitate discussion, I will refer to these specimens as "broad, narrow-stemmed points." The metrical dimensions of eight specimens recovered intact are offered in Table 1.

For the present, I feel obliged to consider two possibilities concerning the origin of hese specimens: (1) they are a local variant of a common Late Archaic/Early Woodland point form; (2) they are hybrids demonstrating the impact of exogenic Susquehanna Tradition broadness upon local narrow-stemmed forms of quartz points.

Other projectile points are also puzzling. Of the thirteen that correspond to conventional narrow-stemmed criteria, seven are asymmetric and demonstrate probable knife edge ware use, while one other is denticulate. Two similar broadpoints recovered show knife edgewear use on one side apiece. These two might be typed either as Susquehanna Broad points or Orient Fishtail variants, and are shown in Figure 2 (Row 2, Nos. 3 and 4), where they appear next to the single Orient Fishtail point found. Might these not demonstrate, I wo nder, the narrowing of blades and increased sloping of shoulders "from which fishtail points developed locally" (Ritchie 1959:90-91). In addition, a contracting-stemmed point (CC-86-43) unlike anything else at the site was recovered, and three additional points are considered problematic.

Chipped Stone Blades

Nineteen patinated basalt blades and one basalt uniface were found stacked in a cache. All were broadly flaked Susquehanna Tradition preforms that correspond to the category "Corner-removed, Type 7" established by Fowler (1963:2). Also found was a broken Boats blade of basalt, one of diorite, and a chipped quartz artifact, which may be either a Boats blade or a Mansion Inn blade broken at the base.

Four spoiled biface knives as well as a rectilinear, ovate, and notched-stemmed specimen were recovered, as were 42 chipped quartz biface fragments. Scrapers were not encountered, although points which we found may have served this purpose.

Other Stone Artifacts

Additional artifacts of ground and polished stone include a broken basalt adze, a short diorite pestle bearing traces of red pigment, a fragment of a polished grooved axe made of fine grained igneous rock, and a piece of rubbed ochre. Two quartz drills as well as an expanded-base specimen of basalt, and one of gray-green argillite were also found.

Decortication Tools and Residue

Small and medium pebble hammerstones were numerous at the site, and three quartz pebbles with single pits were recovered. Spalls of white and variegated quartz as well as secondary and tertiary decortication flakes were distributed near Features 2, 3, 8, 9, 11, 14, and 20. During the first season of field work when 20 units were excavated, we recorded finding 147 primary, 377 secondary, and 467 tertiary quartz percussion flakes - fewer than would be found where quarrying, intensive knapping or long occupations occurred, and probably resulting from the crafting and sharpening of relatively few stone tools. Fourteen patinated basalt spalls and11 flakes of gray-green argillite indicate that Susquehanna Tradition materials were worked at the site. One black chert flake with a percussion bulb was found.

Plymouth Soil

It has been proposed that a soil's ability to provide a ready supply of bulky lithic materials was a significant factor in site selection; archaeologists studying twelve prehistoric sites in Suffolk County, New York, reported that coarsely textured Carver soils were disproportionately represented and that one soil phase, Carver-Plymouth E (CPE), constituted nearly two thirds of the exploitation areas around the sites studied (Kalin et al. 1988). The Plymouth loamy sand (PLB) at SI-2-1 is very similar to Carver series soils but has a somewhat thicker solum with an even greater coarse fragment content (USDA 1975:78). This would make it as desirable or more so than CPE soil as regards site selection.

Given the volume of the lithic material at the Shelter Island scatter, however, it is clear that such desirable soil would have been of little use if its pebbles had to be dug. Instead, stones would have to have been accessible on the surface as the result of erosion, or available in the form of deposits of beach pebbles nearby, as they are currently. Whatever was the case, I seek to demonstrate that expedience made it necessary to gather stones quickly and indiscriminately as the first step of a systematic process that would include subsequently sorting, testing, using, and discarding stones around activity areas.

Scatter Components

Lithic material at SI-2-1 consisted of shattered and whole specimens of the same stones in approximately the same proportions as occur presently in the narrow beach deposits and erosion layers that form the site's present northwest boundary. This includes quartz, quartzite, granite, diabase, conglomerate, gneiss, schist, hematite, sandstone, and small igneous and metamorphic pebbles.

Stones occurred unevenly throughout excavated areas and many displayed signs of heat exposure such as fire-reddening, fissuring, crazing, pot-lid spalling, and fragmentation (Figure 5). No fire-reddening of particular portions of associated features suggested that the large area and many burned and broken rocks were connected intrinsically with some special purpose.

While scatter components of granite and diabase appeared invariably to be shattered by heat rather than percussion, quartz and quartzite, which make up more than 50 per cent of the scatter, in some instances displayed the effects of percussion testing as well as heat exposure. Repeated finds of quartz pebbles that were shattered, split, or had a single spall removed suggest that such stones were tested and discarded on the spot. The inadequacies of quartz for flaking helps explain why a site where occupations were probably few, minor and brief is so heavily littered.

The lithic scatter components of eight excavation units were analyzed in detail. This involved collecting all materials found between 5 and 10 in from the surface (12.7-25.4 cm), washing the specimens, and then sorting them into mineral categories which were, in turn, subdivided into stones that had been worked, unworked, heat-altered, and unaffected by heat. Each sorting was counted and weighed as were the lithics from a ninth unit, that served as a control, and was located 125 ft (38.1 m) north of Datum 2 and was about 25 ft (7.6 m) beyond the site's northern perimeter. The results are shown in Table 2.

Twenty-eight pounds (12.7 kg) was the average weight of scatter components in the units analyzed. If this measure holds true, the weight of the lithic material within the 20,000 sq ft (1858 m sq) area of intensive scatter amounts to approximately 22,400 pounds (10,161 kg). Even if up to 50 per cent of this

material was already there when the site was occupied, it is unlikely that one small task group had an impact upon so much stone during one brief episode. Several occupations in relatively rapid succession must have occurred to create what appeared to be one lose stratum of deposition.

The heat-altering of stones also leads in the direction of this conclusion. These signs indicate that stones were exposed to a variety of temperatures which, in turn, indicates that a variety of activities took place - too many, perhaps, for one depositional episode. For example, 100 per cent of all diabase in study units was spalled by intense heat. At the same time, all small pebbles from the same units were unaffected. In other units stockpiles of quartz pebbles showed no signs of exposure to heat, while masses of fire-reddened quartz boiling stones obviously did. Rock clusters contained some stones that had been exposed to high heat, and some that had not. Many features contained fire-altered quartzite cores as well as quartz spalls and flakes that appeared not to have been heated.

In spite of the evidence of the burning and heating that took place at SI-2-1, however, features contained no charcoal, and only pinhead-sized grains of charcoal without apparent associations were observed. It is possible that fuel utilized at the site vanished almost entirely in the form of vaporized carbon, carbon dioxide and water vapor. Of interest in this regard is the observation that "dry white pine bums very completely and produces a powdery easily disturbed ash... evidence pointing towards fires of small diameter softwoods, which seems likely when one considers the inefficient cutting tools available" (Patterson 1982:120).

Rock Clusters

Although there are exceptions (Ottusch 1982:24-28), it is my impression that "rock clusters" have seldom been described as such in published literature, probably because these features were mistaken often for hearths. Clusters of rock (Features 4, 7, 8, and 15) comprise an important class of features at SI-2-1 , and interpreting them accurately is another key to reconstructing site activities. Containing no charcoal and surrounded by unburned soil, these features do not seem to have supported or contained fires. Instead, they are probably what they most appear to be - piles of stone.

Stones were a principal resource at the site and were first collected and then sorted by size and material for a variety of purposes. Boiling stones, for example, tend to be thick, medium-size quartz and quartzite pebbles, while stones set aside in stockpiles for knapping tend to be thinner, medium-size pebbles that are exclusively quartz. Much stone was utilized, and traversing the area to stoop and pick up pebbles in the chill of the advancing winter would have consumed valuable time and calories. Since the stones probably lay in deposits, it would have been more practical to scoop them quickly into burden baskets and sort them later near the warmth of fires, where they were going to be used. I think the clusters 1 encountered are the picked-over remains of such collections of pebbles. Also, it is possible that many of the stones not associated with features were originally separated from such piles as a result of ordinary traffic when the site was in use. Finally, considering the importance of stones as a resource, it follows that lithics from earlier occupations were probably reused and scattered during subsequent occupations - early features may have been scavenged for the stones they contained, a process which doubtlessly would have contributed to the site's littered appearance.

While some stones from the rock clusters are not heat altered, others are. This would appear to be strong evidence that these features contained recycled materials - rocks that had been gathered, scattered, and heaped together again with fresh additions during the course of several occupations.

Discussion

A common assumption in archaeology, based in part upon modern studies of the energetics of contemporary simple societies, is that prehistoric people exploited resources in an energy-efficient manner and attempted to minimize the "ratio of energy expended to the resources procured" (Kalin et al. 1988). The present example indicates strongly that the several task parties that occupied SI-2-1 adopted a conservative, cost-conscious approach to obtaining resources there. Recycled lithics, areas where several tasks could be accomplished in one place, and the selection of a site surrounded on three sides by water-as though work there was intended to be circumscribed -all bespeak efficiency. The evidence indicates further that the catchment ranges of the groups involved obviously is greater than the two hours walk from residential base to resource that is used often as a standard in evaluating procurement strategies of hunter gatherers (Vita-Finzi and Higgs:1970).

Heating and burning were an integral aspect of life at the site. Most excavated units contained some fire-altered rock, and although some of the burning involved was task specific, it was also extensive. Considering how the principle of least effort is evident in the archaeological record preserved here, burning as a foraging technique becomes a possibility.

Fire for foraging becomes an even more intriguing possibility when one considers the additional benefits it would have provided. Burning would have cleared the site of underbrush, improved visibility, and revealed hazards that might have been present; useful stones and acorns on the ground would have been exposed; plant growth patterns would have been encouraged that would have made the site subsequently easier to locate (Thomas 1956).

Trapping, hunting, and spear-fishing are also possibilities. Sea levels were lower when the site was in use, and perhaps the lagoon here had less access to Shelter Island Sound than it has today forming a shallow cul-de-sac that was filled occasionally with migratory seals, fish, or waterfowl. In this regard it is interesting to note that bones of the gray seal (*Halichoerus grypus*), the common loon (*Gavia immer*), brant (*Branta*

Table 2. Lithic Survey of Selected Units.

Unit	1	2	3	4	5	6	7	8	9	10	11	12
N0W10	88/8.6	12/1.4	4/.10	59/4	32/3.8	6/1.2	—	—	44/9.4	—	—	9/1.4
N35E0	84/14	—	25/4.8	11/1.9	8/.12	3/.4	—	7/3	5/.8	—	—	—
N35E5	69/9.1	—	5/.5	39/3.4	24/2.8	6/1.2	—	—	20/3.4	—	—	7/.10
N40E0	46/7.8	6/2.8	6/1.10	66/10	23/4.8	—	1/.4	—	16/3	—	1/.2	2/.3
N40E5	79/6.5	1/.2	17/1.12	48/5.4	17/2.4	6/1.2	—	—	25/4	1/.1	—	1/.2
N45E0	44/5.8	6/1.5	15/1.15	29/2.14	11/.10	3/.2	1/.1	5/.10	11/2.2	—	—	2/.4
N45W0	58/7.9	6/1.3	7/1.15	74/8.10	33/5.4	—	16/2.4	—	32/3	—	4/.5	—
N45E5	115/12.2	13/2.6	5/.8	65/4.12	12/1.8	12/1.14	—	—	—	—	—	—
Control	15/1	—	—	—	—	1/.2	—	—	—	1/.1	—	—

Key

1	unworked quartz/quartzite pebbles	7	as before, fire-altered
2	as before, fire-altered	8	shattered granite
3	worked or shattered quartz pebbles	9	as before, fire-altered
4	as before, fire-altered	10	unworked sandstone
5	worked or shattered fire-altered quartzite	11	as before, fire-altered
6	unworked granite	12	shattered sandstone

00/00 number of specimens /weight, lbs and oz

bernicla), and whistling swan (*Cygnus columbianus*) were recovered from Stratum 2 at the Hornblower II Site on Martha's Vineyard, where Orient Fishtail, Susquehanna Broad, Snook Kill points, and artifacts of gray-green argillite were found (Ritchie 1969:32). Migratory loons, ducks, geese and seals still visit Shelter Island's bay system during the fall.

What is important is the likelihood that the site was desirable because its location attracted a seasonally available resource - so desirable that occupations by different groups occurred upon the same spot. In spite of the single, multicomponent cultural stratigraphy at SI-2-1, it is my strong impression that Susquehanna Tradition material here was distributed around features and within activity areas distinguished by narrow-stemmed and broad, narrow-stemmed points. Therefore I tend to believe that the first occupiers of the site were local Late/Terminal Archaic Indians using narrow-stemmed points, followed by an episode involving people who brought with them corner-removed blades, argillite, and broad points. As has been noted, campsites of the Susquehanna Tradition "occur in precisely the same locations ...as do those of Archaic and Woodland peoples, indeed, very often on the same loci" (Ritchie 1965:151).

Presently we do not know how much time intervened between these several occupations. A few days or many decades might have separated the episodes. What is evident archaeologically is that its location made the site desirable enough to draw people to it from mainland residential bases at least 11.8 mi (19 km) distant. We have tended to rule out the possibility of such bases existing on Shelter Island, unless they have been submerged, which is possible but unlikely.

The scatter, upon casual observation, appears to be the result of a single cultural event due to its volume and extent, and it would be all the more perplexing, if so misinterpreted. Seen as the accumulation of several occupations by several groups performing the same or similar tasks, the scatter becomes comprehensible and interpretable evidence for advancing or modifying current hypotheses concerning the Terminal Archaic. In this light, two points become significant. First, evidence from this site helps confirm the view that certain Terminal Archaic manifestations in coastal New York and southern New England embrace separate cultural entities - a local narrow-point tradition as well as a discrete cultural system identified by several broadblade point types, corner-removed blades and other traits, and which has been termed the "River Plain" adaptation in southern Connecticut (Pfeiffer 1984:78). Second, if such culturally discrete groups occupied the site during different seasons to procure different resources, peaceful coexistence might have prevailed between the groups as has been proposed (Dincauze 1972; Funk 1984; Ritchie 1969). However, if people within the local narrow-point tradition as well as broadblade users occupied the same site during the same season, then competition between them might have taken place, a deduction supporting the argument that cultural competition occurred in southern Connecticut during the Terminal Archaic (Pfeiffer 1984:86).

The use of the same site by groups with different residential histories, presumably to obtain the same seasonally available resource, leads me to suppose further that such circum-

Unit	13	14	15	16	17	18	19	20	21	22	23	24	25
N0W10	—	—	—	—	—	—	—	1/.3	22/2.4	—	5/.14	58/.7	33.2
N35E0	—	—	—	4/.8	6/3	1/.6	—	—	9/1	—	16/3.9	18/.1	32.7
N35E5	—	1/.1	—	—	—	—	1/.1	—	4/.6	—	12/2.2	44/.3	28.9
N40E0	—	—	1/.2	—	—	—	—	1/.4	4/.12	—	14/2.4	14/.1	33.2
N40E5—	—	—	—	—	—	—	—	—	—	—	21/3.8	54/2.8	26.6
N45E0	1/.1	1/12	—	—	—	—	3/.6	—	1/.1	—	9/1.2	22/.3	29.5
N45W0	—	2/.4	—	—	—	—	—	1/.3	2/1	4/.8	11/1.4	4/.1	33.6
N45E5	—	6/1.4	2/.4	—	—	—	1/.3	3/.1	5/.7	—	5/1	58/.7	26.12
Control	—	—	—	—	—	—	—	—	—	—	—	—	1.3

Key

13 unworked gneiss
14 shattered gneiss
15 as before, fire-altered
16 unworked schist
17 shattered schist
18 unworked conglomerate
19 shattered conglomerate
20 as before, fire-altered
21 shattered igneous rock
22 as before, fire-altered
23 shattered, fire-altered diabase
24 quartz spalls and flakes
25 weight in lbs and oz

00/00 number of specimens /weight, lbs and oz

stances mi`7ht reflect a possible survival mechanism for the users of broadblades who, as wider-ranging non-centrally based wanderers, would have been less adapted to local conditions, and could have benefited from using resource procurement and processing stations developed by others. Such opportunism would be one further example of the principle of least effort in action.

Competition in our view, even if it is only implied by the data, underscores similarities between the competitors as strongly as differences. Taken as a whole, SI-2-1 attests to common factors in the lifeways of convergent Terminal Archaic groups including the probable use of the same resources and the use in similar fashion of the same kinds of tools by task party members of several cultures.

Aspects in common are further reflected in what could be interpreted as evidence for the impact Terminal Archaic groups had upon one another, evidence seen in the morphologies of both broadpoints and narrow points which seem to reflect the pull of contradictory themes - the elongation of broad points into fishtails, and the expansion of blades and stems of local quartz points into broadened hybrids.

Conclusion

Radiocarbon dates that would help to resolve several of the most hypothetical issues the site evokes are regrettably absent, and 1 hope that such information will be obtained in the future from the shell samples that were excavated and retained. One finding that might emerge from such analysis could be that SI-2-1 should be provenienced to the Early Woodland Period, a time, some suspect, when "pockets" of earlier traditions survived in coastal New York and Southern New England (Pagoulatos, personal communication 1990). In Connecticut, the Brodeur Point Site radiocarbon dated at 2970 ± 85 B.P. (Pfeiffer 1984:86) seems to bridge Terminal Archaic and Early Woodland periods, while the Parkos Site (41-18), dated at 1910 ± 100 B.P. (Pagoulatos 1988:74), falls within Early Woodland chronology but has yielded projectile points that share much in common with Terminal Archaic broadpoints. Lithic scatters in Long Island and Connecticut that have been noted by past researchers, but not studied intensively, may serve ultimately with the site presented here to clarify the confluence of traits and variety of sites that distinguish the Terminal Archaic and the several centuries immediately following this little understood period.

Acknowledgments

Thanks are warmly extended to Dr. James A. Moore, Queens College, CUNY, Ms. Donna Ottush-Kianka, and Professor William Parry of Hunter College, CUNY. A debt of special gratitude is owed to Dr. Peter Pagoulatos of Rutgers University, who kindly read and commented upon an early draft of this report.

SI-2-I artifacts and the writer's field notes and photographs have been donated to the museums of the Shelter Island Historical Society and Incorporated Long Island Chapter, NYSAA, Southold, New York.

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Minutes of the 75th Annual Meeting
New York State Archaeological Association

Stouffer Rochester Plaza, Rochester, New York 14614

Executive Committee Meeting

The meeting of the Executive Committee of the New York State Archaeological Association was held on Friday, April 12, 1991, at the Stouffer Rochester Plaza Hotel, Rochester, New York. After a brief welcoming address, President Roger W. Moeller called the meeting to order at 7:51 p.m. and directed the Secretary to call the roll. Because of the late start of the Awards Committee meeting and the problems involved within, the Executive Committee was hard pressed to obtain a quorum as most of the committee people were not in place. Finally, the following voting members, including state officers, chapter presidents, and secretaries, or their alternates were present:

President:	Dr. Roger W. Moeller
Vice President:	Robert J. Gorall
Secretary:	John H. McCashion
Treasurer:	Carolyn O. Weatherwax

Auringer-Seelye Chapter

President:	Gloria Miller (Alternate)
Secretary:	Carolyn O. Weatherwax (Alternate)

William Beauchamp Chapter

President:	Al LaFrance
Secretary:	Vicky Jayne (Alternate)

Chenango Chapter

President:	Dr. Francis Hailey
Secretary:	Lucy M. Sanders

Frederick M. Houghton Chapter

President:	Anna Clemente (Alternate)
Secretary:	Marilyn Hahn

Incorporated Long Island Chapter

President:	Walter Smith
Secretary:	David Elliston (Alternate)

Incorporated Orange County Chapter

President:	Harold R. Decker
Secretary:	Helen M. Green

Incorporated Upper Susquehanna Chapter

President:	Richard Wakeman
Secretary:	Ruth Wakeman

Lewis Henry Morgan Chapter

President:	Robert J. Gorall
Secretary:	Muriel E. Gorall

Louis A. Brennan Lower Hudson Chapter

President:	Absent
Secretary:	Absent

Metropolitan Chapter

President:	Absent
Secretary:	Absent

Mid-Hudson Chapter

President:	AL Wanzer (Alternate)
Secretary:	Absent

Triple Cities Chapter

President:	Richard Jackson
Secretary:	Absent

Van Epps-Hartley Chapter

President:	Fred Stevens (Alternate)
Secretary:	John H. McCashion (Alternate)

Committee Chairpersons

Awards:	Absent
Editor:	Charles F. Hayes III
Publications:	Absent
Legislative:	Absent
Chapters and Membership:	Vacant
NYAC/NYSAA Liaison:	Absent
Constitutional:	Richard Wakeman
75th Diamond Jubilee:	Dr. Roger W. Moeller
Nominating:	Richard Bennett
Finance:	Dr. Roger W. Moeller
ESAF Liaison:	Dr. Roger W. Moeller
Bulletin Distribution:	Dr. Roger W. Moeller

The roll call having been completed and the required quorum (11) being present, the next order of business required the reading of the Executive Committee meeting minutes from the 74th NYSAA Annual Meeting at Eddy Farms, New York, in 1990. Since these had been previously printed and mailed to the Executive Committee on 6/13/90, Richard Jackson made the motion that the 74th Executive Committee minutes be approved as printed and distributed. Vicky Jayne seconded the motion, which was accepted by all. The Executive Committee then proceeded to the next order of business.

Report of the Officers

President

President Moeller began at 7:58 p.m., by asking the committee if there were any questions concerning the roles of the various officers. He would dispense with an official report which would be given under a variety of topics as they appeared on the agenda. Accepted.

Vice President

Vice President Gorall reported that he was standing by until needed. Accepted.

Secretary

Upon returning from the 74th NYSAA Meeting at Eddy Farms, New York, work began immediately on preparing the Executive Committee minutes and investigating the various manufacturing sources for the 75th Diamond Jubilee pins, which, when produced, were sent to Committee Chair, Robert Gorall. He distributed them to you upon registration.

While handling the routine business, research began on clay tobacco pipe Articles Nos. 5 and 6. Research continued on Dr. Elaine Herold's South Carolina pipes, the SUNY pipe collection, and the pipe composition analysis at lntermagnetics in Guilderland.

By May 2, 1990, the completed and edited Executive Committee and General Business Meeting minutes were sent to Charles Hayes to be incorporated in *The Bulletin*. This, as we had agreed in the past, would constitute the history of NYSAA for future generations.

On June 13, 1990, four copies of the *Informational Handbook*, Volume 22, four copies of the Executive Committee minutes, and one copy of the 43-page newsletter were mailed to the officers and chapter secretaries. We do not have a regular newsletter and with our finances below the $25.000 maximum allowable, there seems to be no prospect for one in the future. This points up the need for establishing a fund-raising committee made up of the voting members of the Executive Committee and approved by President Moeller. In the meantime the newsletter will be transmitted three times annually. It will include (as it has) the most basic and useful information as well as reports of archaeological events and contemporary Native American happenings gleaned from the press and other sources.

Due to the increasing volume of business, it was necessary to upgrade the Secretarial Office which was completed with the acquisition of a 386SX computer, scanner, and laser-jet printer which will be made available to all NYSAA members who need to produce graphics, texts, or combinations of both. The Secretarial Office was shut down temporarily in September and October while Fran and I attended conferences and toured the United Kingdom. Mention is made of this as it directly affects NYSAA. We met with Dr. David Gaimster at the British Museum to secure permission to publish in *The Bulletin* sections of the Dutch Pipemakers Guild Records (1660-1724) copies of which had been made available to us through the courtesy of Dr. James Pendergast. Besides studying the methods employed at the Roman sites at Chester and Canterbury, we studied the internal makeup of the trusts such as those of Kent and York with particular emphasis on their effective combination of business and archaeology in their fund-raising structure. Lastly, photographs of Dr. Herold's pipes from the South Carolina dig were brought to the International Pipe Conference at Liverpool for examination by the Bristol and London specialists.

Upon our return there were exactly 100 pieces of NYSAA correspondence, 50 of which required action and response. Amongst them was an invitation to travel to Santa Domingo, where, at Monti Cristi, an unknown inbound wreck loaded with clay tobacco pipes lay in about thirteen feet of water.

On November 20, 1990, the yellow membership cards, two flyers, and a 39-page newsletter in a new type format were mailed to the officers and chapter secretaries. No "first call for papers" was necessary.

On February 12, 1991, Part IV (Article No. 6) in the continuing series of clay tobacco pipe studies was sent to Charles Hayes. Article No. 5 on Stone Quarry Oneida will be completed within six weeks of this meeting and sent to Ted Whitney to be published as a Chenango Chapter Bulletin. Article No. 7 should be completed within four months and No. 8 by the end of the year.

By February 19, 1991, a 20-page newsletter was mailed, its abbreviated length due to the postage rate increase. The unofficial title, "News from the Ground, Up!" has been retired with this issue, and it will be renamed and reformatted with a title more appropriate for a 75-year-old avocational organization.

March was revisionist month. The insert which was sent to those requiring information and membership in NYSAA was completely reformatted and pressed into service. The

entire *Informational Handbook*, four copies of which must be distributed to the four principal officers, underwent a complete change to reflect the 75th Annual Meeting. The NYSAA logo had been drawn by William Ehlers and the outer border was lined with the points scanned from the typology, a tribute to Dr. Ritchie who authored the book and to Gwenyth Gillette who drew the points. The inside text is now printed so that the directions will be easier to read and follow.

Having been recruited to this office under the most unusual circumstances by past-President Elizabeth Dumont at 8:12 p.m.. April 23, 1982, at the Executive Committee meeting at Buffalo, and looking back to my first conference at West Point in 1964 where I first met William Ehlers, I always remember the concern he had for the NYSAA. If the NYSAA was to survive a hundred years, he said, and suffer a thousand setbacks, it still must continue to improve, and improve, and improve.

Report accepted as printed and distributed.

Treasurer

Treasurer Weatherwax presented copies of the Treasurer's Report to all concerned. She commented on various aspects of costs and thanked Harold Decker and the Orange County Chapter in particular for the return of the money lent towards the Flint Mine Hill project.

Motion to accept the report as printed was made by Muriel Gorall, seconded by Vicky Jayne.

Report of the Treasurer, April 12, 1991

Adirondack Trust Co.

4/15/90	
CD #37220016112	$5,706.29
MMDA #7922385*	5,508.72
NOW Acc't #2945406	2,763.70

*Less $1,000 transferred to NOW account.

4/12/91			
CD #37220016112		$6,281.14	
Int. 1990-1991	574.85		
MMDA #7922385*		4,854.02	
Int. 3/30/90-3/30-91	345.30		
NOW Acc't #2945406		2,493.09	
Int. 4/28/90-3/01/91	69.82		
TOTAL ASSETS			$13,628.25

Cash Receipts 1990-1991	
Dues	$6,270.00
Publication Sales	463.87
Binder Refund Flint Mine Hill	500.00
Binder Refund Inc. O.C. Chapter FMH	800.00
Refund Sales Tax HPIIP Printer	75.00
Interest NOW Account #2945406	69.82
Transfer from MMDA #7922385	1,000.00
TOTAL	$9,178.69

Disbursements 1990-1991	
Refund Inc., O.C. Chapter (FMH)	$800.00
1990 ESAF dues (669 members)	136.00
Secretarial expenses	375.00
Archaeological services ($63.00 cr.)	471.11
Bethlehem Printing Co.	150.00
Postmaster, Bethlehem, CT	100.15
Pins for 75th meeting	1,512.00
Refund *Bulletin* sales	9.35
Refund Canadian member	9.00
The Bulletin No. 100	2,502.25
The Bulletin No. 101	3,162.74
The Bulletin No. 102	200.00
Treasurer's expense	16.50
TOTAL	$9,444.10

TOTAL RECEIPTS	$9,178.69
Bal. Ck. Acc't. (4/15/90)	2,763.70
TOTAL	$11,942.39
Disbursements (1990-1991)	-9,444.10
TOTAL	$2,498.29
Checking Account Service Charge	-5.20
BALANCE 4/12/91	$2,493.09

Committee Reports

Editor

Charles F. Hayes III reported that during 1990-1991, two issues (Nos. 100 and 101) of *The Bulletin* were published with a combined total of 63 pages. Five papers and one obituary on New York State related archaeology and archaeologists were included along with the 1990 Annual Meeting minutes. The format, allowing an increasing amount of data to be consolidated, was retained with improvements from previous issues. Monroe Reprographics of Rochester, New York, continued to print *The Bulletin* and ship bulk copies to Roger Moeller for distribution.

Assistant Editors Brian Nagel and Dr. Connie Cox Bodner again contributed their valuable services to the preparation of the manuscripts. Patricia Miller, Graphic Designer PM De sign, was responsible for the composition and layout of both issues. The Editor would like to express appreciation to these individuals for their assistance for another year in providing the NYSAA with a publication with contemporary design, editorial accuracy, and scientific integrity.

During 1991, a special issue, No. 102, of *The Bulletin* will be published in honor of the 75th anniversary of the NYSAA. This special issue will contain some of the papers presented at the "Symposium of the Iroquoian Speaking Peoples of the Northeast" held during the 73rd Annual Meeting in Norwich, New York.

Issue No. 103 is currently being assembled. It will contain four papers plus the minutes of the 75th Annual Meeting. An expected date of publication is January of 1992. There are a few manuscripts ready for No. 104, also to be issued in 1992.

Expenses for *The Bulletin* appear to be reasonable. The NYSAA has a good working relationship with Monroe Reprographics. The company is continually attempting to keep the costs down and to be competitive. Issuing two bulletins each year has eased the scheduling problem and allowed ample time for proper editing.

***Bulletin* and Distribution**

President Moeller reported that *The Bulletin* distribution was proceeding smoothly. Charles Hayes sends *the bulletin*s to Roger, who packages and labels them. Three copies are sent to each chapter and the remainder to the membership within two or three days. Unfortunately, the Postal Service has raised the mailing rates to almost double the previous amount. Approximately 1500 meeting notices were mailed both collectively and individually, and it is probable that most people found out about this meeting via this source. With the time variability in so many different chapter newsletters and the inability to coordinate them into one cohesive informational machine, the direct mailing is the only way to go.

Legislative

Due to the overlapping of the Awards Committee meeting, Dr. Huey was not present, and the legislative report was deferred by President Moeller.

Finance

President Moeller reported that he had conferred with the Treasurer and that the financial status quo was being maintained even with the increase in the postage rates.

Constitution

Chairman Richard Wakeman reported that no action was necessary at this time to change the Constitution.

ESAF Liaison

President Moeller announced that the ESAF meeting would take place in November, 1991, in Williamsburg, Virginia hosted by the Archaeological Society of Virginia. He reported that AENA Volume No. 18 was way behind schedule.

Publications

Drs. Engelbrecht and Kraft not being present, the report was deferred to Dr. Moeller. The Louis A. Brennan Festschrift, reported by Dr. Kraft, was progressing nicely. The title will be "Archaeology of the Hudson Valley: Papers in Honor of Louis A. Brennan," and will be published in the series Occasional Papers in Northeastern Anthropology. The completed copy should be ready by early Fall. Funding will be required from part of the Eddy Farms proceeds as well as from ESAF, MAAC, NYSAA, MALFA, and the L. A. Brennan Chapter. The estimated cost is expected to be below $20.00 per copy.

Nominating

Richard Bennett reported that this was a non-election year and that the President would activate the Nominating Committee in November.

Chapters and Membership

President Moeller stated that this committee could remain inactive unless there was a need for it. The subject had been mentioned at the 74th meeting that there was a possibility of a new chapter arising from the Jamestown area, but this evidently had not been brought to fruition.

NYAC/NYSAA Liaison

Liaison Dolores N. Elliott was not present due to the overlapping of the Awards Committee meeting. Karen Hartgen reported at 8:17 p.m. that most copies of Article 18, concerning burials, had been distributed but that if anyone wanted copies she would provide them. The J-Mark lawsuit was temporarily on hold, but other lawyers from other preservation agencies had been contacted. Grant monies that were applied for to purchase the land at Flint Mine Hill were directed to archaeology in Kingston. Ms. Hartgen reported on the new newsletter and the NYAC brochure, and the Secretary reported that Louise Basa had given them to us for distribution and not to forget to obtain a copy of our Informational Handbook.

Awards

Dr. Peter P. Pratt was absent due to the overlapping of the Awards Committee meeting.

Old Business

A unique transaction took place for the first time in at least 26 years when the Secretary announced from the agenda to President Moeller at 8:32 p.m. that there was no Old Business.

New Business

A. Canadian Taxes and Their Effect on NYSAA. President Moeller reported that as of January, 1991, Canada enacted GST, Canadian Goods and Services Tax. It is mandatory that all organizations register to do business in Canada. You cannot send any of your products to Canada without the registration number appearing on the product. Failure to comply may result in the item being returned to you postage due plus export fees which can range from $20 to $30. This value added tax starts at one cent. For those who register, 7 per cent must be collected on all goods and services sent to Canada. Therefore, all Canadian sales and memberships have ceased, and monies have been refunded as appropriate.

B. Establishment of a Fund-Raising Committee. The Secretary stated that after much investigation it is imperative to establish a fund-raising committee to insure that the NYSAA has sufficient and lasting funds into the next century to publish bulletins and become involved in other preservation issues. The fund-raising committee will consist of the four principal officers and the voting members of the Executive Committee. The Secretary volunteered to coordinate all efforts including the applications for grants and funds to bring our treasury up to the allotted $25,000. Activities would be directed towards individuals and corporations and not financially pressed chapters. This could be accomplished from within the association or from without by hiring a professional fund-raising team. Vice President Gorall made the motion to create the fund-raising committee consisting of the four principal officers and the voting members, chapter presidents, and secretaries. Richard Jackson seconded the motion.

C. Hosting the 76th NYSAA Annual Meeting. President Moeller announced that the new President of the Louis A. Brennan Chapter, Bobbie Buske, reported that the 76th NYSAA Annual Meeting would return to the Eddy Farms complex, April 24, 25, 26, 1992. The cost would be doubles at $110, singles at $94 plus registration fee. Program chairman for the event will be Ed Lenik. Vicky Jayne put forth the motion that the William Beauchamp Chapter would be pleased to host the 1995 NYSAA Annual meeting to celebrate their 25th anniversary. The Executive Committee was pleased to accept, and the motion was seconded by Richard Jackson.

D. Resolution 91-1 Thanking the Host Chapter, Lewis Henry Morgan: whereas, the Lewis Henry Morgan Chapter is hosting this the 75th Diamond Jubilee Annual Meeting, and whereas, Chapter President Robert J. Gorall, Vice President Justin Tubiolo, Secretary/Treasurer Muriel E. Gorall; Executive Committee members, Ralph Brown, Dr. Francis J. Clune, Bart Cucchiara, Yvonne Cucchiara, Henry Domagala, Charles F. Hayes III, Shirley Dombrowski, Dale Knapp, Brian Nagel, Annette W. Nohe, Donald Cameron, and Rev. John R. Lee have worked long and laboriously to provide the excellent accommodations and amenities to our membership, BE IT SO RESOLVED, that the New York State Archaeological .Association express its eternal thanks with the presentation of Resolution 91-1, in which we say, "Well done!" This was followed by a resounding round of applause.

Richard Jackson quickly made the motion to adjourn which was seconded by A1 LaFrance followed by the immediate approval of the Executive Committee, and the shortest Executive Committee meeting on record concluded at 9:03 p.m., April 12, 1991.

General Business Meeting

The General Business Meeting of the New York State Archaeological Association was called to order by President Moeller at 4:47 p.m., April 13, 1991. After a short welcoming address, President Moeller asked the Secretary whether there was a quorum present. With eleven present, the Secretary was directed to read the minutes of the 74th NYSAA Executive Committee meeting. Since these minutes had been printed and mailed, Ty Tanner made the motion that the minutes be accepted as printed. A1 LaFrance seconded the motion, which was approved by the membership.

President Moeller began his report with an update p on the Louis A. Brennan Festschrift which would be completed by Fall. He discussed the effect of the Canadian Government Sales

Tax on the NYSAA membership. Since we had no plans to register we would undoubtedly lose many Canadian memberships. He noted that the ESAF meeting would be at Colonial Williamsburg in November and urged all to attend and support ESAF. He stated that the Executive Committee voted to have the 1995 NYSAA Annual Meeting in Syracuse to celebrate the 25th Anniversary of the founding of the William Beauchamp chapter. There were no objections. He concluded by stating that the awards would be presented at the banquet.

Monte Bennett made the motion that in the interest of time reading of the lengthy Secretary's Report be waived since it would be printed and distributed in June. Vicky Jayne seconded the motion and none were opposed.

The Treasurer's Report was distributed and given by Carolyn Weatherwax. There was no discussion. Richard Bennett made the motion to accept it as printed and distributed and the motion was seconded by Dolores Elliott. This report was approved by the membership.

Charles Hayes gave the Editor's report and basically stated that during 1990-1991, two issues (Nos. 100 and 101) were published with a combined total of 63 pages. When asked why the number of pages was smaller than usual, Editor Hayes stated that a change in the format allowed an increasing amount of data to be consolidated. He thanked Assistant Editors Brian Nagel and Dr. Connie Cox Bodner and Graphic Designer Patricia Miller for their valuable assistance in preparing *The Bulletin*. Report accepted as given.

President Moeller entertained a motion to dispense with the rest of the committee reports in the interest of time. Richard Jackson brought the motion to the floor which was seconded by Richard Wakeman and approved by the membership.

As there was no Old Business the meeting moved to New Business. The Secretary briefly touched on the subject of the Canadian tax and the establishment of a fund-raising commit tee comprised of the voting members of the Executive Committee. There was no discussion. Resolution 91-1 was then read thanking the Lewis Henry Morgan Chapter for their outstanding efforts in hosting the 75th Diamond Jubilee.

Charles F. Hayes III made the motion to adjourn which was seconded by Fran McCashion, and the 75th NYSAA General Business Meeting passed into history at 5:00 p.m.

Legislation: Federal

In November, 1990, President Bush signed a Native American repatriation bill supported by the Society for American Archaeology (SAA). The bill incorporates compromise language worked out by the SAA, the American Association of Museums, congressional staff, and national Indian organizations. For the second consecutive year, President Bush has recommended increased federal funding for historic preservation. In his budget recommendation submitted to Congress on February 4 for fiscal year 1992, beginning October 1, Bush requested $30.2 million for the state preservation offices and $15 million for the first phase of the new American Battlefield Protection Program. The proposal also calls for increased funding for the National Endowment for the Humanities, the Institute for Museum Services, and the Advisory Council on Historic Preservation. Hearings began in mid-February.

On March 4, the Supreme Court upheld the constitutionality of local preservation laws in protecting historic religious properties, including the New York City historic landmarks law as applied to St. Bartholomew's Church. The ruling that the preservation laws did not place an unconstitutional burden on the religious freedom of St. Bartholomew's Church since the church had not been denied the ability to practice its religion nor coerced in the nature of those practices was allowed to stand.

A U.S. Judge in Illinois has upheld the constitutionality of the federal shipwreck act in a Lake Michigan case involving two shipwrecks from the 1860s discovered about ten miles from shore. Meanwhile, several states have proposed new underwater antiquities legislation that has raised concerns among archaeologists. In South Carolina, it is proposed to allow divers to bring up ten objects per day from a wreck, with a weight limit of 15 pounds. Each artifact would be carefully recorded as to location or other provenience on the wreck site. In Maryland, proposed revisions to the regulations for submerged archaeological resources would permit divers to use screw drivers, pliers, and wrenches as tools to excavate underwater sites and would allow the collection of five artifacts weighing 25 pounds from an underwater site without a permit. The good news is that any site considered eligible for the National Register would be exempted. Meanwhile, the National Park Services issued the Abandoned Shipwreck Act Guidelines which were published in the Federal Register on December 4. Guidelines are offered to assist those states which do not yet have established programs in developing legislation and establish programs to manage shipwreck sites. Guidelines are also offered to states which already have programs in reviewing and making any necessary amendments to their respective program's authorizing legislation. Public access to shipwrecks should be guaranteed to allow individuals to explore but not to disturb or remove objects from historic shipwrecks. Steps in creating and operating underwater parks or preserves are outlined. Appended is a list of shipwrecks listed on the National Register, of which there are 17 in New York State. Copies of the guidelines are available free of charge from the Department Consulting Archaeologist, National Park Service, P. O. Box 37127, Washington, DC 20013-7127.

The above information is from the Society for American Archaeology and the National Trust publications Historic Preservation News and Preservation Law Reporter. The Trust's legislative information hotline is (800) 765-NTMP.

State

Last August, legislation designed to reduce liability to landowners who offer their land for public recreational use passed the New York State Senate and was delivered to the Assembly for consideration. It was sponsored by Senator Jay P. Rolson, Jr. and Assemblyman Maurice Hinchey. The bill would protect a property owner from liability if special permission had been given on the property for hunting, swimming, boating, or other recreational activities of that nature. The legislation would make clear that the landowner is not required by law to keep the property safe for recreational use or to give any specific warning of dangers.

Assembly Bill 5177 introduced on March 5 is intended to make artifacts in museum collections more visible to the public with a maximum degree of public display. The Education Com missioner would be required to review the artifact collections of non-profit institutions in the state incorporated as museums to determine the extent of collections held in storage and the frequency of display of stored items. The stated goal of the bill is "having every piece of fine art and artifacts in museum collections on public display at least one time every ten years."

Legislative bills are being drafted on museum record keeping and the acquisition by a museum of title to undocumented property in its custody. No museum can legally deaccession property in its collection to which it does not have clear title. On October 13, 1990, the New York Archaeological Council (NYAC) passed a resolution concerning the use of the New York Statewide Archaeological Inventory Map. This map shows general locations of only those sites which are already known and previously identified, recorded, and inventoried. The map is used as a tool in determining whether archaeological surveys are required in order to identify other archaeological resources that may exist within a proposed project area and may be threatened. If a proposed project is in an area where no previous surveys have ever been conducted and no sites are already known to exist in the vicinity, it is likely that no search for archaeological resources that might be threatened by such a project would be required. NYAC is asking the New York State Office of Parks, Recreation and Historic Preservation to discontinue use of the Inventory Map in project review to determine the need for archaeological surveys, to develop predictive models as planning tools, and to implement additional methods of determining needs for surveys. The state fiscal crisis has had a severe impact on State Museum and State Historic Sites programs. Key positions were lost in the State Library and the State Museum exhibits planning services, and two archaeological positions were among those lost in the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation. Several State historic Sites are slated to be lost. The defeat of the Environmental Quality Bond Act also has limited the progress of historic preservation initiatives.

On February 21, there was a public hearing on proposed revisions to the regulations implementing the State Historic Preservation Act.

Program of the 75th Annual Meeting
New York State Archaeological Association

April 12, 13, and 14, 1991
Stouffer Rochester Plaza, Rochester, New York 14614
Host: Lewis Henry Morgan Chapter

Friday, April 12, 1991

1:00 pm	NYAC Board Meeting
2:00 pm	NYAC Committee Meetings
3:00 pm	NYAC Business Meeting
5-9:00 pm	NYSAA Registration
7:30 pm	NYSAA Executive and Standing Committee Meetings
9:00 pm	Reception: Lewis Henry Morgan Chapter

Saturday, April 13, 1991

8:00 am Welcome

9:00 am NYSAA Registration
Roger W. Moeller, President NYSAA
Robert Gorall, President Lewis Henry Morgan Chapter
Program Notes William E. Engelbrecht

Morning Session: NYSAA Retrospective
Chair: Charles F. Hayes III

9:10 am *A History of the NYSAA*
Charles F. Hayes III, Rochester Museum & Science Center/Lewis Henry Morgan Chapter

9:35 am *Arthur C. Parker's Contribution to New York Archaeology*
Lynne P. Sullivan, New York State Museum/ Van Epps-Hartley Chapter

10:00 am *William A. Ritchie and Louis A. Brennan*
Herbert C. Kraft, Seton Hall University/ Orange County Chapter

10:25 am Coffee Break

11:00 am *Charles F. Wray: The View from the Hill*
Lorraine P. Saunders, Rochester Museum & Science Center/Lewis Henry Morgan Chapter

11:25 am *Marian White: Pioneer in New York Archaeology*
Susan J. Bender, Skidmore College

12:00 noon Lunch on your own

Afternoon Session: General Session
Chair: Gordon DeAngelo

1:30 pm	*Some Notes on Cross-Border Archaeology in This Region Since the Earliest Days* James F. Pendergast, Canadian Museum of Civilization
2:00 pm	Avocational Archaeology in New York Gordon DeAngelo, William M. Beauchamp Chapter
2:30 pm	*Our Changing View of the Paleo-Indian and Archaic New York* Robert E. Funk, New York State Museum/Van Epps-Hartley Chapter
3:00 pm	Break
3:30 pm	*Population Movement During the Woodland Periods: The Intrusion of Iroquoian Peoples* Dean R. Snow, State University of New York at Albany/Van Epps-Hartley Chapter
4:00 pm	*The Development of Historical Archaeology in New York State through 1965* Paul Huey, New York State Office of Parks, Recreation and Historic Preservation/Van Epps-Hartley Chapter
4:30 pm	*Preserving Our Past: Where We Have Been and Where We Should Be Going: Cultural Resource Management in New York State* Brian L. Nagel, Rochester Museum & Science Center/Lewis Henry Morgan Chapter
5-5:20 pm	NYSAA Business Meeting
6-7:00 pm	Reception, Wilson Hall, Rochester Museum & Science Center Conservation Laboratory, open 5-7:00
7:30 pin	Annual Banquet, Eisenhart Auditorium, Rochester Museum & Science Center Master of Ceremonies: Roger W. Moeller, President NYSAA Invocation: Rev. John R. Lee, Lewis Henry Morgan Chapter Keynote Address: *Lewis Henry Morgan as a Collector* Dr. William C. Sturtevant, Curator of Ethnology. National Museum of Natural History, Smithsonian Institution

Sunday, April 14, 1991
Morning Session: General Session
Chair: William E. Engelbrecht

9:00 am	*Implications of Possible Paleo-Indian Watercraft Use* William E. Engelbrecht, Buffalo State College/Frederick M. Houghton Chapter Carl Seyfert, State University College at Buffalo
9:30 am	*The Arc Site: A Paleo-Indian Site in Western New York* Stanley Vanderlaan, Lewis H. Morgan Chapter
10:00 am	Coffee Break
10:30 am	*Reorientation of Historical Maps of Old Fort Niagara Using Computer-Assisted Cartography* Patricia K. Scott, Old Fort Niagara Association/Frederick M. Houghton
11:00 am	Chronology of the Ball Site or Did Champlain Sleep Here? Dean Knight, Wildfred Laurier University
12:00 noon	Lunch on your own
	NYSAA members are invited to visit Ganondagan State Historic Site in Victor, New York. Hours are 11:00 am to 4:00 pm.

NYSAA 75th Anniversary Committee

William F. Ehlers (deceased)
Dolores N. Elliot
Dr. William E. Engelbrecht (Program Chair)
Robert J. Gorall (Co-Chair)
Charles F. Hayes III (Co-Chair)
Richard Jackson
John H. McCashion
Dr. Roger W. Moeller (Ex-officio)
Dr. Charles J. Semowich
Carolyn O. Weatherwax

Registration:	Muriel Gorall Shirley Dombrowski, RMSC Research Division
Assistance:	Anthropology Club, St. John Fisher College

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)
Peter P. Pratt (1980)
Herbert C. Kraft (1989)

Fellows of the Association

Monte Bennett
James W. Bradley
Louis A. Brennan
William S. Cornwell
Dolores N. Elliott
William E. Engelbrecht
Lois M. Feister
Robert E. Funk
Thomas Grassmann O.F.M.
Alfred K. Guthe
Gilbert W. Hagerty
Charles F. Hayes III
Franklin J. Hesse
Richard E. Hosbach
Paul R. Huey
R. Arthur Johnson
Edward J. Kaeser
Herbert C. Kraft
Roy Latham
Lucianne Lavin
Donald M. Lenig
Edward J. Lenik
Julius Lopez
Richard L. McCarthy
James F. Pendergast
Peter P. Pratt
Robert Ricklis
William A. Ritchie
Bruce E. Rippeteau
Donald A. Rumrill
Bert Salwen
Harold Secor
Dean R. Snow
Audrey J. Sublett
James A. Tuck
Stanley G. Vanderlaan
Paul L. Weinman
Thomas P. Weinman
Marian E. White
Theodore Whitney
Charles F. Wray
Gordon K. Wright

Certificate of Merit

Thomas Amorosi
Roger Ashton
Charles A. Bello
Monte Bennett
Daniel M. Barber
James W. Bradley
Art Carver
Gordon De Angelo
Elizabeth M. Dumont
Lewis Dumont
William F. Ehlers
Dolores N. Elliott
Garry A. Elliot
John Ferguson
Joan H. Geismar
Stanford J. Gibson
Gwyneth Gillette
Robert J. Gorall
R. Michael Gramly
George R. Hamell
Franklin J. Hesse
Richard E. Hosbach
Paul R. Huey
Albert D. La France
Kingston Lamer
Edward J. Lenik
William D. Lipe
John H. McCashion
Brian L. Nagel
Marjorie K. Pratt
Peter P. Pratt
Harold Secor
Annette Silver
Mead Stapler
Marilyn C. Stewart
Neal L. Trubowitz
Charles E. Vandrei
James P. Walsh
George R. Walters
Beth Wellman
Henry P. Wemple
Roberta Wingerson
Stanley H. Wisniewski