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Complete James I sixpence, courtesy of Antony Wilson, York Coins, Inc., New York

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The Macauley 8 Site: A Multicomponent Site Occupied From The Late Archaic To The Late Woodland

Richard N. Maxson, State University of New York at Geneseo

The Macauley 8 Site (Mac 8) (Cda 138) is one of the fourteen sites that comprise the Macauley Complex. It was excavated in the 1970s and 1980s by students in field schools directed by Dr. Wendell Rhodes, then Chair of the Department of Anthropology at SUNY Geneseo. The site lies along the Genesee River, near its confluence with Canaseraga Creek. Projectile points found at the site show that there was occupation, probably episodic, from Late Archaic to Late Woodland times. Pottery from the site was limited to Vinette I.

Introduction

The Macauley 8 Site (Mac 8) (Cda 138) is one of the sites known collectively as the Macauley Complex. These sites were excavated by field school students under the direction of Dr. Wendell Rhodes, then Chair of the Department of Anthropology at SUNY Geneseo. It was excavated during the summers of 1974, 1975, 1978 to 1982, and 1986, 1987, and 1989. This report is based on an analysis of the artifacts from those excavations and the extant documentation that have been stored in the Department of Anthropology at SUNY Geneseo.

Site Description

The Mac 8 Site is located about 5 km (3 mi) south of the Village of Geneseo, New York and is on the east bank of the Genesee River a few hundred meters downstream from the confluence of Canaseraga Creek and the Genesee. The exact location of the site is shown in Figure 1, showing a portion of the USGS 7.5 minute topographical map of the Geneseo quadrangle. The location of the site is recorded in several student notebooks, as well as on a map, presumably prepared by Dr. Rhodes in the 1990s.

Mac 8 is on the first terrace of the river about 15 m (50 ft) above the river bed. Across the river from the site is the bed of a periglacial lake named Lake Geneseo (Muller et al. 1988:126). The lakebed is 2 or 3 km wide at the site and the northern end is the present floodplain of the Genesee River. To the east of the site the terrain rises to a ridge approximately 3 km (2 mi) to the east and about 180 m (600 ft) above it. Water flowing from this ridge has eroded

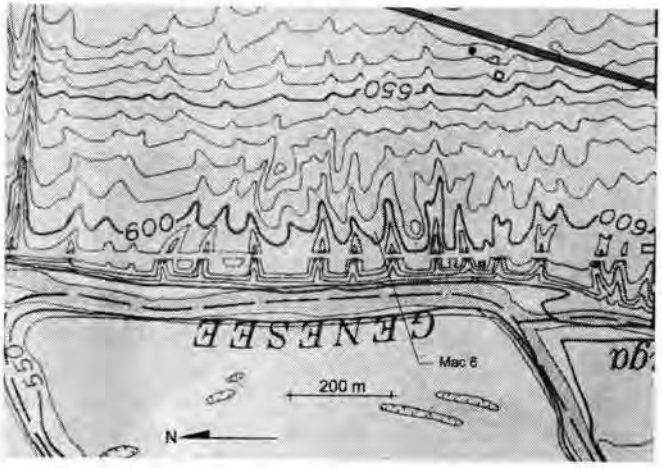

Figure 1. Map showing location of the Macauley 8 Site (Mac 8). The map is copied from USGS topographical map of the Geneseo quadrangle, dated 1978.

gullies in the river bank from a few meters to a few tens of meters deep. Two of these shallower gullies form the north and south boundaries of the site. The west boundary of the site is the bed of a railroad that was abandoned in the mid-twentieth century (Cook 2000:7).

The soils at the site are Ottawa loamy fine sand, undulating phase. The USDA report states:

> The 9-inch plow layer is grayish-brown loose loamy fine sand, very strongly acid where unlimed. [Below the plow layer] is yellowish-brown loose very strongly acid loamy fine sand. Yellowish-brown firm loamy fine sand, mottled with rust-brown streaks, starts at 18 inches and extends to 26 inches [USDA 1956, Map 3, 78].

There are a very few records of the depth of the mantle at the site. Those that exist vary from 4 to 10 in. From this I infer that perhaps at least part of the site had never been plowed.

Excavations

Locus I

Three different datum stakes were used during the Mac 8 excavations. The 1974 and 1975 excavations I have called

Locus 1. There also were a few "test pits" and two "test trenches" excavated in those years.

Locus 2

In 1978 a different datum stake was established. This stake was used to number the units for that year, continuing through 1982. I have called this group of excavations Locus 2. Again a few "test pits" were excavated during those years.

Locus 3

A few artifact tags were labeled Locus 3. These had dates between 1986 and 1989. Artifacts from eight units were excavated during that time period. There were also several "pits," "test pits," and "holes" excavated during that time period.

There is no extant information about the spatial relationship among these three loci, nor is the relation of the "test pits," (and other non-five-by-five excavations) and the primary datum known. Because of uncertainty about their locations, I have included the information about the artifacts from test locations in the Data section, but have opted not to include any of these data in the Analysis section. The screens were probably ¼ in mesh. Dr. Paul Pacheco tells me that that was the standard in the United States in the seventies and eighties.

Artifactual Data

Lithics

The Mac 8 collection contains three broad groups of lithics: chipped stone artifacts, ground stone artifacts and rough stone artifacts. The chipped stone artifacts from Mac 8 are shown in Table 1. A few words about some of the entries in Table 1:

- Biface fragments are those bifaces for which I was unable to make a more definitive identification.
- "Cache bifaces" is a term Karine Taché has suggested to denote artifacts that have been known as cache blades for several decades (Taché 2014). She has a good argument and I have adopted that nomenclature.
- "Knife/Scrapers" are those artifacts that show use on one edge as a knife and another edge as a scraper.
- I measured the angle of the working edge of the artifacts I judged to be scrapers. The average angle was 59.7°; the standard deviation was 7.7°.
- There were about a dozen small points, very similar to each other and somewhat different from most Lamoka points. These points are described in more detail in the footnote below[1].

Table 1. Chipped Stone Artifacts.

Category	Count
Biface fragment	39
Bladelet	1
Cache biface	1
Celt/fragment	3
Chert fragment/ nodule/pebble	62
Chopper	4
Core/fragment	34
Debitage	24,295
Drill/fragment	48
Knife/fragment	50
Knife/scraper	2
Point/fragment	319
Point preform	5
Scraper/fragment	47
Other tools	3
Total (excluding debitage)	**618**

Table 2. Ground Stone Artifacts.

Category	Count
Adze/fragment	17
Ornament fragment	5

Table 3. Rough Stone Artifacts.

Category	Count
Hammerstone/anvilstone	50
Hematite	1
Hoe	2
Mano	2
Metate fragment	1
Netsinker/fragment	14
Total	**70**

[1] There were a dozen or so points, small and with sharp shoulders that seemed to be different from run-of-the-mill Lamoka points. They were much too small to be Snook Kill. Dr. Paul Pacheco thought they might be Merom points (Justice 1995: 130), but the stems are straighter and the geographic center of the Merom cluster centers is near the Mississippi. We decided they were not Merom, though perhaps that culture had influenced the ones in the Mac 8 collection. We ended up calling them Lamoka points. I plotted the units from which these points came and there did not seem to be a pattern to their occurrence that was different from the other tools.

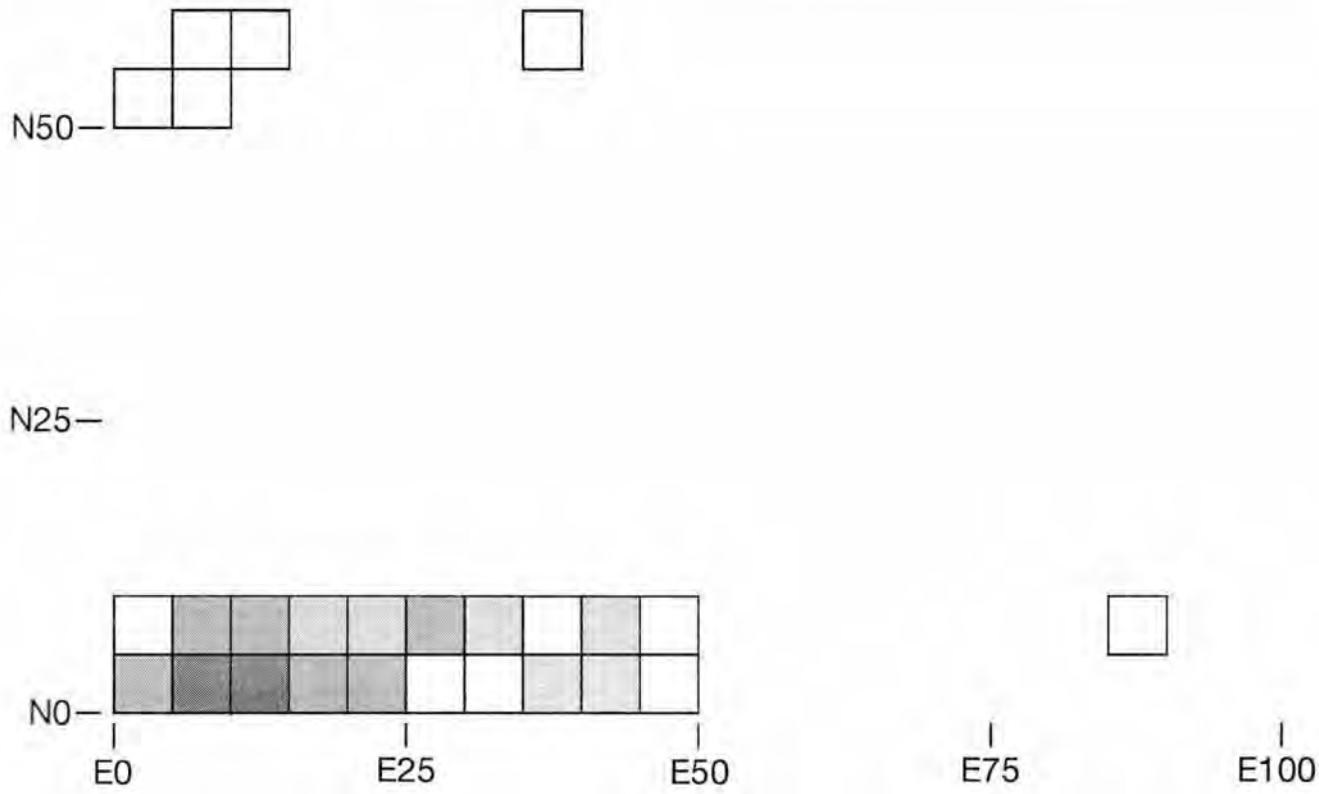

Figure 2. Locus 1 Lithic Tool Distribution at the Macauley 8 Site (Mac 8). Key: 15% shading denotes 1 to 2 tools; 30% shading denotes 3 to 5 tools; 50% denotes 6 to 10 tools.

Table 2 contains the data for the ground stone artifacts.

Table 3 contains the data for the rough stone artifacts[2]. Figures 2, 3 and 4 show the distribution of the lithic artifacts found in Locus 1, Locus 2, and Locus 3 respectively.

Ceramics

The Mac 8 collection contained no glass or other historical artifacts. Table 4 lists the ceramic artifacts that were found.

- The pipesherds are all prehistoric bowl sherds. They came from the same unit and probably are from the same pipe, although the sherds do not refit. One sherd has a hint of a flare. The sherds indicate a bowl a bit less than 3 cm in diameter.
- All the potsherds are bodysherds. This seemed to me to be unusual; see the Appendix for a discussion of this seeming anomaly.
- Many of the potsherds were much eroded. Figures 5 and 6 show the distribution of potsherds found at Locus 2 and Locus 3 respectively.

[2]Accurate distinctions between anvilstones and hammerstones seems questionable; hence, they are lumped together.

Table 4. Ceramics.

Category	Count
Pipesherds	4
Potsherds	80
Other	6
Total	**90**

Other Artifacts

The "Other" database contains records of flora, fauna and metal. Table 5 lists the details.

- Almost all the bone was deemed to be historic. Two bags contained calcined bone that could be prehistoric. The teeth were all from small mammals.
- The metal objects consisted of one roofing nail and one railroad spike.

Features

Of the 60 possible features recorded in the extant documentation, I found only 14 of which I was reasonably sure of the characterization. This small number probably makes any definitive statement about the features in the site impossible;

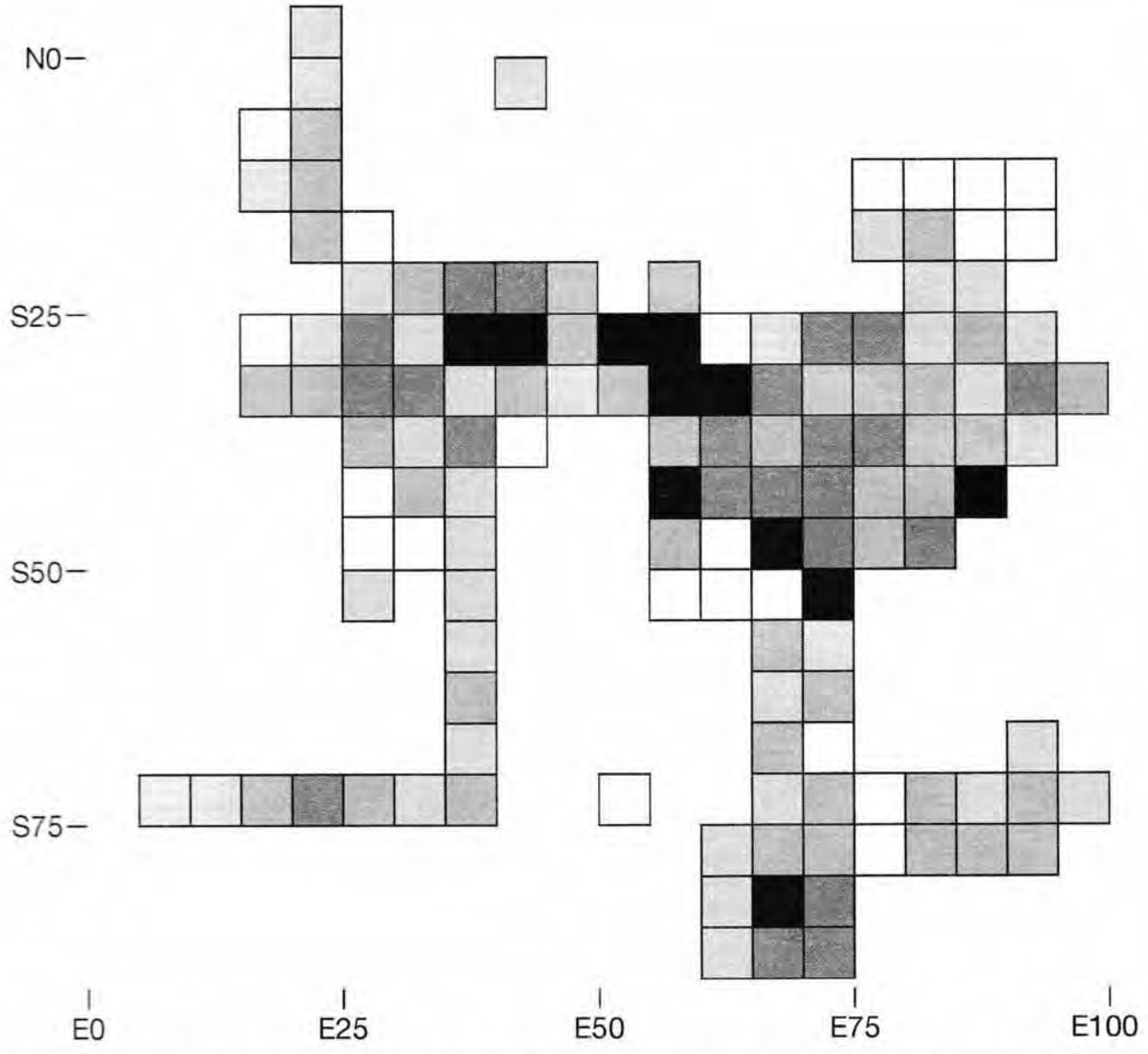

Figure 3. Locus 2 Lithic Tool Distribution at the Macauley 8 Site (Mac 8). Key: 15% shading denotes 1 to 2 tools; 30% shading denotes 3 to 5 tools; 50% denotes 6 to 10 tools; 100% shading denotes 11 to 22 tools.

nevertheless the characterized features are as follows:

- Hearth or probable hearth: 8
- Earth oven: 1
- Possible refuse pit: 1
- Rock feature not further characterized: 4

The features that were identified by the excavators as "rock features" may be earth ovens. Although that seems to be the most likely characterization, there was no mention in the documents of charcoal or ashes being found in them. Hence, their function remains in doubt.

Analysis

Time of Occupation

The projectile points and ceramics from the Mac 8 Site afford some insights into when the site was occupied. These artifacts have date ranges associated with them from many sites, which have been dated either by radiocarbon and/or seriation techniques.

The projectile points, identifiable point fragments, and scrapers that have been reworked from points provide the

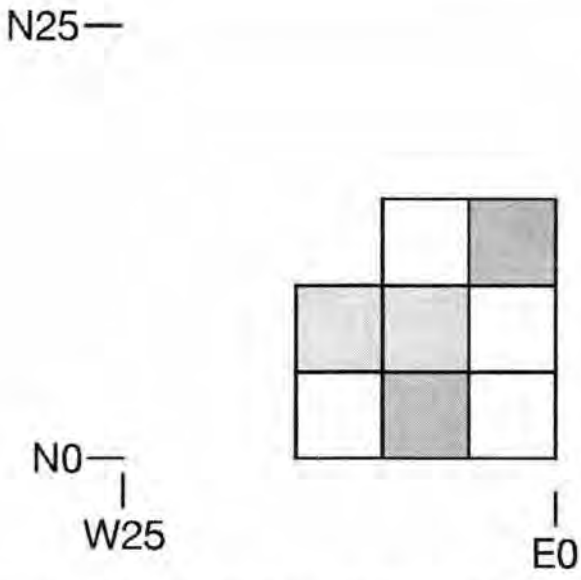

Figure 4. Locus 3 Lithic Tool Distribution at the Macauley 8 Site (Mac 8). Key: 15% shading denotes 1 to 2 tools; 30% shading denotes 3 to 5 tools.

Table 5. Other Artifacts.

Category	Count
Bone	24 bags
Charcoal	10 bags
Tooth	4
Metal	2
Other	3

information shown in Table 6. I have grouped the point types using the cluster concept as per Justice (1995). The Age Range column contains the period estimated for wide use of the particular styles, as per Justice (1995). These data clearly indicate a significant presence in the Late Archaic period, a lesser presence in the transitional and Early Woodland periods, and a slight presence in the Middle and Late Woodland periods. The single pipesherd that appeared to be flared may also date to the Late Woodland (Ritchie 1980:312).

Further information about the periods of occupation of the site can be inferred from the pottery that was found at the site. Since pottery was made and used by Meadowood people and later cultures, the types of pottery found at the site can tell us something about the Woodland occupants of the site. Although it is more difficult to identify pottery types than projectile point types, I was able to identify 28 of the sherds (of the total of 80) as being Vinette I (Ritchie and MacNeish 1949:100). The remaining sherds were too eroded to make a confident identification as to type, although the paste looked very similar to the Vinette I sherds. In the 1949 paper, Ritchie and MacNeish (p.100) state that Vinette I pottery dates from the Middlesex "phase" until the middle of the Middle Woodland period (about A.D. 500). Later, Ritchie (1980:xxiv) amended that age range to include the Meadowood period. Although this is not very precise, it broadly agrees with the data obtained from the projectile point and scraper data shown in Table 6.

Several samples of charcoal from remains of hearths were collected; however, there are no extant records of radiocarbon dates. Hence we have only the projectile point and ceramic data to furnish temporal information. Nevertheless, those data point quite strongly to occupation from early Late Archaic times and the Early Woodland period and also some, perhaps not sedentary, use of the site in the Middle and Late Woodland.

Site Utilization

Without reliable data about the features at Mac 8, it is difficult to determine how the site was used. Even without those data, neither the excavations at Locus 1 or Locus 3 were extensive enough to provide many clues about what activities were conducted in those areas. Nevertheless, several facts stand out:

- No pottery was found at Locus 1, possibly indicating that this area was not occupied after about 1000 B.C.
- Although the sizes of Locus 2 (134 units were excavated) and Locus 3 (8 units were excavated) are greatly different, the number of potsherds found in the two loci was the inverse: 11 sherds from Locus 2 and 69 sherds from Locus 3. This may indicate that the Locus 3 portion of the site was occupied later,

Table 6. Time-Marker Artifacts.

Cluster	Artifact Count	Age Range	Reference
Lamoka	115	3500 – 2500 B.C.	(Justice 1995: 115)
Brewerton	82	3000 – 1700 B.C.	(Justice 1995: 129)
Susquehanna	14	1700 – 700 B.C.	(Justice 1995: 167)
Meadowood	8	1300 – 500 B.C.	(Justice 1995: 171)
Jacks Reef	2	500 – 900 A.D.	(Justice 1995: 217)
Triangular	2	800 – 1600 A.D.	(Justice 1995: 224)

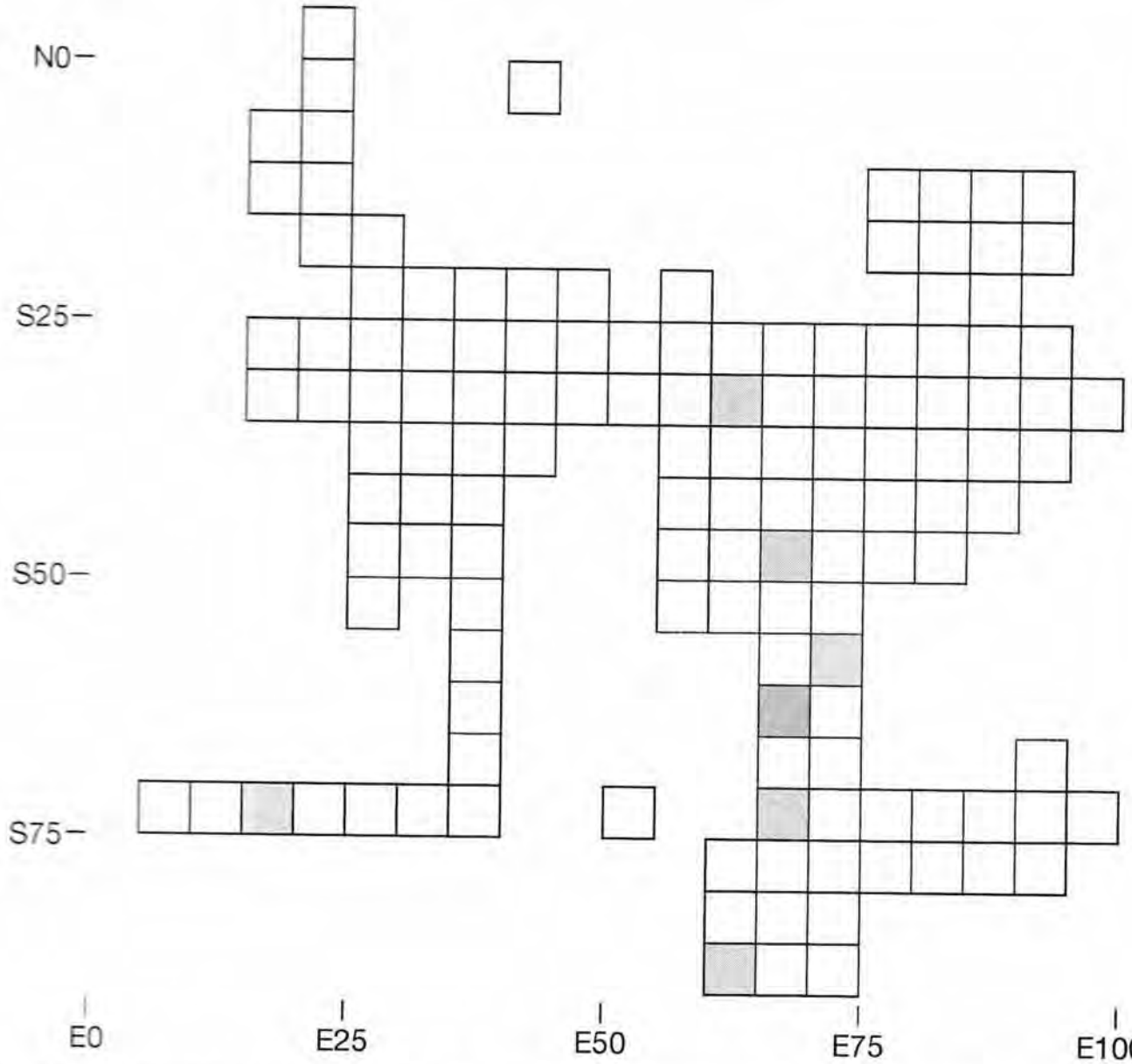

Figure 5. Locus 2 Potsherd Distribution at the Macauley 8 Site (Mac 8). Key: 15% shading denotes 1 to 2 sherds; 30% shading denotes 3 to 5 sherds.

when pottery was more common; or it may indicate that Locus 3 represents an area of domestic activity.

- All the pipesherds came from one unit, Locus 2, S20/W5, probably sherds from the same pipe. They were found within a couple of feet of each other and the unbroken surfaces of all the sherds are burnished.

Density plots of lithics (except debitage) for each locus are shown in Figures 2, 3, and 4. Other than the fact that the density of tools is considerably higher in Locus 2, there does not seem to be anything remarkable about these plots.

Density plots of potsherds for Locus 2 and Locus 3 are shown in Figures 5 and 6, respectively. Figure 5 shows the potsherds, although they are few in number, scattered along a north-south axis at about E45. Figure 6 shows the high density of potsherds in Locus 3 mentioned above.

Finally, density plots were made of the artifacts found in Locus 2 that could be attributed to the Lamoka period. Similarly, the Brewerton period artifacts found in Locus 2 were plotted. Although these plots are not included herein, they show the same tendency as the potsherds (i.e., they are concentrated along a north-south axis near E45. Perhaps this was the small ridge that appears on the map in Figure 1).

A relatively large amount of debitage was unearthed at Mac 8. To see if this could be tied to an area of tool manufacture or reworking, I plotted the density of the sum of the

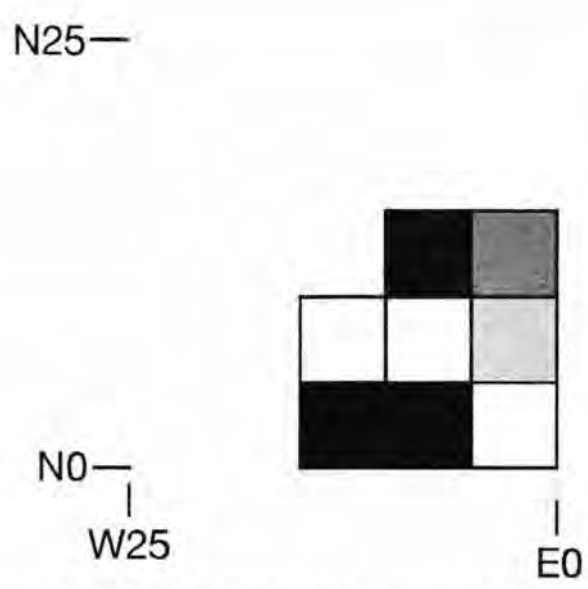

Figure 6. Locus 3 Potsherd Distribution at the Macauley 8 Site (Mac 8). Key: 15% shading denotes 1 to 2 sherds; 50% shading denotes 6 to 12 sherds; 100% shading denotes 13 to 26 sherds.

Table 7. Intensity of Occupation.

Point Type	No. of Marker Artifacts	Duration of Occupation (yrs.)	PPY
Lamoka	115	1000	0.12
Brewerton	82	1300	0.06
Susquehanna	14	1000	0.01
Meadowood	8	700	0.01

counts of debitage, cores, chert, chert fragments, and chert nodules for each locus, thinking that these artifacts were markers for such an activity area. Although these plots are not included in this report, they show a fairly uniform scatter of debitage that I felt could be attributed to early stages of tool reduction in nearly every area. There are isolated points of higher concentration, but to my eye, nothing strikes me as a tool-making activity area. Rather, it seems that tools were made and repaired wherever the toolmaker happened to be.

Intensity of Occupation

The occupation of Mac 8, like the other Macauley sites, was probably episodic. The people who lived there were probably foragers and collectors. Perhaps some of the occupation was quite transitory, such as a hunting or fishing camp. In spite of this uncertainty, it seemed to me that it would be of interest to try to quantify how often the site was occupied. Since projectile points are easily distinguishable and the periods of their use are well known, a logical metric was what I have called Points Per Year (PPY). The data in Table 6 can be used in the calculation of PPY. There are too few artifacts from the Middle and Late Woodland periods to include them in the calculation. Table 7 shows the result of the calculation for the Lamoka, Brewerton, Susquehanna, and Meadowood periods.

These calculations are probably no better than order-of-magnitude estimates, but they do show that the site was utilized by Lamoka peoples more frequently or for longer periods than the other groups. That the site was most heavily used in the Late Archaic is evident when we realize that the Lamoka and Brewerton peoples overlapped in time (see the data in the third column of Table 6). Another clue to site utilization is the fact that the density of tools in Locus 2 is higher than that of either of the other loci (see Figures 2, 3, and 4).

Subsistence

The archaeological evidence of subsistence practices at Mac 8 are:

- the presence of netsinkers, implying the netting of fish.
- carbonized nut shells reported in one unit, implying the consumption of acorns or other nuts.
- projectile points, implying the hunting of birds and animals.

Although there is no evidence of the utilization of shellfish, this may very well be due to the acidity of the soil which would preclude the survival of shells.

Some Interesting Artifacts

Two drill fragments were uncovered that show evidence of having been hafted. These are the fourth and fifth examples of this unusual artifact to be found at sites in the Macauley Complex. They were found in units sharing a corner and were 9 ft apart. Hafting should make the drilling process much more efficient in that the haft could be rolled between the palms to spin the drill. These notched-for hafting drill fragments are shown in Figure 7.

A particularly good example of a *mano* was also unearthed at Mac 8. It is a cobble of a metamorphic rock (4 by 5 by 2 in), with a very prominent ground surface that I attribute to use-wear. The ground face of this *mano* is shown in Figure 8.

Conclusions

The data from the Mac 8 excavations show that the site was occupied as early as the Late Archaic and Early Woodland

Figure 7. Two drill fragments that have the proximal ends notched for hafting.

periods. Also, the few Jacks Reef points indicate that there were groups present on the site during Middle Woodland times. There is no ceramic evidence of Late Woodland occupation, but two Madison points were found. The possible flared pipe bowl may be further evidence of Late Woodland presence. Had there been better data about the features at Mac 8, we might have been able to draw stronger conclusions about the use of the site.

Acknowledgements

Dr. Rose Marie Chierici, Chair of the Department of Anthropology at SUNY Geneseo, gave me permission to examine the artifacts and records in the Department. Dr. Paul Pacheco was an invaluable source of suggestions and counsel. Esmeralda Askenas did the necessary but less-glamorous portions of the project. To those persons, I express my sincere thanks. Any errors are, of course, my responsibility.

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Figure 8. The grinding surface of a *mano* showing the use-wear.

Appendix

What Proportion of Potsherds Are Rimsherds?

I was struck by the fact that there were so few rimsherds recovered at Mac 8. In fact, there were none. Is this an anomaly? Let's make a few back-of-the-envelope calculations to estimate how many I should have expected. For simplicity's sake let's assume we have a vessel (although bottomless) that's 15 cm (6 in) in diameter and 30 cm (12 in.) tall. The surface area is:

Area = π d2 h/4 or
Area = (3.14 X 15 X 15 X 30)/4
Area = 5299 sq. cm

Now let's suppose the average potsherd is a 2 cm by 2 cm square. Dividing the total area by the area of one sherd gives the number of sherds:

Ntotal = 5299/4
Ntotal = 1325

How many of these are rimsherds? This is given by the circumference of the rim divided by the length of one sherd:

Nrim = π d/ 2
Nrim = 23

Thus, the fraction of rimsherds to bodysherds is:

Frac = 23/ (1325-23)
Frac = 0.017

Thus, we might expect roughly 2% of the sherds to be rimsherds. Not many.

Applying this estimate to the Mac 8 data, the question to ask is: What are the odds that finding no rimsherds from a group of 80 sherds is consistent with the estimate? The statistic that applies is the chi-squared test where chi-squared is:

Chi-squared = (o-e)2 /e

Where o is the observed value, zero in our case, and e is the estimated value, 0.017 X 80 = 1.4 in our case.

Entering these values in the equation, we obtain

Chi-squared = (0 – 1.4)2/1.4 or
Chi-squared = 1.4

Looking this value up in a table of the chi-squared distribution we find that we would find no rimsherds about once in four times. Not too likely, but not at all unlikely.

Fort Orange Coins, Beverwyck Clay Pipes, and Gordon DeAngelo*

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Fort Orange, constructed in 1624 and abandoned in 1676, and the Dutch village of Beverwyck established north of Fort Orange in 1652 are sites both of which have produced a wealth of archaeological information about the Dutch material culture of colonial New Netherland. Fort Orange and Beverwyck, now within the present-day City of Albany, were at the center of the colonial fur trade with the Iroquois and other Indian people. Vast quantities of trade goods flowed westward from these places in exchange for furs. Among the many artifacts recovered from those Albany sites, identifying some types inevitably presented a challenge. That was a reason to contact Gordon DeAngelo. His knowledge of trade axes, coins, bale seals, clay pipes, and a multitude of other types of artifacts excavated from Central New York State Indian contact sites made Gordon a most valuable resource. Two examples of Gordon's expert assistance relate to coins excavated at Fort Orange and a clay pipe excavated in Albany at a Beverwyck site.

Figure 1. View of the initial test excavation northward from the new Hudson River bridge, November 1970.

In the early morning hours of October 20, 1970, a diesel power shovel began digging a deep test hole along lower Broadway in the City of Albany, New York. Previous research had indicated this was the site of Fort Orange, the Dutch fort built in 1624 and abandoned in 1676. The digging was carefully monitored by archaeologists from the New York State Historic Trust, assisted by several students who had been trained in a Heldeberg Workshop field school. Before long, the first Dutch artifact was found, a pipe stem marked with a *fleur-de-lis*, spotted by John McCashion.

* Previously published in *Memorial Tribute to Gordon C. DeAngelo, 1931-2010*, pp. 35-50. William M. Beauchamp Chapter, New York State Archaeological Association, 2014.

Figure 2. View northward from the new Hudson River bridge of the site after the first snowstorm, December 1970.

Then a piece of Westerwald stoneware jug with the date 1632 was found. Excavation was continued by hand (Figure 1), and in the profiles a stratigraphic sequence was visible. A shelter was built by the Department of Transportation over the site so that excavation could continue all winter (Figure 2). Eventually parts of four structures and the south moat of Fort Orange were uncovered and recorded. Work continued until the threatened portion of the site was completely excavated, and the site was then backfilled in March 1971. With the construction of Interstate 787 under way, a crash wall was built through the excavated area, and the site was buried under deep fill for the new highway which now runs along the west bank of the Hudson River.

The discovery of an important seventeenth-century site and artifacts generated an immense awakening of interest in Albany in the Dutch history of the city and of New Netherland. Throngs of people visited the site to watch the excavation. This was the first extensive excavation of any seventeenth-century Dutch colonial site, and a broad range of artifacts directly from the Golden Age of Dutch culture was uncovered. To be sure, seventeenth-century artifacts had been found at Indian contact period sites, but except for occasional discoveries of marked items such as coins, archaeologists often could not be certain which beads, Jew's harps, clay pipes, ceramics, and other trade artifacts were French, Dutch, or English (Beauchamp 1898:126; Beauchamp 1903:28-29, 45; Graham and Wray 1966:48, 58; Kier 1949; Noël Hume 1969:305; Pratt 1961:1; Ritchie 1954:43, 74; Salwen 1966:28-32; Weinman and Weinman 1971:55; Witthoft and Kinsey 1959:131-133; Wray and Schoff 1953:57-59). The revival of interest in the colonial Dutch has continued to the present day with the publication of scholarly books and the on-going translation and publication of forgotten Dutch records.

Fort Orange was built by the West India Company on the west bank of the Hudson River in 1624 for trade with the Iroquois Indians, replacing the earlier Fort Nassau that was built on an island to the south in 1614 (Figure 3). No detailed plans of the fort have been found. In 1630 Killiaen van Rensselaer, a director in the Company, was allowed to establish a farming colony consisting of tenant farms on the fertile river flats above and below Fort Orange. In 1652 the West India Company established the village of Beverwyck

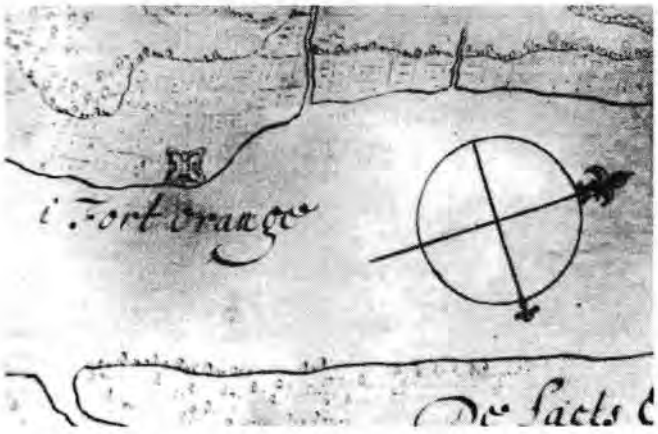

Figure 3. Detail of the 1630 map of Rensselaerswyck (New York State Library).

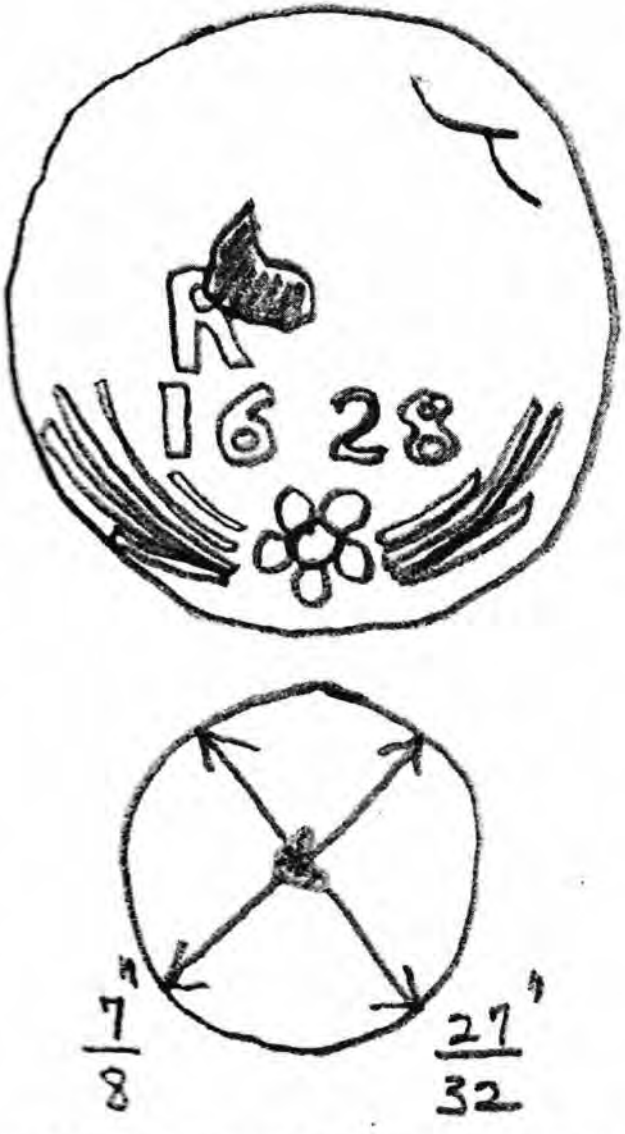

Figure 4. Sketch sent to Gordon of the 1628 coin found at Fort Orange.

Figure 5. A Gelderland *duit* of 1690 (private collection).

northwest of the fort, but in 1664 the English took New Netherland without resistance. They abandoned Fort Orange in 1676, building a new fort on the hill in the town formerly called Beverwyck but now named Albany.

Only a few coins were found in the Fort Orange excavation. Coins were extremely scarce in New Netherland, and wampum was used instead for currency. Many of the other artifacts could be identified and documented in Dutch still life and genre paintings. The coins were a problem, however, because we had no books on Dutch coins, and there was no Internet or World Wide Web in 1971. Even before the excavations were completed in March 1971, Gordon DeAngelo fortunately offered to help with the identification of the coins.

One coin, with a hole in the center, had a clear date of 1628 and part of a single remaining letter, either an R or an N (Figure 4). It was found in a context tentatively dated from 1657 to 1664 (Huey 1988:504, 509-510). The curator of the Division of Numismatics at the Smithsonian Institution believed it was possibly a copper *duit* of the province of West Friesland (Clain-Stefanelli 1971). The Curator of European and Modern Coins at The American Numismatic Society in New York, however, thought the 1628 coin was a Gelderland *duit* (Grunthal 1971b). The *duit* was a Dutch coin that equaled one-eighth of a *stuiver*. Today, the Gelderland and West Friesland identifications seem unlikely because of the many images of coins available on the World Wide Web. While Gelderland *duits* of the second half of the seventeenth century have the word GEL RIÆ with the R in the correct position for this coin (Figure 5), the Gelderland *duits* of the early seventeenth century have a G in this position (Figure 6). Gordon also had his doubts, and he sent the coin sketches to the Dutch Royal Coin Cabinet in The

Figure 6. A Gelderland *duit* of 1626.

Gordon C. De Angelo
Box 36
Oran, N.Y. 13125

8/3/71

Dear Miss Truax:
Blessed be the yellow lined pad that bringeth new data!
As of letter dated July 28, 1971 from Miss G. van der Meer of Koninklijk Kabinet, Van Munten, Penningen en Gesneden Stenen, 's-Gravenhage, Zeestraat 71b (Royal Coin Cabinet, The Hague, Netherlands):
Re: "R— 1628" 21.83 mm coin
"The copper coin with the date of 1628 is a duit, probably struck by the Count of Reckheim in imitation of a duit of the province of Friesland. An article on the duiten of Friesland and the Reckheim imitations can be found in the Jaarboek voor Munt- en Penningkunde XXVIII (1941), pp. 1-38."

Figure 7. Gordon's letter of August 3, 1971, regarding the 1628 coin.

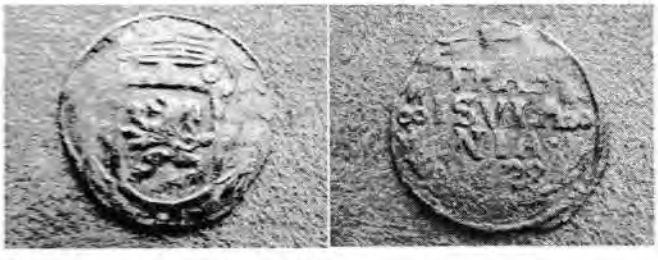

Figure 8. An Overijssel *duit* of 1628.

Hague. The Coin Cabinet curator identified the 1628 coin as a *duit* made probably by the Count of Reckheim in imitation of a *duit* of the Province of Friesland (DeAngelo 1971d) (Figure 7). We accepted this identification, but now I am again doubtful. The R is probably actually an N, which would make it a duit from the Province of Overijssel. Overijssel duits had the name TRAS ISVLA NIA in three lines over the date, and the N is in exactly the correct position (Figure 8). Overijssel *duits* have turned up elsewhere. In

Figure 9. Fragment of a James I sixpence of 1605 excavated at Fort Orange. Scale in 16ths of an inch.

the Mohawk Valley, an Overijssel *duit* with the date 1623 or 1625 was excavated at the Oak Hill Site (Kier 1949:31). The 1628 *duit* at Fort Orange is one of two copper *duits* that have dates and were found at Fort Orange. The other is a *duit* dated 1627 with the name HOLLANDIA, leaving no doubt as to its origin. Unfortunately the 1627 Holland *duit* was found in a recent intrusive context.

Another coin from Fort Orange fascinated Gordon, and we were extremely grateful for his help in identifying it correctly. It is half of a small silver coin (Figure 9), and it was found in a context dating from about 1655 to 1665 (Huey 1988:490). Early in April 1971, Gordon concluded it was probably a British coin (DeAngelo 1971a). But the curator at The American Numismatic Society in New York identified the coin fragment as a *liard* of Gronsfeld, a small duchy in the eastern Netherlands, of the first half of the seventeenth century (Grunthal 1971a). Gordon remained very doubtful, because of the words on the coin (Figure 10). Especially important were the letters MAG, which Gordon knew were part of the standard British inscription meaning "by the grace of God, King of Great Britain, France and Ireland." In addition, Gordon noted, the independence of the Netherlands from Spain was not fully recognized until 1648 (DeAngelo 1971a, 1971b) (Figure 11). At the end of May 1971 Gordon sent the sketch of the half coin to the Royal Coin Cabinet at The Hague, but by this time Gordon wrote

Figure 10. Sketch of the fragment of the James I sixpence of 1605.

During the period that Grunthal attributes the coin, Holland's independence from Spain was still not fully recognized (Treaty of Westphalia 1648) and there may be still a Spanish "flavor" to coinage designs, but I am still bothered by the "MAG", since I have never seen this used on later Dutch or early Spanish coins. "D.G.-R-IMP" is common. Also in later years (1740+) only the Austrian Netherlands used the liard in their monetary system (the liard is, of course, a common French coin in the middle 1600's).

All in all - an interesting problem - and if you can provide me with the above noted data I'll see what I can do at The Hague.

Regards —
Gordon

Figure 11. Gordon's letter of April 24, 1971.

Re: "VSDG MAG" silver 23.44 mm coin.

"The silver coin cannot be a liard as these coins were copper ones. It is probably a sixpence struck in Ireland in 1605 by James I.

The obverse has a bust of the king with the legend IACOBVS D G MAG BRIT FRA ET HIB REX, the reverse a crowned harp with the legend TVEATVR VNITA DEVS (cf. A. Dowle & D. Finn, The Guide Book to the Coinage of Ireland, London 1969, p. 53)."

My Note: It was nice to know I was in the right "ball park" — see my 3rd ¶ in my letter to you 5/29/71.

Figure 12. Gordon's letter of August 3, 1971, regarding the 1605 sixpence.

Figure 13. Complete James I sixpence, courtesy of Antony Wilson, York Coins, Inc., New York.

that he could "almost match it up with Thistle Crowns and Halfgroats under James I in England (1603-1625)" (DeAngelo 1971c). The curator at the Smithsonian Institution concluded that the coin might be "a sixpence struck in the name of Charles I of England (1625-1649)," but the Royal Coin Cabinet at The Hague confirmed Gordon's suspicions (Figure 12) (Clain-Stefanelli 1971; DeAngelo 1971d). It was indeed probably a sixpence struck in Ireland in 1605 by James I. On an example of a complete coin, the outline of the crown is quite clear, and the letters TV on the side near the crown, and the letters VSDG:MAG on the reverse, part of the word JACOBVSDG, are clearly visible (Figure 13).

Gordon DeAngelo provided valuable assistance in 1971, without which, if we had relied on other authorities, we probably would not have identified the James I coin from Fort Orange correctly. More than twenty years later, in 1993, Gordon continued to help with coin identification. This time it was a copper coin found at a Rensselaerswyck farmhouse site located across the river and south of Fort Orange. The farm was occupied probably from about 1634 to 1696 (Huey and Luscier 2004:64-66). The coin appeared to have the strange letters TRA IFC TVM, and the date 1624

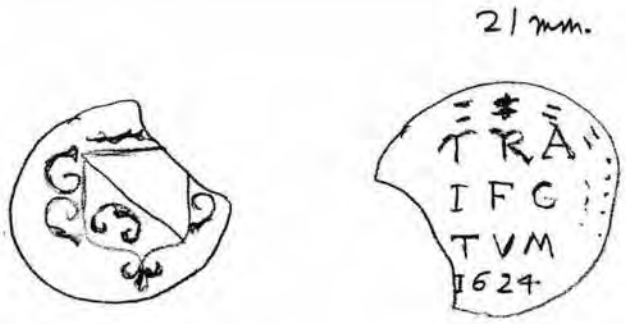

Figure 14. Sketch of the Utrecht *duit* of 1624.

Figure 15. Heel-less pipe with post horn mark found in Albany.

(Figure 14). Still without access to the World Wide Web, we had no idea what the letters meant. Gordon quickly explained that the coin was a *duit* struck in the city of Utrecht and that TRAJECTVM was the Latin name for Utrecht (DeAngelo 1993). This is of interest because many of the Rensselaerswyck settlers came from near Utrecht.

Gordon's interests were certainly not limited only to coins. His knowledge encompassed a wide variety of artifacts, almost everything from clay pipes to trade axes. In May 2000 Chuck Fisher of the New York State Museum showed me the stem of a heel-less Dutch clay pipe with the impressed mark of a post horn at the base of the pipe bowl (Figure 15). The stem bore diameter was 7/64 in, and it seemed to be a typical Dutch pipe from the mid-seventeenth century made for trade to America. The pipe was found at the Quackenbush Square Parking Garage site, located at the north edge of the village of Beverwyck where there was a brick yard after 1651 (Fisher 2000). The question was whether pipes with this mark had been found at other sites, or at sites of what date. I posted the query on the NYSAA-list, and Gordon took up the challenge almost immediately. He checked through his pipe data and publications but could find no reference to this mark at Onondaga sites (DeAngelo 2000). The first useful information about dating was found a year later by Gordon, when he noticed the mark was on some of the pipes found on the wreck of the Swedish warship *Kronan*, sunk in 1676 (DeAngelo 2001). It also became clear that pipes with this mark are found in the Netherlands, that it was used in Utrecht after 1640, and that

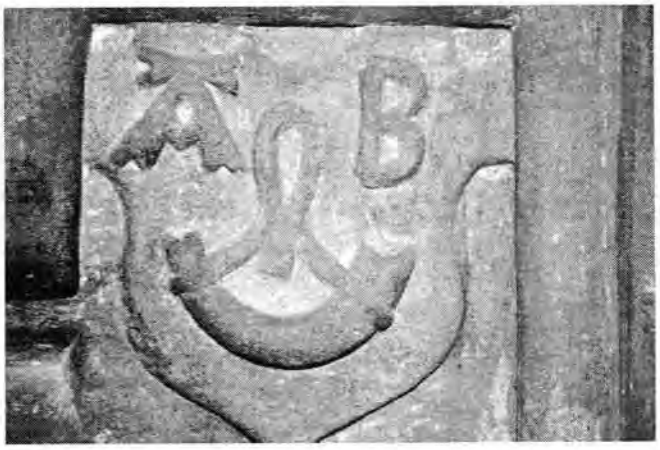

Figure 16. Bellingham Coat of Arms, 1589, on a stone fireplace, Levens Hall, Cumbria, England.

Figure 17. City of Hoorn Coat of Arms.

It was a Gouda mark from after 1660 (Duco 1982:15, 65; 2003:143-144; Smiesing and Brinkerink 1988:113-115). Gordon brought to my attention the magnificent new book by Dom Duco published in 2003, *Merken en merkenrecht van de pijpenmakers in Gouda*, a book that provided the vital information that helped explain this pipe. Gordon likewise showed me useful publications of the Society for Clay Pipe Research, an organization to which I now belong, thanks to Gordon.

The post horn appears as a device in heraldry in both England (Figure 16) and in the Netherlands in the sixteenth and seventeenth centuries. It is in the coat of arms of the City of Hoorn (Figure 17). The post horn mark was used by the Gouda pipe maker Abraham Danielsz. van Hoorn until 1674. His father, also in Gouda, probably used the mark as well. Abraham may have started working as early as 1651, when he was married at Lekkerkerk, southeast of Gouda (Huey 2008:46). This pipe represents the rise of the pipe making industry of Gouda in the second half of the seventeenth century, eventually superseding Amsterdam. So far no other examples of the pipe are known to have been found in North America, and the import of this pipe to Beverwyck perhaps indicates a special circumstance.

Coins and clay pipes are just two subjects about which Gordon DeAngelo has made lasting contributions. He was always available when his expertise could be of assistance, and he was always generous in providing useful information.

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Storrs Harbor: Archaeology of a War of 1812 Naval Shipyard on Lake Ontario

Timothy J. Abel, Jefferson Community College

During the campaign of 1814, the navies of Great Britain and the United States were deadlocked in an epic struggle for control of Lake Ontario. The United States gained that control in August with the launch of the 58-gun warship Superior. Britain upped the ante with the launch of the 102-gun first-rate St. Lawrence and the 56-gun frigate Psyche at Kingston. To counter this new threat, the US Navy commissioned the construction of three new warships during the winter of 1814-15. Two of these would be 106-gun first rate ships-of-the-line and the last would be a 58-gun frigate. Construction began on the two massive ships-of-the-line in January 1815: New Orleans at Sackets Harbor and Chippewa at a new shipyard at Storrs Harbor. With the war ending just a few weeks later, none of these vessels were completed. The shipyard at Storrs Harbor was maintained by the navy for several decades after the war, but falling into ruin, the Chippewa and its shipyard were scrapped in 1833. Since then, both have all but vanished from the historical record. Recent historical research has shed new light on this dramatic closing episode of the war, while archaeological research has now revealed the location of Lake Ontario's forgotten naval station.

Introduction

During the War of 1812, victory for either side depended on control of the Great Lakes for shipping men and supplies to remote wilderness outposts and theaters of combat. Control of the lakes tipped back and forth based on the balance of naval power. In the fall of 1814, the struggle to control Lake Ontario was escalating. The United States had launched the frigate *Superior* from its Lake Ontario naval station at Sackets Harbor. Eventually carrying 58 guns, she was the largest American warship to see service during the war. A few weeks later, the British at Kingston (just 30 mi away, ironically) launched the 102-gun ship-of-the-line *St. Lawrence*. This time, neither launch was effective at lifting the stalemate for control of Lake Ontario, for both ships entered port for winter after only one uneventful cruise each. But each signaled the shape of things to come.

With talks in Ghent stalled, both sides pressed a "carpenter's war." Each new warship launched required a bigger and more powerful counter-launch to maintain superiority. To counter the new threat of the *St. Lawrence*, the United States prepared to build three new warships over the winter of 1814-15. The British had one "package" frigate *en route* and made plans for two more ships. Both building agendas pressed their shipyards to their limit.

The Navy Yard at Sackets Harbor was the most productive of any US naval station during the war. Between 1812 and 1814, under the leadership of Commodore Isaac Chauncey (USN) (Figure 1), this little station at the eastern end of Lake Ontario launched eight warships ranging in size from the 1-gun dispatch schooner *Lady of the Lake* to the 58-

Figure 1. Commodore Isaac Chauncy, USN. Oil on Canvas by Gilbert Stuart (1775-1828), c. 1818, in the possession of the U.S. Naval Academy Museum Collection. Transferred from the U.S. Naval Lyceum, 1892. Photo: Wikipedia Commons (http://en.wikipedia.org/wiki/File:Isaac_Chauncey.jpg)

gun frigate *Superior*. It also produced 15 armed landing barges measuring 75 ft in length in the summer of 1814. The goals of the shipbuilding effort during the winter of 1814-1815, however, would pale in comparison to any previous.

Two of the new ships to be built would be 106-gun ships-of-the-line, the largest warships this nation had ever built and each measuring 200 ft long. The last would be a 58-gun frigate identical to *Superior*. There was one problem: the existing shipyard at Sackets Harbor had room enough to build only one of the first-rates in time for the spring sailing season. If the effort was to succeed, additional shipyards would have to be procured and put into operation.

To solve the problem, Chauncey decided to build the first-rate *New Orleans* and frigate *Plattsburgh* at Sackets Harbor. The other first-rate, *Chippewa*, was to be constructed nearby at a new shipyard at Storrs Harbor. Construction began on the two massive vessels in January 1815, but with the war ending just a few weeks later, neither was completed. The Storrs Harbor shipyard was maintained by the Navy for several decades following the war. Falling into ruin, however, the *Chippewa* was sold and scrapped in 1833. Since then, both have all but vanished from the historical record.

The details of this dramatic closing episode in the war could have been forgotten but for the research of local historian Dr. Gary M. Gibson, who resurrected the story of the *Chippewa* and Storrs Harbor (Gibson 2011). Based on his research, a successful effort was initiated in 2005 to relocate the site of Storrs Harbor. From 2005-2012, archaeological testing documented a rich cultural record of the "wilderness battleship" and Lake Ontario's forgotten naval shipyard.

Location and Setting

Storrs Harbor is located on the south shore of Black River Bay, 6 km (3.6 mi) northeast of Sackets Harbor and 11 km (6.6 mi) west of Watertown, in the Town of Hounsfield, Jefferson County, New York (Figure 2). It lies on a small upland plateau rising 280 ft AMSL, overlooking a gentle slope to the bay which housed the *Chippewa* on her stocks. Chaumont limestone shelves outcrop around the rim of the plateau, and in terraces sloping toward Black River Bay. To the northwest, the limestone forms a steep bluff 30 ft above the water. To the east of the plateau is a shallow-water inlet formed by a narrow peninsula known locally as Catfish Point.

Figure 2. Location of the Storrs Harbor Site in the Town of Hounsfield, Jefferson County.

Drainage at the site is to the north and east. Prior to development, a small intermittent stream ran from west to east through the site along the rim of the plateau, falling to the bay. That stream is now re-channeled into ditches following Storrs Road. There is a valley *cul de sac* to the east of the site with a wetland at the bottom that also drains into Black River Bay.

The topography surrounding the site is characterized as the Lake Ontario Lowland, a region of relatively low relief bordering Lake Ontario (Cressey 1977). It is characterized by low northeast-trending ridges carved out by glacial scoring, and later buried by runoff and lacustrine sediment. Bedrock outcrops near the lake where these soils are shallow, and at the edge of the region, above the shores of glacial lakes. The exception to this is along streams where alluvial erosion has cut valleys and chasms through the bedrock.

The soils of the site are characterized as Hudson silt loams and Galoo-Rock Outcrop complex soils (McDowell 1989). The Hudson type (HuB) is a deep glaciofluvial soil on slopes of 3-8%, with moderate drainage. They are characterized by a 20 cm (8 in) dull yellowish brown silty loam topsoil layer, above a lighter yellowish brown silty loam subsoil up to 30 cm (12 in) in depth. Beneath this lies a brown silty clayey loam subsoil transition zone up to 40 cm (16 in) in depth, above a dull brown silty clay.

The Galoo type (GbB) is an excessively drained, shallow glaciofluvial soil on 0-8% slopes. It is characterized by a thin dark brownish black silty loam topsoil up to 10 cm (4 in) in depth above a dull reddish brown silty loam subsoil up to 18 cm (7 in) in depth, on bedrock.

Initial Development

Prior to development, Catfish Bay was an open body of water, with a draught deep enough to accommodate several large armed barges in 1815. Deforestation and commercial farming has led to the silting in of the bay over the last 180 years, to the point where there is hardly a Catfish Bay today (Ford 2009). Most of it has turned to vegetated wetland. Only a small portion of the extreme northern end remains open water.

The land here (Lot 52 of Macomb's Great Lot 5) was initially owned by Lemuel Storrs and Henry Champion, who directed Jonathan Crary to survey it for subdivision and sale (Jefferson County Deeds G:93). All but the most remote and undeveloped of these lots were sold off between 1797 and 1814. Storrs and Champion apparently envisioned a city at Storrs Harbor, directing John Mitchell to lay out village lots on the eastern border of Lot 52 (Jefferson County Deeds G: 95, 200, N:94). Realizing the futility of their effort in 1814, however, they looked for a buyer.

Serendipitously, Isaac Chauncey was looking for a new shipyard in 1814, and Storrs Harbor fit that bill. He had considered Henderson Harbor, which would have been better suited for building the two liners, but several factors eliminated that option. The entire Navy post would have to be moved there to provide adequate protection, and the land would have to be acquired from its owner, who was not willing to sell. Storrs Harbor could be better defended, and the land was for sale (Gibson 2011). But despite needing only a few acres upon which to build a shipyard, however, Storrs and Champion refused to subdivide. In 1815, Storrs and Champion sold lots 12, 13 and 14 amounting to approximately 363 acres, to Henry Eckford and Adam Brown (Jefferson County Deeds G:93). They in turn sold a ¼ share of this land to Elisha Camp (Jefferson County Deeds G:200).

Three days after signing the contracts, Eckford and his partners, Adam and Noah Brown dispatched workmen to Sackets Harbor to begin construction. Upon arrival, they realized immediately that Storrs Harbor was a harbor in name only. Before they could even consider laying down a ship-of-the-line, they needed a shipyard and a means to provision over 400 workmen and soldiers. Until these facilities were constructed, the men lived in tents... in northern New York... in January. Needless to say, the shipyard, including the stocks, a mouldboard shed, a blacksmith shop able to accommodate 30 blacksmiths, a joiner's shop, two barracks for 200 men each, a mess hall and two blockhouses were completed in the span of two weeks. The keel for the *Chippewa* was likely laid in early February, 1815 (Gibson 2011).

Construction of the *Chippewa*

The *Chippewa*, and her sister ship, the *New Orleans*, were unlike anything the Navy had ever built. At a length of 183 ft 6 in on the keel, a breadth of nearly 57 ft on the beam and 2,948 tons burthen, they were larger than any ship of the day, even on the oceans (Figure 3). In fact, there were no plans for such vessels—the largest warships then in the US Navy topped out at 2,243 tons burthen and 87 guns. This was pioneering ship construction, Eckford's specialty (Gibson 2011).

Building on the massive liner got underway by early February, 1815. Of course, the Treaty of Ghent had been signed more than a month earlier (on December 24, 1814) but since word of it had not yet reached Chauncey, construction proceeded. As fate would have it, the winter of 1815 was especially harsh.

Construction lagged for a lack of men and supplies. Chauncey had already known the new British "package"

Figure 3. Photo of the ship *New Orleans* as it stood in the spring of 1881, after the shiphouse was destroyed in a storm. Photographer unknown. Photo: Gary Gibson from a glass plate negative in the collections of the Jefferson County Historical Society, Watertown, NY.

warship *Psyche* (56 guns) would be ready to launch by January. In February, he learned of British plans to lay down two new liners of 106 guns each. His plans for controlling Lake Ontario were in ruin unless he could finish his ships first and take Kingston (which seemed doubtful), or unless Congress ratified the treaty. In all likelihood, Chauncey would begin the 1815 campaign for control of Lake Ontario at a nearly 100-gun disadvantage (Gibson 2011).

By February 23rd, news had reached Sackets Harbor that Congress had ratified the Treaty of Ghent, ending the war. Chauncey was ordered to cease all construction immediately and dispatch the workers back to their homes. This was more complex than it first appeared, however. There were not enough transports to conduct nearly 1000 workmen home in a timely manner, so Chauncey had them continue construction in a diminishing capacity until all the workmen had left. This meant that building continued on the *Chippewa* for about 30 more days, for a total of about 60 days construction. By estimates, she was about 50% completed (Gibson 2011). According to a post-war survey, she was all in frame and planked to her lower gunports. By late March, however, the *Chippewa* likely stood silently on her stocks and Storrs Harbor lay abandoned.

The End of the Chippewa

The end of the war saw the liners at Sackets and Storrs Harbors in an unfinished state, silently standing on their stocks and exposed to the spring elements. Most leaders in Congress agreed that something should be done with them, just in case the war resumed. What they could not agree on was "what." One plan called for completing the hulls, launching them, then sinking them in the shallow harbor for preservation. That plan did not pass, and the two ships laid exposed for the entire summer. In the fall of 1815, the Navy contracted with William Vaughan to construct two shiphouses to protect the vessels from further deterioration. These structures were also extraordinary, being some 240 ft by 80 ft and four stories high (Gibson 2011).

By 1817, the need for large warships on the lakes was abated by the Rush-Bagot treaty. The two liners stood silently in their shiphouses for several decades, becoming somewhat of a tourism destination. By 1824, however, the question of what to do with them came up again, especially since they had just received Eckford's extraordinary bill for leasing the land at Storrs Harbor. A survey of the vessels the next year found the *Chippewa* in a state of decay, noting rot in two places. The Navy struck the ship from its list of vessels under construction and recommended scrapping it. But Congress didn't agree, and the ship and shipyard stood for another decade—as did Eckford's bill to the United States (Gibson 2011).

Finally in 1833, the Navy took the initiative. While Congress was in recess, the Navy listed the vessel and shipyard accoutrements for sale (Figure 4). On August 5, 1833 the *Chippewa*, all shipyard buildings, blacksmith tools, scrap iron and wood were sold at auction. Over the next few months, she was quietly dismantled and likely sold off for lumber. Legend in nearby Sackets Harbor is rich in stories about ship and shiphouse timbers being used in local house construction (Gibson 2011).

Much of it was probably used, however, to build the

Sale of U. States Property.

THE Ship and Ship-House, as they now stand, at Storrs' (near Sackett's) Harbor, county of Jefferson, will be sold at PUBLIC AUCTION, at the house of P. Butterfield, on the first Monday of August next, at 12 o'clock, M.

Terms of sale, approved endorsed notes, at 60 days, payable at the Jefferson County Bank to my order; as also good security in the penal sum of one thousand dollars, to remove both obstructures from the premises, on or before the first day of November next, unless the consent of the owner of such land on which said structures now stand, can be obtained for their remaining after that period, without charge against the United States.

Also, at the same time and place—
A quantity of BLOCKS, of various sizes;
A set of Blacksmith's Tools;
150 Leather Cartouch Boxes;
A quantity of Pig Iron; 3000 lbs. Old Iron;
1 Anchor, 5 cwt.; 1 Ship's Bell.

By order of the Navy Commissioners.
FRANCIS MALLABY,
Com'g. Naval Officer.

Sackett's Harbor, June 12, 1833. 41

Figure 4. Advertisement placed in the Watertown Eagle on June 20, 1833. Photo: Gary Gibson from microfilm.

barn that stood on the property after the shipyard was dismantled. In 1838, Henry Eckford's estate sold the property at Storrs Harbor to Elisha B. Camp, the son of Elisha Camp (Jefferson County Deeds E3:349). By 1840, he had constructed a farmstead on the property that once was the shipyard. That farm remained in use until the 1960s, when the farmhouse burned. Following that time, the old milking barn was renovated into a seasonal cottage. The farm's outbuildings remained intact to be used as storage. In the 1990s, a two-stall garage was added, and the seasonal cottage was upgraded to a year-round residence. Examination of the beams used in the construction of the barn point to their having been cut for another building and repurposed. Tree ring dating may be used in the future to solve the mystery.

Archaeological Investigations

Efforts to relocate the site of Storrs Harbor began in the fall of 2004, when the author and Gary Gibson compared period and historic maps with modern U.S.G.S. topographic maps. That comparison left little doubt in either of our minds where the site was, despite modern maps which locate "Storrs Harbor" well inside Muskalonge Bay. There was really only one place it could be—at the head of a small inlet known locally as Catfish Bay.

Prior to any archaeological testing, students under the direction of Dr. Michael "Bodhi" Rogers (Ithaca College) conducted a gradiometer survey of two parcels on the site totaling 0.45 ha (1.125 a) (Figure 5). The survey highlighted a large magnetic anomaly on the eastern end of the site, and several spot and linear anomalies distributed around the entire tested area. The linear anomalies appeared to follow bedrock crevices that had presumably accumulated metallic debris in them. The large anomaly on the north end of the site, and the spot anomalies, remained to be explained.

Beginning in the spring of 2005, avocational volunteers under the author's direction began gridding the site by establishing a datum and grid north baseline. A topographical survey was conducted by volunteers under the direction of Gordon DeAngelo, a retired landscape architect of the New York State Department of Transportation. The site was gridded into 1-meter squares in anticipation of small crews and limited excavation episodes.

Testing began in June, 2005 with a series of three 1x1 m units excavated systematically at 5 m intervals across the eastern end of the site (Figure 6). This area produced the strongest anomaly of Dr. Rogers' gradiometer survey, and seemed like a good place to start the search for diagnostic evidence of the shipyard. The crew consisted of trained avocational volunteers from the Thousand Islands Chapter (TIC) of the New York State Archaeological Association under the author's direct supervision.

We returned to the site in 2006 to expand the grid to the west in an effort to examine additional spot anomalies, and specifically to look for evidence of a blockhouse on the northern-most promontory of the site. Trained avocational volunteers under the author's direction excavated seven 1x1 m units. Two units were placed over a strong magnetic anomaly in the central portion of the site, while the remaining five were placed on the north end of the promontory.

In 2007, testing was conducted on the western end of the site, in an effort to locate evidence of barracks structures. Trained avocational volunteers from the TIC, in addition to volunteers from the Living History Education Foundation, all took part in the 2007 excavations, all under the author's direction. We excavated a total of fourteen 1x1 m units recovering the first diagnostic evidence of the war in the form of military buttons and accoutrements.

Since the 2007 season had been so successful, we returned to the western end of the site in 2008 to excavate one more 1x1 m test unit. Besides the TIC, we had additional volunteers from the Living History Education Foundation and visiting graduate students from the Texas A&M Department of Anthropology working under the author's direction. In addition to the test unit, we began a program of

Figure 5. Details of the magnetic gradiometer survey conducted by Dr. Michael Rogers.

systematic shovel testing to document the distribution of artifacts across the remaining uninvestigated portions of the site. Twenty-one shovel tests were excavated at 5 m intervals in the west portion of the site.

The shovel testing program was continued in 2009, this time spreading to the east and south of the site datum. Thirty-one shovel tests were excavated by the TIC under the author's direction. After 2009, we took a two year hiatus from excavations to process cultural material and assess the results. We also completed a successful application to have the site nominated and listed on the National Register of Historic Places.

In 2012, TIC members returned to the site along with seven students taking Introduction to Archaeology at Jefferson Community College and 8 Boy Scouts engaged in earning their Archaeology merit badges. Excavations were again concentrated on the west end of the site, but east of the area examined in 2007. Four 1x1 m units were excavated.

Based on the layout of the site, we anticipated the location of the enormous shiphouse, and the *Chippewa*, but did not conduct any testing to locate its remains. The area where the shiphouse likely stood has been subjected to ice scouring and landscaping over the years. The present land owner informed us that he had to place considerable rip-rap and fill in the area to restore the shoreline. In addition, we judged fairly early in the investigation that while interesting, a search for the shiphouse would reveal no diagnostic artifacts that would allow us to identify the site. We did place a datum in the area, however, for future reference.

Methodology

Unit Excavations

All of the units were excavated using the same methodology. They were first stripped of sod, which was placed aside without screening. This was done because the site is still actively used as a residence and the sod was desired to be replaced at the end of excavations. In each case, the sod comprised Layer 1. Any artifacts that fell out of the sod were bagged and labeled accordingly. Each unit floor was horizontally scraped in 5 cm (2.5 in) levels or 10 cm (5 in) levels within natural strata. All the soils beneath the sod were screened through ¼ in mesh to recover artifacts, which were bagged according to stratum and layer. Layers were numbered sequentially to avoid confusion.

Floor plans were made detailing features and/or soil compositions at the surface of each natural stratum. Additional floor plans were made as needed to document additional lenses or features. Wall profiles were graphed of

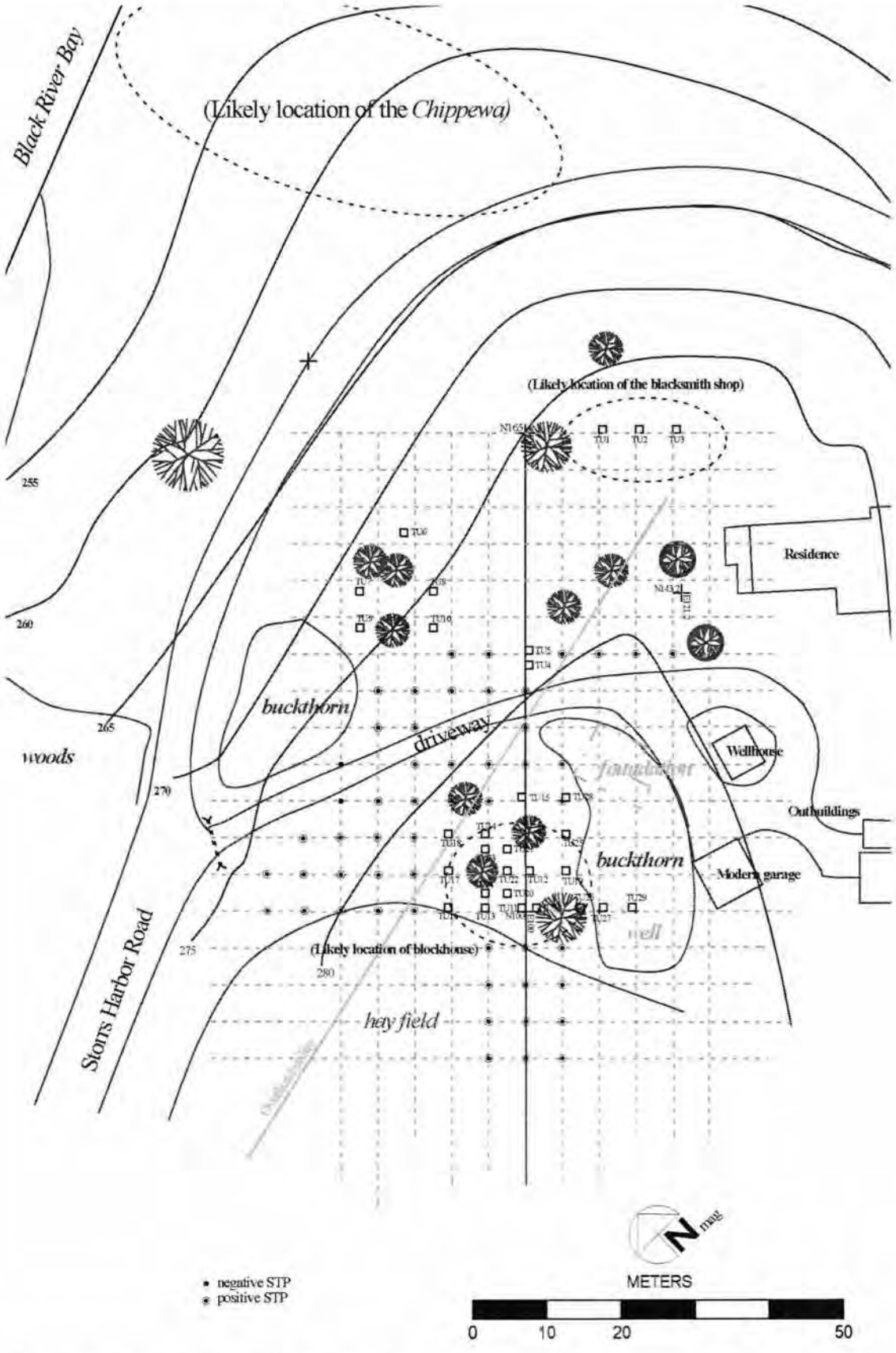

Figure 6. Plan of archaeological investigations at the Storrs Harbor Site.

each wall to document stratigraphy. Depth datums were made of the highest corners in each unit, which were noted. An elevation survey was completed in 2005.

Shovel Testing

Shovel tests 35 cm in diameter were all excavated by stratum. The sod was stripped off and saved, but all other soils were screened through ¼ in mesh by stratum to recover artifacts. Measurements were made of the depth of each stratum, using the existing surface at the time of excavation as the depth datum. Notes were made of the soil composition and color before backfilling.

Artifact Processing

In the lab, all artifact bags were checked against field inventories to verify provenience labels. The artifacts were cleaned with a soft-bristle toothbrush in warm water to remove soil and adherents. The artifacts were then placed on tables to dry. Once dried, the artifacts were analyzed to identify function, type and raw material. These data were entered into an Excel spreadsheet to facilitate analysis further.

Prehistoric artifacts were divided into classes of ceramics and lithics. For ceramic artifacts, each sherd was analyzed in terms of paste, form, surface treatment and type attributes to assign them to their proper cultural context (Engelbrecht 1971; MacNeish 1952; Ritchie and MacNeish 1949). Lithic artifacts were analyzed for lithic source, functional type, and stylistic type attributes (Justice 1987; Odell 1988).

Historic artifacts were inventoried according to functional classes including activity-related, structural, firearms, food remains, kitchen-related, personal items, smoking, and unaffiliated categories (cf. South 1976). Some were further divided into subclass to refine functional analyses. When possible, efforts were made to type each artifact to a specific functional and cultural context. Minimum, median and terminal dates were researched for each diagnostic artifact type to assist in temporally dating each historic stratum. This information was also included in the Excel spreadsheet.

Once assembled, the frequency of each artifact class, subclass and type was calculated by stratum. Mean median dates were calculated for each stratum using all available diagnostic artifacts. Both open and closed period dates were used, unless specified. The current year was used as the terminal date for open temporal periods, while in some cases, arbitrary terminal dates were used to clarify the analysis. These included terminal dates for modern cut nails and whiteware.

Site Stratigraphy

The stratigraphy of the site is relatively uniform and shallow. The profile of the north end of the site, documented in Test Units 1-3 (Figure 6), consists of a shallow, dark greyish brown silty loam topsoil (A^1) 10 cm (4 in) in depth above a dark brown loam midden (A^2) an additional 10 cm (4 in) in depth. The topsoil contained a moderate density of nineteenth-century to modern artifacts including horseshoe nails, common modern cut nails, wire nails, glassware and window glass, whiteware and tin can fragments- all believed to be part of a sheet midden associated with the occupation of the Elisha Camp, Jr. farmstead. An underlying second midden layer contained a dense concentration of brick, cut nails, charcoal, scrap iron and forging slag indicative of the Storrs Harbor blacksmith shop. No structural features were documented. The second midden layer terminated at a depth of approximately 20 cm into a sterile, dull yellowish brown silty clay subsoil (B). Bedrock (R) was reached in all units at a depth of 30-35 cm (12-15 in).

The profiles in the middle and south end of the site (documented in Units 4-10 and 11-30; Figure 6) were similar but lacked the clear distinction of two cultural horizons witnessed in Units 1-3. The upper 10 cm (5 in) consisted of a crumbly dark greyish brown silty loam designated as Stratum 1. Beneath this was a dark brown silty loam that ranged in thickness from 15-36 cm (6-14 in) designated Stratum 2.

Both strata contained artifacts of all time periods represented on the site, from prehistoric ceramics to modern (c. 1950s) artifacts. While there was some vertical separation of artifacts by time period within Stratum 2 (older artifacts tended to be located deeper), modern artifacts could be found at all levels, indicating severe disturbance. Historically, this area was a livestock yard which in spring likely became a muddy mess. Upper soil horizons would have been frequently pushed into deeper ones by walking animals. As such, only diagnostic artifacts could be associated with the shipyard occupation. Below Stratum 2 in all units was a dark yellowish brown clayey loam sterile subsoil that extended at least 20 cm to the limits of excavation; it was designated Stratum 3.

Features

Few features were documented across the site. Lenses of brick and wall plaster were common near the foundation of the Elisha Camp house (which is located on the south end of the site), but there were no shaft or pit features documented. The only shaft features known to exist on the site are the extant open house foundation and well, on the south end of

the site. Excavations near the well suggest it is contemporary with the Elisha Camp house and not a reused feature of the shipyard occupation, as had been hoped.

The lack of features has been the single-most troubling aspect of the project. But when the conditions and haste of the shipyard construction are considered, it is perhaps not at all surprising that features are rare or nonexistent. The shipyard construction began in January. At that time in northern New York, the ground is typically frozen solid to a depth of a foot or more. The year 1815 was noted as a particularly harsh winter throughout the northeast, so it is reasonable to expect that conditions at the site were typical if not even more severe. That meant that digging any kind of feature outside would have been impossible.

The structures of the shipyard were likely built directly on the ground, perhaps on foundations of laid fieldstones, but definitely not on prepared foundations. Most likely, they used sill stones, laying sill beams on top and burying the whole from inside once the structures were enclosed and heated. Soil from the floors may have also been taken outside for fill around the outer foundation as well. In short, the structures were likely superficially built, at best.

There is some archival evidence for the likelihood of this scenario. The Navy contracted with Samuel Alden and Oseas Hoisington to each build one of the two blockhouses on the site. Records show that they were fined a combined $100.00 off their payment for shoddy construction (Gibson 2011:41). After the shipyard was abandoned, accounts show that the buildings deteriorated very rapidly, some becoming ruins in the span of only a decade. By 1833, only one blockhouse remained, and that demanded repair (Gibson 2011:67). Such accounts, in addition to the evidence of disturbance, make it plausible that we should expect to find few, if any features.

The distribution of diagnostic artifact classes, however, makes it very likely that at least two structures have been relatively located. On the north end of the site, Test Units 1–3 (Figure 6) produced a large amount of scrap iron, slag and brick, making it the obvious location of the blacksmith shop. An 1815 survey of the shipyard states that the blacksmith shop housed 30 blacksmiths. That number suggests a building of considerable size with approximately 5-7 forges. A working example of a blacksmith shop of this size at Colonial Williamsburg measures 22 ft x 80 ft. Although the fate of the Storrs Harbor blacksmith shop is unknown, it is assumed that it was among the buildings decayed beyond repair by 1821. The entire tool inventory was among the accoutrements sold in 1833 (Gibson 2011:74).

The association of the military-related artifacts at the west end of the site make it likely that one of the two blockhouses was located in this area (Figure 6). The blockhouses were built to protect the shipyard from an overland attack. One of them was allowed to decay while the other was used as the ship-keeper's quarters. Both were torn down when the shipyard was scrapped in 1833. No records survive about their size or configuration. All we know about them is that they were poorly constructed, since their builders, Samuel Alden and Oseas Hoisington, were fined for their shoddy construction (Gibson 2011:41).

Artifacts

Archaeological excavation and testing at the Storrs Harbor site produced more than 5,236 artifacts and over 66 kg of brick and slag. Much of the artifact assemblage can be related to the nineteenth-century Elisha Camp farmstead, while numerous prehistoric artifacts add valuable information about Middle Woodland settlement and subsistence in northern New York. These assemblages will not be discussed here. Artifacts diagnostic of the shipyard include an 1814 British half-penny, iron slag deposited from the blacksmithing operation, infantry and artillery coat buttons, gaitor (legging) buttons, iron and lead shot, gunflints, and several wrought "ship spikes" (Figure 7-9). Nails and other building materials may also be associated with the shipyard component, but their association is much less secure.

Coins

Shovel testing on the south end of the site produced the only coin found, an 1814 British half-penny token minted in Halifax (Figure 7J). This coin displays an Eagle motif on one side with arrows and olive branch, bearing the date and words "HALFPENNY TOKEN." On the reverse is a motif depicting Britannia holding an olive branch, encircled in laurel. It was found on the outer rim of the area that is believed to have housed one of the two blockhouses.

Buttons

Test units on the south end of the site produced a large assemblage of artifacts from the nineteenth-century Camp farmstead. In addition to these, however, archaeologists recovered a small assemblage of buttons that document occupation of this area by martial forces. Seventeen buttons were recovered in total, of which six could be identified as diagnostic military buttons. Most of the remaining buttons are suspected to be of the war period as well, though this cannot be established with any certainty.

Three of the buttons are of Albert's (1976) type GI36 (Figure 7A-C). One is of variant A1 (Figure 7A), another is of variant A2 (Figure 7C) and the last is of variant B

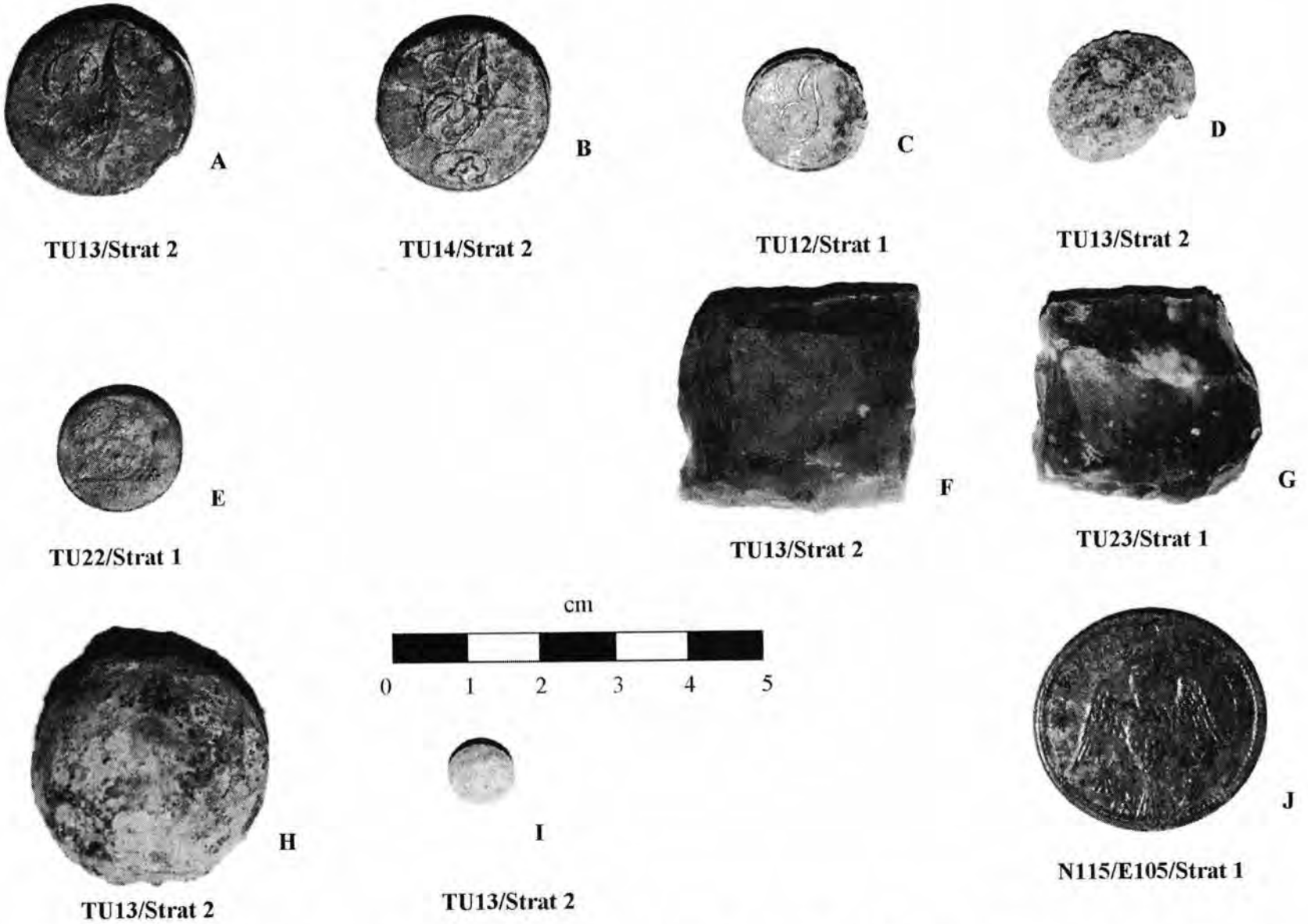

Figure 7. Diagnostic military artifacts from the Storrs Harbor Site. **A-D**: infantry coatee buttons, **E**: artillery militia coatee button, **F-G**: cannon-sized gunflints, **H**: grapeshot, **I**: 30 caliber lead ball, **J**: 1814 half-penny token.

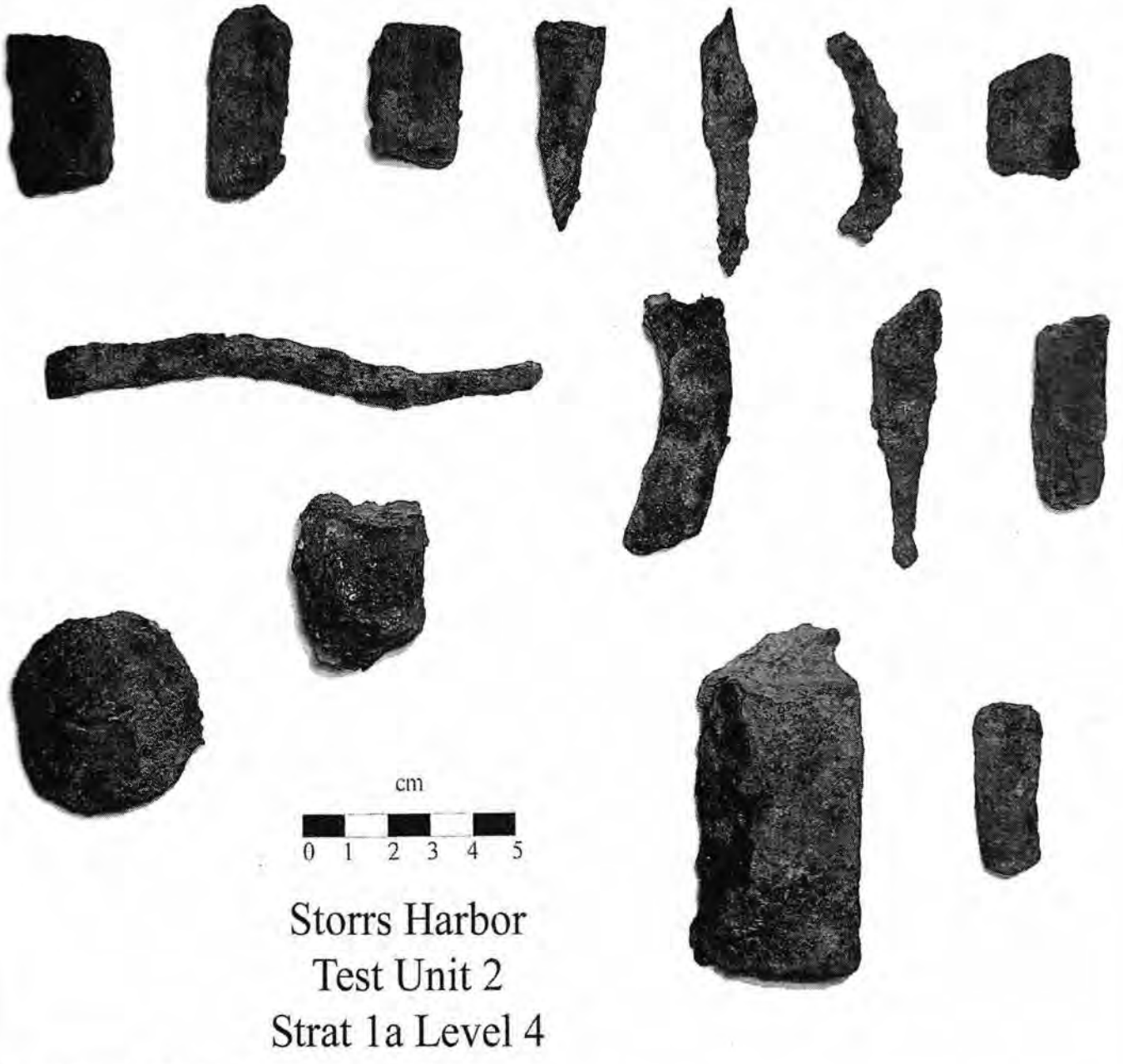

Figure 8. Examples of iron scrap from the Storrs Harbor Site.

(Figure 7B). Variant A1 is a coatee button measuring 2 cm diameter, while the A2 variant is probably a weskit or pantaloon button 1.5 cm diameter. Variant B is a coatee button 2 cm diameter. These are flat, one-piece pewter cast buttons produced between 1812-1815. They are plain, save for a foliated or script 'I', for Infantry, and an oval cartouche underneath bearing a star. They have no backmark identifying the maker.

One of the buttons is of Albert's (1976) type GI38, variant B (Figure 7D). This is a one-piece pewter cast button with a convex face bearing the American Eagle motif with arrows and olive branch. A shield on the eagle's left breast displays a script 'I' for infantry. These buttons were produced in the last year of the war and remained in use until 1821. It is a coatee button 2 cm diameter.

One button is of Albert's (1976) type GI41, variant A. This is a convex, one-piece pewter cast button bearing the American Eagle motif with an olive branch forming a cartouche. Inside the cartouche is a star. Encircling the motif

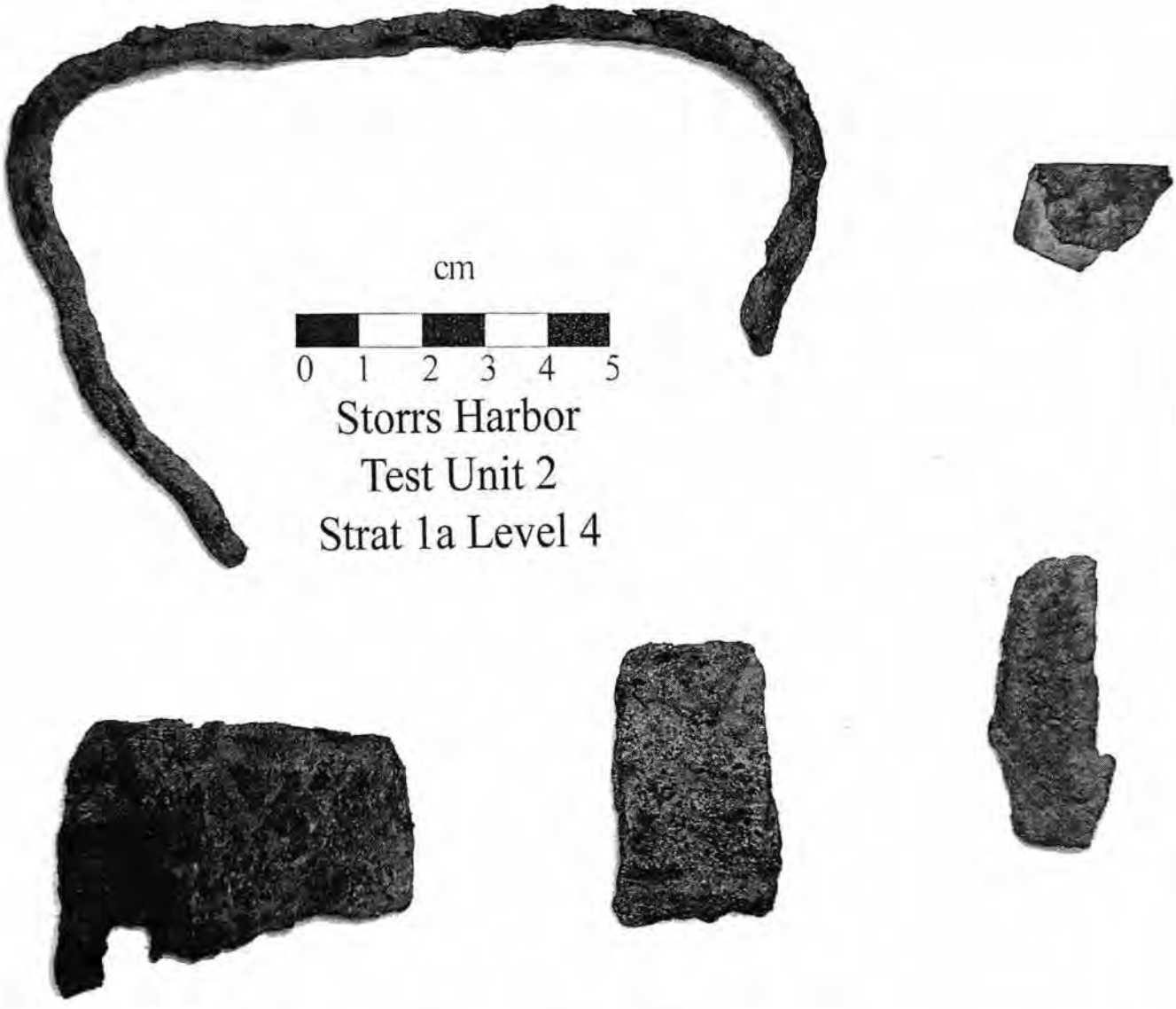

Figure 9. Examples of iron and copper scrap from the Storrs Harbor Site.

are the words "UNITED STATES INFANTRY." These buttons were produced from 1812-1815. It is a coatee button 2.2 cm diameter.

The last of the diagnostic buttons is of Albert's (1976) AY58, variant B (Figure 7E). This is a flat, one-piece brass cast button bearing an eagle seated on a cannon with 10 cannon balls. The name "CORPS" appears below the insignia. These are believed to have been in use by militia artillery from 1814-1821. Local resident Elisha Camp is known to have captained a company of light artillery militia during the war (Hough 1854:463), and it would not be surprising to find them garrisoned at Storrs Harbor. This button is likely a weskit or pantaloon button 1.5 cm diameter.

In addition to the above, archaeologists recovered a small, 1 cm diameter one-piece hemispherical pewter button typical of gaiter buttons worn by the military during the war. A plain, flat, one-piece pewter cast button and a plain, flat, one-piece brass cast button may have come from non-military trousers or coats of the war period. They also recovered one flat pewter button with an iron eye, one bone button and two brass 2-piece buttons that may or may not be associated with the war period. Two iron rivet buttons appear to be post war, as does a glass button and a 4-hole one-piece pewter button.

Firearms

Excavations produced a total of 21 artifacts related to firearms; however, only a handful of these can be securely associated with the war period. Two of these that are diag-

nostic are musket or cannon-sized gunflints. One is a blade-variety flint made of British Brandon flint (Figure 7F). The other is a spall flint made of honey-colored French Grand Pressigny flint (Figure 7G). These would have been used with the 1794 Springfield musket or perhaps on naval locks attached to cannon. They were recovered in stratigraphic association with the military buttons at the south end of the site.

A total of four lead round balls were recovered from the southern end of the site. Two of these have diameters of 0.30 in. and the other two measure 0.67 in. The two 30 caliber round balls (see Figure 7I) were likely used in "buck and ball" loads that were common among the American Infantry during the war. The remaining two were likely used in single-shot loads for the 69 caliber Model 1794 Springfield musket. All four round shot were in an unfired condition. Also recovered was one misshapen round ball of roughly 69 caliber (Sivilich 1996). It is cleaved almost in half and badly deformed, but does not appear to have been fired. It may have been taken out of the mold prematurely, and discarded or dropped.

One iron ball shot was recovered (Figure 7H). It is approximately 2.5 cm in diameter and would have likely been used in a half-sized three pounder cannon or perhaps a swivel-mounted hand cannon. Alternatively, it could have been used in grape or case shot on a larger 7-12 pounder cannon.

Scrap Iron and Slag

Excavations in Test Units 1-3 (2005) produced an assemblage of scrap iron, brick, charcoal, and slag that are undoubtedly from the blacksmithing operation at the Storrs Harbor shipyard. Archaeologists recovered 3.5 kg of iron

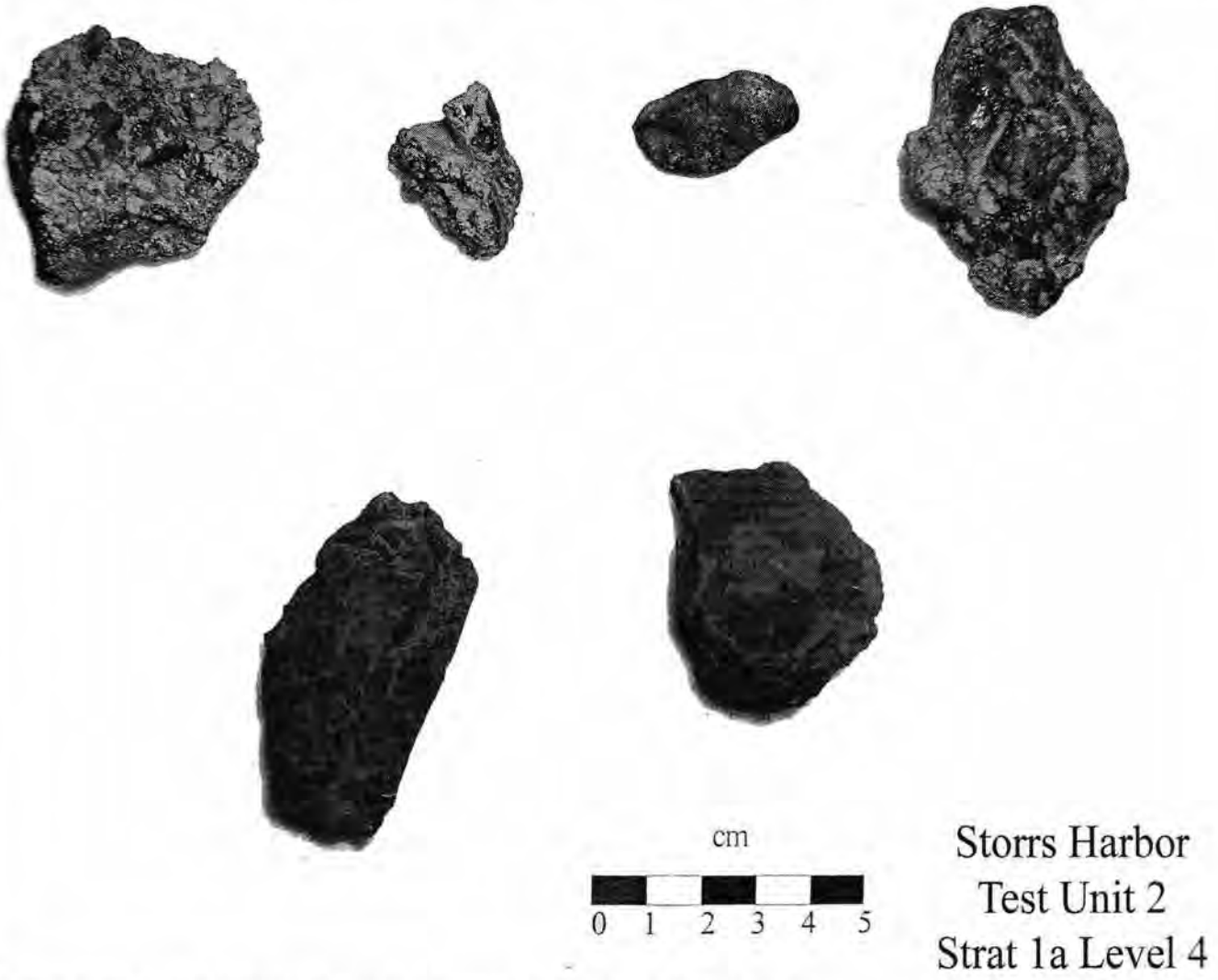

Figure 10. Examples of iron forging slag (top) and brick fragments (bottom) from the Storrs Harbor Site

Figure 11. Examples of early and transitional cut nails from the Storrs Harbor Site.

scrap (Figure 8-9), the vast majority of which (all but 48 g) came from Test Units 1-3. Half of this material came from Test Unit 3, which may indicate a storage/disposal area. Little of this material was identifiable in terms of any standardized form. Several small 'buttons' of scrap are likely to have been blanks for making nuts. Other long, slender pieces may have been destined to become fasteners such as bolts or nails. Other pieces appear to have been leftover stock in rod or sheet form. At least two of these stock pieces displayed cleave marks used to cut pieces off of them. No spectrographic testing has been done to determine the source of the iron, though such testing may be possible in the future.

Excavations produced nearly 6 kg of slag (Figure 10), again, much of which (5.8 kg) came from Test Units 1-3. More than half of this material (3.8 kg), again, came from Test Unit 3, while 1.4 kg came from Test Unit 1. The slag is diagnostic of a forging operation, rather than a smelting operation, consisting of mostly small, porous pieces. None of the pieces display the glassy appearance typical of smelting slag.

Test Units 1-3 produced 12.3 kg of brick fragments (Figure 10), comprising one-quarter of the brick fragments recovered across the site; 9 kg of this brick came from Test unit 3. The brick is soft-fired and very dusty, which would have been typical of cheap bricks produced during the war period. While testing has not been done to determine the source of this brick, historic documents record a brick yard just 2.5 km distant owned and operated by Benjamin Barnes in 1812, and later sold to Abraham Jewett (Massey 1981). Jewett was producing bricks in nearby Watertown as early as 1806 and purchased the Barnes operation in 1818. The Jewettville operation produced bricks as well as potash and waterlime, and was in use well into the 1850s. It appears on the J.H. French map of Jefferson County, drafted in 1854.

Nails and Other Fasteners

As could be predicted, nails are the most abundant of the architecture-related artifacts found at Storrs Harbor. Assigning nails to specific buildings, occupations and functions, however, remains problematic, stemming from the contamination of the second nineteenth-century Elisha Camp farmstead component. Therefore, only the early, transitional, and wrought nail types could be reliably associated with the shipyard. These only made up 22% of the nail assemblage (N=263). Of these, transitional cut nails are more abundant (Figure 11), followed by early cut and wrought nails.

There is every likelihood that some modern cut nails made their way to Sackets Harbor by late 1814, but their overlap with later components makes their provenience problematical. Modern cut nails made up 35% of the nail assemblage (N=404). Cut nail fragments made up an equal proportion of the nails at 34% (N=391). There also a few intrusive wire nails, as well as one copper and one pewter nail.

The most diagnostic of the fastening artifacts are nine wrought "ship" or "boat" spikes. These are large square nails with rose heads reflecting 1-4 facets (Figure 12). The shortest was about 15 cm in length, while the longest was

Figure 12. Wrought iron "ship spikes" from the Storrs Harbor Site.

almost 30 cm. Curiously, they were fairly evenly distributed across the site—perhaps an indication that they were used in architectural construction, rather than nautical construction.

Kitchen

Artifacts related to domestic functions are few across the site except for the area near the Camp residential site, and it is impossible to associate them with either the shipyard or farmstead contexts. It is certain, however, that the 400 workmen employed at the shipyard, and the military, conducted subsistence activities. These activities are undoubtedly reflected in the recovered artifact assemblage.

There were four pieces of flatware recovered from the southern end of the site in the vicinity of the blockhouse. Two of these were fragments of carved bone handles, one was a rat-tailed knife blade fragment, and the last was a pewter spoon.

More than 1200 pieces of ceramic ware were recovered from excavations, most of which came from the south end near the Camp residence foundation. Among the assemblage were 11 pieces of Jackfield-like manganese-glazed redware, 105 pieces of pearlware and 2 pieces of creamware that may be associated with the war period. The rest is made up of whitewares, porcelain, ironstones and stonewares that are ambiguous in context. Even the cream and pearlwares would not be out of place in an 1840s component.

Conclusions

Following a successful effort to relocate the site of Storrs Harbor, largely avocational archaeologists under the author's direction have recovered a modest cultural assemblage of a site related to the naval shipbuilding effort on Lake Ontario during the closing months of the War of 1812. This assemblage is unique in its precise association with an

identifiable historical context, rather than the war in general, or the war period. There can be no doubt that this site contains yet more evidence of the war and its participants, the latter of whom are of particular interest to anthropology. The ephemeral nature of the site and its later contamination by nineteenth- and twentieth-century occupation, makes the task of isolating cultural assemblages difficult. It is unfortunately the case, then, that future excavations are much more likely to recover evidence of the later component which is admittedly very well preserved.

In 2012, we officially ended our investigation of the Storrs Harbor Site as other projects took precedence. With such a rich assemblage of sites relating to the War of 1812 in and around Sackets Harbor, it is extremely difficult to focus on just one. We may return to Storrs Harbor in the future, but for now the site lies protected from development. We are now turning our attention to other sites that are not so fortunate.

Acknowledgements

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The Illustrious History of an Eighteenth-Century Oneida Site

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This article correlates the Lanz-Hogan archaeological site (c. 1730-1780) with the well-documented village of Old Oneida, a settlement with a distinguished past. Seeing why Lanz-Hogan/Old Oneida was situated where it was clarifies the locations of the sites preceding it: Primes Hill (c. 1710-1730) and Upper Hogan (c. 1677-1696).

KEY:

PSWJ	The Papers of Sir William Johnson
DRCHSNY	Documents Relative to the Colonial History of the State of New York
DHSNY	The Documentary History of the State of New-York
JR	The Jesuit Relations

There is disjunction between archaeology and history of the Oneida Iroquois, particularly during the late 1600s and early 1700s. Archaeologists of the Chenango Chapter who compiled the Oneida sequence of central New York (between the present cities of Utica and Syracuse) have not, for the most part, ventured into the documentary record. Few historians, on the other hand, make much sense of the material record. The fragmentary archaeological data, one of them remarked, make the fate of the Oneidas during the early 1700s seem mysterious (Richter 1992:257).

The major archaeological sites in question—three of them—and the rich history of the time are separate streams of information I propose to bring together in the form of a case study of one of the locations. We of the Chenango Chapter know it as the archaeological station of Lanz-Hogan. Conrad Weiser, Sir William Johnson, and Samuel Kirkland knew it as a village they called Anajot, Oneida, or, most frequently, Old Oneida. This article identifies the archaeological site as the historically attested settlement, and then explains how that village comprises an important chapter of American colonial history.

Occupied during the golden age of Iroquois diplomacy, Old Oneida was the greatest Oneida center of speech-giving and wampum-passing of the eighteenth century. Oneidas in this town supervised the Tuscaroras, a tribe of resident immigrants. Old Oneida was the place from which Iroquois authority was exercised over the traffic of native refugees in the Susquehanna drainage. Around this village swirled the final battles between English and French for continental supremacy.

But while the historical research recounted here is

Figure 1. Published in 1779, this map depicts the local Oneida situation about the year 1760 (DRCHSNY 1: inset at 774). The village of Kanonwalohale ("Canawaroghare") is shown at the location of today's Oneida Castle, having just moved up Oneida Creek to that spot from "New Oneyda Castle." Old Oneida ("Old Oneyda Castle") is on the road just east of present Oneida Castle.

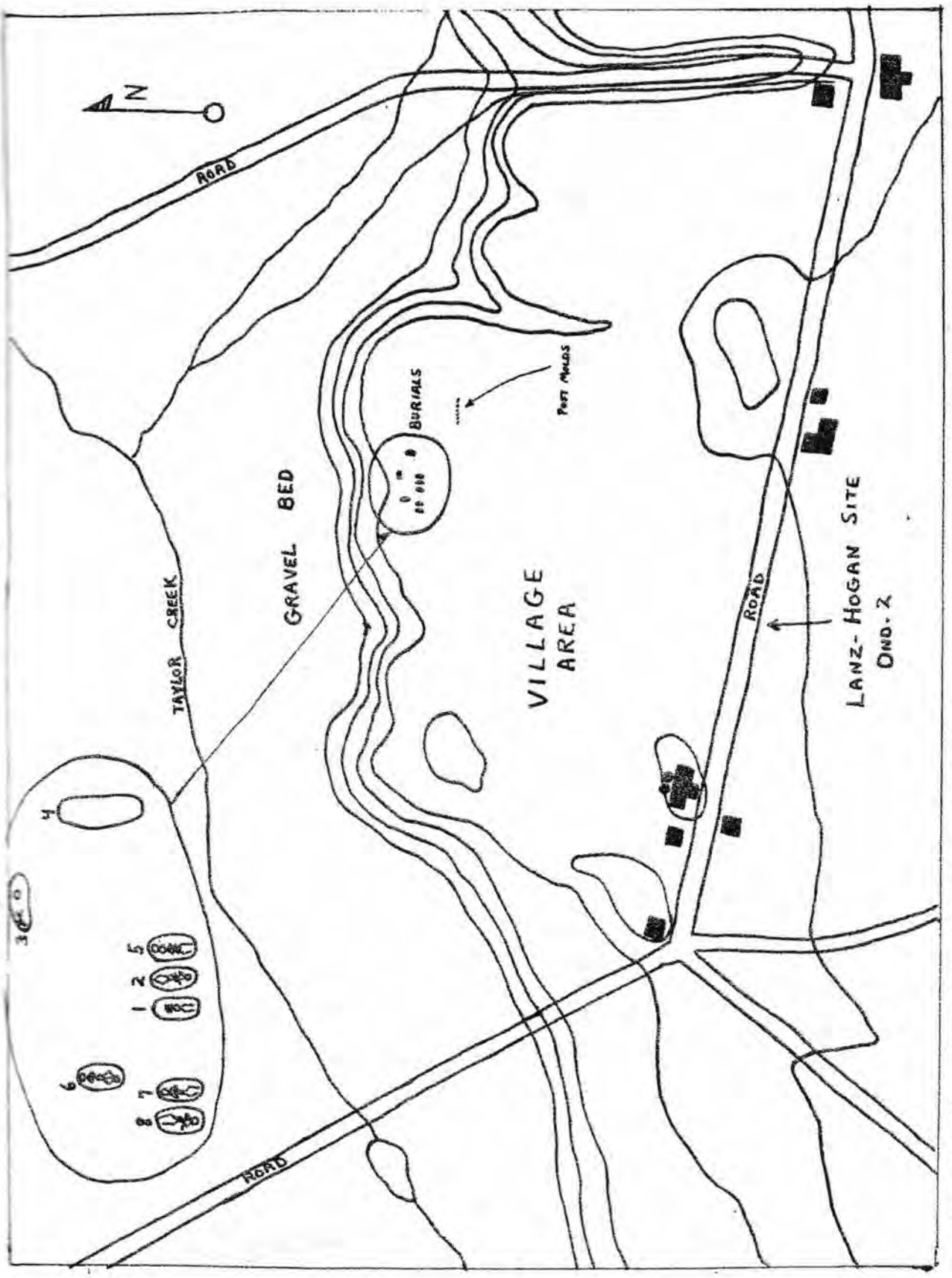

Figure 2. Sketch map of the Lanz-Hogan Site by Monte Bennett (Bennett 1982: Figure 2).

worthwhile in its own right, there is an archaeological point about settlement pattern to be made. To grasp Old Oneida's location is to learn a great deal about why sites preceding it were situated where they were.

The Archaeological Site

Old Oneida was in the southwest corner of the Town of Vernon in Oneida County (Beauchamp 1907:137 and 1916:152; Doblin and Starna 1994:39). Sometimes called "Oneida on the Hill," the village was situated on a height from which one could see Oneida Lake in the distance (Belknap 1882:20; PSWJ 12:836-37). Old Oneida was said to be about 6 mi (9.6 km) east of Oneida Castle (the latter a known location retaining the same name today) on the main path between the Mohawk Valley and Onondaga (Figure 1; Pilkington 1980:350). During the 1790s, that road was the one that missionary Samuel Kirkland traveled from his home in Clinton to reach Oneida Castle (Taylor 2006:382).

Only one archaeological station of appropriate age conforms with those facts. Lanz-Hogan is in the southwestern portion of the Town of Vernon, Oneida County, about 5.5 mi (8.8 km) from Oneida Castle. It sits "on high ground just south of Taylor Creek. Across the road to the south edge of the site the land rises quickly to a high bluff overlooking the entire valley" (Bennett 1982:3). Standing on Lanz-Hogan, one can see Oneida Lake. The site is on the north side of Marble Road (also called Knoxboro Road and County Route 12), today a scenic back road, which must have been the old path, traveled by Iroquois ambassadors, European soldiers, and colonial traders across this stretch of Oneida country.

Inventoried on both state and state-museum inventories (Ond 2-4 and NYSM 647), Lanz-Hogan (also called "Lanze," "Lanz," and "Whitney") had long been familiar to archaeologists. Peter P. Pratt, dean of Oneida archaeology, estimated its occupation to have occurred about 1720-1750 (Bennett 1983:56-58). Local Chenango Chapter members knew, as well, that the site was "the scene of a rather active gravel-bed operation on the northern periphery. Stories have been told about burials falling out of the exposed bank for over thirty years" (Bennett 1982:1).

Among those monitoring the site was Richard Cole, who discovered, during the summer of 1976, that:

> a large area of topsoil, approximately fifty feet in width and well over two hundred feet in length [15 m x 61 m] had been bulldozed from along the edge of the gravel bank. A huge pile of topsoil had resulted at the edge of the field, probably meant for later commercial sale. This left a thick layer of clay subsoil and the gravel below that, so that the heavy machinery could easily dig into the 25-30 foot high bank [ca. 8-9 m] and extract the gravel for the various road-building projects in the area that year. The pile of topsoil was also littered with bone fragments. It was quickly evident that part of the Iroquois cemetery that related to the site had been badly disturbed [Bennett 1982:1].

It was July 4 of the nation's big bicentennial celebration and no official answered the phone that weekend. Cole, Monte Bennett, and other Chenango members conducted their own emergency operation to clear and record what turned out to be eight burials that they left in situ. Shortly afterward, "the entire area was gone forever. Unknown to us, a large amount of gravel was needed for a nearby road and by the time we arrived, an area over seventy-five feet in width and one hundred fifty feet in length had been removed to a thirty foot depth" (ca. 23 m x 46 m, 9 m) (Bennett 1982:2).

A year later, two Chenango archaeologists were able to uncover a row of post-molds near the burials (Figure 2). That proved to be the final excavation. Because of gravel mining destruction before and after, the limits of the site were never defined archaeologically. Today, the site probably is all but obliterated.

The burials that were mapped had been placed in wooden coffins set out in a row. This reflected European notions of interment and, not surprisingly, the surviving material culture of the site was overwhelmingly European in

Figure 3. Incised "Jesuit" rings of brass from Lanz-Hogan including two examples (middle) of the "Double M" (*Mater Misericordia*) design (photo courtesy of Monte Bennett).

Figure 4. The "R.Tippett" cartouche on the type of English kaolin pipe characteristic of Lanz-Hogan (photo courtesy of Monte Bennett).

derivation. Most datable artifacts fall within the first half of the eighteenth century: coins, medals, brass rings (Figure 3), and thousands of small glass "seed beads" once embroidered to clothing. The median date of kaolin pipe stems (Figure 4) was calculated from Binford's formula as 1746.5 (Binford 1962). A few native-made but imported objects of catlinite (Figure 5), as well as the distinctive implements of carved stone called micmac pipes, belong to the same time period. Other notable artifacts include gunflints of both British and French varieties and a few wampum beads which probably also had been attached to clothing.

The Historical Village

Daniel Claus left the following account of Old Oneida, which he visited in September 1750. Claus, accompanied by Conrad Weiser, was traveling from the Mohawk Valley to confer with the council of the Iroquois confederacy at Onondaga.

> Riding on a very bad road where the horses were often stuck in mud up to their bodies and the sky in addition afflicted us with something from above, after 11 hours we arrived at the Indian Castle Oneida, which was lying on a height. ...Everybody came out as we were climbing up. According to their custom, a deputy was sent out, who had to get information about where we came from and what we desired. Having been given the appropriate answer, he retreated again and then showed us our place of residence, which was one of the more distinguished [houses] because a gray pole with intermittent red stripes stood in front of it.
>
> [The houses] were entirely built of bark about 12 or 13 Schlag [feet?] wide and 18 or 20 high ["sic," the editors note, puzzled by these dimensions and wondering whether the description applies to houses elsewhere]. Inside, they were divided on both sides into several rooms, which were rather well fit together with posts and boards, on which one could sit or lie; on both sides, boards were also nailed below so that one could put something behind. These rooms, of which there were 3 to 6 on each side the house, appeared to me like box-beds without doors. In the middle of the corridor, which was 5 or 6 Schlag wide, a fire was burning in front of each [room] for cooking and on top goods and victuals were laid. The seat was about 2 Schlag high from the floor. On top, holes of about 40 or 50 and more Schlag long [apart?] will be kept open, which did not suffice, however, for all the smoke to escape.
>
> So we were led there. In front of the door, there lay a young black bear, that upon seeing white people coming made himself appear as wild as if he had never been tamed. Then we were shown our box

Figure 5. Ornament of red catlinite (c. 2.75 cm long) drilled for suspension with some wampum beads from Lanz-Hogan (photo courtesy of Monte Bennett).

> [room] and after we had arranged ourselves, corn bread was given us, that had been baked in hot corn husks. N. B. Ahead of time, the Indian corn was pounded with hard blows in a hollowed stump, about 2 Schlag high, then wetted with water and ashes put into it [Doblin and Starna 1994:39-40].

Old Oneida, then, was a village of bark houses, still the traditional "longhouse" which, being three to six apartments on a side, would have been substantial structures roughly 70 to 125 feet long [c. 21 m-38 m] (Snow 1994:40-46). The previous village site, Primes Hill, had been palisaded. Anajot was not fortified to judge by negative evidence (walls not mentioned) and by the fact that a prominent leader of Old Oneida would shortly ask the English to build a fort to protect the village:

> Just on this day, the Indians had a feast for they all appeared in regalia. Soon afterwards, their music was heard playing for a dance with an instrument formed like a snare drum but emitting the sound of a kettle drum. There ensued a great shout of joy before the dance began. When I heard that they were about to begin, I approached the house, which was rather long, and wanted to watch from a distance. But without any harm being done to me, I was pushed and pulled in and had to sit near [the] fire, around which they presently formed a circle and danced in a solemn and upright manner; a woman well advanced in years went in front and a young Indian followed, who repeatedly called out several words which the rest shouted after him. I watched them for about half an hour and since it was already night, I went to our lodgings where we lay down to sleep.
>
> The next morning, the 27th, a man came and announced to Mr. Weiser that the council had assembled to hear what his diplomatic mission to them entailed and what would be asked of them. He [Mr. Weiser] therefore went to the place where they led him. The speaker introduced his commission and immediately thereafter sent a messenger to Onondaga to make our arrival known so that the rest of the Nations could be called together. After the council had ended, we were invited by one of the chiefs for the midday meal, which we could not refuse. We therefore arrived at the appointed time and after sitting down, a hen and corn cake boiled in chicken broth was put in front of each in a big wooden bowl and after this a goodly number of apples, which, however, like everything grown in the woods did not have much taste. At the end, we were treated to flute music played by a young Indian. Having rendered our thanks, we returned to our lodgings and prepared for continuing our journey to Onondaga...
>
> On Tuesday, the 28th, we wanted to set out early but were advised that this morning some warriors would depart for South Carolina against the so-called flat heads or Catabaw Indians; we wanted to see this. Half an hour later, however, we were told that they would not go today because the trial by fire had not given a satisfactory answer to the question whether this would be a good time to set out against the enemy. Thus we went away [Doblin and Starna 1994:40-42].

Old Oneida was at perpetual war with distant native villages to the south. Oneidas fought the Catawbas or Flatheads, as Claus noted, but also directed hostilities against Cherokees, Creeks, Choctaws and others. Casualties were frequent and sometimes substantial. The Oneida Nation, it was reported in 1729:

> is in the utmost Sorrow & Distress upon account of the loss they have sustained by the Virginia Indians [Catawbas] with whom they have had a Battle w'ch lasted Two days; that the Virginia Indians were Two hundred Men to their hundred; that on the Second Day their Enemies proposed to come to a Peace with them & they...agreed to their Enemies Proposals w'ch they no sooner did, than the Virginia Indians fell upon & Massacred several of their People, by this they have sustained of Loss of 55 men & wounded [Wraxall 1968:177].

Cradleboard for Tuscaroras

After leaving Old Oneida, Claus and Weiser passed through a settlement of Tuscaroras called Ganadesko (also Kanadesko, Ganatisgoa, and S'ganatees; see Beauchamp 1916:121, 151, 154). It was situated a mile west of Old Oneida, about three mi [1.6 km, 4.8 km] southeast of present Sherrill. In 1736, Ganadesko was said to comprise 250 warriors (Landy 1978:520)—a figure almost certainly referring not just to the village but to the territory associated with it—the present Stockbridge Valley extending to the south. The valley could also be called Ganadesko in much the same way we refer to New York as both city and state. Later Ganadesko was called Tuscarora as was its hinterland. Thus in 1789, Samuel Kirkland could record going to the village of Tuscarora while noting how the village was part of a tract occupied earlier by the Tuscaroras and therefore called

Tuscarora" (Pilkington 1980:160).

As they continued west across Oneida country, Claus and Weiser encountered other Tuscaraora settlements, the largest being the westernmost: Ganachseroge, present Canaseraga or Sullivan just east of Chittenango on State Route 5 (Beauchamp 1916:120-21, 151). That so many southern Indians were present in Oneida country may have seemed odd insofar as they had been foes in the recent past. Raids against the Flatheads also hit the Iroquoian-speaking Tuscarora tribe of North Carolina. By the turn of the eighteenth century, the New York Iroquois and the Tuscaroras regarded each other as mortal enemies (Boyce 1987:153). However, amity between the two had been established suddenly. A later interpretation of the event invoked common ancestry. According to nineteenth-century Tuscarora sources, New York and Carolina Iroquoians originated together in a cave near Oswego. Their common tribal god, Sky Holder, subsequently directed the Tuscaroras to move away from the others (Beauchamp 1892:11-13; Johnson 1881:42-45). Now, recognizing their common parentage, it was natural for the brethren peoples to reunite.

The actual peace conference took place in 1710 at Conestoga, Pennsylvania (just southwest of Lancaster), with the colony of Pennsylvania in attendance. All three parties seem to have agreed that the Tuscaroras might emigrate to the drainage of the Susquehanna River (Jennings 1984:258-60). It was an extremely timely arrangement for the Tuscaroras who, in 1711-13, were shattered in war with the Carolina colonies. The defeat precipitated a general movement northward extending over at least fifty years.

From the very beginning, the flow of refugees to the north was substantial. In 1714, Iroquois let New Yorkers know that the Tuscaroras were among them (Boyce 1987:155-56). The Oneidas had "seated" their guests by arranging for them to reside in their own (Tuscarora) settlements, several of which were on the east-west path across Oneida country. To the south, the start of the emigration coincided with the appointment of the first of several Iroquois agents—regents or even "kings" as they were styled—supposed to watch out for confederacy interests at a distance. He was Carondawana, an Oneida, who assumed his office at Conestoga in 1714 (Jennings 1984:265). The northward emigration appears to have been a well-organized affair with Oneidas directing traffic at both ends. This suggests the Oneidas had a great deal to do with the peacemaking of 1710.

Why was it the Oneidas and not one of the other Iroquois nations interested in refugee peoples to the south? We are told only that, in 1713, "the Oneida Indians, having heard of the disaster to the Tuscarora Nation, invited them to come and make their dwelling among them; so, accordingly, they left Carolina and took their journey north to rejoin their sister nations" (Johnson 1881:68).

Soon after (about 1723), the Iroquois announced that the Tuscaroras were the sixth nation of the Iroquois confederacy (Landy 1978:519). The refugee men, numbering perhaps 600, greatly augmented the military capacity of the confederacy of the whole then said to be about 1800 warriors (Fenton 1998:383; cf. Richter 1992:239). The Iroquois were proud to achieve the increment of a whole new nation and thereby, in figurative terms, extend the rafters of their confederacy.

The Tuscarora memory of this event was that they had applied to the confederacy, "through their brothers the Oneida, to be admitted into the Iroquois and become the sixth nation, on the grounds of a common generic origin" (Johnson 1881:69). They were admitted not as equals, however, but as juniors "under the arm of the Oneidas" (Fenton 1998:398). Represented by Oneida sachems in council proceedings, the Tuscaroras had no voice or vote of their own. Metaphorically speaking, the Tuscaroras came into the confederacy on an Oneida cradleboard. The Oneidas were the parents and, for many years, the Tuscaroras were said to belong to the Oneidas as children (DHSNY 2:635).

The Oneidas who organized Tuscarora resettlement were living in a village which, today, is the archaeological site of Primes Hill (about 1710-1730). It is situated on the crest of a high ridge (East Hill) which means that Tuscaroras taking up residence in the Stockbridge Valley would have been far below and a short distance west of it. When the Oneida village moved north to become Old Oneida, it occupied ground lower than Primes Hill but still appreciably higher than the surrounding countryside. From Old Oneida, the Oneidas could look down on Ganadesko, the chief Tuscarora settlement, a short distance to the west. As regards propinquity, elevation, and relative direction, therefore, the same relationship obtained over time. Metaphorically speaking, the Oneida village was like a parent watching over the child close at hand to the west.

During the American Revolution, the Oneidas had befriended the Stockbridge Indians (Mahicans of Stockbridge, Massachusetts) and invited them to come to Oneida territory. The Oneidas gave the Stockbridges the amount of land the Stockbridges had lost to their white neighbors—a township six mi square. The land so awarded was the former Tuscarora neighborhood southwest of Old Oneida, now a largely vacant area because most Tuscaroras had moved on to the Niagara region. At or next to Old Oneida itself, also deserted, the Oneidas seated the Stockbridges' Protestant minister. Hence, a new shepherd watched over a new flock, perhaps in the same fashion as Old Oneida had watched over the Tuscaroras.

Southern Gatekeeper

Claus and Weiser visited Old Oneida at a time when Oneidas, Onondagas, and Cayugas operated as traffic cops to numerous Indian groups on the move to the south. Between about 1730 and 1760, the central Iroquois were supervising the drainage of the Susquehanna River as a resettlement zone for small shattered bands fleeing enslavement, land loss, and military defeat. But it was the Oneidas of Old Oneida who particularly seemed to function as keepers of the southern door to the confederacy (Wallace 1945:66; Jennings 1984:35, 304).

Southern lands supposedly belonged to the three Iroquois tribes by right of conquest over the Susquehannocks in the late seventeenth century (Wallace 1945:358). Though possibly fictitious, the assumption of military victory proved convenient to the major participants. It permitted Pennsylvania, on the one hand, to deal with a single, obliging Indian party willing to police the region and grant quit claim (extinguish Indian title) to the lands. On the other, the Iroquois performing in this role acquired prestige and goods. Their client groups served them as a shield protecting Iroquois country from counter-attacks resulting from raids to the south (Fenton 1998:324, 402; Jennings 1984:290, 312-23, 359-65 and 1988:48, 324, 402).

Delawares, Nanticokes (Conoys), Piscataways, Shawnees, Tuteloes, and others moved north into the Susquehanna region to place themselves under Iroquois supervision in exchange for sanctuary. These peoples were not, as a rule, admitted to the confederacy. They became "props of the longhouse," that is, allies and adopted kin to their Oneida hosts and sponsors (Kelsay 1984:7). Refugee groups were assigned a particular tract of land to use—but not sell—as they wished. They were free to keep their own languages and customs and were given freedom to hunt and fish throughout Oneida territory. In exchange, they accepted political subordination to their hosts and were expected to support them in time of war. Typically, new immigrants were directed to settle in or near multicultural Indian towns of the Susquehanna such as Conestoga, Shamokin (Sunbury, Pennsylvania), Otsiningo (immediately north of Binghamton, New York), or Oquaga (vicinity of present Windsor, New York). Typically, an Iroquois regent was named to keep watch over them. Most of these factors were Oneidas, the best known of them being Shikellamy, installed at Shamokin in 1728 (Elliott 1977:94; Fenton 1998:399; Jennings 1984: 302-3).

Refugee groups seeking Iroquois asylum entered a world of elaborate ritual drama consisting of wampum presentation, formal declamation, and council deliberation. Typically, one opened communications with leaders at Old Oneida who then carried the message to the Onondaga senate. The reply would be channeled back to Old Oneida and, from there, conveyed to the original interlocutors. In 1750, for example, Nanticokes at Wajokik (Wyoming, Pennsylvania) sent delegates to the Oneida village to discuss where they would live. An Oneida sachem then relayed the question with accompanying wampum belts to the council at Onondaga:

> Thereupon, to our astonishment, an old Oneida began to sing the message which he had for the Council, in a very high tenor voice. He continued for more than half an hour. It was a message from Sganiotaratichrohni, or from the Nanticokes in Wajomik; firstly, concerning the renewal of their covenant, and their gratitude for permission to remain and plant on their land at Wajomik. Secondly, it referred to the land which they still own in Maryland among the whites. The belts were only white, and very poor compared to ours. The Oneida repeated his message and handed over the belts to Ganassateco [Onondaga chief], who made some remarks and then delivered them to the Council [Beauchamp 1916:48].

Within a few years the Nanticokes received Iroquois orders to move north to Otsiningo. As soon as the got there, they were welcomed by the Oneidas but the Nanticokes feared their hosts would order them to move again (Beauchamp 1916:163, 188).

Crossroad of Empires

Throughout the era of European documentation, there seems to have been one principal Oneida village in which the majority of the tribe resided. In the early 1700s, the principal village (archaeological Primes Hill) was said to have a population of 1100-1200 people (Andrews 1714:125). In 1744, when the principal village was Old Oneida, the number of Oneida warriors was estimated at one hundred (Wallace 1945:200). By a common rule of thumb, that would indicate a population of roughly four hundred overall. That seems very low. Where was everybody?

This village was inhabited during a time of sickness—smallpox in 1738 and 1743, tuberculosis nearly all the time. Very likely, the villagers often were hungry (Fenton 1998:446; Kelsay 1984:28). Conrad Weiser noted an impressive amount of Iroquois corn in 1737, but that is the last mention of good crops for many years to come. "Famine stalked the Longhouse as crops were not planted or brought to harvest. Men were too weak to hunt. People no longer

lived in nucleated, palisaded villages, as settlement spread out in defenseless pattern" (Fenton 1998:407-8).

People, in fact, were moving away. Some went to the Ohio country where, merging with other Iroquois, they came to be called Mingos (Kelsay 1984:42-43; McConnell 1987). Quite a number moved north to Oswegatchie (Ogdensburg, New York), where the French had established a Catholic mission post in 1749 (Jennings 1988:27, 75-76; Wallace 1945:310). Most of all, they were moving around to other locations within Oneida country.

An important cause of peripatetic activity was pressure from the English-French rivalry which was then heating up. An Oneida feeling pro-British or pro-French, or wishing to avoid either entanglement, voted with his/her feet by moving to a settlement of like-minded individuals.

"We were shown the English flag that had been stuck on the house," Daniel Claus reported of one residence at Old Oneida (Doblin and Starna 1994:41). The flag indicated the village was pro-British, a feeling that prevailed because the leading citizen of the place, Canochquiesa, personified pro-English sentiment.

Canochquiesa was a sachem or peace chief in the Iroquois confederacy, that is, a person bearing a name that was really an office title. The title could endure over many years so long as a new individual was named or raised up to take the place of his deceased predecessor. The name "Canochquiesa" (my standardization of Sir William Johnson's Mohawk-derived version, but more like "Kanyukweyo:lu" in Oneida or "Kanongweniyah" in Fenton's Seneca rendering) was the best documented sachem-ship in Iroquois history (Fenton 1998:207, 531-32). The man who bore this name at Old Oneida was installed in 1740 and died in 1775 (Fenton 1998:408; Penrose 1981:51). Aside from being a prominent leader of the confederacy and the leading ritual speaker of his age, Canochquiesa was regarded as the headman of Old Oneida. To live near him, to be in his orbit was to announce one's identification with the English cause.

That was a good reason to move away it one were inclined toward the French. That would have seemed a wise thing to do when the French were in the ascendancy during the 1740s and early 1750s. It was the French who won the battles fought in Oneida country at Oswego and at Fort Bull on the Oneida Carry (1756). The French passed freely across Oneida territory to strike at the Mohawk Valley (1757). Oneidas living near Oneida Lake were in communication with the French about these events and may have been complicit in them (Jennings 1988:261, 293-94, 323-25; Fenton 1998:487, 492, 498-99). The majority of the Oneidas, Sir William Johnson observed in 1757, are "under the influence of those of their Nation whom the French have drawn off to live at Swegatchy, and at whose scalping parties which molest the German Flats they do at least contrive" (PSWJ 9:325).

Pro-French sentiment centered at a settlement called Kanonwalohale (Mohawk: Canowaroghere), probably on Oneida Creek roughly six mi from Oneida Lake. It must have been substantial in size when first heard of in 1756, the year Canochquiesa asked that a fort be built at Old Oneida for protection against the French (PSWJ 9:378). Instead, Sir William, the British superintendent for Indian affairs, had it constructed at Kanonwalohale, apparently to court the allegiance of that place (DRCHSNY 7:101). Not wishing to be defended in that fashion, however, the Kanonwalohale Oneidas quietly destroyed the new fort to please the French (DHSNY 1:526).

Nevertheless, the wisdom of Sir William's gesture toward the other town became apparent when the tide of battle turned in favor of the British. Kanonwalohale quickly announced enthusiasm for the English and furnished the lion's share of Oneida soldiers for British campaigns against Niagara and Montreal in 1759-60 (PSWJ 10:175, 180-85, 251-53 and 13:157).

Canochquiesa continued to play a prominent role in Oneida affairs. But his village became increasingly peripheral to Kanonwalohale, which moved upstream to present Oneida Castle about 1760 (Figure 1). In the drama of village rivalry, Canochquiesa never ceased to champion the interests of his diminishing settlement over the newer Oneida Castle. That stance brought frustration and, over time, he became increasingly vexatious as is apparent from this report given to Sir William in 1770 by a leader of Kanonwalohale:

> Takawaron an Oneida Chief in a private Conference with Sir W'm Told him that notwithstanding all the pains taken by his Village of Kanonwaroghare, [at Sir William's request] to Unite those of that Nation living at Oneida on the Hill with theirs, that Ganaghquaissa opposed it, and declared that he would have nothing more to do with Sir W'm or ye English but look entirely to the Six Nat's & etc., & so prevented ye rest (who were disposed to Settle at Kanonwaroghare) from joining them. Wherefore He [Tegawaron], with ye rest of his Castle were determined to have nothing farther to do with him, but would follow Sir W'm's advice in everry thing and begged that he would on everry occasion afford it to them & that He might depend on their strictly observing it. [PSWJ 12:836-37].

We last hear of Canochquiesa trying to stir up trouble

for the missionary, Samuel Kirkland, who resided in the rival village. As the Revolutionary War approached, Kanonwalohale had become the principal Oneida settlement and a place dominated by pro-American sentiment. The steadily dwindling Old Oneida exhibited pro-British sentiments. What few inhabitants it retained in 1780 left, probably to join up with other Loyalist Iroquois at Niagara (Penrose 1981:258-60; Glatthaar and Martin 2006:269). Old Oneida never again existed as a major village although four or five families were reported living there in 1789 (Pilkington 1980:378).

Archaeologically Speaking

The archaeological record of the 1600s pieced together by the Chenango Chapter indicates a movement of Oneida villages northward along a high north-to-south trending ridge called the East Hill. At the end of the seventeenth century, the process culminated in the Upper Hogan site perched at the northern edge of the East Hill. Upper Hogan directly overlooks the later Lanz-Hogan station as well as the road on which Lanz-Hogan sits (Figure 6).

The Chenango Chapter also has documented an increasing European component in the surviving material record. About 99 percent of what an archaeologist recovers from an Oneida site of 1660 or later is European-made (Hosbach 2004:194). Moving north and acquiring more European goods were related processes, suggesting that Upper Hogan and Lanz-Hogan occupied much the same location for the same reason. Residents of both villages needed European-made goods which were carried to those villages along that route.

The Oneidas were dependent on utilitarian goods such as duffels cloth and Stroud's woolens, copper kettles, steel hatchets and other metal tools. All of these items were more cheaply available from the English than from the French and the chief source of English goods was Albany (Fenton 1998:330). The utilitarian category also included guns and gunflints imported from across the ocean. A desire for European flint seems odd in view of the fact that the Oneidas were sitting on their own potential supply of gunflints in the form of Onondaga chert.

That is a forceful reminder of the extent to which they had become materially dependent. Their need for European products extended into the non-utilitarian realm to include wampum, small, tubular shell beads made from whelk columella and quahog clam shell. Investing wampum with considerable symbolic importance, the Iroquois made it fundamental to performance of their socio-political rituals. Yet, wampum was a recent invention made possible by the availability of European metal tools and, by the 1630s, its distribution was entirely in Euramerican hands (Ceci 1989; Fenton 1998:298-99; Jennings 1988:52,78; Tooker 1978:421-23). Hence, the Iroquois depended on foreigners, mostly in Albany, for a substance essential to practicing their own customs.

The non-utilitarian category also included alcohol which resulted in drunken bouts terrifying visitors to Oneida villages for nearly 150 years (JR 51:123-25; Pilkington 1981:311). Some of the drink was French brandy. Most was New England rum carried by hand from Albany, and by the barrel along the forest path winding around the base of the East Hill.

As dependence on foreign-made substances increased during the 1600s, therefore, Oneida settlements gravitated toward the Albany path skirting the northern end of the East Hill. When Oneida villagers first took up position along the artery in about 1677, however, they found the location to be a vulnerable one. That settlement, the archaeological Upper Hogan site, was almost certainly the Oneida village destroyed by the French in 1696 (DRCHSNY 9:655-56). Reeling back about 3.75 mi (6 km) to the south, the Oneidas then reestablished their principal village on the highest point of the East Hill in about 1710—the Primes Hill site (Wraxall 1968:79). However, the lure of the east-west path became stronger than ever due to the presence of an English trading post going up at Oswego during the 1720s.

When the Oneidas ventured back to the road to found Old Oneida, the same situation that obtained with regard to Albany access was as real as ever. Now, however, some of the products they most desired were more readily available, including the stock-in-trade of traders everywhere—rum (Fenton 1998:452; Kelsay 1984:17, 29). Oneidas welcomed the Oswego post because they were "anxious to gain access to a convenient, strategically located marketplace" (Grumet 1995:384). Taking into account the permanent establishment of Oswego about 1727, the beginning date of Lanz-Hogan/Old Oneida is likely to have been about 1730.

In sum, I began this article with correlating the Lanz-Hogan archaeological site with the village of Old Oneida. Today, that location straddles a quiet country lane, a route almost certainly in existence for centuries. In the late seventeenth and early eighteenth centuries, it was a segment of the main path across New York State connecting the Iroquois groups to one another and to Albany, supplier of foreign-made goods on which the Iroquois had become dependent. Understanding the location and importance of the road clarifies why Oneida sites trended northward toward it during the course of the seventeenth century. European goods, the artery on which the goods moved, and, on occasion, the presence of European troops—these were the major determinants of Oneida settlement location from at least the late

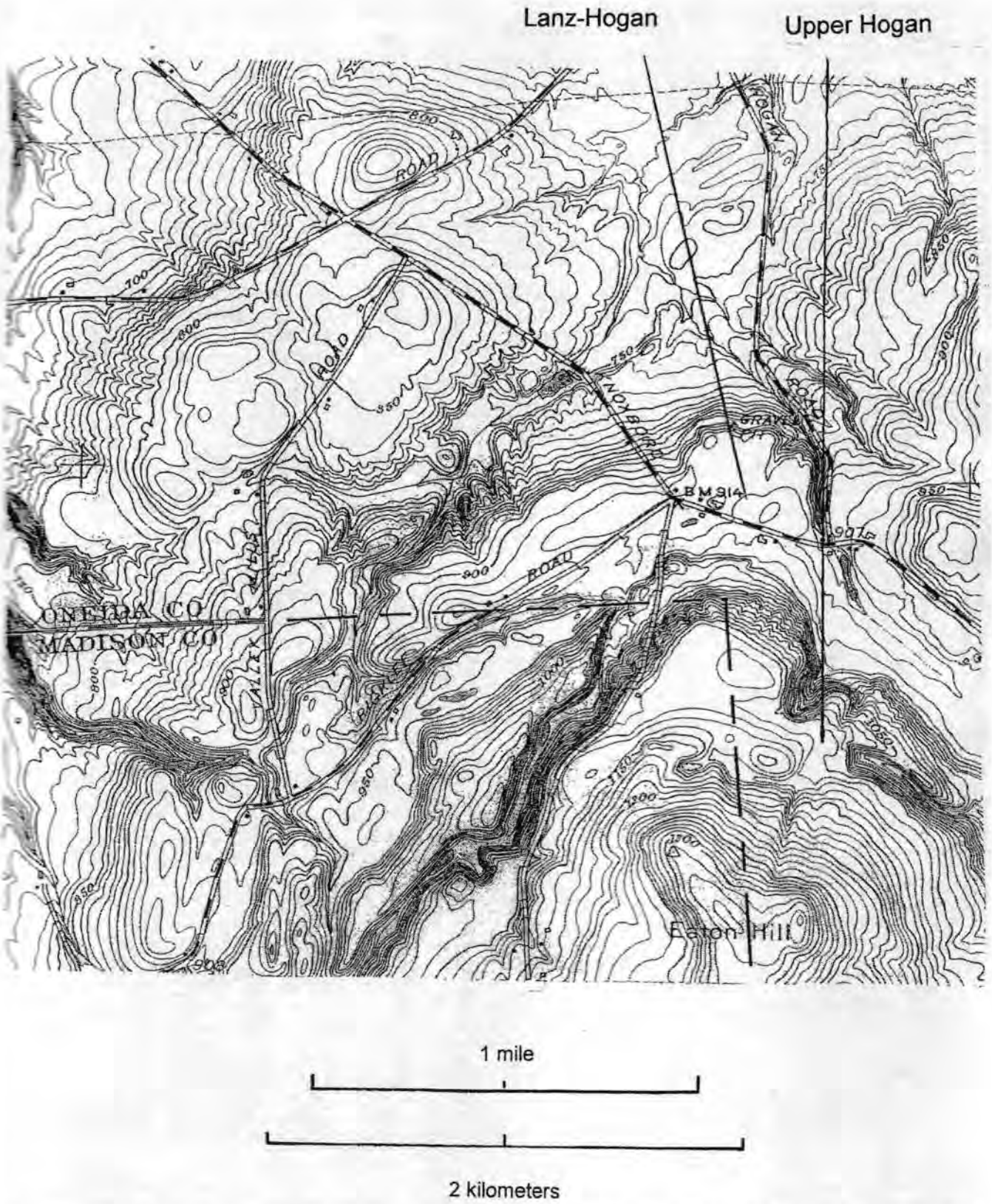

Figure 6. Locations of the Lanz-Hogan (ca. 1730-1780) and Upper Hogan (c. 1677-1696) sites—detail view from a USGS topographic map (Vernon, N. Y., SE/4 Oneida 15' Quadrangle, 1955).

1600s to the mid 1700s.

Knowing, furthermore, that Lanz-Hogan is Old Oneida means we have a specific spot of ground rich in history. Here was the Ambassadors' Road. Here was a key location in the exercise of Iroquois diplomacy from which the confederacy's new sixth nation was supervised. From here, the refugee traffic in the Susquehanna Valley was overseen. Here, also, was the grandstand from which Oneidas witnessed the showdown of European imperial powers in North America.

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The History and Dendrochronological Dating of the Dave Walker Dugout Canoe: A Progress Report

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In 1946 a dugout canoe was recovered from Deer Pond, a small, one-acre wetland located in an upland saddle in the Town of Pharsalia, Chenango County, NY. Dave Walker, who found the canoe, transported it to the City of Norwich, where it was ultimately put on display at the Chenango County Historical Society Museum. The canoe is approximately 17 ft long and made of black ash (Fraxinus nigra)*, and shows several unusual characteristics not found on other canoes known from the region. Based upon its shape and its location away from navigable waterways, we suspect that the canoe may have been used for harvesting wild rice* (Zizania aquatica) *rather than for human transportation. Tree-ring analysis has tentatively placed the age of the canoe in the early part of the eighteenth century (approximately 1720-1725), although it is possible that the canoe is much older. Several sources indicate that wild rice was not heavily utilized by the Iroquois, although it was an important food source to surrounding groups. Consequently, this evidence for wild rice harvesting may coincide with the emergence of refugee settlements along the Chenango and Upper Susquehanna drainages in the early part of the eighteenth century.*

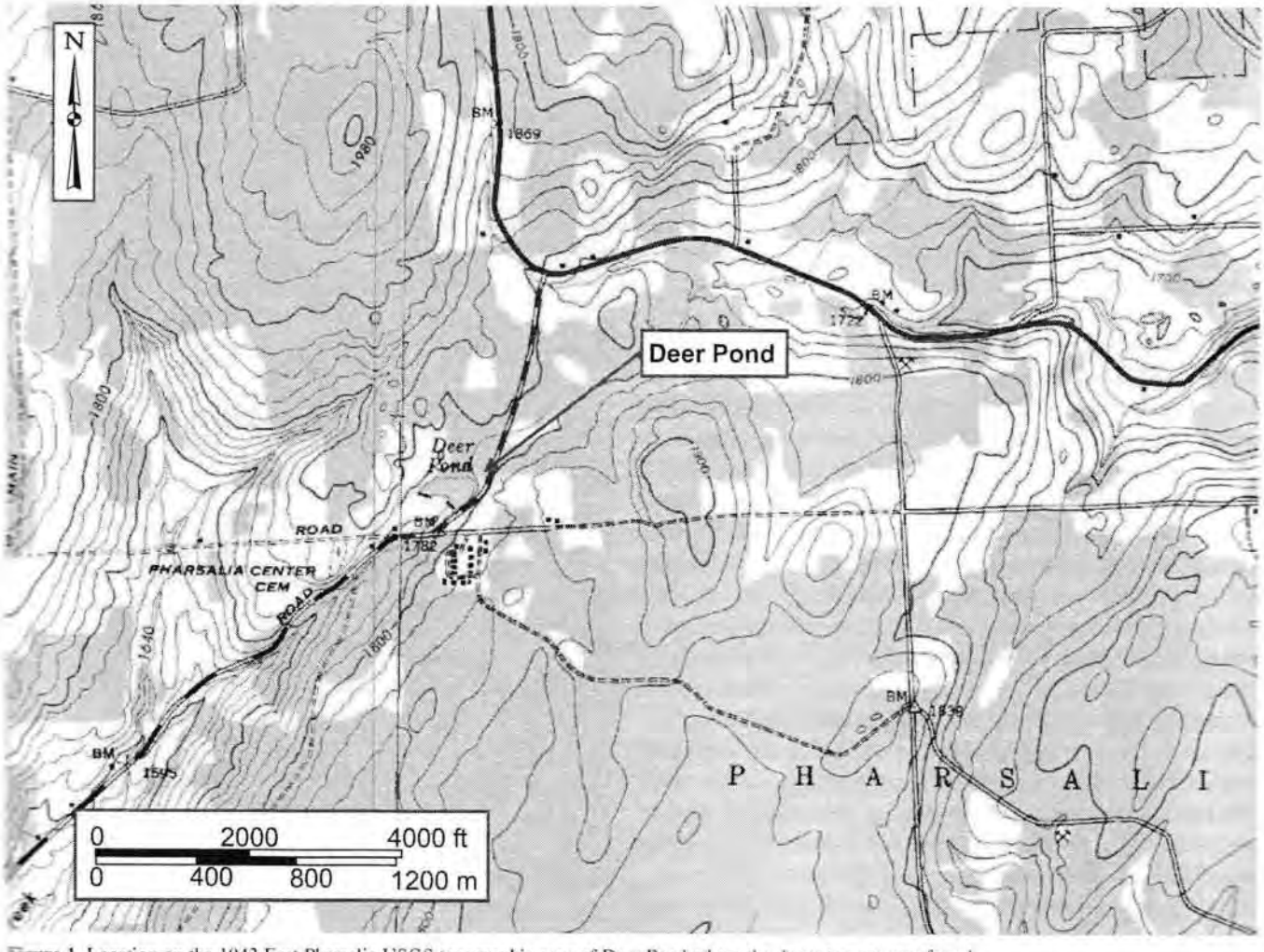

Figure 1. Location on the 1943 East Pharsalia USGS topographic map of Deer Pond where the dugout canoe was found.

Figure 2. View of Deer Pond in the Town of Pharsalia where the dugout canoe was found.

Introduction

In the summer of 2009 members of the Chenango Chapter, NYSAA began a study project of the dugout canoe, which until recently was on display at the Chenango County Historical Society Museum where the chapter holds its monthly meetings. The project was unintentionally started by member Daniel Noble, who stated that the display card associated with the canoe was incorrect, and that it was actually found 34 years earlier by David R. "Dave" Walker in 1946 in Deer Pond near Pharsalia (Figure 1). Dan began a campaign to document the history of the canoe, which culminated in the production of a video interview of Dave that was filmed and produced by chapter member Josh Sheldon. The video was shot in front of Deer Pond, which enabled Dave to show exactly where the canoe was found and how it was transported (Figure 2). In September 2009, Dave Walker gave a brief talk at our monthly chapter meeting about finding the canoe; this answered many of our questions about its history and origin (Figure 3).

History reveals that one July evening in 1946, Dave went to Deer Pond to hunt frogs. The water had been recently lowered by the bursting of a beaver dam. He noticed a log protruding from the mud at the edge of the pond. Upon examination he observed that it was hollowed out. Suspecting that it might be a dugout canoe, he informed the owner, Lester Small, who said he could have it in exchange for some frogs' legs. Dave enlisted some of his

Figure 3. Dave Walker describing the finding of the dugout canoe in Deer Pond.

buddies: Howard Welton, Bill Walker, and Joe Walker. After some frustrating attempts, they were able to extract the canoe from the mud and managed to load it onto a truck and haul it down to the City of Norwich. They unloaded the canoe onto sawhorses next to the barn of Willard Lewis, who was a local historian and the owner of the truck. His daughter Mae, who went on to become the County Historian, had the canoe installed in the Museum where it currently resides, when it opened in 1962 (Windsor 2009).

The canoe itself is 17.66 ft long and 2 ft wide, with low thick walls and a flat bottom (Figure 4). The hollow portion of the dugout measures approximately 5 in deep, and the hull is at least 3 in thick. There are no obvious metal adze or tool marks evident on its surface. The pith, or center, of the tree is clearly evident almost at the top of the dugout at both ends, indicating that it was dug out with the center of the tree close to the top of the canoe (Figure 4).

Figure 4. View of the pith, or center, of the tree near the top of the dugout.

Figure 5. Carol Griggs using an incremental wood borer attached to a cordless drill to obtain tree ring samples for analysis.

Figure 6. The inner surface of the top of the sampled end of the dugout, showing the rings from the pith across to the inner wall; the first sample was taken directly to the right from the outer surface.

Dating the Deer Pond Dugout Canoe

While we were pleased that we were able to correct and document the true history of the finding of the canoe, our curiosity was piqued, and more questions began to emerge. We were very interested in finding out how old it was, so we enlisted the help of Carol Griggs of the North American Tree-Ring Laboratory at Cornell University. She came to the museum and took a core sample from the canoe for analysis (Figure 5) (Griggs 2011). Unfortunately, the timing of this phase of the project coincided with a major renovation of the museum, and the canoe had been moved into storage above a doorway in the attic. A dry-wood borer was used to take one core from the outer surface of the larger end of the dugout, on the side farthest from the pith (approx. 12 in) which contained the most rings (Figure 6). In addition, it was possible to follow the outer rings of the sampled area along the top edge of that side of the dugout and see additional outer rings towards the center about 2 ft from the first core. A second sample was taken from this area in order to extend the first core's ring series closer to the outer ring and bark of the tree.

The samples were stored in plastic tubing for transport to the Cornell Tree-Ring Laboratory (Figure 7). There the cores were glued to specially-made holders, and sanded down progressively with 80 to 300 grit sandpaper to show their cellular structure and ring boundaries. The ring-widths were measured twice on a moving table under a microscope with crosshairs. The ring-width series of the two cores were compared to each other to determine where the two

Figure 7. Core sample placed in plastic tube for transport back to the Cornell Tree Ring Laboratory for analysis.

sequences overlap (Figure 8). The comparison showed that they probably overlap by 5 rings, but no more. The considerably narrower rings after the overlap indicate that this overlap is correct—there is no better match in its ring-widths and growth patterns. However, due to the shortness of the overlap, we used all three data sets—the two sequences from the cores and the combined sequence—to attempt to date this dugout. The ring-width patterns in each sequence were "cross-dated" to the current forest and historic chronologies developed for a number of different species. This process includes using statistics to find all possible placements where the ring patterns match the best, then using visual comparison to determine the best placement in time.

The species of tree used for this dugout is not pine, as we had expected, but black ash (*Fraxinus nigra*), a hardwood species that grows mainly in and around swampy

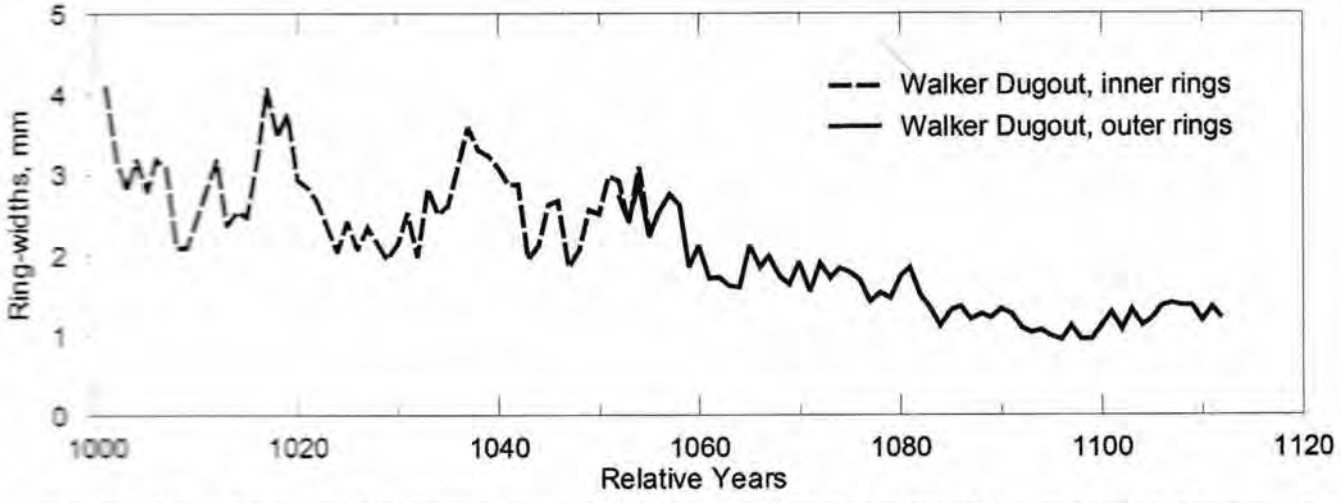

Figure 8. The ring-width measurements of the two cores, overlapping by 5 rings, are shown here. Total length is 112 years plus one year represented by an incomplete ring at the end of the outer core. This is the most probable overlap of the two samples (Adapted from Griggs 2011).

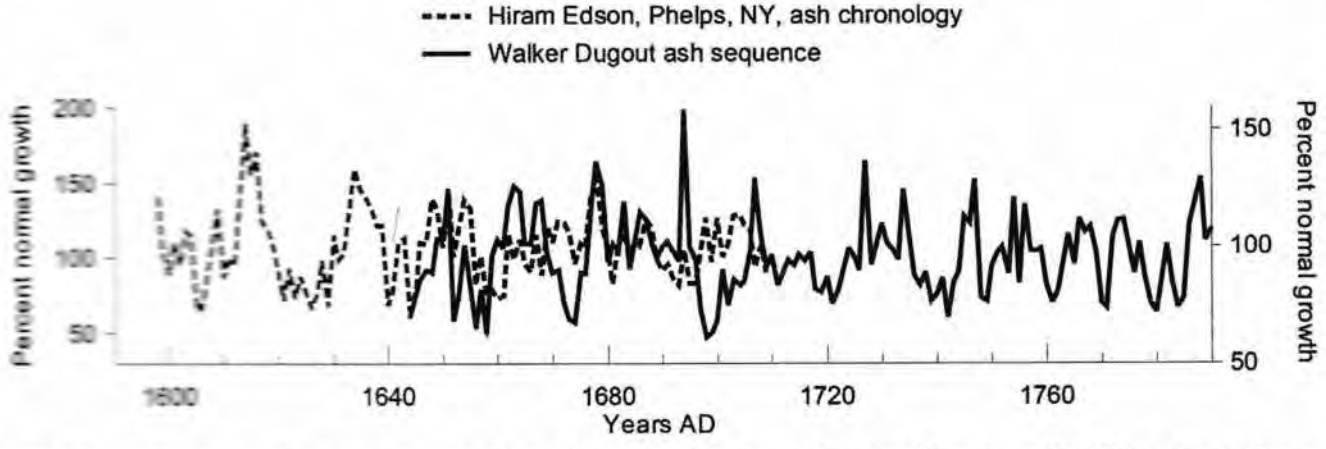

Figure 9. A possible placement of the dugout sequence with an ash chronology from Phelps, NY (Adapted from Griggs 2011). This is the only placement that is supported by statistics. The ring-width measurements were "detrended" to remove the normal reduction in ring-widths over time. The y-axis to the left is for the Edson chronology, to the right for the dugout data.

areas. Unfortunately, the ash species is difficult to date dendrochronologically, and as a result many of the findings remain very tentative. While forest and historic regional chronologies date back to the 1550s for eastern white, red, and pitch pines, eastern hemlocks, and many oak species, the tree-ring laboratory's historic ash chronology is composed of only a few, mainly white ash, series from four different sites. As a result the tentative ash chronology is calendar-dated by its similarities to the oak and hemlock chronologies which were built from timber in historic buildings 10–80 mi from Norwich. Chronologies of each of these species were used in an attempt to date this dugout. Also contributing to the uncertainty is the possibility that the canoe may have been dug out prior to 1550, and would not cross-date at all with any present chronologies.

Cross-dating the dugout sequence with the ash chronology did bring out one possible placement in time for the dugout sequence (1588–1710+vv [+vv represents the waning edge or beginning of the outmost bark]) (Figure 9). While cross-dating this sequence with the rest of the species' chronologies, does not corroborate this date, neither does it suggest any other possible date after A.D. 1550. Although no bark remained on the canoe to provide a terminal date, there are 15 sapwood rings in the second core with the outer rings. An examination of ten modern black ash samples reveals that most contain between 25 and 30 sapwood rings, so the dugout would have been constructed approximately 10 to 15 years later than the outer ring of this sample. If the 1710+vv date is correct, then the dugout would have been made between 1720 and 1725.

Given the tentativeness of the date, a radiocarbon sample was taken from the innermost ring of the first core sample and submitted for analysis. Unfortunately, the date came back as being modern (80±30 BP; Beta 302018). Note that while the conventional radiocarbon date came back as modern, one of the calibrated 2 Sigma dates was CAL AD 1690-1730, in keeping with the c. 1720–1725 dendrochronology results. The recent radiocarbon results may be the result of the problems associated with radiocarbon dating of objects less than 400 years old due to old carbon emissions or possibly, but less likely, due to a contamination issue involving the glue used to hold the core samples together. Consequently, radiocarbon dating was unable to further refine the chronology, leaving the canoe's date still open to speculation.

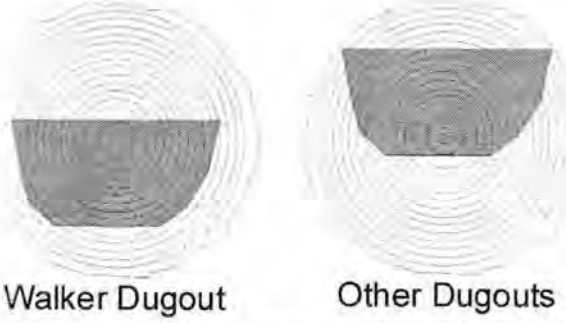

Figure 10. Diagram showing the relative cross section of the Dave Walker canoe within the trunk of the tree in comparison with similar dugout canoes.

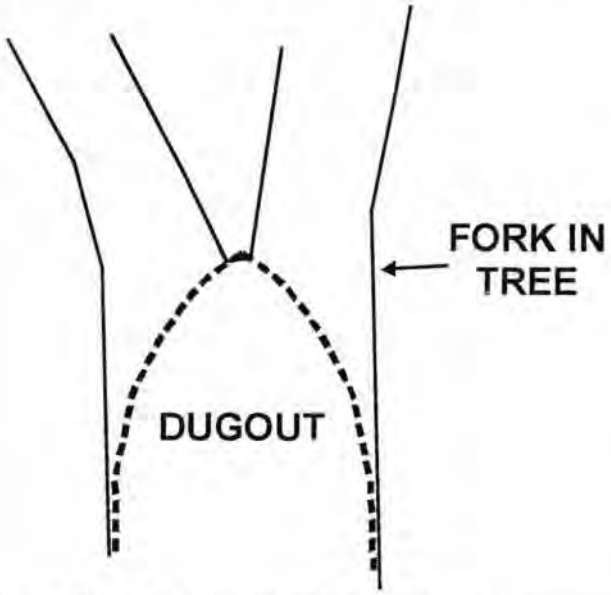

Figure 11. Schematic drawing showing how one end of the dugout was cut from a point where the trunk was branching.

Discussion

Several major differences exist between the "Dave Walker" canoe and the three other dugouts dated by Griggs and the Cornell Tree-Ring Laboratory. The other dugouts, all securely dated from the early 1700s through the late 1800s, are all made of eastern white pine (*Pinus strobus*), and also had nearly half of the log removed before they were dug out, but the center of the tree was at the bottom of each dugout (Figure 10). On the "Dave Walker" canoe, the pith is closer to one side on the larger end, and at the other end the tree was either branching or splitting into two trunks, most likely from farther up the tree (Figure 11). The wood at such a junction is stronger and denser than in a straight trunk, but whether the tree was cut there for that reason is unknown. Finally, the general thickness of the Walker dugout is much greater than the others. No evidence of burning was visible on the surface or interior of the canoe, although the use of fire is well documented in ethnohistoric accounts (Figure 12).

Even more unusual than the manufacturing techniques is the location where the canoe was found. Deer Pond is a

small upland pond located well away from any navigable waterway. The pond itself was once likely part of a larger system of wetlands, and many other small ponds and wetlands occur close by. The area is an artesian watershed that feeds into the Otselic River, Brakel Creek, Canasawacta Creek, and Genegantslet Creek. These streams in turn empty into the Chenango River to the east and the Tioghnioga River to the west.

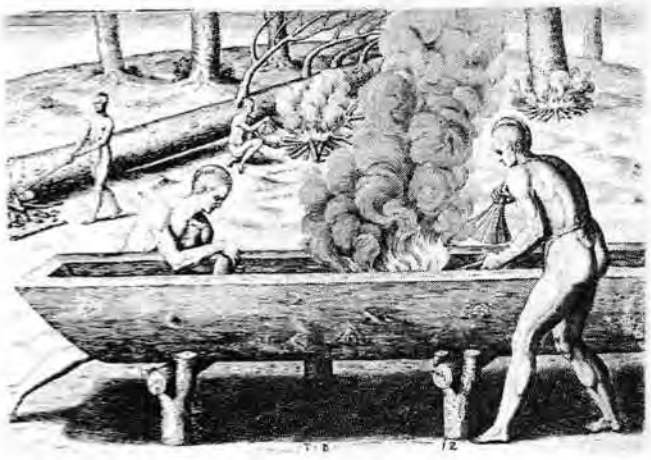

Figure 12. Engraving by Theodor de Bry entitled "The Manner of Makinge their Boates" showing the use fire to hollow out dugout canoes. From Hariot (1590).

It would seem that Deer Pond was very small at the time the canoe was discovered in 1946. The 1903 Norwich USGS map shows the pond to be oval in shape and measuring only 70 x 400 ft or about 0.6 acres (Figure 13). Dave Walker stated that Lyle Perkins, a DEC forester, told him that when the pond was dredged and enlarged to its present size in the 1960s two more, much shorter, dugout canoes were found and placed atop a pile of mud. Unfortunately, they disappeared and no one knows where they went. This dredging led to the erroneous notion that Dave's canoe came to the Museum two decades after its actual discovery.

So the question remains: what is such a big boat doing in such a small pond? The flat bottom and shallowness of the dugout canoe make it appear unstable for use in transportation. One possibility is that the canoe may have been used in the harvesting of wild rice and was not ridden in, but instead used as a floating basket. Under this scenario a person would have waded alongside and shook and beat the rice into the canoe, which could then be pushed or pulled ashore. While not an abundant resource, wild rice does grow in larger wetland areas in central New York State and was probably much more common prior to the drainage and manipulation

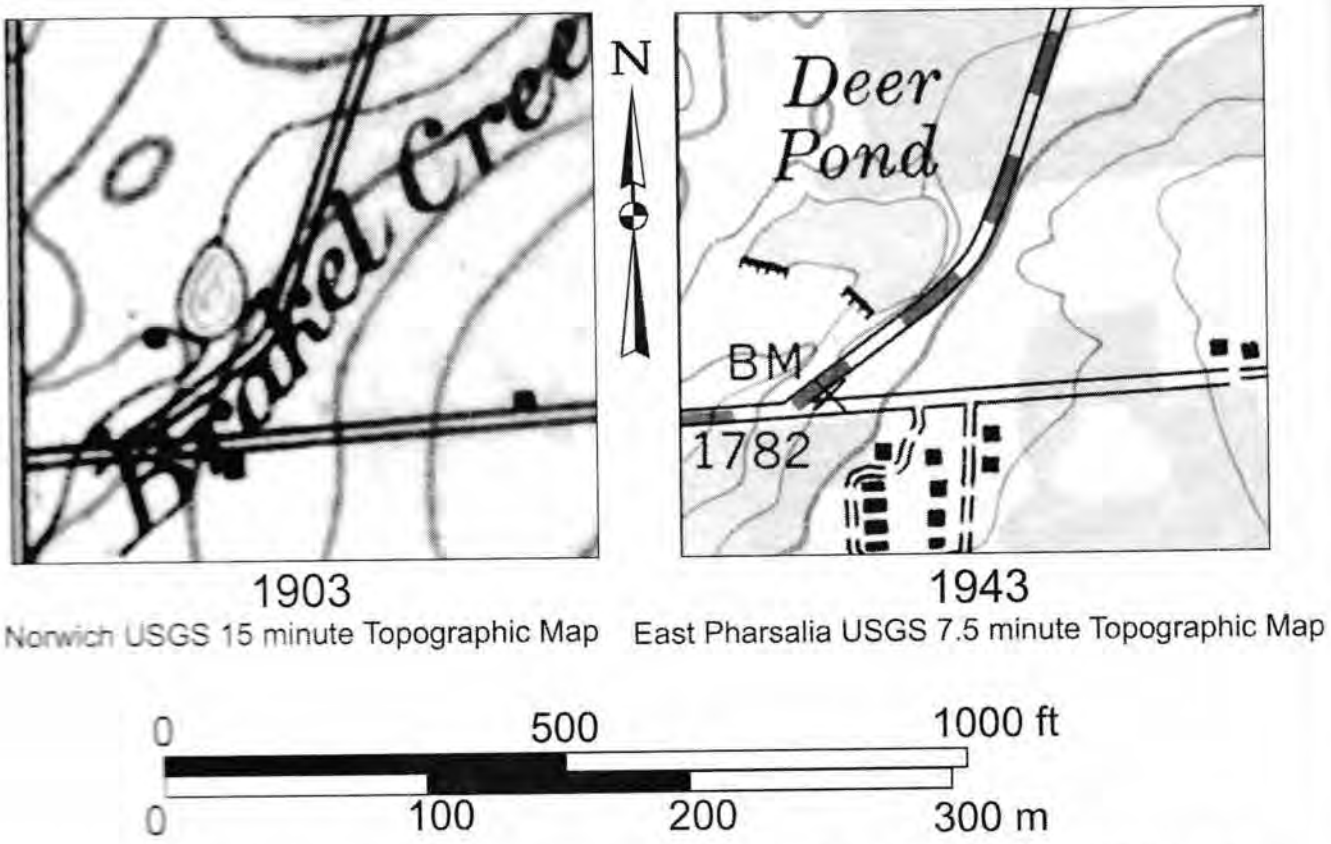

Figure 13. A comparison of USGS topographic maps showing changes in the size and shape of Deer Pond between 1903 and 1943. Not to scale.

of the landscape. The area south and southeast of the pond is depicted as a huge wetland called Barlow Swamp on the 1863 A. Pomeroy and C.S. Warner Map of the counties of Chenango and Cortland, New York (Figure 14). Deer Pond may have represented the periodic margin of this large wetland, which was likely big enough to provide suitable habitat for wild rice.

Scholars of Iroquois foodways agree that wild rice was not a significant dietary plant in comparison with that of other native groups. Parker notes:

> Wild Rice was an important food to the Indians of the eastern portion of the continent, especially along the Great Lakes and the Mississippi Valley. It was little used by the Iroquois, however, although there are records of its employment. The Seneca some 40 years ago gathered a great quantity of it but the writer does not know of its use subsequently [Parker 1910:109].

Likewise, Waugh states, "the wild oat or rice was occasionally used by the Iroquois, although it was employed extensively by surrounding tribes" (Waugh 1916:78).

Figure 14. Detail of 1863 A. Pomeroy and C.S. Warner Map showing the location of Deer Pond with respect to a large wetland to the southeast known as the "Barlow Swamp."

Possible Cultural Affiliations

This issue of possible use in rice harvesting became central to our question of who made the canoe. It seems unlikely that it was made by Europeans, given the remote location of the find and the lack of colonial settlement in the region in the early eighteenth century. If the date of 1720–1725 is correct, it would mean that the canoe had been made during what was a time of rapid change in the Chenango and Upper Susquehanna Valleys. Clusters of villages composed of refugee populations began to emerge to the south of the Iroquois heartland. These villages were generally located around major confluences and were known to be ethnically diverse, especially the larger villages that flourished toward the mid-eighteenth century, such as Ostiningo and Onaquaga. Decimated by war and disease, populations of Shawnees, Nanticokes, Conoys, Mohicans, Delawares, and Conestogas ultimately made their way north to live under the protective eye of the Five Nations. Of significant mention was the adoption of the Tuscarora into the Iroquois Confederacy, which took place in 1722 (in keeping with the possible canoe construction date of 1720–1725). Originally living in portions of North Carolina, between 1,500 and 2,000 Tuscarora were relocated to a broad area in central New York which includes the Deer Pond vicinity as shown on Lewis Henry Morgan's map of tribal locations in 1720 (Morgan 1851). The Tuscarora are known to have used wild rice much more intensively than Iroquoian groups in New York, and in fact the term, "Tuscarora Rice," is one of the common names for wild rice in popular usage today. Thus the Deer Pond canoe may reflect a continuation of traditional Tuscarora subsistence practices as transplanted in central New York.

Future Directions

In addition to providing valuable research information about a poorly understood artifact type, the canoe project was an enjoyable experience for everyone in the group. After hearing Dave Walker speak about the canoe we also watched Josh Sheldon's video from Deer Pond. We initiated a contest in which members guessed the age of the canoe based upon the dendro results, the winner of which would win a very nice trophy.

Current research has focused on attempts to find additional samples of black ash from the Deer Pond vicinity for use in refining the tree ring chronology, including looking for large examples of living trees. We are also conducting research into whether some of the unusual characteristics of the canoe might be reflective of temporal or cultural variations in canoe production techniques. Of particular interest would be techniques used by tribal groups from other regions who had been resettled in the area in the early part of the eighteenth century.

Future plans include helping to design a display of the canoe when it is put back on exhibit at the museum. We hope to make the dendrochronology a key part of the canoe's interpretation and include the core samples as part of the exhibit. We'd also like to continue our research into the

dendrochronological dating of the canoe by building a black ash chronology for our region from standing trees and possibly obtaining additional samples from submerged logs in the vicinity. It is important to stress the tentativeness of both the dating results and the subsequent interpretations presented in this paper. Future research may have yet another story to tell about the canoe and it origins, and if so, we look forward to sharing it.

Acknowledgements

We especially wish to thank Dave Walker for both his keen eyesight and foresight and his willingness to share his story with us. Thanks also to the Chenango County Historical Society for permission to test the canoe and to Bill Griggs, who is not afraid of ladders and shared his experience with us. Sincere thanks also to an anonymous donor who made the dendrochronogical and radiocarbon analyses possible.

Figure 15. Full length view of the Deer Pond dugout canoe.

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Faunal Exploitation in the Eastern Cayuga Sequence, Central New York State, c. 1275-1525*

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Although new research has contributed new insights into the Cayuga Iroquois, their origins, social organization, and subsistence practices are still among the least known of the Five Nations Iroquois. This paper offers a preliminary look at prehistoric Cayuga faunal exploitation on the eastern side of Cayuga Lake during the Late Woodland period (c. 1275–1525). Faunal assemblages from four sites in the historic Cayuga homeland in Central New York State were analyzed to ascertain the range of species present and their relative abundances, patterns of exploitation, and variation of these factors through time as the community moved north over a period of approximately 250 years. These initial insights into prehistoric Cayuga subsistence practices on the eastern side of Cayuga Lake will form the basis for future zooarchaeological work in the region, and spur further archaeological investigations into this poorly understood group.

Introduction

The origins, social organization, and subsistence practices of the Five Nations Iroquois have piqued the interest of archaeologists since the early nineteenth century. However, of these groups the Cayuga are by far the least well known, archaeologically speaking. Only scattered investigations into this group have taken place, largely based on work by Lenig (1965), DeOrio (1980), and Niemczycki (1984, 1991), although newer studies have focused on Cayuga settlements dating to the contact and historic periods (Allen 2009; Birnbaum 2011; Levine 2003; Mandzy 1990; Michaud-Stutzman 2002, 2009; Williams-Shuker 2005, 2009). This lack of archaeological attention stems from a number of factors. As early as 1921, Alanson Skinner reported that decades of looting by local farmers had destroyed many Cayuga cemeteries and village sites and dispersed their artifacts, while today other sources of data remain locked away in unpublished reports, unstudied collections, and the largely untapped knowledge of avocational archaeologists (according to Mandzy 1990; Niemcyzcki 1991; Weiskotten 2000). Further compounding the problem is that while the field of Iroquoian archaeology is well established, there has been little sustained zooarchaeological research conducted in New York State.

In response to these issues, this paper builds on previous faunal research on the Mohawk (Socci 1995; Kuhn and Funk 2000), Oneida (Pratt 1976), Onondaga (Pipes 2011a, b, c; Tuck 1971), and Seneca (Pipes 2009; Sempowski and Saunders et al. 2001; Somerville 2014; Wray et al. 1987, 1991) to better understand patterns of faunal exploitation among the prehistoric Cayuga on the eastern side of Cayuga Lake. The analysis of faunal remains from midden contexts can give important insights into site use, season of occupation, changes in exploitation patterns due to shifting environmental conditions, internal/external stress, and other factors. The analysis here reveals a range of species that would have been present in the environment surrounding the villages, dominated primarily by deer, with various species of birds and freshwater fish also present. However, a pattern of increasing mammal exploitation and decreasing bird and fish exploitation over time emerges. The reasons for this shift are uncertain, but several possible scenarios are provided.

Cayuga Prehistory

The Cayuga homeland lies between Cayuga and Owasco Lakes in Central New York State (Figure 1). According to Iroquoian legend, the Cayuga and the Seneca to the west shared a common origin, and linguistic evidence appears to bear out this connection (Michaud-Stutzman 2002:28). While somewhat tenuous, ceramic and settlement data suggest that the Cayuga and the Seneca appear to have emerged from a combination of divergent development from a common ancestral population and in situ development (Niemczycki 1984). It is believed that several dispersed populations coalesced into the historic group that would become the historic Cayuga sometime between A.D. 1250 and 1300 (Engelbrecht 2003:119). At the beginning of the fifteenth century, the main population was located on the eastern side of Cayuga Lake, and a smaller population on the western side from about A.D. 1450 to the end of the 1500s. The relationship between the two populations is unclear, and although it is presumed that both populations were part of the same "Cayuga Tribe," similarities in ceramics associated with the western Cayuga and those with the Seneca and Susquehannock suggest some degree of interaction between

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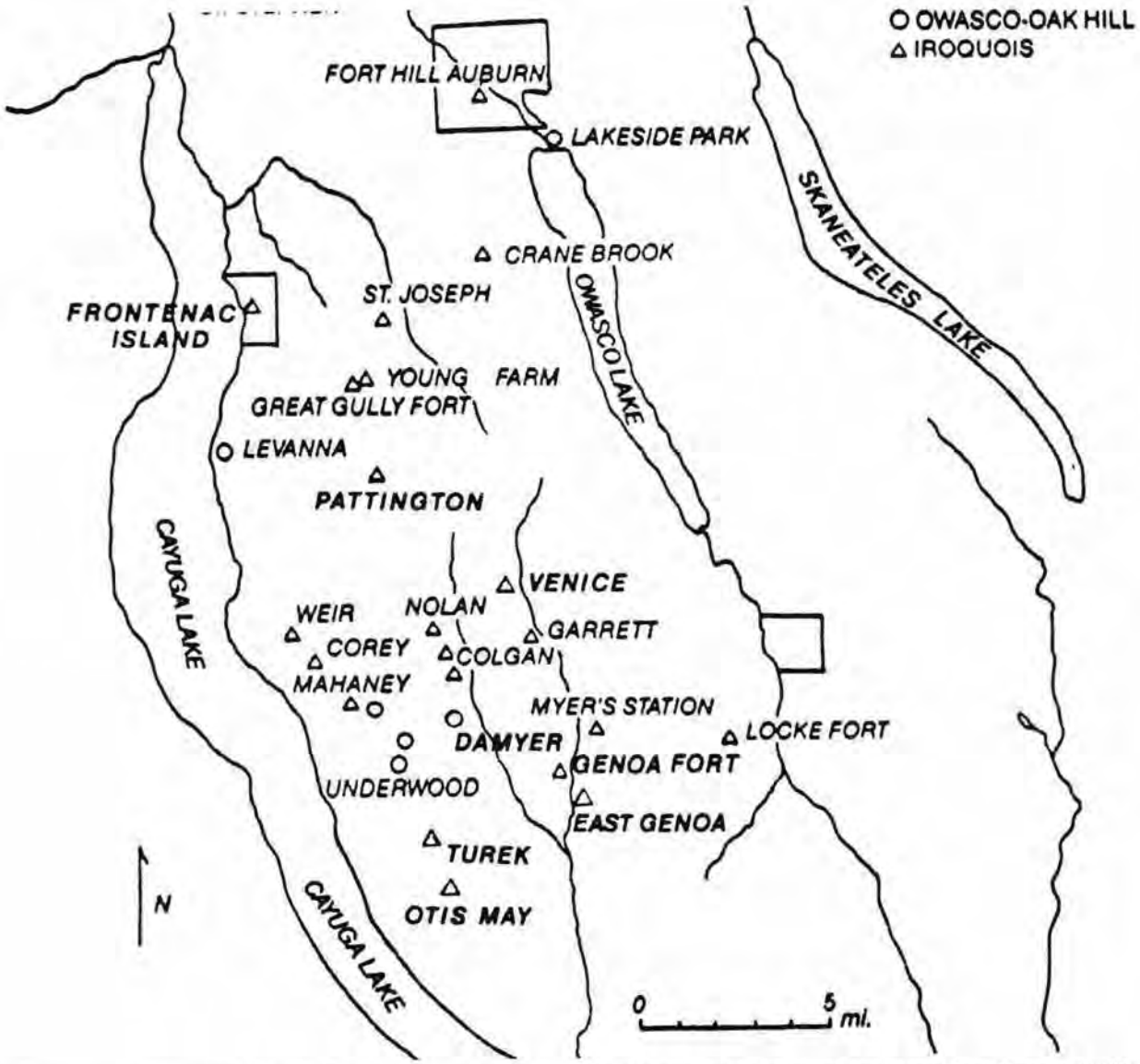

Figure 1. Locations of known sites in the Cayuga territory on the eastern side of Cayuga Lake (Abstracted and adapted from Niemczycki 1991: 95 [with permission]).

and among those groups (Niemczycki 1984; Michaud-Stutzman 2002:30). In any event, by A.D. 1600 the western population had rejoined the main group on the eastern side of the lake (Allen 2009).

Based on continuity in ceramic styles, the four sites under investigation—Underwood, Mahaney, Corey, and Weir—are believed to represent the movements of a single community as it moved northward over a period of approximately 250 years (Figure 1). The Underwood, Damyer, Abbott, and Mahaney sites were likely base camps or hamlets occupied by different segments of the total population in the area which consolidated later into a single large village at Weir (Niemczycki 1984:73). The Weir, Colgan, and Nolan/Landon Sites appear to form a single sequence of settlement from 1400–1500, but the location of succeeding settlements in this sequence are unknown. Furthermore, faunal data are not readily available from the Colgan and Nolan/Landon Sites. All four of the sites under investigation here were picked over by collectors and pothunters to some degree.

Some of the faunal assemblages examined here were recovered during excavations carried out during a survey of Central New York by the University at Buffalo Archaeological Survey in 1969–1972 under the direction of Marian White, and have remained understudied or unstudied in the intervening 40-plus years. The assemblages were collected through subsurface excavation, surface collection and, at the Mahaney and Corey Sites, flotation sampling.

Additional faunal remains from the Corey Site were recovered during excavations by Ithaca College in 2003 and 2005, and were examined by April Beisaw (2006a). Those data have been incorporated into the following examination, and have been marked where applicable.

Theoretical Background

Human subsistence is a complex series of behaviors and practices that are subject to environmental and social dynamics in which they take place (Jordan 2008). Relative abundance indices are based on the assumption that faunal remains are reflections of past hunting efficiency in which the faunal species with the highest energy return values (i.e., large-bodied animals) are pursued first, and their relative abundances in archaeological contexts reflect how frequently they were encountered and the amount of energy available in the environment (Broughton 2002). Thus, the relative abundance of small species is a function of, and an indirect index to, the availability of larger-bodied or higher ranking species. Environmental shifts and discrete climactic events can affect the abundance and range of species available for capture. Many species, especially small rodents, birds, and fish, are sensitive to shifts in environmental conditions including ambient temperature, change in available forage, and habitat creation/destruction whether through human or natural action (Svensson et al. 2010). Small mammals such as rabbits, woodchucks, squirrels, mice, voles, and chipmunks are excellent indicators of environmental change because they are especially sensitive to subtle shifts in vegetation, moisture, and temperature (Stahl 1996). If changing environmental conditions were the cause of shifts in faunal range and abundance in the Cayuga Sequence, it is hypothesized that the amount of small rodent species present at archaeological sites will vary accordingly, with increased amounts of rodent species in cases where environmental conditions favor the spread of their habitats, and lesser amounts in cases where environmental conditions such as drought do not favor these species. Furthermore, as these species, especially squirrels and woodchucks, threatened crops and were not the primary meat source for any Iroquoian group, they were more likely to have been killed and thrown into middens whole, and often burrowed into middens and died there. These species will be represented by complete or nearly complete skeletons and be better preserved than other archaeological fauna, and likely will not bear evidence of butchering, heating, or digestion which would indicate their consumption for food (Shaffer 1992; Stahl 1996:61-62).

Given that deer were the main source of meat for the Iroquois in New York State, if increasing human population pressure is the driving factor behind faunal change over time in Central New York, there may be a noticeable increase in the proportion of lower-ranked small animals that were not staples of the Iroquoian diet, such as rabbit, dogs, woodchuck, squirrel, frogs/toads and others present in increased amounts at sites dating to periods when population pressure increases and decreases at sites when population pressure was low. The number and variety of birds and fish would also be expected to increase as well. Overhunting may also occur during times of stable or increasing human populations. In these cases, the amount of large/higher-ranked species will be low at sites when warfare was at its lowest and epidemics were not known to have been present, while smaller/lower ranked species will be higher (Rawlings 2006:188). Warfare can also have profound effects on social organization, and can greatly influence the amount and type of prey species that are available for hunting, especially when it is considered that it is cross-culturally observed that male hunters also serve as combatants. While warfare cannot be considered as the singular cause for changes in faunal patterns over time, it influences hunting decisions such as the maximum safe distance from the village which hunters are willing to travel, resulting in a decrease in long-distance game in communities in danger of attack (Rawlings 2006:191). A decrease in human population pressure results from hunters/warriors leaving for battle, as well as a concurrent lack of those able to hunt and defend the village from reprisals. This would result in an increase in smaller/lower-ranked faunal species such as small mammals, birds, fish, bivalves, and possibly amphibians and reptiles such as snakes, as well as a decrease in larger/higher-ranked species such as deer, elk, and bear. These various scenarios generate observable differences in processing, consumption, and waste management decisions, which can also provide important evidence for social and cultural values towards animals and whether these change over time (Tani 1995).

Methodology

A total of 10,731 faunal specimens were examined as part of this investigation, including data from Beisaw's (2005) study of the Corey Site. Bones were first sorted according to class, species, and relative body size using comparative skeletal type collections at the Rochester Museum & Science Center and printed sources (Gilbert 1973; Olsen 1964, 1968, 1971, 1979; Schmid 1972; Shufeldt 1914). Each bone was minimally identified to the class level (i.e., mammal, bird, fish, etc.) (Beisaw 2001:4). For this paper, small mammals refer to those species whose average body weight is less than 40 pounds. These include

Table 1. Total TNF/MNI counts from each site.

Site	TNF	MNI
Underwood	888	485
Mahaney	121	88
Corey*	6,515	6,337
Weir	3,207	943
Total	**10,731**	**7,853**

* includes data from Beisaw 2006a

woodchuck, beaver, dog/canids, fox, bobcat, and small rodents. Medium mammals are those which average 41–200 pounds in weight, and include deer, wolf, and European livestock such as pigs and sheep. Finally, large mammals are those that weigh in excess of 200 pounds, and include bear and elk. Birds were categorized according to body size, and include small (chickadee to sparrow-sized), medium (pigeon, duck, hawk-sized), and large (turkey, goose, crane-sized) because most could not be conclusively identified to the species and/or taxon (Beisaw 2001:4; Serjeantson 2009:81-82). Fish were also sorted according to element size into small, medium, and large, although most could not be identified to the species level.

Two quantitative counts of the faunal collections were taken. The total number of bones was counted and entered into a Total Number of Fragments (TNF) field (also referred to in the literature as the Number of Identified Specimens (NISP) (Beisaw 2001)). This count indicates the absolute number of bones for any given row of data. The Minimum Number of Individuals (MNI) was then calculated for each site. This measure is used in conjunction with TNF to determine how many and how much of each taxon is represented in a faunal assemblage (Lyman 1994). MNI is the minimum number of individuals that are required to account for all the skeletal remains of a particular species recovered from a site by separating left and right skeletal elements and uses the greatest number to determine the least number of individuals that would have been present (Brewer 1992). In this paper two different methods were used to generate MNI counts. One aggregated all faunal data from a site and treated it as a single sample, while the other counted skeletal elements on a feature-by-feature basis, and was assisted by age at death information and the pairing of left and right skeletal elements. Overall, MNI counts generated by aggregation were approximately 1.5-2 times lower than those generated by feature (Klein and Cruz-Uribe 1984:28). See Table 1.

The Sites

Underwood (UB 869, c. 1275-1350)

Table 2. TNF/MNI Counts of Species from the Underwood Site.

Species	TNF	MNI
Mammal		
Bear	2	2
Cow	9	1
Dog	1	1
Elk	5	5
Fox	1	1
Grey Squirrel	5	5
Large Mammal	14	14
Medium Mammal	323	99
Mouse/Rat	1	1
Muskrat	4	3
Opossum	6	1
Raccoon	2	2
Skunk	1	1
Small Mammal	12	12
Small Rodent	9	5
Squirrel sp.	15	13
Unidentified Mammal	13	13
White-tailed Deer	74	66
Woodchuck	3	3
Mammal Subtotal	*500*	*248*
Birds		
Hawk	1	1
Large Bird	2	2
Medium Bird	32	30
Passenger Pigeon	2	1
Small Bird	21	21
Bird Subtotal	*58*	*55*
Fish		
Catfish	1	1
Large Fish	7	7
Medium Fish	52	43
Small Fish	1	1
Unidentified Fish	26	26
Fish Subtotal	*87*	*78*
Gastropod		
Freshwater Snail	1	1
Unidentified Gastropod	60	42
Gastropod Subtotal	*61*	*43*
Bivalve		
Freshwater Clam	140	23
Bivalve Subtotal	*140*	*23*
Amphibian/Reptile		
Amphibian/Reptile	1	1
Frog/Toad	3	3
Turtle	2	1
Amphibian/Reptile Subtotal	*6*	*5*
Unidentified Species		
Bird/Rodent	21	19
Small Mammal/Reptile	2	2
Unidentified Animal	13	12
Unidentified Subtotal	*36*	*33*
Total	**888**	**485**

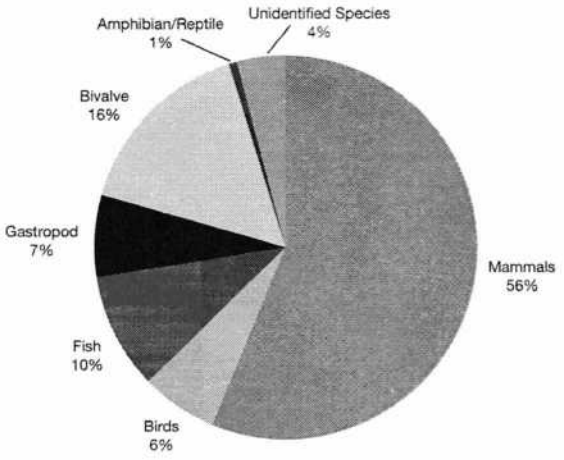

Figure 2. TNF% of animal species from the Underwood Site.

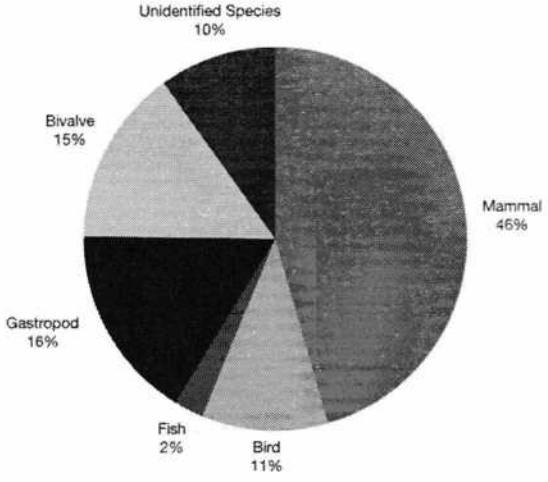

Figure 3. TNF% of animal species from the Mahaney Site.

The Underwood Site is located in the town of Genoa, Cayuga County. The one-third acre base camp/hamlet is situated on a high terrace above Cayuga Lake, and is bordered on the east by a dried-up creek bed, a small running creek to the west, and a marshy area to the north (Ganz 1970; Niemczycki 1984). Human remains were uncovered by the landowners, but the location of the cemetery and the full extent of the site are unknown (Perkowski 1969, 257:33) Table 2 lists faunal counts for each species and Figure 2 illustrates faunal classes by relative percentage (Table 2 and Figure 2).

Mahaney (UB 666, 1350-1450)

The Mahaney Site is located in the town of Ledyard, Cayuga County. The one quarter-acre hamlet site is located immediately west of Little Salmon Creek on top of a hill above

Table 3. TNF/MNI counts of species from the Mahaney Site.

Species	TNF	MNI
Mammal		
Canid	1	1
Dog	3	3
Grey Squirrel	5	3
Medium Mammal	24	10
Mouse/Rat	1	1
Opossum	1	1
Rabbit/Cottontail	5	5
Sheep	1	1
Small Mammal	2	2
Unidentified Mammal	1	1
White-tailed Deer	6	6
Woodchuck	5	3
Mammal Subtotal	*55*	*37*
Bird		
Large Bird	4	4
Medium Bird	1	1
Mourning Dove	1	1
Passenger Pigeon	1	1
Small Bird	2	2
Turkey	4	4
Bird Subtotal	*13*	*13*
Fish		
Large Fish	1	1
Medium Fish	2	2
Fish Subtotal	*3*	*3*
Gastropod		
Unidentified Gastropod	20	19
Gastropod Subtotal	*20*	*19*
Bivalve		
Freshwater Clam	18	12
Bivalve Subtotal	*18*	*12*
Unidentified Species		
Bird/Rodent	1	1
Unidentified Animal	11	3
Unidentified Subtotal	*12*	*4*
Total	**121**	**88**

Cayuga Lake (Jones 2008:321; Niemczycki 1984). The site was partially destroyed by decades of dirt quarrying, but a longhouse is believed to have been present (UB site files). Although Jones (2008:322) suggests that there "is no record of any type of archaeological research at the site....and...no record of any artifacts that have been found at the site," excavations conducted by the University at Buffalo in

1970–1971 recovered a substantial amount of artifacts including many pieces of reconstructed pottery, projectile points, hammerstones and lithic debitage, carbonized beans and corn, and smoking pipes. Excavations by the University of Pittsburgh in 2005 also recovered substantial amounts of material, primarily ceramics (Cathy Serventi, personal communication, 2014). The faunal assemblage from the Mahaney site is very small, with a total of only 121 faunal specimens (see Table 3 and Figure 3 for species counts and percentages by faunal classes).

Corey (UB 660, ca. 1450-1500)

The Corey Site is located in the town of Ledyard, Cayuga County. The two-acre village site sits on promontory above the lake, and is bounded by streams which have cut steep banks on the north and south sides. Additional fortifications include a palisade, embankment, and ditches (Niemczycki 1984; Parker 1920:505, No. 31; Perkowski 1969), as well as a formal shorthouse, ground stone workshop area, and a medicinal herb garden (Rossen n.d., 2007) (see Table 4 and Figure 4 for species counts and percentages by faunal classes).

Table 4. TNF/MNI counts of species from the Corey site.

Species	TNF	MNI
Mammal		
Bear	3	2
Beaver	1	1
Beaver*	1	1
Black Bear*	8	8
Chipmunk*	12	12
Dog	5	4
Dog*	15	15
Elk	3	3
Elk*	2	2
Fox	1	1
Grey Squirrel	1	1
Gray Squirrel*	53	53
Hare/Rabbit*	2	2
Large Mammal	16	9
Large Mammal*	2363	2363
Medium Mammal	178	24
Medium Mammal*	1213	1213
Muskrat*	2	2
Raccoon*	4	4
Rat/Mouse*	13	13
River Otter*	1	1
Small Mammal	4	4
Small Mammal*	1011	1011
White-Footed Mouse*	8	8
White-Tailed Deer	36	29
White-Tailed Deer*	208	208
Woodchuck	3	2
Woodchuck*	8	8
Mammal Subtotal	*5175*	*5004*
Birds		
Hawk	1	1
Medium Bird	1	1
Medium Bird*	5	5
Perching Bird*	2	2
Pigeon*	61	61
Small Bird*	271	271
Turkey/Pheasant*	2	2
Bird Subtotal	*343*	*343*
Fish		
Bigmouth Bass*	1	1
Carp/Minnow*	32	32
Catfish*	34	34
Large Fish	2	2
Salmon/Trout*	18	18
Sucker*	2	2
Sunfish*	1	1
Unidentified Fish*	820	820
Fish Subtotal	*910*	*910*
Gastropod		
Mollusk*	51	51
Unidentified Gastropod	2	2
Gastropod Subtotal	*53*	*53*
Bivalve		
Freshwater Clam	3	1
Bivalve Subtotal	*3*	*1*
Reptile/Amphibian		
Frog/Toad*	11	11
Green Frog*	9	9
Toad*	1	1
Tortoise/Turtle*	3	3
Reptile/Amphibian Subtotal	*24*	*24*
Unidentified Species		
Bird/Rodent	1	1
Unidentified Animal	6	1
Unidentified Subtotal	*7*	*2*
Total	**6515**	**6337**

* denotes data from Beisaw 2006

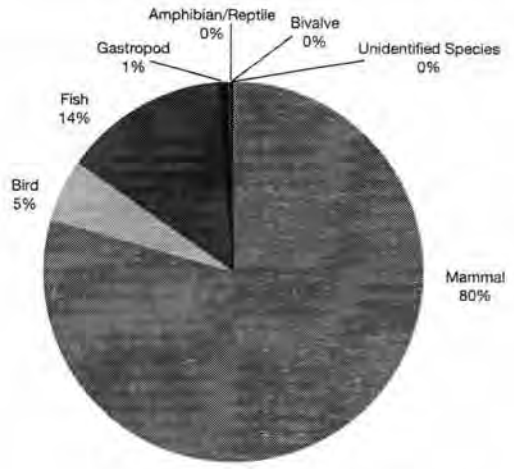

Figure 4. TNF% of animal species from the Corey Site.

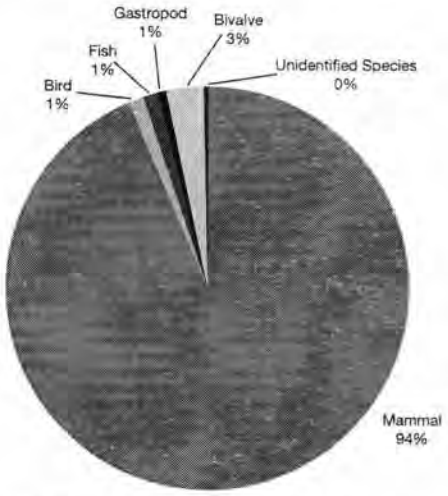

Figure 5. TNF% of animal species from the Weir Site.

Weir (UB 662, A.D. 1450-1525)

The Weir Site is located in the town of Ledyard, Cayuga County on the eastern side of Cayuga Lake. The site is approximately two-and-a-half acres in size and is situated on a high, defensible outcrop between two ravines. The settlement was palisaded and had several deep middens (Niemczycki 1984; Squier 1851:Plate 13, No. 3; Perkowski 1969). The site forms the last component of the Transitional Iroquois sequence on the eastern side of Cayuga Lake, in which early populations in the area consolidated into villages of increasing size (Niemczycki 1991:29) (see Table 5 and Figure 5 for species counts and percentages by faunal classes).

Table 5. TNF/MNI counts of species from the Weir Site.

Species	TNF	MNI
Mammal		
Beaver	1	1
Canid	2	2
Dog	2	2
Elk	5	4
Grey Squirrel	12	10
Large Mammal	45	30
Medium Mammal	2227	314
Small Mammal	14	14
Small Rodent	1	1
Squirrel sp.	5	4
Unidentified Mammal	3	1
White-tailed Deer	684	457
Mammal Subtotal	*3001*	*840*
Bird		
Large Bird	2	2
Medium Bird	32	31
Mourning Dove	1	1
Small Bird	3	3
Bird Subtotal	*38*	*37*
Fish		
Medium Fish	36	23
Small Fish	1	1
Unidentified Fish	2	2
Yellow Perch	1	1
Fish Subtotal	*40*	*27*
Gastropod		
Land Snail	3	3
Unidentified Gastropod	18	16
Gastropod Subtotal	*21*	*19*
Bivalve		
Freshwater Clam	95	12
Bivalve Subtotal	*95*	*12*
Unidentified Animal		
Bird/Rodent	8	6
Unidentified Animal	4	2
Unidentified Subtotal	*12*	*8*
Total	**3207**	**943**

Results

The assemblages are dominated by mammal remains, primarily those of white-tailed deer, with smaller numbers of beaver, bear, dog, elk, fox, squirrel, chipmunk, mouse/rat, muskrat, opossum, rabbit, raccoon, and woodchuck (Table 6). A small number of dog/canid remains are represented on all four sites, several of which show evidence of butchery and heating. Rabbits are not common species in

Iroquoian faunal assemblages, a pattern that is consistent through time and space. Identifiable species of birds include red-tailed hawk, turkey, passenger pigeon, mourning dove, and possible goose, killdeer, bobwhite, and pheasant. Most of the unidentified medium-sized birds are probably passenger pigeon, as the Cayuga homeland was a flyover area for passenger pigeon migrations, and historical documents indicate that they were captured in droves (Orlandini 1996). Fish species include yellow perch and catfish, carp, as well as possible drum or bass. All of these species are present in glacial lakes such as Cayuga Lake (Becker 1983:802).

A considerable number of terrestrial snails were recovered; they are commonly found in hardwood forests in the northeastern United States (Morgan 2008). A single freshwater snail was identified, a native of freshwater streams and rivers in the drainage areas of the Great Lakes (Jokinen 1992:33). While the use of snails as a food source

Table 6. TNF counts of all species by site.

Species	Underwood	Mahaney	Corey	Weir
Mammals				
Bear	2	*	3	*
Beaver	*	*	2	1
Black Bear	*	*	8	*
Canid	*	1	*	2
Chipmunk	*	*	12	*
Cow	9	*	*	*
Dog	1	3	20	2
Elk	5	*	5	5
Fox	1	*	1	*
Grey Squirrel	5	5	54	12
Hare/Rabbit	*	*	2	*
Large Mammal	14	*	2379	45
Medium Mammal	323	24	1391	2227
Mouse/Rat	1	1	13	*
Muskrat	4	*	2	*
Opossum	6	1	*	*
Rabbit/Cottontail	*	5	*	*
Raccoon	2	*	4	*
River Otter	*	*	1	*
Sheep	*	1	*	*
Skunk	1	*	*	*
Small Mammal	12	2	1015	14
Small Rodent	9	*	*	1
Squirrel sp.	15	*	*	5
Unidentified Mammal	13	1	*	3
White-footed Mouse	*	*	8	*
White-tailed Deer	74	6	244	684
Woodchuck	3	5	11	*
Birds				
Hawk	1	*	1	*
Large Bird	2	4	*	2
Medium Bird	32	1	6	32
Mourning Dove	*	1	*	1
Passenger Pigeon	2	1	61	*
Perching Bird	*	*	2	*
Small Bird	21	2	271	3
Turkey	*	4	2	*
Fish				
Bigmouth Bass	*	*	1	*
Carp/Minnow	*	*	32	*
Catfish	*	*	34	*
Channel Catfish	1	*	*	*
Large Fish	7	1	2	*
Medium Fish	52	2	*	36
Salmon/Trout	*	*	18	*
Small Fish	1	*	*	1
Sucker	*	*	2	*
Sunfish	*	*	1	*
Unidentified Fish	26	*	820	2
Yellow Perch	*	*	*	1
Gastropod				
Land Snail	*	*	*	3
Freshwater Snail	1	*	*	*
Mollusk	*	*	51	*
Unidentified Gastropod	60	20	2	18
Bivalve				
Clam	*	*	*	10
Freshwater Clam	140	18	3	85
Amphibian/Reptile				
Amphibian/Reptile	1	*	*	*
Frog/Toad	3	*	11	*
Green Frog	*	*	9	*
Toad	*	*	1	*
Tortoise/Turtle	*	*	3	*
Turtle	2	*	*	*
Unidentified Species				
Bird/Rodent	21	1	1	8
Small Mammal/Reptile	2	*	*	*
Unidentified Animal	13	11	6	4

is documented ethnographically, particularly among the Seneca (Waugh 1916), most terrestrial gastropod assemblages are probably the result of natural death populations (Bobrowsky 1984:82), and are considered as such here. A small number of Eastern elliptio freshwater clams (*Elliptio complanata*), a common species found on Iroquoian sites throughout New York State, were recovered. The species is found in shallow freshwater rivers and lake bays in the Northeastern United States (Price 2012). While freshwater clams and mussels were an important food source for native peoples in New York State, they nonetheless formed only a minor part of the total diet (Parmalee and Klippel 1974). Finally, reptiles and amphibians are not well represented at any site in the sequence. There is some faunal and documentary evidence that frogs and toads served as a food source and ritual aspect for the Iroquois, and it is possible that these individuals served one of those purposes as well (Beisaw 2006b).

Season of Site Occupation

The faunal remains in the Eastern Cayuga Sequence reflect the exploitation of game in the area surrounding the settlements, in environments including woodland and open grassland, streams, and nearby Cayuga Lake. Some degree of seasonal occupation can be extrapolated from the faunal assemblage, although hunting and fishing was a year-round activity for the Iroquois. Historic accounts indicate that intensive deer hunting took place in October, but deer were taken year round (Jogues 1856 [1642-43]:34). The presence of elk at the Underwood site points to a seasonal occupation of the site. Elk move into uplands during the spring and down into valleys during the fall (Pipes 2011b). Bear were usually hunted during the winter while they were hibernating; thus the presence of bear remains at the Underwood and Corey Sites suggests a year-round occupation, an important observation given the uncertain function of the Underwood settlement. Animals such as raccoon, squirrel, opossum, muskrat and beaver spend most of the winter months in their dens, although some species likely threatened crops and were probably killed opportunistically (Pipes 2011b). Passenger pigeons were captured in the spring when their migration patterns took them over Central New York. Reptiles and amphibians hibernate in October and emerge in April, and the presence of turtle and frog/toad remains on the Underwood site point to seasonal activities at the site, suggesting that the midden was open sometime between April and October and covered over after this period. Fish are also seasonal, and most species are active in lake and river shallows during the spawning seasons from

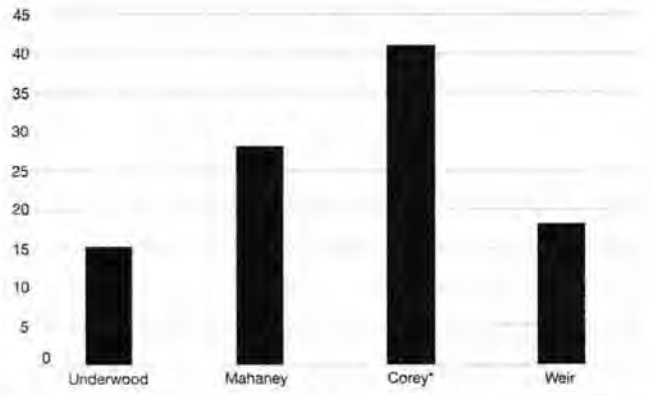

Figure 6. TNF% of burned bone. The Corey Site includes data from Beisaw 2006a.

May to July, while some species such as perch are available year round but were often taken in the winter (Pipes 2011b).

Bone Grease Production

A high degree of bone fragmentation and heating is visible in all the assemblages, indicating marrow extraction and bone grease production (Fisher 1995) (Figure 6). Bone grease manufacture is considered by some researchers to be evidence for dietary stress (Binford 1978). In cases such as these, resource depression (whatever the cause) is reflected not only by the depth and breadth of species present, but also variations in how they are processed and consumed (Binford 1978). For example, faunal remains from a Chinese mining camp in Montana (Ellis et al. 2011) and the Donner Party site in California (Dixon et al. 2010) offer insights into known starvation contexts. Faunal remains from both sites revealed thousands of small, unidentifiable fragments of calcined bone with numerous processing scars and evidence of extensive cooking, in attempts to extract as much nutrition as possible out of a paucity of faunal resources. In Iroquoian contexts, however, bone grease was also used in crafting, medicinal, and ritual contexts (Jordan 2008:286; Parker 1910; Tooker 1964; Waugh 1916), and as a flavoring and nutritional supplement to daily fare is well documented by observations in later Euro-American journals and letters (Karr et al. 2005). There is an increase in the amount of burned bone over time, and it is possible that, at the Corey Site especially, there may have been periods of food stress necessitating increased production of bone grease. However, this is speculative as the rate of bone deposition is not known, nor is there any pattern of increasing small animal exploitation at any site. Thus, evidence for it among the Cayuga suggests it was a means to prevent dietary stress rather than a response to it.

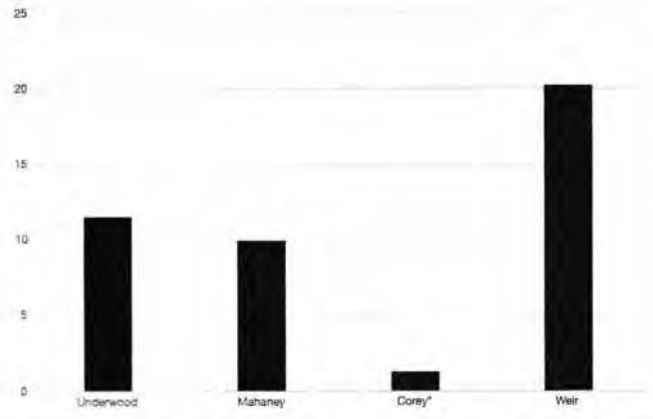

Figure 7. TNF% of weathered bone by site. The Corey Site includes data from Beisaw 2006a.

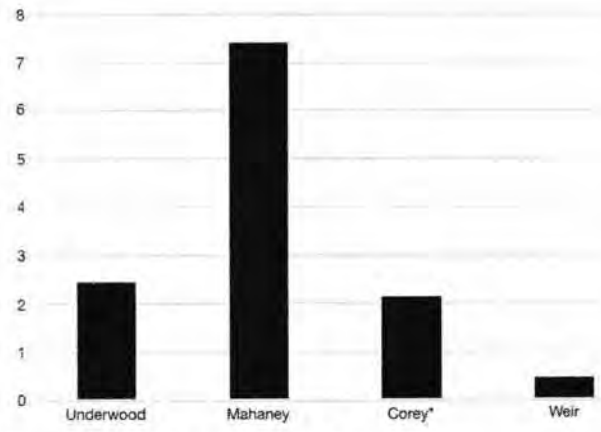

Figure 8. TNF% of gnawed/digested bone.

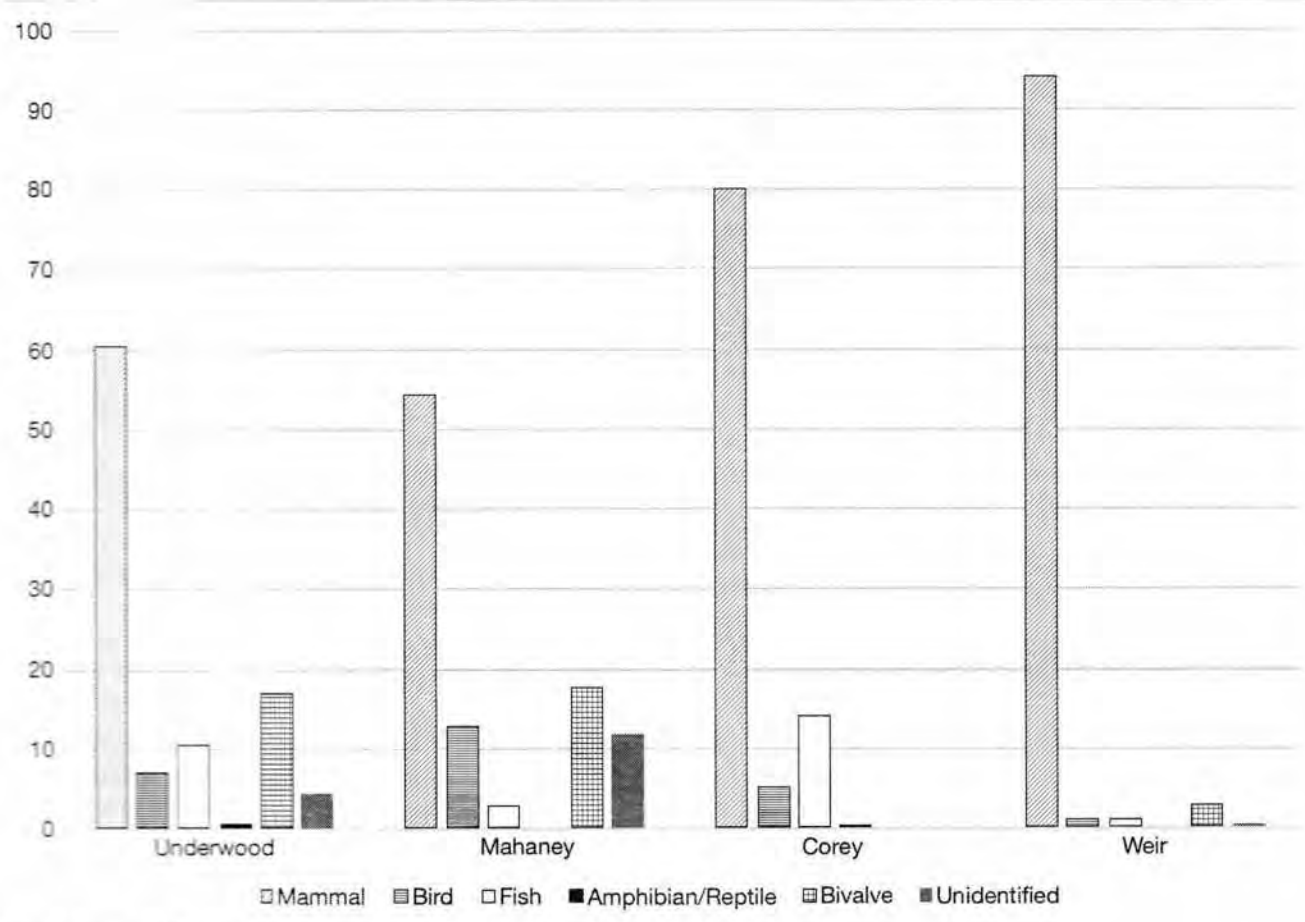

Figure 9. Species TNF% through time.

Taphonomy

Weathered bone includes water worn and bleached bone, indicating that food waste was not covered over after discard (Figure 7). Weathering patterns fluctuate considerably through time, reaching a low point at the Corey Site, indicating that waste was better managed here than at other sites. The large amount of weathered bone at the Weir Site is due to bone being tossed over the palisade walls, forming middens on the hillside. A similar pattern is revealed by gnawed/digested bone, which reflects whether or not scavenging dogs and rodents can easily get at food waste. Comparatively little of each site's assemblage bears gnaw marks, suggesting that waste was consistently managed in

some way by throwing it over palisades or covering it with dirt or some other technique (Figure 8). Furthermore, the bones of some animals that may have been considered special do not bear gnaw marks, which might suggest ritual treatment of those species.

Temporal Trends

Although there is no obvious temporal trend indicating an increased or decreased reliance on small-bodied mammals, there is evidence from the assemblages that small mammals do appear to have been used as food at least on occasion. Dog remains are common in Iroquoian faunal assemblages, and were important as companions, food sources, and in ritual activities (Beauchamp 1888). As noted above, some dog remains bear evidence of butchering and heating, but it is uncertain if these reflect ritual consumption and disposal, or everyday consumption. Several small mammal bones, including from squirrel and possible woodchuck, show evidence of heating, as do bones from frogs and mice from the Corey site, though these comprise only a very small percenttage of the total bone count. These species may have been consumed on occasion, but their small numbers suggest they were neither a staple or suggestive of possible food stresses or ritual activity (see Beisaw 2006b; Somerville 2014).

Determining the degree and nature of variation in faunal use over time was one of the central goals of this paper. Based on TNF%, there is considerable change in faunal exploitation over time (Figure 9). Small-bodied animals (i.e., those under 40 lb), decrease over time as medium- and large-bodied mammals become more common. In conjunction with aggregated MNI% counts, these is no apparent pattern of increasing small animal exploitation over time, and in fact larger mammal exploitation appears to increase considerably over time (Figure 10).

The comparatively small amount of mammals at Underwood and Mahaney may be a result of site function, as well as the small size of the Mahaney assemblage. As noted above, the Underwood and Mahaney sites are very small and are believed to be base camps or hamlets occupied by a small number of the total population. These may be specialized areas where fish and deer were processed and animal parts with more meat and marrow were brought elsewhere, or deer skins and pelts were brought there for processing (Jordan 2008). There is a general decrease in small animals over time and a concurrent increase in mammals, At the Mahaney Site, especially, there is a sharp contrast between the ratios of small animals to medium mammals, with no large mammals identified. Fish, bird, and bivalve remains fluctutate over time from the Underwood to Corey occupations, but reach their lowest point at the Weir Site. Amphibians and reptiles do not appear to have a strong pattern of exploitation at any point in time.

It is unclear why there is such an abrupt shift in prey choice and concurrent hunting strategies over a longer period of time. Site function as well as a lack of excavation data are contributing factors, but these alone do not explain the increase in the exploitation of medium-bodied mammals. Increasing population by the time of the Weir occupation

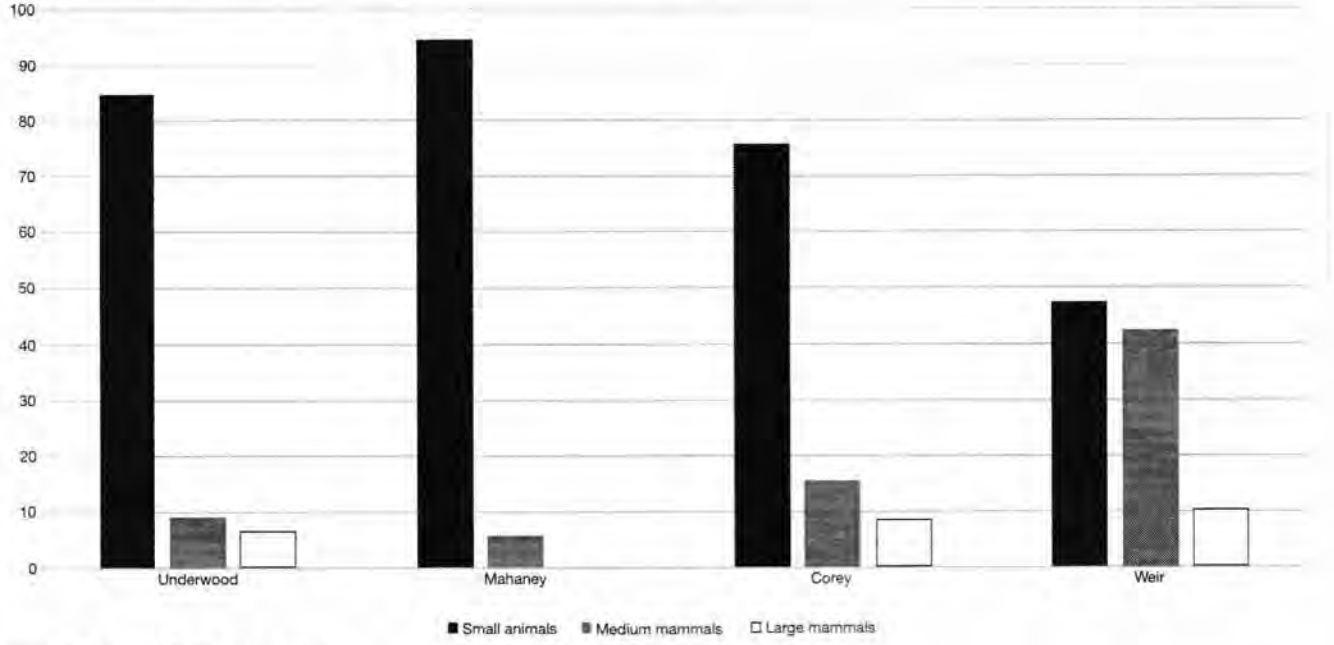

Figure 10. Species MNI% through time.

was likely a factor, and led to the increased hunting of deer. Furthermore, as suggested by the large number of ribs, vertebrae, skull fragments, and feet elements, deer were brought into the settlements whole, probably after being taken within a short distance from the settlement. This pattern is particularly striking at the Weir Site. Medium mammal remains from Weir consist of butchered and broken long bones, vertebrae, ribs, and skull fragments, and are reflective of the bone marrow and grease processing and hide production typical of Iroquoian sites in New York State (Madrigal and Holt 2002).

Environmental change is difficult to determine from currently available evidence, but there is no apparent increase in small mammal/rodent remains that would signal major shifts in environmental conditions in the region. However, interpersonal violence and warfare may have had an effect on the faunal patterns seen here. Violent encounters certainly occurred in Iroquoia at this time, (c.f. Fox 1987, Ritchie 1980), and all four of the sites examined here are located on defensible terrain and/or were palisaded, suggesting that some level of conflict was present during this period (Ritchie 1980). However, Iroquoian settlement location was a confluence of environmental and social factors. Palisades and other fortifications functioned as symbols of collectivity and place; to maintain boundaries between the inside and outside world; and perhaps as competitive displays between communities (Birch 2010; Engelbrecht 2003:90-92). Indeed, the increase in deer/medium mammal remains and no pattern in small animals through time argues against this, as does the faunal evidence from sites in New York State, the Southwest, and the Midwest where periods of interpersonal violence occurred (Kuhn and Funk 2000; Milner et al. 1991; Muir and Driver 2002; Pipes 2011a, b, c; Scarry and Reitz 2005; Socci 1995; Somerville 2014). There was probably comparatively little violence in the area, at least from the time of the Corey and Weir occupations, which would have allowed hunters to pursue larger prey without leaving themselves or their home villages open to attack. However, given the extreme lack of Cayuga burial data from this time from which traumatic injuries could be extrapolated, this is still speculative (Mandzy 1992; Weiskotten 2000).

Conclusions

In many ways, the faunal assemblages from the Underwood, Mahaney, Corey, and Weir sites exhibit typical Iroquoian patterns of faunal exploitation, including the preponderance of deer/medium mammal remains and extensive processing of deer bone for marrow and grease. The range of species represented among the assemblages is reflective of those present in the environment around the settlements, and illustrates the seasonal nature of Iroquoian faunal resources, as the faunal data also indicate that the Underwood and Mahaney sites, while not large settlements, were nonetheless probably occupied all year. The sharp increase in mammalian remains over time is somewhat puzzling, given that increasing medium- and large-bodied mammal exploitation and the location of the sites in defensible areas is the antithesis of that expected in times of conflict. This pattern is likely due to several as yet unknown, but interrelated environmental, demographic, and social factors.

As is clear, much additional work remains to be done in order to better understand the depth and breadth of Cayuga faunal resources. Future research will build on the data presented here by examining patterns of faunal exploitation prior to and in response to European contact (Somerville n.d.). The addition of other data sources from recorded and known, but unrecorded sites, will add greatly to our knowledge of prehistoric and Contact-period Cayuga origins, development, subsistence patterns, and interactions with other native groups (Niemczycki 1991). As noted above, much of these faunal data originated from unexamined collections stored away in cigar boxes in a museum repository, dormant for over four decades. It is hoped that this paper will encourage other researchers to inquire about the contents of old archives and encourage caretakers to reopen theirs.

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1987 *The Adams and Culberson Sites*. Charles F. Wray Series in Seneca Archaeology, Volume I. Research Records No. 19, Rochester Museum and Science Center, Rochester, New York.
1991 *Tram and Cameron: Two Early Contact Era Seneca Sites*. Charles F. Wray Series in Seneca Archaeology, Volume II. Research Records No. 21, Rochester Museum and Science Center, Rochester, New York.

IN MEMORIAM

Stanley G. Vanderlaan (1929-2014)

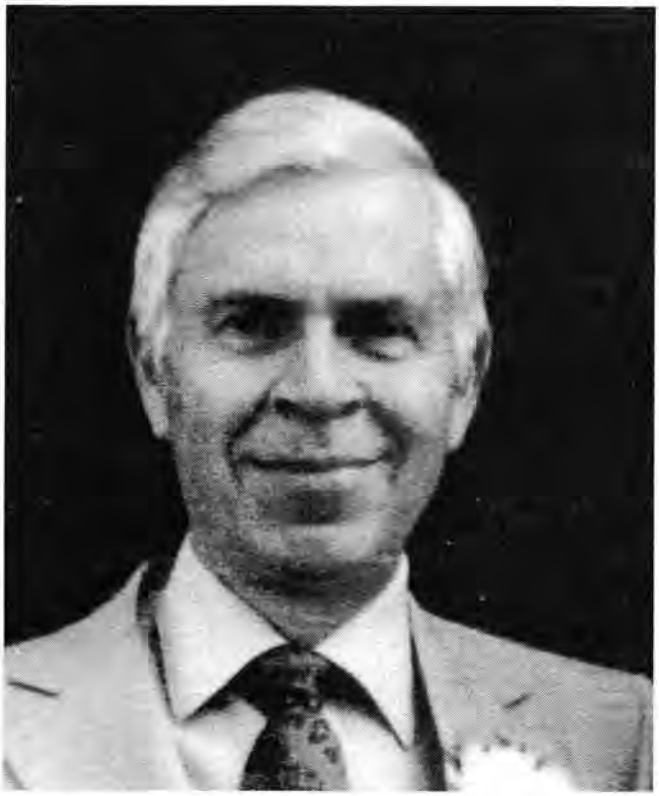


Photo courtesy of Elizabeth Katherene Vanderlaan.

Stanley G. Vanderlaan of Albion, New York passed away on August 14, 2014. He was born in Albion and remained in the area except for service in the United States Air Force from 1948-1952 during the Korean War. He was employed by T.J. Lipton's, and subsequently had his own S. Vanderlaan TV Sales and Service. Stanley is survived by his wife of 63 years, Elizabeth Katherene; five children, David, Ronald (Joanne), Barbara, Dale (Anna), and Donna; two grandchildren, Kristin and Marc; and one brother Richard. Many of the family members were very active in Stanley's archaeological research. For years, Stanley's father spent countless hours with him, walking the fields around Albion and beyond in search of previously undiscovered archaeological sites.

Stanley's death was a severe loss to western New York archaeology and Native Americans. He was a Research Fellow of the Rochester Museum & Science Center, as well as a Fellow of the New York State Archaeological Association, and an active member of the Lewis Henry Morgan Chapter. In addition, he was active in the Orleans County Historical Association as a founding member and in the American Legion. He developed an intense curiosity about the history and archaeology of his local area early in life, and he soon began collaborating with both avocational and professional archaeologists, earning him the respect of all who worked with him. He was relentless in his search for sites in Genesee County, and tenacious in his pursuit of the nature and chronological placement of each. Identification and understanding of Western New York's Oakfield Phase sequence of sites was one of Stanley's major contributions to New York State archaeology, a formulation which he continued to update as new information came to light.

Perhaps his greatest accomplishment, however, was the discovery and identification of the Paleoindian Arc Site, which has now attracted attention well beyond New York State. It was perhaps his greatest disappointment as well, in that it took so long to begin to draw out the level of professional investigation that the site required. It is now considered the most extensive Paleoindian site in New York State and one of the most important in the country.

Stanley's standards and ethics were always beyond question. His collection of carefully documented artifacts was willingly made available to serious scholars and interested individuals. Some years ago a significant portion of his collection and site records was donated to the Rochester Museum & Science Center for longterm curation. Most importantly, he regularly published his findings in accessible journals (see Selected Publications below); his written work will live on and continue to be of great significance to New York State archaeology.

Finally, Stanley was always a welcome presence at NYSAA and Morgan Chapter meetings, giving talks and lectures, either singly or with colleagues or family members. He will be greatly missed.

by Charles F. Hayes III
Martha L. Sempowski

Selected Publications

Vanderlaan, Stanley

1961 A Fishing Village on Oak Orchard Creek (Ood 6-3). *The Bulletin* New York State Archaeological Association 22: 14-16.

1962a Fording Places (Ood 2-3) *The Bulletin*, New York State Archaeological Association 25:15-20.

1962b The NOK Site (Mda 9-4). *The Bulletin*, New York State Archaeological Association 26:15-18.

1964 A Possible Sequence in Genesee County. *Morgan Chapter Newsletter Notebook* Vol. IV #3. Lewis Henry Morgan Chapter, New York State Archaeological Association.

1965 The Ganshaw Site (Mda 3-4). *The Bulletin*, New York State Archaeological Association 35:3-19.

1975 The Woeller Site (Mda 8-4). *The Bulletin*, New York State Archaeological Association 65:30-41.

1976 Odds and Ends: Archaeological Memoirs. Self-published, Albion New York.

Vanderlaan, Stanley (continued)

1980 The Oakfield Phase, Western New York State. *Proceedings of the 1979 Iroquois Pottery Conference*. Research Records 13: 95-98, Rochester Museum & Science Center, Rochester New York.

1983 Update: The Oakfield Sites, Genesee County New York. *The Iroquoian*, Lewis Henry Morgan Chapter, New York State Archaeological Association 6: 18-29.

1986 The Arc Site. *The Iroquoian*, Lewis Henry Morgan Chapter, New York State Archaeological Association 12: 64-73.

1990 Bamber Mound (Ood 7-3). *The Iroquoian*, Lewis Henry Morgan Chapter, New York State Archaeological Association 18: 33-35.

1997 Oak Orchard Site (Mda 15-4). *The Iroquoian*, Lewis Henry Morgan Chapter, New York State Archaeological Association 23:13-15.

Tankersley, Kenneth B., Stanley Vanderlaan, John D. Holland and Stephen Bland

1997 Geochronology of the Arc Site: An Early Paleoindian Habitation in the Great Lakes Region. *Archaeology of Eastern North America* 25:31-44.

IN MEMORIAM

Muriel E. Gorall (1930-2014)

Muriel E. Gorall died on Monday, August 11, 2014. Of Newark, Red Creek, she was born March 23, 1930 in Oswegatchie, New York. She was very active for a long time in the New York State Archaeological Association, serving as Secretary for a number of years and was a member of three chapters: the Lewis Henry Morgan, William Beauchamp, and Thousand Island Chapters. Muriel was predeceased by her husband, Robert Gorall, a daughter, Charlotte, and two sons, Patrick and Stephen. She is survived by daughters, Christina (Roger) Champion, Julia (David) and sons, Jeffrey (Kim), Thomas, and David (Jana); thirteen grandchildren, and twenty-six great grandchildren.

Muriel was one of many women who have both acted as individual scholars and in support of others in archaeological, historical, and ethnological pursuits in New York. Her volunteer involvement was extensive and varied, including co-founder of the Newark-Arcadia Historical Society, the 1794 Canandaigua Treaty Commemoration Committee, the Newark Garden Club, and several of the Iroquois Nations. It is expected that she will be one of those persons to be emulated in the future as members of the New York State Archaeological Association expand their familiarity with the digital age.

Over many years, Muriel did field archaeology on a variety of native and historical sites in the Rochester area. She also contributed along with her husband, the late Robert Gorall, to publication of *The Iroquoian*, a Morgan Chapter publication, and *The Bulletin*.

By Charles F. Hayes III

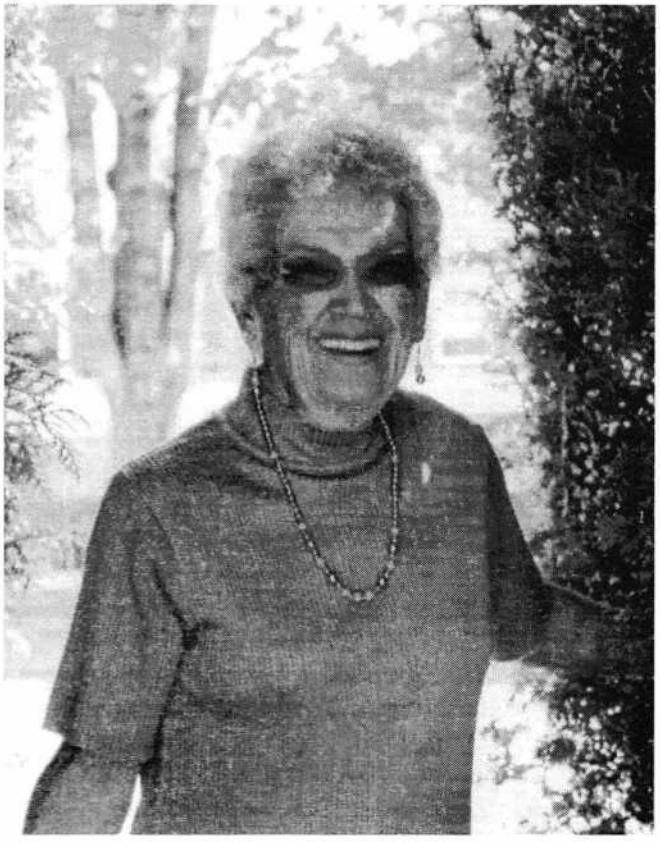


Photo courtesy of Christina Champion.

Selected Publication

Gorall, Muriel

1984 A Rare Prehistoric Artifact. *The Iroquoian*, Lewis Henry Morgan Chapter, New York State Archaeological Association 7:21.

IN MEMORIAM

Dale G. Knapp (1930-2014)

Dale Knapp, longtime member of the Lewis Henry Morgan Chapter, NYSAA, passed away on August 23rd of last year. He leaves his wife of more than 60 years, Aileen; sons, Brian, Bruce, and Dean; five grandchildren; and many devoted friends. Dale spent his formative years in New Jersey, after which he completed a degree in photography at RIT. This was followed by two years of service in the US Army. In 1953, he accepted a position at Eastman Kodak Company, retiring in 1995 after 43 years.

Dale's interests, beyond his family and professional life, were wide-ranging, including fishing, photography, ink drawing, maple syrup making, genealogy, history, chair caning, gardening, furniture refinishing, Boy Scout leadership (for 30 years), and socializing with good friends. Dale was a member of the Trout, Salmon and Anglers Fishing Club, as well as the Genoa and the Honeoye-Richmond Historical Societies. He worked tirelessly on his family's genealogy, and in the process, while investigating the burial locations of ancestors in the Genoa area, was able to find and register with New York State the locations of two previously abandoned cemeteries with Knapp interments in them.

None of his interests, however, were deeper or more enduring than that in local archaeology. He joined the Morgan Chapter in 1967, and from the earliest years, took part in chapter excavations whenever opportunities presented themselves. Even in very recent years, after Dale was no longer up to "digging," he was a consistently reliable and good-natured participant at all of the chapter's summer excavations. Dale served many terms on the Morgan Chapter Executive Committee: as President, Vice President and Treasurer. He was never one to hold back when there was work to be done or a responsibility to be shouldered. Dale also provided valuable assistance and support for innovative Morgan Chapter activities such as the "Step into the Past" tours, field trips, and NYSAA promotion of Conservation Easement programs; he also authored several articles in *The Iroquoian*. Along with his close friend, Ralph Brown, Dale walked the fields of known sites, and explored previously unknown ones, which he then carefully documented and registered with the Rochester Museum & Science Center. Materials acquired during those surveys were carefully numbered, measured, documented, and eventually donated to the Honeoye-Richmond Historical Museum to ensure their longterm preservation.

After his retirement in 1995, seeking volunteer work in archaeology at the Rochester Museum, Dale joined the research efforts of the Seneca Archaeology Research Project. He assisted with the project's photography, and laboratory analyses; diligently measuring, and recording

Photo Courtesy of the Knapp family

countless artifacts that were then included in V. III of the *Charles F. Wray Series in Seneca Archaeology*. In 1996, he was awarded the NYSAA Certificate of Merit in recognition of his contributions to the project.

One of Dale's most significant contributions to the field of archaeology involved a 10-year long effort, together with Marie-Lorraine Pipes, to create electronic CD-ROM's of NYSAA and Morgan Chapter publications. They digitized 118 back issues of *The Bulletin* and 23 issues of *The Iroquoian*. In the process, Dale taught himself how to enhance imagery; create navigational links and bookmarks in pdf documents; and burn and label the CD's. He handled the physical production and sales of the CD's for years.

In so many senses, Dale was a natural researcher. He was inately curious, but he was also meticulous in the way in which he organized and recorded data, as reflected in his fine, scaled drawings of artifacts. He was also a firm believer in preserving what he found as a legacy for the future: be it the record of his ancestry, a lost cemetery, an archaeological site, scholarly publications, or an isolated pipesherd or projectile point.

Dale was unusually generous with his time, his efforts, and his friendship. He will be greatly missed by all.

By *Marie-Lorraine Pipes*
and
Martha Sempowski

Selected Publications

Knapp, Dale

1997 Dedication to Ralph Wallace Brown (1929-1997). *The Iroquoian*, No..23. Lewis Henry Morgan Chapter, NYSAA, Rochester New York.

2005 A Small World. *The Iroquoian*, No. 28:8-9 Lewis Henry Morgan Chapter, NYSAA, Rochester New York.

2007 Lewis Henry Morgan Chapter Membership List 1916-2006. *The Iroquoian*, No. 30: 9-23 Lewis Henry Morgan Chapter, NYSAA, Rochester New York.

IN MEMORIAM

Jack Holland (1926-2014)

Jack Holland was born on July 10, 1926 in Lock Haven, Pennsylvania. While in high school, he met Louise, whom he was to marry the following year (1944). They remained devoted to one another and to their two children, Johnny and Mona, grandchildren and great grand children. It was a great loss to all when he passed away in December of 2014.

Jack's lifelong interest in archaeology began as a boy collecting arrowheads along the flood plains of the West Branch of the Susquehanna River near Lock Haven, Pennsylvania. In 1958 Dr. Marian White was conducting salvage operations at the Kleis Site in Hamburg, New York, not far from where Jack lived in West Seneca. He volunteered his assistance and then worked with Marian White on a number of subsequent projects, including initial investigations at the Hiscock site. When the Houghton Chapter of the NYSAA was founded in 1961 by Dr. White, Jack became one of the founding members.

Early on, Jack developed skills in chert identification and analysis and began training himself in flint knapping techniques, taking courses from D. C. Waldorf, Frank Cowan, and Errett Callahan. On his own, he devised an elegant use wear experiment using 25 different types of chert, each type being used for the same length of time and the same tasks. Not only did Jack became a good flint knapper, but he was a superb explainer of the process.

For the last twenty years of his life, with his increased involvement in archaeology and in lithic sources, came his realization that there was no major repository of lithic material in North America where one could compare a lithic specimen to known sources. Thus he embarked on his second career: chert chaser. He would visit the actual geologic outcrop, taking multiple samples from different accessible areas and carefully recording the location of the specimens collected. This endeavor took him to all 50 states and the amassing of over 22,000 samples representing more than 1,500 named lithic types from the United States and Canada. His willingness to share his time and knowledge with researchers was legend. His lithic collection, originally at the Buffalo Museum of Science, is now housed at the Smithsonian Institution.

Jack was a Fellow of the NYSAA and a Research Associate of the Buffalo Museum of Science. He received the J. Alden Mason award from the Society of Pennsylvania Archaeology, and in recognition of his contributions to archaeology, Jack received the Crabtree Award from the SAA and was named a Pioneer of Science by the Hauptman-Woodward Institute of Buffalo.

By L.M.Anselmi and Bill Engelbrecht

Selected Publications

Holland, John D.

1988 Some Dover Billets. *In Twentieth Century Lithics*, edited by D. C. Waldorf, pp.93-96. Mound Builder Books, Branson, Missouri.

1991 Review of Arrowheads and Spear Points of the Prehistoric Southeast: A Guide to Understanding Cultural Artifacts, by Linda Crawford, University Press of Mississipppi, Jackson. *Journal of World Anthropology* 1(1).

1993 The ABC's of Flintknapping: A Flintknappers' Alphabet. *Bulletin of Primitive Technology* 5:71-72. Society of Primitive Technology.

1993 Paleoindians of Western New York. In *Prehistory of Western New York*, edited by Elaine Herold, pp. 10-14. State University of New York at Buffalo and F. M. Houghton Chapter, New York State Archaeological Association.

1994 Lithic Procurement at the Paleo Crossing Site, Medina County, Ohio. *Current Research in the Pleistocene* 11: 61-63.

1996 Geoarchaeology of the Kilmer Site: A Paleoindian habitation site in the Appalachian Uplands. *North American Archaeologist* 17:93-111.

1999 Lamb Site Lithics: Local and Exotic—An Analytical Assessment. *American Society for Amateur Archaeology* 5:103-104.

2003 A Guide to Pennsylvania Lithic Types. Journal of Middle Atlantic Archeology 19:129-150.

2004 New Data on late-Pleistocene Lithic Artifacts from the Hiscock Site (Western New York). *Current Research in the Pleistocene* 21:46-48.

2004 Lithic Types of New York. *The Bulletin* Journal of the New York State Archaeological Association 120:17-36.

2005 Chert and Other Lithic Materials of Prehistoric New Jersey. *Bulletin of the Archaeology Society of New Jersey* 60:54-61.

2005 Types and Varieties of Archaeologically Relevant Ohio Chert. *Ohio Archaeologist* 55:20-22.

2006 Virginia Lithic Types: Chert, Qartzite, and Others. *The Quarterly Bulletin of the Archaeological Society of Virginia* 61:137-152.

2007 West Virginia Lithics of Potential Prehistorical Significance. *West Virginia Archeologist* 53:19-24.

2008 Illinois chert types. *Illinois Antiquity* 43:3-17.

2009 FDR and me: archeology-politics. *Bulletin of the Buffalo Society of Natural Sciences* 38: 31-32.

Co-Authored publications

Ennis, Rachel, Marc Hess, John D. Holland, Vivian Honsinger, Kevin P. Smith, Kenneth P. Tankersley, and Stanley Vanderlaan,

1995 Survey and Test Excavations at the Arc site, Genesee County, New York. *Current Research in the Pleistocene* 12:9-11.

Tankersley, Kenneth B. and John D. Holland.

1994 Lithic Procurement Patterns at the Paleo Crossing site, Medina County, OH. *Current Research in the Pleistocene* 11: 61-63.

Tankersley, Kenneth B., John D. Holland, and Royce L. Kilmer

1995 The Kilmer Site: A Paleoindian Site in the Allegheny Plateau. *Current Research in the Pleistocene* 12:46-48.

1996 Geochronology of the Kilmer Site: A Paleoindian Habitation in the Appalachian Uplands. *North American Archaeologist* 17(2):93-111.

Tankersley, Kenneth B., Stanley Vanderlaan, John D. Holland, and Stephen Bland

1997 Geochronology of the Arc Site: A Palaeoindian Habitation in the Great Lakes Region. *Archaeology of Eastern North America* 25:31-44.

Smith, Kevin P., Neil O'Donnell, and John D. Holland

1998 The Early and Middle Archaic in the Niagara Frontier: documenting the "Missing Years" in Lower Great Lakes Prehistory. In *Contributions to the Natural Sciences and Anthropology: a Festschrift in Honor of George F. Goodyear*, convened by Ernst E. Both. Bulletin of the Buffalo Society of Natural Sciences 36:1-79.

Holland, John D. and Roger L. Ashton

1999 The Flately Brook Quarry: A source of Normanskill Chert Located in Washington County, New York. *The Bulletin*, Journal of the New York State Archaeological Association 115:13-16.

Ellis, Christopher J., John Tomenchuk, and John D. Holland

2003 Typology, Use and Sourcing of the Late Pleistocene Lithic Artifacts from the Hiscock Site. In *The Hiscock Site: Later Pleistocene and Early Holocene Paleoecology and Archaeology of Western New York State*, Richard S. Laub editor, pp. 221-237. Bulletin of the Buffalo Society of Natural Sciences 37.

Storck, Peter L. and John D. Holland,
2003 From Text to Context: Hiscock in the Paleoindian World. In *The Hiscock Site: Later Pleistocene and Early Holocene Paleoecology and Archaeology of Western New York* State, Richard S. Laub editor, pp. 281-300. Bulletin of the Buffalo Society of Natural Sciences 37.

Holland, John D., and Walter Ashton
2008 Indiana Chert Types. *Illinois Antiquity* 43:18-26.

Smith, Kevin P., William Engelbrecht, and John D. Holland
2010 Late-Paleoindian Archaeology at the Eaton Site, Western New York. *Current Research in the Pleistocene* 27:142-145.

Roets, Michael, William Engelbrecht, and John D. Holland
2014 Gunflints and Musket Balls: Implications of the Occupational History of the Eaton Site and the Niagara Frontier. *Northeast Historical Archaeology* 43:18-33.

NEW YORK STATE ARCHAEOLOGICAL ASSOCIATION

ADIRONDACK CHAPTER - QUEENSBURY
AURINGER-SEELEY CHAPTER – SARATOGA SPRINGS
WILLIAM M. BEAUCHAMP CHAPTER - SYRACUSE
CHENANGO CHAPTER – NORWICH
FINGER LAKES CHAPTER – ITHACA
FREDERICK M. HOUGHTON CHAPTER – BUFFALO
INCORPORATED LONG ISLAND CHAPTER – SOUTHOLD
LOUIS A. BRENNAN/LOWER HUDSON CHAPTER – CROTON-ON-HUDSON
METROPOLITAN CHAPTER – NEW YORK CITY
MID-HUDSON CHAPTER – REDHOOK
LEWIS HENRY MORGAN CHAPTER – ROCHESTER
INCORPORATED ORANGE COUNTY CHAPTER -MIDDLETOWN
INCORPORATED UPPER SUSQUEHANNA CHAPTER – OTEGO
THOUSAND ISLANDS cCHAPTER – PHILADELPHIA
TRIPLE CITIES CHAPTER – BINGHAMTON
VAN EPPS-HARTLEY CHAPTER – FONDA

Minutes of the General Meeting
NYSAA 97th Annual Meeting
Ramada Inn, Watertown, NY
April 26, 2013

Opening:
Called to order at 7:40 pm by President Sherene Baugher. Minutes will be taken by Lisa Marie Anselmi (Vice-President) as Lori Blair (Recording Secretary) could not be here this evening.

Present:

Chapter Roll Call:

Present: Adirondack, Auringer-Seelye, William M. Beachamp, Chenango, Finger Lakes, Frederick M. Houghton, Inc. Long Island, Lewis Henry Morgan, Inc. Orange County, Inc. Upper Susquehanna, Thousand Islands, Van Epps-Hartley.

Absent: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities.

A. Reports of the Officers

President's Report, Sherene Baugher: Critical issues that have arisen this year:

- Treasurer Fred Assmus passed away in October and we have been dealing with a transition to the new Treasurer Ann Morton.
- Our Corresponding Secretary, Laura Johnson-Kelly, needed to resign due to job and family issues. The rest of the executive board has been rethinking duties in the wake of this development and would like to suggest a realignment of duties of the other four officers to absorb this position's duties.
- There are on-going problems with the charter which have been exacerbated by the new banking regulations put forward by Homeland Security and issues with our 501c3 status.

Vice-President's Report, Lisa Marie Anselmi:

- no formal report.

Treasurer's Report, Ann Morton:

- Thank you to all of the chapters for forwarding membership lists and dues with explanations, etc.
- The bulk of NYSAA's money is still in the Berkshire Bank in Goshen. As Fred Assmus was the only signatory, there have been complications with trying to move the funds. Sharon Assmus has graciously tried to move this process forward by providing death certificates, etc. In the near future, Sherene Baugher, Lori Blair and Ann Morton will have signing authority and the account at Berkshire will be closed with funds transferred to an account at Chase bank (selected due to the large number of branches across the state).
- Our current account at Chase contains approximately $6000 from recent dues payments, etc. The Berkshire account contains approximately $22,000 and there is another $20,000 in certificates of deposit investments there which will be moved as they mature.
- Primary suggested changes include:

1) previously the secretary was to inform the executive board of chapters that were in arrears relating to dues remittance; we feel that the treasurer would be better suited for this and 2) previously membership lists were sent to the secretary and dues would be sent to the treasurer; we feel that this would work more effectively if both the membership list and dues would first go to the treasurer and then the membership list would pass to the secretary for use in mailing the bulletins, etc. This way, only members in good standing (i.e., dues paid in full) would be issued bulletins.

- Treasurer reports a rough transition but states that we are in good financial shape and have enough liquid funds to cover bulletin payments, etc. for a time as the bank accounts are transferred.
- Treasurer requests that chapters review members in good standing list that she will distribute at tomorrow's officer/secretary breakfast meeting.
- Bulk mailing duties for the bulletin will be handled by the Treasurer and our Bulk mailing professional, Steve Austin.

Corresponding Secretary: not applicable

Recording Secretary, Lori Blair:

- Approval of Minutes from April 27, 2012 meeting at Poughkeepsie.
- No changes required.

➢ **Motion to approve minutes: Marie-Lorraine Pipes**
Second: Vicky Jayne
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

- Report on File.

B. Report of the Committees

Awards and Fellowships – Peter Pratt

- Awards will be presented tomorrow at the banquet.

High School Clubs – Christina Reith

- no report.

Publications –

Bulletin – Martha Sempowski – report on file

- Late on bulletin distribution but hopefully by the end of May #127 will be ready.
- There has been issues with the quality of images provided by some authors.
- Editing for #128 is nearly complete and expected distribution is December 2013.
- The editors encourage submissions. Please see the guidelines in the bulletin. These are set to be amended, especially with regard to digital images shortly and will be put on the website when possible.

Newsletter – Lisa Marie Anselmi

- Newsletter set to be compiled but in need of submissions of articles and images.
- Please submit these directly to me at anselmlm@buffalostate.edu.

Finance/Legal – Fred Stevens

- Charter amendment needed for chapters to use it as the basis of legal status for bank accounts, etc.
- Lori Blair has been investigating these issues since 2010/2011. New York State recognizes NYSAA charter (provisionally since ~1920; absolutely since 1928) but neither charter mentions chapters. Additionally, there is legal correspondence from 1941 that implies that the State Education department denies the existence of chapters of NYSAA even though there is official correspondence between the state and various chapters as early as in the 1920s/1930s.
- Fred Stevens has 'hired' a lawyer who agreed to work on this for NYSAA on a *pro bono* basis. Lori Blair, Fred Stevens and a State Education department representative met. We learned from the State Education department representative that NYSAA can amend our charter to cover the chapters. The lawyer has determined that we need a resolution from our trustees. First, we need to amend the by-laws/constitution that our state-wide officers/executive board constitutes our trustees as seen by the state definition. This resolution will be brought forward later this evening. Sherene Baugher (President) and Lori Blair (Recording secretary) will act as signatories in this process.

  Some chapters with their own charters (i.e., Van Epps-Hartley, since the 1930s) but many chapters need to get the state and chapter charter to use. We should be able to all use the same identification numbers at that point. The crux of the

problem is that we did not know that State Education department was unaware of our existence.

- Fred Stevens advocated for putting the lawyer on retainer so as to eliminate the need for background work being continually redone. He requests some legal guidance from any chapter that might have lawyers among their membership.
- For the financial committee, Fred Stevens used to prepare a yearly budget but it was essentially the same as what we spent the year before. Our largest costs are associated with *The Bulletin*. He argued that it is necessary for the treasurer to be made aware of the schedule for payments for the Bulletins, usually May/Dec. but updated financial statements should be sent to the treasurer.
- Fred Stevens also advocated for switch the financial books of NYSAA to a true calendar year term rather than an April to April 'fiscal' year term. This would dovetail with our membership period which is already set up on a true calendar year term.

Legislative – Doug Mackey – no report

- Sherene Baugher noted that Doug Mackey will be retiring from the SHPO to become a Methodist Minister in the Syracuse area. Congratulations to him. Changes will be put in place at the SHPO and will be forwarded to the membership of NYSAA when confirmed.

Library – Long Island Chapter

- Need a new computer.

Archives – Bill Bouchard – no report

Public Service Award – none this year

Program for 2014 – Dave Moyer

- Upper Susquehanna and Chenango Chapters to host next year's annual meeting in Oneonta. There are new hotels in the area and possible volunteers available from the area's colleges. Date to be determined but SPA is the 1st week of April so they are leaning towards the last week of April.

Special Appointees

ESAF – Tim Abel

- ESAF is alive and well. Last conference was in November in Perrysburg, Ohio. All back issues of *Archaeology of Eastern North America* are now gone but online in JStor except for the three most recent years. Available as institutional member or by fee per download. Also current articles available from ESAF website, downloadable for a fee ($10 per article).
- Their newsletter, abstracts and reports are all available for free on their website.
- Next conference will be first weekend of November, in S. Portland Maine

NYAC – Marie-Lorraine Pipes

- Three awards given out this year: Lois Feister (abstracts); two Founders awards: Nina Versaggi and Ed Kaeser
- Discussion this year about identifying eroding sites near streams, rivers, and related to natural disasters such as Hurricane Sandy. Sees ways that NYSAA might also play a role here.
- Fall program will be held the last weekend of September at the New York State Museum

Funk Foundation – Paul Huey and Ed Curtin

- report on file
- Wayne Lenig has retired from board. Thanked for his service. Paul Huey will now serve.
- Attorney says their incorporation to come through soon. They can accept donations but cannot deposit checks as yet. Ann Morton mentioned that NYAC has a pass through program (checks for Funk come in through NYAC and are then turned over to Funk). She suggests that NYSAA could also act in this way.
- They have two grant proposals in review. They sought clarifications in March but are likely to fund both this year.
- They have also been dealing with the New York State Education department and the IRS regarding their bank accounts and their separation from the New York State Museum.
- Check issued last year for $300 in holding pattern due to this. Likely need to reissue this check. NYSAA could also agree to donate to the Funk foundation on a yearly basis as donations come into NYSAA for them from our membership. A general agreement rather than a vote is all

that is needed for this to happen.

ASPI – Ann Morton

- Very quiet; interest still there but not much to do
- Likely to play a role with natural disaster mobilization especially the eroding sites as discussed by NYAC

PANYC – Diana Wall – no report

Website – Sherene Baugher

- Griffin Hamell has resigned. The executive board would like to hire a website maintenance firm who will report to the Vice-President. Inquiries to the website will funnel to the Vice-President and the other officers as appropriate. Sherene Baugher expressed her disappointment with the lack of updating to the website as she knows that chapters were submitting material but it was not being placed on the website. The executive board had even offered monetary compensation to Mr. Hamell but the offer was rejected.
- The question is how to move forward. NYAC is also looking for a website designer/maintenance service and suggestion was made to pull our resources in this regard as Ann Morton was spearheading the search for NYAC and is already NYSAA treasurer. Specific queries regarding price (both upfront and maintenance needed).
- A maximum allocation of $2000 for this was discussed since action will need to be taken before next year's general meeting. We also need information from Griffin Hamell on how the website is currently constructed as we have the domain name for the next two years. Sherene Baugher reports that Griffin is willing to work with someone during the transfer.
- Member question asked does it bite into publishing costs. Ann Morton answered that it should be okay as we have just a few signatures that are necessary before all of the funds are accessible once again.

➢ **Motion by J. Lothrop: Authorizing an expenditure of up to $2000 dollars for the finishing and maintenance of the NYSAA website.**
Second: Stephanie Benson, Inc. Orange County
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

Old Business:

New Business:

Charters and Chapters – Fred Stevens

- Fred Stevens explained the need for a resolution (to turn our officers into trustees in the eyes of the State) and a petition to amend our charter. This may take up to three 3-month cycles depending on when it lands on the board of regents' approval docket.
- Quorum is ¾ of the existing chapters. This is met by the presence of the following chapters for the vote: Adirondack, Auringer-Seelye, William M. Beachamp, Chenango, Finger Lakes, Frederick M. Houghton, Inc. Long Island, Lewis Henry Morgan, Inc. Orange County, Inc. Upper Susquehanna, Thousand Islands, Van Epps-Hartley. These members constitute 12 of the 16 total chapters of NYSAA.

➢ **Motion by Laura Johnson-Kelly: Authorizing the resolution that would allow the officers to act as NYSAA trustees through the charter amending process.**
Second: Louise Basa
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

➢ **Motion by Wayne Lenig: Authorizing the amendment of the NYSAA charter to include chapters.**
Second: Stephanie Benson and Gary Keeton
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

- We also need to discuss the changes in the executive officer's duties.Primary suggested changes include:

  1) previously the secretary was to inform the executive board of chapters that were in arrears relating to dues remittance; we feel that the treasurer would be better suited for this and 2)previously membership lists were sent to the secretary and dues would be sent to the treasurer; we feel that this would work more effectively if both the membership list and dues

would first go to the treasurer and then the membership list would pass to the secretary for use in mailing the bulletins, etc. This way, only members in good standing (i.e., dues paid in full) would be issued bulletins.

- Previous issues that necessitated two secretaries: 1) bulk mailing (now handled by a service) and 2) notices sent by postal mail (now handled mostly through email), are no longer of as great concern.
- Vice-president will assume more formal newsletter duties and outreach.
- Fred Stevens, legal committee, has suggested that we propose these changes to the by-laws/constitution. He has consulted a lawyer who suggests the following procedure:
  - Vote tonight to initiate the legal change to the by-laws/constitution
  - Propose by motion to consider these officer duty changes
  - Discuss these changes at the chapter level
  - Vote next year to amend the by-laws/constitution in full
- Vote tonight to use current year as a trial run of these changes

➢ **Motion by Maureen Kennedy: to consider the proposed changes to the officer's duties and the need to amend the by-laws to reflect these changes**
Second: Vicky Jayne
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

➢ **Motion by Louis Basa: to consider the proposed changes to the officer's duties and the need to amend the constitution to reflect these changes**
Second: Diane Coates
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

➢ **Motion by Marie-LorrainePipes: to adopt on a trial basis of one year, the proposed changes to officer duties as described above**
Second: Laura Johnson -Kelly
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

Contributions to Funk Foundation

➢ **Motion by Stephanie Benson: to reissue the $300 donation to the Funk Foundation**
Second: Dave Moyer
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

➢ **Motion by Dave Moyer: to make an additional donation in the amount of $300 to the Funk Foundation**
Second: Wayne Lenig
Yeas: unanimous of chapters present
Nays: none
Abstentions: Brennan/Lower Hudson, Metropolitan, Mid-Hudson, Triple Cities

Contributions to the Fisher Fund

- Discussion focused on the status of this fund and what activities have benefitted from it. J. Lothrop gave an impromptu report. It was clarified for the membership that NYSAA and NYAC have not contributed to this fund in several years as it is unclear what it is being used for and who controls its use. Marie-LorrainePipes suggested that Chuck Orser, curator of historical archaeology at the NYSM could make a statement over intent of the fund. In the end, it was decided that NYSAA will wait for a formal request from the fund before considering any further donations.

Archaeology poster – Marie-LorrainePipes

- 2013 poster in bookroom, DOT paid for printing and put together by the NYSM
- 2014 poster will be designed by AKRF on their South Ferry Terminal project. It is quite possible that they will sponsor the printing. No NYSAA funds would be required if this happens.
- 2015 poster likely to by designed by Chrysalis out of NYC.

Membership cards

- Several chapters requested that cards be issued. This had previously been a corresponding secretary duty. Sherene Baugher will ask Lori Blair (Recording Secretary) if she has the template. If

not, Abigail Herlihy, a former corresponding secretary, will be contacted regarding this issue.

At Large Membership Dues:

- J. Lothrop brought forward a discussion of membership dues from his careful reading of last year's minutes. Discussion around changing the dues to match the highest chapter dues ensued. Doing this would encourage all members-at-large to join chapters. Discussion focused on fees for this and procedure (it would require a by-laws amendment). Several members pointed out that many members-at-large were likely from outside of NY State and did not want/need chapter extras. The State-wide officers were encouraged to send notice of renewal. Several members requested additional information from numbers of current members-at-large (just 3 down from 347 last year). It is unclear how last year's counts were generated. Ann Morton, the new treasurer, has much lower numbers for members in good standing (i.e., paid dues) from the chapters as well. Caroline Weatherwax inquired about institutional memberships. Ann Morton reported that these numbers are holding steady. J. Lothrop requested more data on the issue of Member-at-Large fees and their relation to printing of the Bulletin, etc.

Meeting adjourned at 10:04 pm.

➢ **Motion: Louise Basa, Seconded: Maureen Kennedy; unanimous of chapters present.**

NEW YORK STATE ARCHAEOLOGICAL ASSOCIATION

ADIRONDACK CHAPTER - QUEENSBURY
AURINGER-SEELEY CHAPTER – SARATOGA SPRINGS
WILLIAM M. BEAUCHAMP CHAPTER - SYRACUSE
CHENANGO CHAPTER – NORWICH
FINGER LAKES CHAPTER – ITHACA
FREDERICK M. HOUGHTON CHAPTER – BUFFALO
INCORPORATED LONG ISLAND CHAPTER – SOUTHOLD
LOUIS A. BRENNAN/LOWER HUDSON CHAPTER – CROTON-ON-HUDSON
METROPOLITAN CHAPTER – NEW YORK CITY
MID-HUDSON CHAPTER – REDHOOK
LEWIS HENRY MORGAN CHAPTER – ROCHESTER
INCORPORATED ORANGE COUNTY CHAPTER -MIDDLETOWN
INCORPORATED UPPER SUSQUEHANNA CHAPTER – OTEGO
THOUSAND ISLANDS CHAPTER – PHILADELPHIA
TRIPLE CITIES CHAPTER – BINGHAMTON
VAN EPPS-HARTLEY CHAPTER – FONDA

Minutes of the General Business Meeting
NYSAA 98th Annual Meeting
Holiday Inn, Oneonta, NY
April 11, 2014

Opening:

Called to order at 7:50 pm by President Sherene Baugher.

Present:

Officers Present:

President, Sherene Baugher; *Treasurer/Membership Secretary*, Ann Morton, and *Recording Secretary*, Lori Blair.

Officers Absent:

Vice-President Lisa Marie Anselmi

Chapter Roll Call:

Present: Adirondack, Auringer-Seelye, William M. Beachamp, Chenango, Finger Lakes, Frederick M. Houghton, Inc. Long Island, Mid-Hudson, Lewis Henry Morgan, Inc. Orange County, Inc. Upper Susquehanna, Thousand Islands, Triple Cities, and Van Epps-Hartley

Absent: Brennan/Lower Hudson, Metropolitan

A. Reports of the Officers

President: Sherene Baugher

- introductory remarks:
- It has been a busy year; working on several issues including charter, loss of non-profit status (not currently 501C-3); by-laws and chapters. Fred Stevens will report on these later;
- The website has been defunct but a new, joint website with NYAC is about to be launched. Inquiries through our old site did work and Sherene received about 5 a week that she responded to.

Vice-President: Lisa Marie Anselmi

- Lisa was not present so no formal report; Sherene relayed that Lisa needs articles for the newsletter.

Treasurer: Ann Morton

- Two reports are on file. One for year end and one interim, reflecting the first quarter. Generally we are in good financial shape.
- We had a one-time $850 filing fee.

➢ **Motion was made by Tim Abel to accept the treasurer's reports. Seconded by Ann Maguire. Voted and passed unanimously.**

Corresponding Secretary: Ann Morton.

- Ann has assumed the role of corresponding secretary to make sure mailings and Bulletins go through and the membership list is maintained.
- Thanks to the chapter secretaries and/or treasurers who have submitted membership lists.
- Saturday morning at breakfast, Ann will present on the new membership spreadsheet.
- Membership, as far as the current list shows, is 2013 with a total of 430; so far in 2014 it stands at 371 although there were some last minute submissions not reflected in this number. There is no membership information or money from Triple Cities and Long Island Chapters since

2011. Institutional memberships stand at 35.

Recording Secretary: Lori Blair

- report on file.
- Chapter packets are available; if you are taking your chapter's packet, please sign for it.
- Members were asked to review the minutes of the Executive Committee meeting held in Liverpool on November 23, 2013 in Liverpool, NY.

➢ **Motion by Tim Able to accept the minutes of the November 2103 Executive Committee Meeting with the correction in the time meeting opened to 12:05 pm. Second by Dave Elliston. Voted; passed unanimously.**

B. Reports of the Committees

Awards and Fellowships – Peter Pratt

- Their meeting was successful. Awards will be presented tomorrow at the banquet

High School Clubs – Christina Reith

- no formal report; she put in a plug for a high school group from the Beauchamp chapter who will be presenting this weekend on their research.

Publications

Bulletin– Martha Sempowski – report on file

- Bulletin #128 will be ready by June.
- Need articles for the next one. The editors encourage submissions.

Newsletter – Lisa Marie Anselmi (presented by Sherene Baugher)

- Would like to have newsletter out in June but in need of submissions of articles and images.
- Special thanks to Tim Abel for submissions for the winter newsletter.

Finance/Legal – Fred Stevens

- Nothing to add to the Financial Report ~ Ann did a great job.
- We've had no budget for the last few years ~ there is no need. If there is no input from members about money coming in or going out, we just use the treasurer's report.
- Charter: We contacted an attorney and met with the Education Department about an application for an amended charter. Ann can send a pdf to chapters; that and a copy of the Chapter charters will be useful for opening up bank accounts. In 1970, there was a change in how organizations could have chapters and we were under the old regs; we are no up-to-date.
- 501C-3: we lost our status through a series of errors such as an old address on file and no filings of the 990 form. The same attorney ~ working pro-bono~ helped with this issue as well as the charter issue. The process included starting from scratch and completion of a long & complicated form. It was submitted in October 2013. Hopefully we will hear back by mid-year.
- Fred assumes we don't have any tax exemption because the state relies on the 501C-3; pay sales tax until we get reinstated. It should be retroactive to time of application once it is approved. If you pay tax, keep the receipt and should be able to reclaim; can't do or know that until we are approved.
- Fred recommends we need someone well-versed in legal issues ~ perhaps someone from the membership.
- We need a legislative committee to look at the NYSAA constitution and by-laws; see Sherene Baugher if interested.

Library, Long Island Chapte: – Dave Elliston

- Status quo.

Archives

- There is some material at the RMSC; seems safe there.

Special Appointees

ESAF – Tim Abel

- Last conference was in November in Maine.
- ESAF introduced a new student membership for $20.
- There are undergraduate and graduate student paper awards at meetings; includes cash and publication. Visit ESAF's website for instructions; see Tim for site address.
- JSTOR (a subscription service for journal articles) is now open to individuals in membership; 50% discount on JSTOR.
- Next meeting is in Maryland.

NYAC – Marie-Lorraine Pipes

- Two Founders awards: Paul Huey and Bill Engelbrecht.
- From now on, NYAC won't expect NYSAA to

pay for room for spring meetings.

- The fall program (Sept or Oct) may include a program related to fracking. Would team with Pennsylvania Archaeological Council and GAP (Gas Association of Pennsylvania). Information will be put on the website.
- Archeology Season Poster was sponsored by AKRF. Please take and distribute.
- Usually the sponsor pays for the whole thing. AKRF chose to pay 50% of poster; NYAC is asking for ½ of the remaining which is $250.00.

Funk Foundation – Ed Curtin

- The Funk Foundation is also not a 501C-3; it's not an issue when under the umbrella of the NYSM. They have applied for status and are in the process.

Society for Pennsylvania Archaeology – Fred Stevens

- 2014, Greensburgh last weekend.
- April 10-12, 2015 Fogelsville. PA (Near State College).

ASPI – Ann Morton – no report

PANYC– Diana Wall– no report

Facebook – Tim Abel

- There is a lot of traffic; was a useful tool of communication, especially for this meeting.
- Anyone can post to the wall.
- Can post meeting announcements, pictures, etc. of chapter activities.

Website – Sherene Baugher and Sissie Pipes

- Griffin Hamell resigned about a year ago.
- Worked with a web designer for a joint website NYSAA and NYAC; right now only a beta version is available but it should be ready to launch in a few days. (http://nysarchaeology.org/)
- The home page presents shared pages ~ information that relates to both organizations.
- Can post information but it will be funneled through a single source ~ Lisa Anselmi for NYSAA and Sissie Pipes for NYAC (for now).
- A request was made for photographs for the site; there is a template for Chapter information available.
- The password to the old NYSAA site is the past webmaster's (Griffin's). We can't take the old site down without him. There is no way to dismantle; the domain name expires in one year.

Old Business

Officer's Roles

Corresponding Secretary/Membership Secretary: Ann Morton

- The tasks of treasurer and membership is a substantial amount of work.
- There was a discussion on dividing the tasks.
- Sissie Pipes mentioned the possibility of putting the membership list in virtual space similar to what the Morgan Chapter does. Could establish a gmail account for the chapter which connects to google docs. Can restrict access. There could be more discussion at the breakfast meeting.
- Ann Morton mentioned making tasks more efficient such as not retyping information.
- Also, the issues of Bulletins are being produced later and later; there is some implications such as mailing vs handing out at the annual meeting. This has been done in previous years. Articles need to be submitted.

New Business

Fiscal Year/Membership Year – Ann Morton

- The fiscal year is an issue with the IRS. Chapters and the State organization run on various years. Currently the State organization is April 1st through May 31st. Membership year is September 1 through August 30th. The organization needs to report on memberships; also for grants. The members discussed this issue.
- The officers will put out a proposal to change the by-laws to reflect a fiscal year of January 1st to December 31st for the State organization and the chapters.
- Chapters should be aware that it may involve a change in their by-laws as well.

➢ **Motion by Laura Linder to put out a proposal to change the fiscal year to January 1st to December 31st for the parent organization and chapters. Second by Donald Griffin. Voted; passed unanimously.**

Special Presentation on Suggestions for Increasing Membership – Dave Johnson, Orange Co. Chapter

- The Incorporated Orange County Chapter has

60-70 members; 90% of whom are active. Some highlighted points and suggestions of the presentation:

- We are competing against social changes.
- Need to attract older people.
- There should be equal treatment of all – everyone (professional/avocational/someone interested in archeology) can find a job in the chapter.
- Ask former members why they aren't members anymore.
- The have fundraisers and use the money including for scholarships.
- Personally greet attendees at events.
- Advertise speakers and meetings – drawing in new members.
- Don't limit topics.
- Conduct symposiums and presentations for the public.
- Work it at many levels.
- Contact Dave if you would like to discuss further.

Upcoming Meetings

- 2015 is open
- 2016 will be triple hosted in Rochester in celebration of the 100th meeting.

Contributions to Funk Foundation

- We have been supporting the foundation. They are holding two years' worth of money till they can accept.

➢ **Motion by Fred Stevens to donate $300.00 to the Funk Foundation and hold till they have their 501C-3 status. Second by Dolores Elliot. Voted; passed unanimously.**

Fisher Fund

- Last year it was decided not to contribute to the fund. The Fund no longer exists at the NYSM.

Archaeology poster – Sissie Pipes

- 2015 poster by Chrysalis out of NYC; they will pay 100% of production.
- 2016–Morgan, Houghton and Beauchamp Chapters of NYSAA.
- 2017–PAF out of SUNY Binghamton.

➢ **Motion by Sue Maguire to pay ¼ of the cost of producing the 2014 poster in the sum of $250. Second by Dolores Elliot. Voted; passed unanimously.**

Election – Dolores Elliot

- There were 131 ballots returned.
- Results:
  - President - Sherene Baugher
  - Vice-President - Lisa Anselmi
  - Secretary – Lori Blair
  - Treasurer – Ann Morton
- There is no longer an office of Corresponding Secretary.

Meeting adjourned at 10:02 pm.

➢ **Motion to adjourn: Vicky Jayne, Seconded: Dolores Elliot; unanimous of chapters present.**

Respectfully submitted,
Lori J. Blair
NYSAA Recording Secretary

Guidelines for Manuscript Submissions

General

The Bulletin is a journal devoted to the dissemination of scholarly articles relating to the archaeology of New York State and its environs. It is published annually by the New York State Archaeological Association.

Authors wishing to submit an article for publication should send two complete paper copies, including an abstract, text, list of references cited, illustrations, captions, tables, and full return mailing address (both regular mail and email). One copy should be sent to the Editor, Charles F. Hayes III, 246 Commodore Parkway, Rochester, NY 14625-2032, and the other to the Associate Editor, Martha L. Sempowski, 7284 Maplewood Avenue, Lima NY 14485. The editors may reject or return an article to the author for revisions, on the basis of either content or style.

Authors may request peer review of their article, along with the names of several suggested reviewers. Upon acceptance, authors will be asked to submit their article in electronic format—either Windows or Macintosh format. Most current word processing programs can be accommodated. Please read carefully the section on Figures, below, for requirements for electronic submission of images.

Manuscript Organization

Please organize your manuscript as follows:

- Title, author, institutional or chapter affiliation
- Abstract - a single paragraph of 100 to 150 words
- Text
- Acknowledgements
- References cited
- Tables (with captions)
- Figures (with captions listed on a separate page)

Manuscripts should be written as clearly and succinctly as possible. They should be unjustified and double-spaced, on one side of 8 1/2" x 11" paper. Only one space should follow periods and pages should be numbered in the upper right hand corner. Endnotes are to be used instead of footnotes, but they should be used sparingly.

Headings

Primary headings should be flush left, bolded, and at the same font size as the text, with only the first letter of each word capitalized. Secondary headings should be flush left, unbolded, and at the same font size as the text, with only the first letter of each word capitalized. Tertiary headings should be flush left, in italics, and at the same font size as the text, with only the first letter of each word capitalized.

Measurement Units

In order to avoid errors in translation, measurements may be in either English or metric units, as appropriate to the content of the article; however, for further clarification, one may wish to include conversions in parentheses. Commonly used units of measurement such as feet, yards, miles, meters, centimeters, kilometers, and hectares are abbreviated as follows (without periods):

inches	in	meters	m
feet	ft	centimeters	cm
yards	yd	kilometers	km
miles	mi	hectares	ha

In-Text Reference Citations

In-text reference citations should follow the simple *American Antiquity* style within parentheses immediately following the material to which the citation refers (for particulars, see *American Antiquity*, Volume 57, number 4, pp. 749-777). Simple citations should include author's last name and year of publication unseparated by a comma, and if appropriate, the page number(s) preceded by a colon (Smith 1978:222) or Smith (1978:222). Citations involving two authors should include both names; those involving three or more authors should use the first author's name followed by et al. (e.g., Brown et al. 1987). Where more than one publication is being referenced, they should be ordered alphabetically within the parentheses and separated by semi-colons (e.g., Barton 1986; Davis 1975; Wilson 1999). Where there are several references for the same author within a set of parentheses, these are separated by commas (e.g., Adams 1975, 1985; Brown 1988).

Quotations

Quotations of five lines or less should be included in the text; double quotation marks are used. The citation should follow the form indicated above for in-text reference citations, but should always include page number(s). Quotes of more than five lines should be inset in a block and double spaced without quotation marks. Citations, including page numbers, should follow in brackets.

Tables

If at all possible tables should be set up in the same word processing format as the text. They should be as simple as possible and include a short descriptive title above the table itself. Tables should be numbered consecutively as they will appear in text. All tables should be referenced in the text.

Figures

All photos and line drawings are designated as figures and numbered consecutively as they are referred to in the text. **Captions should be submitted on a separate page, not as part of the illustration**. A light pencil marking on the back of the photo or drawing should identify the particular illustration. Photos and drawings should be high quality images reproducible at sizes appropriate to the journal. Authors bear the responsibility for obtaining written permission for the reproduction of any materials protected by U.S. copyrights. Film-based photographic prints and original drawings are preferred, but figures may be submitted as

digital image files *if they are suitable for publication*. Digital image files which do not meet the following specifications will be rejected. Photographs should be submitted as rgb or greyscale tiff or pdf files only, 8" x 10" or 5" x 7" at a minimum of 300ppi. Line art should be submitted as bitmap tiff or pdf files at a minimum of 1000ppi. **No other formats, such as jpg, doc, etc. will be accepted.** If the graphic was created in digital form, **submit individual files, not printouts, and do not include the images in a Word document**. Contributors may be required to provide photographic prints or hard copy drawings if digital image files are not useable for publication. Photocopies, laser prints, and inkjet prints are never acceptable. If there are any questions, please contact Gian Carlo Cervone at giancarlo@cervone.net **before** prepearing any graphics for publication—**of late graphics submitted have been less and less suitable for publication, so discussion in advance can save a lot of time and reworking**.

References Cited

The list of references cited should include all references cited in the text (except personal communications), and conversely, only references cited in the text should be listed. **Authors bear the responsibility for double-checking the accuracy of each and every citation used**. The list should be alphabetized by the author's last name, then first name and middle initial. Multiple entries by the same author should be in chronological order with the earliest first. Do not use n.d. unless absolutely necessary—if the date is truly unknown. The format for references should follow the *American Antiquity* Style Guide (see *American Antiquity*, Volume 57, number 4, pp. 749-777). Examples of the most commonly needed formats are listed below:

1. Book with single author

Bradley, James W.

1987 *Evolution of the Onondaga Iroquois: Accommodating Change 1500-1655 A.D.* Syracuse University Press, Syracuse, New York.

2. Book with multiple authors

Burt, William H. and Richard P. Grossenheider

1976 *Peterson Field Guides: Mammals*. 3rd ed. Houghton Mifflin, Boston.

3. Edited book (author is editor)

Morris, William (editor)

1978 *The American Heritage Dictionary of the English Language*. Houghton Mifflin, Boston.

4. Translated book

van den Bogaert, Harmen Meyndertz

1988 *A Journey into Mohawk and Oneida Country 1634-35*. Translated and edited by Charles Gehring and William Starna. Syracuse University Press, Syracuse.

5. Reprinted book

Hale, Horatio E., editor

1963 *The Iroquois Book of Rites*. Reprinted with an Introduction by William N. Fenton, University of Toronto Press, Toronto. Originally published 1883, D.G. Brinton, Philadelphia.

6. Multivolume set

Thwaites, Reuben G., editor

1959 *The Jesuit Relations and Allied Documents: Travel and Explorations of the Jesuit Missionaries in New France, 1610-1791*. 73 vols. Reprinted, Pageant, New York. Originally published 1896-1901, Burrows Brothers, Cleveland.

7. Titled volume in a series

Wray, Charles F., Martha L. Sempowski, and Lorraine P. Saunders

1991 *Tram and Cameron: Two Early Contact Era Sites*. Charles F. Wray Series in Seneca Archaeology, Vol. II, edited by Charles F. Hayes III. Research Records No. 21. Rochester Museum & Science Center, Rochester, New York.

8. Article in an edited book

Wade, Mason

1988 French Indian Policies. In *History of Indian-White Relations*, edited by Wilcomb E. Washburn. Handbook of North American Indians, Vol. 4, William G. Sturtevant, general editor, pp. 20-28. Smithsonian Institution, Washington, D.C.

9. Article in a journal

Murray, Jean E.

1938 The Early Fur Trade in New France and New Netherland. *Canadian Historical Review* XIX:367.

10. Article in edited volume in a series

Noble, William C.

1992 Neutral Iroquois Smoking Pipes. In *Proceedings of the 1989 Smoking Pipe Conference*, edited by Charles F. Hayes III, Connie C. Bodner, and Martha L. Sempowski, pp. 41-49. Research Records No. 22. Rochester Museum & Science Center, Rochester, New York.

11. Presented paper

Ceci, Lynn

1985 Shell Bead Evidence from Archaeological Sites in the Seneca Region of New York State. Paper presented at the Annual Conference on Iroquois Research, Rensselaerville, New York.

12. Dissertation or thesis

Drooker, Penelope B.

1996 *The View from Madisonville: Continuity and Change in Late Prehistoric Protohistoric Western Fort Ancient Interaction Patterns*. Ph.D. dissertation, State University of New York, Albany. University Microfilms, Ann Arbor, Michigan.

13. Manuscript in press

Brown, William T.

2000 Early Days in Livingston County. New Horizons Press. In Press.

14. Unpublished manuscript

Wray, Charles F.

1978 Field notes: Fugle Site. MS on file, Rochester Museum & Science Center, Rochester, New York.

15. Web pages and electronic documents

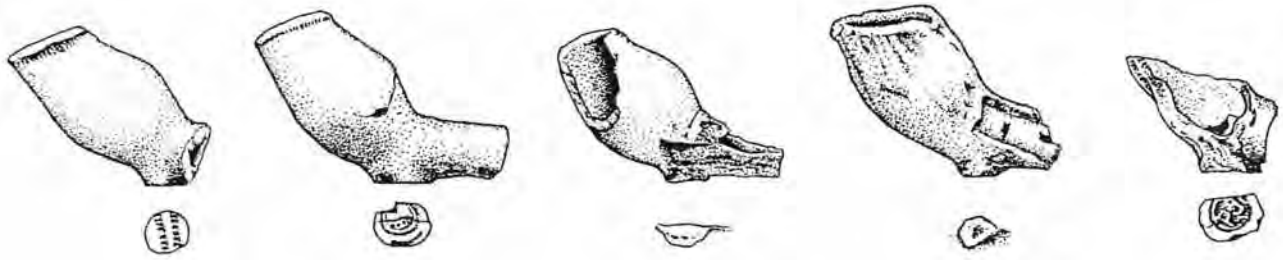
Sharp, John

2008 *Washington District of Columbia Biographies: Louis Deblois*. Electronic document, http://genealogytrails.com/washdc/bio_deblois_1.html, accessed July 15, 2009.

NEW YORK STATE ARCHAEOLOGICAL ASSOCIATION

The Archaeology of Maspeth, Long Island, New York and Vicinity

The New York State Archaeological Association is proud to announce the sale of its latest Researches and Transactions publication, Volume XVIII, Number 1. This issue is entitled *The Archaeology of Maspeth, Long Island, New York and Vicinity*, by Stanley H. Wisniewski and Ralph S. Solecki. 104 pages. 59 illustrations. The cost is $10 for NYSAA members, $15 for non-members, plus $2 shipping and handling. Make checks payable to NYSAA and mail to William Engelbrecht, 16 Atlantic Avenue, Buffalo, NY 14222.



The Archaeology of Maspeth, Long Island, New York and Vicinity

Name:
Address:

Number of copies:
Amount enclosed:
(include $2/copy S & H)

Past and Present NYSAA Award Recipients

The Achievement Award

- Charles M. Knoll (1958)
- Louis A. Brennan (1960)
- William A. Ritchie (1962)
- Donald M. Lenig (1963)
- Thomas Grassmann O.F.M. (1970)

Paul L. Weinman (1971)

- Robert E. Funk (1977, 1994)

Peter P. Pratt (1980)

- Herbert C. Kraft (1989)

Lorraine P. Saunders (1999)
Martha L. Sempowski (1999)
William E. Engelbrecht (2004)
Edward J. Kaeser (2006)
Edward Lenik (2012)

Fellows of the Association

Sherene Baugher
Monte Bennett
James W. Bradley

- Louis A. Brennan
- William S. Cornwell
- Gordon DeAngelo

Dolores N. Elliott
William E. Engelbrecht
Lois M. Feister
Stuart J. Fiedel

- Charles L. Fisher
- Robert E. Funk
- Thomas Grassmann O.F.M.
- Alfred K. Guthe
- Gilbert W. Hagerty

Charles F. Hayes III
Franklin J. Hesse

- John D. Holland
- Richard E. Hosbach

Paul R. Huey

- R. Arthur Johnson

Edward J. Kaeser

- Herbert C. Kraft
- Roy Latham

Lucianne Lavin

- Donald J. Lenig

Wayne Lenig
Edward J. Lenik

- Julius Lopez

Jonathan Lothrop
Ellis E. McDowell-Loudan

- Richard L. McCarthy

Mary Ann Niemczycki

- James F. Pendergast

Peter P. Pratt
Christine Rieth
Robert Ricklis

- William A. Ritchie

Bruce E. Rippeteau

- Donald A. Rumrill
- Bert Salwen

Lorraine P. Saunders

- Harold Secor

Martha L. Sempowski
Dean R. Snow
David R. Starbuck
David W. Steadman

- Audrey J. Sublett

James A. Tuck

- Stanley G. Vanderlaan

Paul L. Weinman
Thomas P. Weinman

- Marian E. White
- Theodore Whitney

Anthony Wonderley

- Charles F. Wray
- Gordon K. Wright

Joseph Zarzynski

Theodore Whitney Commendation

- Gordon C. DeAngelo (1998)

Charles F. Hayes III (1999)
Carolyn O. Weatherwax (2010)
William E. Engelbrecht (2010)
Ralph S. Solecki (2010)
Nan Rothschild (2012)
Diana Wall (2012)
Anne-Marie Cantwell (2012)
Louise Basa (2014)
A. Gregory Sohrweide (2015)

Certificate of Merit

Tim Abel
Thomas Amorosi
Roger Ashton

- Fred Assmus

Charles A. Bello
Monte Bennett
Daniel M. Barber

- Malcolm Booth

James W. Bradley

- Ralph Brown

Art Carver
Leonard Cohan

- William Davis

Barbara DeAngelo

- Gordon De Angelo

Robert DeOrio
Harold R. Decker

- Elizabeth M. Dumont

Lewis Dumont

- William F. Ehlers

Dolores N. Elliott
Garry A. Elliot
Lois M. Feister
John Ferguson

- Robert E. Funk

Joan H. Geismar

- Stanford J. Gibson
- Gwyneth Gillette
- Robert J. Gorall

R. Michael Gramly
George R. Hamell
Gerald Hayes
Elaine Herold
Franklin J. Hesse

- Richard E. Hosbach

Paul R. Huey
Vicky B. Jayne
Barry Kass
Jordan Kerber

- Dale Knapp

Albert D. La France

- Kingston Lamer
- John R. Lee CSB

Edward J. Lenik
William D. Lipe
Kelly Lounsberry
Adrian O. Mandzy

- John H. McCashion

Ellis E. McDowell-Loudan
Dawn McMahon
Jay McMahon
Ann Morton
Brian L. Nagel

- Robert Navias

Annette Nohe

- Alton J. Parker

Marie-Lorraine Pipes
Douglas Pippin
Marjorie K. Pratt
Peter P. Pratt
Louis Raymond
Beulah Rice

- William H. Rice

Saul Ritterman
Lucy Sanders
William Sandy
Barbara Sciully
William E. Scott

- Harold Secor

Annette Silver
A. Gregory Sohrweide

- William Mead Stapler

David W. Steadman
Fred Stevens
Marilyn C. Stewart
Kevin Storms
Tyree Tanner
Donald Thompson
Neal L. Trubowitz
Justin A. Tubiolo
George Van Sickle
Charles E. Vandrei
James P. Walsh
George R. Walters
Alvin Wanzer

- Beth Wellman
- Henry P. Wemple

Daryl Wonderly
Roberta Wingerson

- Stanley H. Wisniewski

Susan Avery Young

• known deceased