

# THE BULLETIN

Number 65      November 1975

## CONTENTS

The Clay Tobacco Pipes of New York State-Part One: Caughnawaga 1667-1693 John H. McCashion	1
New Evidence of The Frost Island Phase in the Lower Genesee Valley Neal L. Trubowitz and Pandora E. Snethkamp	19
The Oak Orchard Watershed Archaeological Survey Pandora E. Snethkamp and Sydne B. Marshall	26
The Woeller Site (MDA 8-4) Stanley Vanderlaan NYSAAF	30
Book Review Elizabeth M. Dumont	41
New York State Archaeological Association-Minutes of the 59th Annual Meeting	44



# THE BULLETIN

NUMBER 65

NOVEMBER 1975

\*\*\*\*\*



13  $\frac{1}{4}$

Fleur-de-Lis

Courtesy British Museum

THE NEW YORK STATE ARCHEOLOGICAL ASSOCIATION

OFFICERS

Elizabeth Dumont . . . . . President  
Charles Gillette . . . . . Vice President  
William F. Ehlers . . . . . Secretary  
J. Thomson Fuller . . . . . Treasurer  
Louis A. Brennan . . . . . E.S.A.F. Representative

THE ACHIEVEMENT AWARD

Charles M. Knoll (1958)                      Louis A. Brennan (1960)  
William A. Ritchie (1962)                  Donald M. Lenig (1963)  
Thomas Grassman O.M.F. (1970)          Paul L. Weinman (1971)

FELLOWS OF THE SOCIETY

Roy Latham	Richard L. McCarthy	Louis A. Brennan
William A. Ritchie	R. Arthur Johnson	Paul Weinman
Charles F. Wray	Stanley Vanderlaan	Thomas Weinman
Alfred K. Guthe	Robert E. Funk	Audrey Sublett
Julius Lopez	Edward J. Kaeser	Theodore Whitney
Marian E. White	Robert Ricklis	William S. Cornwell
Donald M. Lenig	Charles F. Hayes III	Gordon K. Wright
Thomas Grassman O.F.M.	Bert Salwen	James A. Tuck
Bruce Rippeau	Herbert C. Kraft	

CERTIFICATE OF MERIT

Franklin J. Hesse	William F. Ehlers	Roger Ashton
Stanford J. Gibson	Dolores N. Elliott	William D. Lipe
Peter P. Pratt	George R. Walters	Marilyn C. Stewart
Monte Bennett	Elizabeth Dumont	Lewis Dumont
Richard E. Hosbach	Marjorie Pratt	Henry Wemple

PUBLICATIONS

*Researches and Transactions*

*Occasional Papers* William S. Cornwell, Editor

*The Bulletin*

Editor	Assistant Editor	Publications Chairman
Louis A. Brennan	Roberta Wingerson	Roberta Wingerson
39 Hamilton Avenue	60 Pinesbridge Rd.	60 Pinesbridge Rd.
Ossining, N.Y. 10562	Ossining, N.Y. 10562	Ossining, N.Y. 10562

Published by the New York State Archeological Association. Subscription by membership in N.Y.S.A.A. For membership information write William F. Ehlers, 8 Jackson Av., Middletown, N.Y. 10940. Back numbers may be obtained at \$2.00 each from Charles F. Hayes III, Rochester Museum and Science Center, 657 East Avenue, Rochester, New York 14607. Entire articles or excerpts may be reprinted upon notification to the Editor: three copies of publication issue in which reprints occur are requested. All manuscripts submitted are subject to editorial correction or excision where such correction or excision does not alter substance or intent. Printed by Braun-Brumfield, Inc., P.O. Box 1203, Ann Arbor, Michigan 48106.

THE CLAY TOBACCO PIPES OF NEW YORK STATE  
PART ONE: CAUGHNAWAGA 1667-1693

John H. McCashion

Chenango Chapter  
Van Epps-Hartley Chapter

INTRODUCTION

This is the first in a series of articles on the Clay Tobacco Pipes of New York State. Subsequent articles will investigate statewide clay pipe distribution as well as analyze the chronological value of these comparatively abundant artifacts recovered from fairly well dated complexes. By employing a historico-scientific method, that is, by combining historical record, when available, with comparative and attribute analysis, by applying current dating formulae, and by using well illustrated line drawings of available pipe styles and heel marks, it is hoped that relatively reliable dating and distribution patterns will emerge.

Caughnawaga (1667-1693)

About a mile west of Fonda, New York, on the north side of the Mohawk River, stands the present Shrine of Kateri Tekakwitha (also the headquarters of the Van Epps-Hartley Chapter of the New York State Archaeological Association). On the slightly tilted tableland guarding the eastern corridor to the Iroquois nation once stood Caughnawaga, the double stockaded village or "castle" of the Mohawk turtle clan. So-called because of the nearby rapids, Caughnawaga was resettled in 1667 after a daring raid by M. de Tracy and a force of French and Indians had destroyed it and all existing Mohawk villages then situated on the south side of the Mohawk River. Twenty-six years later, in 1693, Caughnawaga again fell to a French force which wreaked havoc on the Mohawk villages. Thereafter the site was disturbed only by the ravages of time and plow, until its archeological excavation began in 1950, (Grassman 1969:638-46) to be completed in 1956. Grassman stated:

*"Historical research and the application of archeological principles were combined for the purpose of authenticating a Mohawk "Castle" which, according to the Jesuit Relations, contained the first Catholic chapel (St. Peters) in the Mohawk valley section of the New York State."*

The authenticity of the site was established by this work; but no program was pursued to study and analyze the artifacts, the most abundant of which were clay pipes.

Through the kindness of Father Ronald Schultz, O.F.M. (Conv.), Director of Mohawk-Caughnawaga, the fragmentary clay pipe material excavated from the interior of the stockade was made available for this analysis and interpretation.

Method

A catalog was compiled of each pipe fragment recovered by the excavators which had an accession number. Each of these was then observed under a five power glass for maximum attribute identification and catalogued with the following description:

1. Length of the stem, measured in mm.
2. Thickness of the stem, calculated in mm.
3. Notations, illustrations, measurements of bowls, stems and other features such as heelmarks and stem marks.

---

COVER ILLUSTRATION: One of three pipes from the Bragge Collection, British Museum. The other two appear in Plates 1 and 2. These are described as "Dutch pipes of a very fine class," much larger than the pipes exported to America.

After an initial study of the more complete specimens, other applicable attributes were recorded, such as:

4. Clay color, texture, finish, ring, trim marks, fingerprints, biting, blunting, whittling, staining.

5. Cross section and position of the hole in the stem.

6. Measurement of legitimate stem bore diameters, extraction of intrusive material, and application of current dating formulae.

From the foregoing a dating-distribution chart was compiled.

Initial classification was accomplished by measuring stem bore diameters of the more complete specimens and then the more fragmentary stems. Magnification was employed to establish an approximately fixed reference point from which to take various stem measurements by which we hoped to estimate the original length of the pipes, and to sort out the intrusive material from that of later (post-1693) occupations. Ninety-five per cent of observable specimens showed the heaviest trim marks on the top and bottoms of the stems, thus suggesting a usable reference point from which to measure both length and thickness of stem. The result was the exclusion of presumably 18th and 19th century material, amounting to 26 stems and 7 bowls. The total length of stems pertinent to the time period 1667-1693 was 13,633 mm.

Again, using the more complete specimens, which included portions of the stem and bowl as the upper point of reference and the unaltered bit-end or mouthpiece as the lower, and observing position of heaviest trim marks on the top and bottom of the pipe stem, the thickness was calculated from these points. Where oblateness occurred, the measurements were still maintained along the points of heaviest trim. Ninety per cent of the measured specimens showed a constant declination from stem-bowl junction toward bit-end or mouthpiece and 10 per cent were small enough to show no declination, remaining equal in length. This particular measurement also helped us cull out intrusive material. J. C. Harrington's (Harrington 1954:1) observation that there was a long period over which the stems became thinner and thinner, was corroborated by our studies of both English and Dutch pipe styles, so that our sorting out the intrusive material became easier and more valid.

Stem bore diameters were measured by inserting the hafting end of a set of German steel drills measured in 64ths of an inch. The drilling end, if employed, will cause a deviation in the final results when applying a mathematical formula such as Binford's. Walker (Walker 1967:96-7, Walker 1971:88-9) discovered this deviation in his work with the Louisbourg pipes and concluded that "statistical analyses, per se, are not always reliable." Where the stem bore was larger than one size but not large enough to take the next size drill bit, we assigned a plus to the values. This was done for closer "tracking" purposes when studying the distribution of the material from the site itself. There was not enough stratification at Caughnawaga to achieve useful results by this step but it can be applied in other cases where distribution patterns are more stable. To attempt to compensate for this deviation by assigning half-sizes results in a questionably earlier date, as De Angelo discovered (De Angelo 1974: pers. comm. and graph).

#### Credits

Each important feature was photographed and enlarged through the efforts of Robert Batchelder. Gwyn Gillette accurately stipple-drew the material from these enlargements and David Gillette completed the accompanying Plate No. 1. The pipes were arranged for display in their own case in the Mohawk-Caughnawaga museum at Fonda and the catalog was reproduced and recorded May 1, 1973 and filed in the museum archives.

Historical research and comparative data from other sites were required. James Corsaro, New York State Manuscript and History section provided much direction for the research. Comparative data from other New York State sites were generously given through the efforts of Gordon De Angelo as well as John Stillman, Monte Bennett, Dick Cole, Reginald Bigford, Henry Wemple, Theodore Whitney, Robert J. Anderson, Robert De Orio, Dr. Kingston Larner, John



PLATE 1

Courtesy of the British Museum

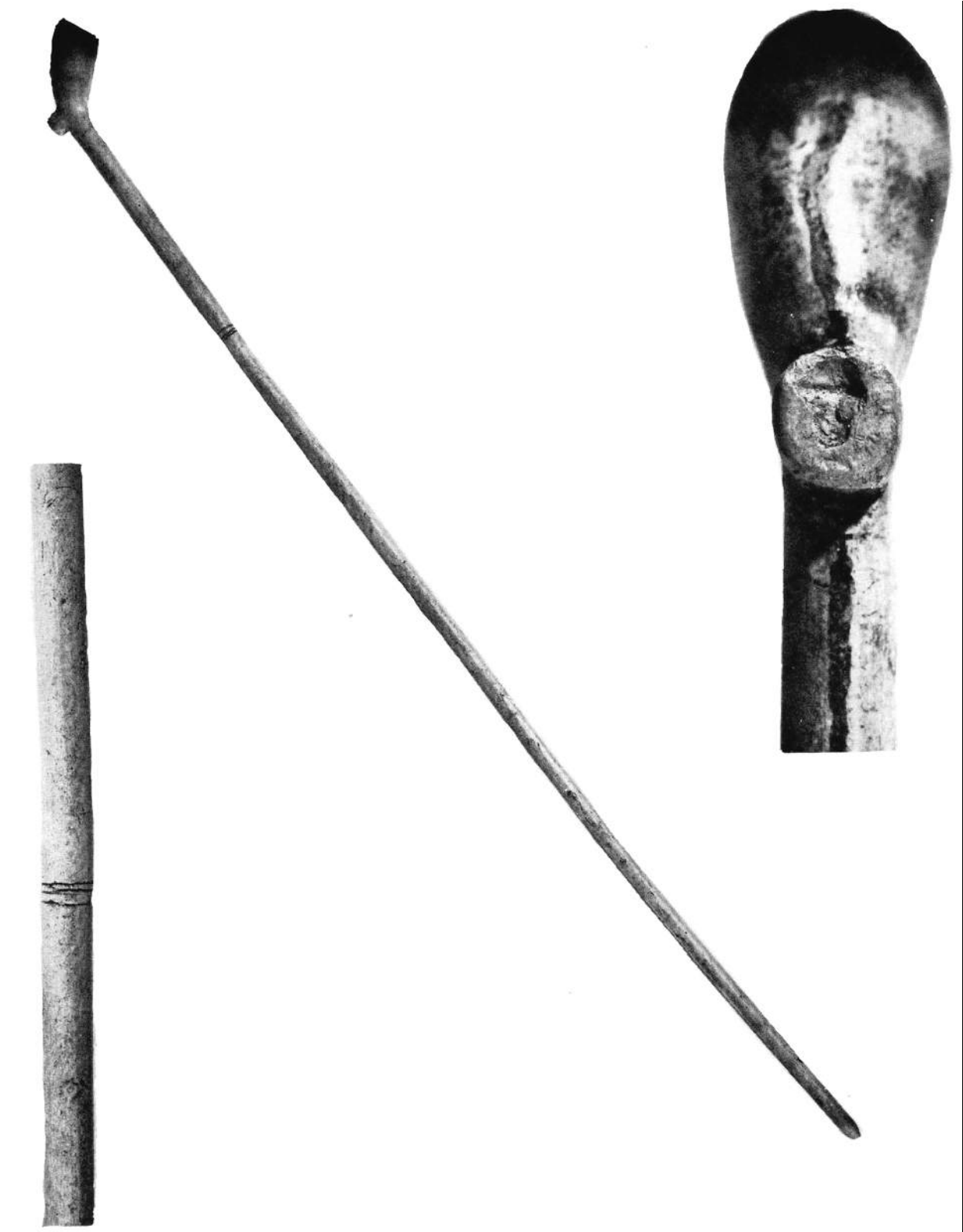


PLATE 2

Courtesy of the British Museum

Swart, Paul Huey, Peter Pratt, Charles Gillette, Gordon Schmahl, Charles Wray, Earl Casler, Sarah Bridges and Bert Salwen. And, finally, my wife Fran, provided the most valuable resource of all-time.

#### Historical Evidence

For the most part, Caughnawaga's economic mood reflects other Iroquois sites sampled, that clay pipes may not have been readily available or particularly sought after, being outranked on the shopping list by such "necessities" as guns, lead, flints, hatchets and knives, in that order. This attitude is confirmed in an Albany Common Council Order dated 14 September 1686 (NY Colonial Manuscript No. 34) which forbade the residents of Schenectady to trade major items such as guns, powder, lead, duffels, or rum with the Indians. Forbidden also, were the small wares such as Jew's harps, bells, thimbles, ribbon, scissiors, beads, looking glasses, tobacco, pipes, tobacco boxes, etc. Even three years after the destruction of Caughnawaga, Livinius Van Schaick (Brodhead: 1854 Vol. IV:170), in retrospect, remarked that,

*"The goods which the Indians put the highest value and esteem upon are, slight Zeige guns, powder, lead, stroud water cloth in red and blue, blankets, duffels, red, blue and white woolen stockings, and small brass kettles."*

Clay pipes, therefore, appear not to have been among the top ten on the hit parade as far as the Iroquois were concerned and the excavation of the interior of the stockade section supports this assumption. Approximately 500 fragmentary clay pipe samples were recovered, not many for such an active site, in existence for 26 years. However, there are two possibilities which must not be overlooked. First is the fact that much more pipe material may still be recovered from the topsoil stripped off at Caughnawaga, and second is the fact that, after the destruction of the south riverbank sites in 1666, some Mohawks may have carried over their "favorite auld clays" when they resettled on the north side of the Mohawk River in 1667. Not enough archeological research has been done on the south bank sites to test this possibility, but information suggesting that varieties such as 7 GH (Plate No. 1) may have been exclusive on the south bank short-term Mohawk Freeman site (Larner 1974: pers. comm.) lends credence to the possibility, as does illustration B (Plate No. 1) which also appears on the Bauder Farm (FDA-13), another short term south bank Mohawk site, which falls somewhere within the 1630-1650 time period.

Relocation, however, was not the only method by which clay tobacco pipes reached Iroquois sites. Trade was certainly a contributing factor, either intertribal or from Albany or Schenectady. Conquest is probably a factor also but certainly large numbers of pipes were given from time to time to the Five Nations as presents by those whose vested interest required them to be allied to the Dutch-English in Albany in the event of French invasion.

Excluding Wentworth Greenhalgh's visit to Caughnawaga in 1677 (Brodhead 1854: Vol. III, 250-52) about which it is not positively known whether presents were given, the first recorded instance when gifts of tobacco pipes were given that would have ended up at Caughnawaga, occurred at Albany, August 5, 1682, when colonels Coursey and Lloyd, acting on behalf of Lord Baltimore, effected a peace treaty with the Five Nations. Warlike incursions made by the Iroquois into Lord Baltimore's domain had resulted in several deaths and a considerable amount of looting and general destruction. On this occasion, besides other presents, "three rolls of tobacco and some tobacco pipes were given to each nation." (Brodhead 1854 Vol. III: 326). If these pipes, brought by the English, were of English manufacture then their existence is reflected on two Mohawk sites, Caughnawaga, where two bowls were recovered (not illustrated), and Gandagaro (FDA20) where one was recovered (Svart 1972: pers. comm.). All specimens had definitely English oval off-center heels and bowl styles approximating those "recovered from London, dating 1670-1700, and having no maker's mark nor any decoration other than the milling near the rim of the bowl." (Alexander 1967:63, No. 19). These pipes are also similar in shape to those recovered from London by Atkinson (Atkinson 1965:254, No. 34) who dated them at 1683 and the rest of the material recovered with them at between 1682-90.



The bowl styles then fit comfortably within the span of both Caughnawaga and parent Gandagaro and could, conjecturally, be part of "some pipes" given to the representatives of the Five Nations by Colonels Coursey and Lloyd. But these do not account for the majority of the tobacco pipe recovered from Caughnawaga.

What caused the increase of Indian presents also caused the increase of clay tobacco pipes reaching Indian sites. Commander-in-Chief Richard Ingoldsby writing to the Duke of Bolton April 28, 1692 (Brodhead 1854: Vol. III: 834) declared,

*"Our Assembly are now sitting, to provide for the reinforcement of Albany situated on the head of the Hudson River for trade with the Indians. . . . The Mohawks have always been in amity and friendship with the Inhabitants of Albany and have thence all their- supply of Gunns, powder, lead, duffels and other Indian merchandize from Europe . . . but have grown indifferent to us because no care is taken to maintain the Friendship with them. . . . We are forced to an expense of great presents to them. "*

The practice expanded. Abraham Gouverneur and Jacob Leisler testified (Brodhead 1854, Vol. IV: 197) that by 1696,

*"Presents were given sometimes once a year, sometimes twice, and that the greatest amount given yearly until 1689 was worth 150 pounds. During the administration of Colonel Fletcher (1692-1696) the presents amounted to 1000 pounds."*

The largest supply of clay tobacco pipe probably reaching Caughnawaga occurred on June 6, 1692, when representatives of the Five Nations met with Richard Ingoldsby and company at City Hall in Albany. Among the presents given were "six grosse of pipes." (Brodhead 1854, Vol. 111: 842).

The man most responsible for purchasing the "gifts" for the Indians was Robert Livingston (1654 -1728), Secretary of Indian Affairs at Albany (1676-1721). In later years he complained bitterly that he was "forced to great expense running up and down (Hudson's River) purchasing presents for them." That he also maintained close contact with his brother-in-law, Andrew Russell, may be one reason why the large amount of Dutch goods including pipes, were recovered at Caughnawaga. Andrew Russell, Scottish merchant residing at Rotterdam, Netherlands, was very active between the years 1670-1689, after which, he, Janet Livingston Russell and their nine children probably left Rotterdam. (Gemeente Rotterdam, F.A.M. Schoone, Keeper of the Records Letter dated March 25, 1975).

#### Development Of Method In Applying Statistical Data To Historical Fact

In this particular study, where the application of statistical data from the recovered pipe specimens is used to re-enforce documentation, the development of method is of primary significance. The immediate results of statistical methods often seem to be scientifically inconclusive and vulnerable to criticism, in attempting to pinpoint in time, numbers and types of clay tobacco pipes historically recorded that probably reached Caughnawaga, for several reasons:

1. Clay pipes which were not historically recorded, arrived on the site over some time.
2. This study applies generally to pipes recovered only from the interior of the stockade and smoking may not have been limited to the interior.
3. Some fragments may have been lost to surface hunting and may have been removed with the topsoil.
4. Many Indians probably carried their pipes with them, away from the site, as shown in the early 18th century print of TISH-KO-HAN.

The following method may, however, have value if and when more data become available, from closely controlled excavations of short-term well-dated contexts.

Pursuing the subject of method, we found it necessary to speculate upon how the Indians divided their "presents." Livingston answers this query, stating, "these public presents were Most exactly sub-divided to every Indian of their Nation." (Brodhead 1854: Vol. IV: 876). From the historical data it was noted that the largest numbers of clay tobacco pipes that probably reached Caughnawaga occurred on June 6, 1692. "Six grosse of pipes" equally subdivided between the representatives of the Five Nations would approximate 172 pipes per nation based on a 144 unit gross. To divide the 172 pipes per Mohawk "castle" it was necessary to find out how many "castles" were in existence at this time.

On the July 3, 1672, Tohariwaghqua and Crage, the representatives of the four Mohawk "castles", were present at Schenectady to sell land to some of the inhabitants. The sale was confirmed July 13, 1672, and signed by Tohariwaghqua, Cansehquo and Oquarry (NY Colonial MSS 22:132). By 1677, according to Wentworth Greenhalgh, "the Mohawks have four towns, Caughnawaga, Gandagaro, Canajoharie and Tionontogen, besides one small village 110 miles from Albany" (Brodhead 1854: Vol. III, p. 250).

Franquelin's maps of 1684 and 1688 also show four Mohawk "castles" as then existing (Grassman 1969:655). On September 4, 1691, when the Senecas and Mohawks met at Albany, four chiefs were present: Tanaguriss, Isquadegoe, Diswaydorre and Ocquarriochke (Brodhead 1854, Vol. III: 805). 172 Mohawk pipes, when "equally-subdivided" between the four Mohawk "castles", would come to about 43 pipes per "castle". Comparative populations of the Mohawks from 1698 show a decrease in males from 270 to 110 (Brodhead 1854, Vol. IV: 337).

It is interesting to note that at Caughnawaga, those pipes illustrated as 1, 2-D, 3-D and 4-I (Plate 1) represent the majority of marked pipes totaling 31. Ninety nine per cent of the measured stem bore diameters were  $6/64$ th or  $6/64$ th + in. Illustrations 7 and 8 (Plate 1) totaled 5 out of 8 recovered. Illustrations 9E and A, 10-F, and 11-A (Plate 1) represented 8 marked pipes recovered. All had stem bore diameters measured at  $6/64$ th inch or  $6/64$ th inch +. The total was 44.

Estimating the length of a pipe by measuring the declination of the stem from the stem-bowl junction to bit-end or mouthpiece, and using the more complete specimens as a guide give an approximation of 228.6mm. Subtracting 33mm for the bowl length, the resultant 195.6mm was divided into 9261.5, the length of stems with bores of  $6/64$ th. A remainder of 47 tobacco pipes resulted, which approximated the number of recovered specimens whose stem bore diameters measured  $6/64$ th or  $6/64$ th + inch. However, portions of 81 individual pipe bowls were recovered in all, of which 55 had identifiable makers or owners marks and one did not. Our conclusions therefore suggest that all the pipes were not of the same length and not all of the material was recovered. To correct the data would require the pipe to be about 202mm in total length. Subtracting 33mm for bowl length, each stem length would be 169mm which, divided into the total length (13,633) of recovered stems for the period 1667-1693, would approximate the 81 individual pipe bowls recovered.

Another observation further to "confuse the statistical issue" would be the possibility that the pipes arriving in "lots" contained mixed pipes of variable length and style, thus suggesting that the Indians liked variety as well as anyone else.

At any rate, it must be kept in mind that we are primarily interested in formulating method until, as Walker stated, "We get what no one seems to be putting out-well illustrated corpora of material from well dated contexts." (Walker 1973: pers. comm.).

#### The History And Use Of Mathematical Formulae To Date Clay Pipe Stems

William L. Calver, as early as 1931, noted that "very old clay pipes had a much larger perforation in the stem than was common later." (Calver 1931:97) While working with the predominantly English pipes in the Jamestown collections, J. C. Harrington also observed "that the early pipes had relatively large holes through the stems, while the holes in the later specimens

were much smaller." Harrington 1954:348). He drew up a series of percentage charts divided into five time periods based on his data of predominantly English stem bore diameters measured in 64th's of an inch (see Chart 1, No. 1). Using Harrington's original data, Lewis Binford took each pipe assigned to a period and recorded the median date for the production estimate; the sum of all the median dates for pipes making up a period sample was then calculated. This result was divided by "n", the number of pipes in the sample, resulting in a mean production date for the specimens represented in the sample. (Binford 1971:232). This date was then used, together with the mean bore diameter, to calculate the regression formulae  $Y=1931.85-38.26X$ , Y being the theoretical date at which the bore diameter would reach zero by this formula, 38.26 being the slope of the line (number of years between each 1/64th inch decrease), and X being the mean bore diameter for the sample to be dated. (Binford: 1962:19-21)

Since 1962, Binford's formula has been one of the major dating techniques used on historic sites in this country and has been used with success or failure, depending upon who used it and under what circumstances. (Walker 1967:90-101). Subsequently, Geiger Omwake announced "a computer-determined version of the original Binford formulae, which involved a curved line rather than a straight line regression, not previously published, which read  $Y=1929.189-36.818X$ ." (Omwake, 1967:9). He then reported that Mrs. Audrey Noel Hume had found that the computer revision of the formula yielded "mean dates" consistently 5 to 9 years higher than those which resulted from application of Binford's formula to (English) materials from 5 sites.

In 1969, Lee H. Hanson Jr. (Hanson, 1969:2), while finding no fault with Harrington's original observations, did find fault with Binford formula and proceeded to "compute ten formulae for varying time periods from the Harrington data using the line of least squares method" which he published (Hanson, 1969).

Binford attacked Hanson (Binford 1971:230-53), and Hanson "capitulated" dismissing his formulae from further consideration (Hanson 1971:22). As this battle subsided Robert F. Heighton and Kathleen A. Deagan presented a new formula for determining dates from clay pipe stems (Heighton and Deagan 1972:220-9), and Paul Cresthull presented tables and graphs relating to the Harrington, Binford and Hanson Tobacco Pipe Stem Data (Cresthull 1972:258-63).

Meanwhile, in Holland, F. H. W. Friederich as early as 1964, had been calculating dates for domestic Dutch clay pipes by use of statistical measurements from Dutch "genre" paintings in which pipes occurred, from surface material, and from excavations, which gave him a representative sampling of about 10,000 pipe bowls. (Friederich 1964 ABC, Fibula 1964, pers. comm. 1972). However, when presented with "Dutch" material from Caughnawaga and Gandagaro, he exclaimed, "I have never seen pipes so large." (Friederich 19-29/8-72 pers. comm.). This indicated to us that special pipes were being made for the "trade." It occurred to us that perhaps the bores for these "special" pipes had special wires which might have been larger, if the Dutch knew that the Indians were interested in variety while requiring a larger pipe bowl. Friederich also noted that some of the EB heel-marked belly bowls from Gandagaro approximated a smaller style recovered from the ancient Sloterdijke region around Amsterdam, Nederland. To aid us in our analysis, he kindly sent over 450 representative samples of Dutch domestic pipes encompassing the entire range of dating in Western Holland. [One specimen, also from Sloterdijke, was similar to though less elaborate than one illustrated by Beauchamp (Beauchamp 1898:166, figure 139). It had the same I over M heelmark and Friederich dated it 1625-1630.]

#### Contributions To New York Pipology

New York can boast of only five works exclusively devoted to the study of clay tobacco pipes, those of Calver (1931), Gifford (1940), Omwake (1958), Barber (1966) and Fox (1972). Only the latter two made use of Binford's formula. Concerning Barber's work, Walker (Walker 1967:97-8) stated:

*"Barber, dating six contact Seneca Indian sites in New York State, found that with the five 17th century sites, the Binford dates fell within the dates estimated for the sites from other evidence . . . . Indeed, when terminal dates were known, the Binford date as an actual median date did in four cases give a date span very similar to the span deduced from other evi-*

*dence, despite the fact that the stems used only numbered between 25 and 116. The sixth site, while known to have been in existence by the 1730's, yielded late 18th or early 19th century material. The dates from five different parts of the site all ranged between 1751 and 1754, but are likely to have been affected by later pipe material giving too early a date. However, there is an unresolved problem with Barber's material, as bore-diameters, which should not occur during the archeologically deduced flourit of the sites but do occur."*

This affected the Power House site, for example, which did not give a median date. Concerning Power House, dated by the Wray-Schoff span estimate of 1630-1650, Barber (Barber 1966:92) states:

*"There were 36 stems in the total sample . . . all obtained from the surface . . . yielding a mean of 7.19 with a Binford date of 1657."*

Had he an adequate knowledge of style and shape as well as the formula with which he was dealing, he would have realized that the Binford formula is based on Harrington's date and if, following Harrington (Chart No. 1) stem bores of 4, 5 and 10/64th in. are removed and then Binford's formula is applied to the remaining 26 specimens, the mean bore diameter would be 7.53846, with a mean production date of 1643.4285, which fits comfortably within the Wray-Schoff span estimate for Power House: (1630-1650).

Lack of knowledge of the particular artifact one is dealing with occurs in Fox's opus (Fox 1972:25) where no attempt was made to sort out intrusive material before applying the Binford formula. For clay pipes studied at Caughnawaga, Fox states, "The stem bore diameters support Harrington's theory . . . according to Binford's equation, the mean date is 1685." (Fox 1972:25). According to Harrington's percentage chart (Chart 1) stem bores of 4/64th would not be found on a site dating 1667-1693, unless they were intrusive, which they were proven to be. Stem bores of 5/64th were also found to be intrusive with the exception of two which, after study, had to be compensated for as explained later. In our analysis, there were no legitimate stems measuring 9/64th inch. Comparing our analysis with Fox yielded a substantial difference:

FOX (Caughnawaga) 1667-1693 median site date: 1680

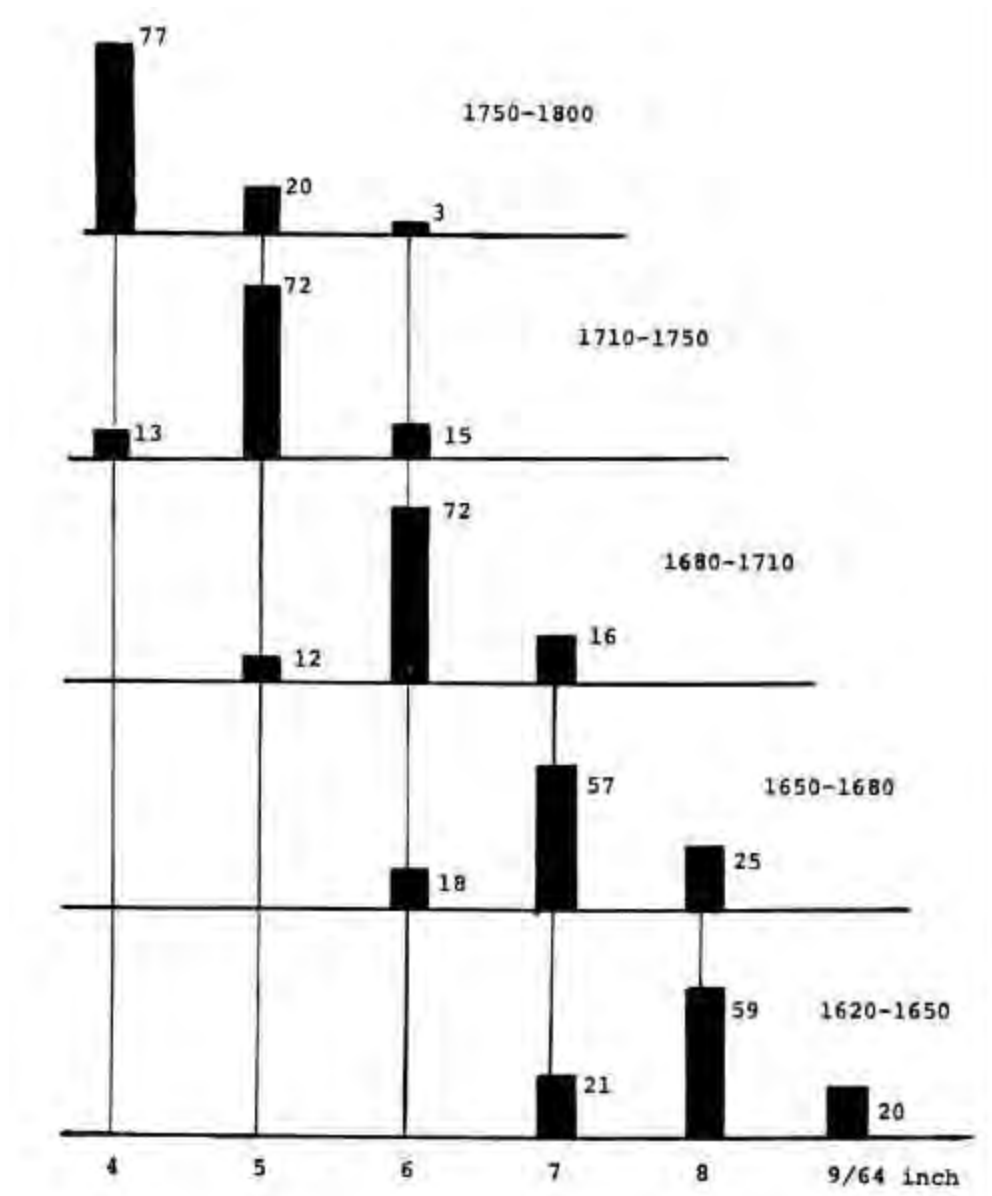
Harrington Dates	Bore Diameters	No. of Pipe stems tested
1620-1650	9/64 in.	4
1620-1650	8/64 in.	16
1650-1680	7/64 in.	188
1680-1710	6/64 in.	256
1710-1750	5/64 in.	12
1750-1800	4/64 in.	<u>2</u>
		478 Total

REVISION (Caughnawaga) 1667-1693 median site date: 1680

Bore Diameters	Sample tested
4/64 in.	0
4/64+ in.	4
5/64 in.	11
5/64+ in.	9
6/64 in.	126
6/64+ in.	198
7/64 in.	98
7/64+ in.	24
8/64 in.	9
8/64+ in.	4
9/64 in.	0
9/64+ in.	<u>0</u>
	483 Total

CHART 1

BAR GRAPH OF BORE DIAMETER PERCENTAGES  
(After Harrington, 1954)



Fox's application of the Binford formula yielded a mean bore of 6.45188, which in turn gave a date of 1685.0010. Using his data and excluding stem bore diameters of 4, 5 and 9/64th in., a Binford date of 1683.99 resulted, with a mean bore of 6.47286. After revision, however, the dates differed. 483 specimens, including bores of 4 and 5/64th in., yielded a mean bore of 6.2484472 with a mean production date of 1692.7845, which is the date, it is felt, that most of the pipes reached Caughnawaga. However, using 459 samples exclusive of stem bores of 4 and 5/64 in. a mean production date of 1689.9535 was arrived at, which is felt to be more in line with Binford's formula based on Harrington's data.

Bennett and Cole (Bennett and Cole 1974:9) applied Binford's formula to 208 stem bores, most of which were of the HG variety similar to those found at Caughnawaga; their date was

1689.414. An additional 104 samples were obtained from John Stillman, most of which were HG samples, and the Binford date was subsequently raised to 1691.621 for 312 samples. Excluding stem bores of 5/64th in. changed the date to 1689.150. But, since the termination date for the Upper Hogan site (OND 54) is not historically established, as is that of Caughnawaga, exclusions of bores of 5/64th in. cannot be deemed legitimate since the site probably had an extension into the early 18th century when Dutch pipes with 5/64th in. bores were making the scene, as it were.

Omwake's "computerized version" of the Binford formula was applied to the Caughnawaga revision and yielded a date of 1699.1337 for all bores and 1696.4095, excluding bores of 4 and 5/64th in. This supported, for Dutch pipes, what Audrey Noel Hume had discovered, using Omwake's version, for English pipes-that using the computerized version yielded dates five to nine years higher.

Finally, the Heighton-Deagan formula was applied. It is stated thus:

A-  $x = \text{minus log Y plus } 1.04434 \text{ divided by } .5324$ . Log Y is converted to logarithmic form of Y and the date

B-  $=1600 \text{ plus } 22X, X$  being the value resulting from Formula A.

REVISION

Mean Stem Hole Diameter	-LogY	x	Date
6.32	8007	4.576	1700.76
6.25	7959	4.666	1702.76

FOX

Mean Stem Hole Diameter	-LogY	x	Date
6.50	8129	4.347	1695.7
6.25	8096	4.409	1697.0

In conclusion, therefore, both Omwake and Heighton-Deagan formulae yielded dates well above the termination date for the site. Based on the historical data and scientific analysis, it must be stated that no median date (1680) for Caughnawaga was achieved. Simply stated, pipes date pipes; they do not date sites, certainly not Caughnawaga, where a lopsided distribution is intimated both historically and scientifically.

Heelmarks and Bowl Styles of Plate 1

1. .Impressed heelmark of unknown maker or owner occurring on 17th century funnel, elbow angle and belly-bowl white clay "trade" pipes ranging between 7.5 and 9 in. in length. Encircled by a plain or beaded ring, the letters HG are generally 2mm in height and 1 to 2mm in width; the overall mark ranges from 5 x 5mm to 6 x 6mm. The pipes on which this mark is impressed are generally not well made and perhaps rank in a lower class of manufacture at Gouda or Amsterdam, their suspected origin. Stem bore diameters measure 6/64th + in. on 7 of 8 measurable specimens and 7/64th in. on the other. Minimum thickness of the stem at stem-bowl junction is 11.5mm; maximum is 12.3mm. No belly bowls bearing this mark were recovered at Caughnawaga. The stems of the funnel elbow angle style show warping or bowing 18mm from the bowl. Their distribution ranks second to those pipes impressed with the EB mark and is probably not confined to New York State.

2D-3D: Impressed heelmark of unknown maker or owner found on 17th century funnel, elbow angle and belly bowl white clay "trade" pipes ranging between 7.5 to 9 in. in length. The figure shows the letters HG surmounted by a three-point crown overrunning the apparently plain circle. This is probably caused by the trimmer, or tremster, who flattened the mark in the course of his labors, causing the distortion in the mark, which may, in reality, be similar to 3D, which has the mark, surrounded by a plain outer circle with interior beading. It now appears, after study of many HG heelmarks, that the trimmer or smoother may have flattened the mark altogether, causing beaded rings to appear plain. The HG letters are generally 2mm in length and 1.5 to 2mm in

PRELIMINARY DATING AND DISTRIBUTION CHART OF TWO BASIC 17TH CENTURY CLAY PIPE STYLES AND HEELMARKS OCCURRING ON NEW YORK STATE SITES RELATIVE TO THOSE RECOVERED AT CAUGHNAWAGA.

New York State Site	Dating	Numbers correspond to heelmarks on Plate #1									
		1	2-3	4	5	6	7-8	9	10	11	
<b>Mohawk</b>											
Caughnawaga	H1667-1693 B1689.95	F	BF	F	B	B	BF	B	B	B	
Freeman	Before 1666						F				
FDA20 Gandagaro	H1667-1693					B	B				
CNJ49 Tionontogen	E1640-1650						B				
<b>Oneida</b>											
MSV1-2 Thurston	P1625-1637										
MSV4-2 Stone Quarry	P1640-1650 B1649.315						BF				
MSV6-2 Dungey/Lemery	P1650-1660						BF				
OND3-4 Moot/Sullivan	P1660-1677 B1654.515	F					BF				
OND5-4 Upper Hogan	P1677-1685 B1691.621	F	M								
<b>Cayuga</b>											
Young Farm Site	E1660-1760+ B1701 (all) B1687.07 (excl. 4&5/64)						M				
<b>Seneca</b>											
Power House	Y1630-1650 B1657						B				
Boughton Hill	Y1645-1687 B1677						M				
Beal Marsh	Y1645-1687						M				
Dann	Y1645-1687	M					M				
	Y1650-1675 B1650						F				
Rochester Junction	Y1675-1687						B				
<b>Onondaga</b>											
Bloody Hill 2 Doxsteder	E1675-1698	BF	BF		B	B	B			B	
Indian Hill	Ebefore1690						B				
Indian Castle	E1650-1670						F				
Carley	Ebefore1670						B				
Jamesville	E1684-1696						B				
<b>Miscellaneous Sites</b>											
Fort Orange	H1624-1675	F					BF				
Schuyler Flatts	H1642-1962	F					BF				
Kingston Stockade	Hafter1660	F									
SCH40 River Site	H1670-1910	F					BF				
South Beach, Staten Is.	E1675-1700	F	B				B	B			
<b>Style Key</b>			<b>Date Key</b>								
B=Belly bowl			H=Historic			Y=Wray-Schoff Span					
F=Funnel bowl			B=Binford			E=Estimate based on artifacts					
M=Mark but no style			P=Pratt Revised								

width, the overall mark ranging from 6 x 6mm to 7 x 7mm. The pipes on which this mark is impressed appear to be of a finer or middle class of pipe made at Gouda or Amsterdam. Stem bore diameters of eight measurable specimens ranged from 6/64th to 6/64th+ inch. Of the 8, five are funnel elbow angles and 3 are belly-bowls. Minimum thickness of the stem at stem-bowl junction is 11.5mm maximum is 11.9mm. The stems of the funnel elbow angled pipes with this mark also show warping or bow-

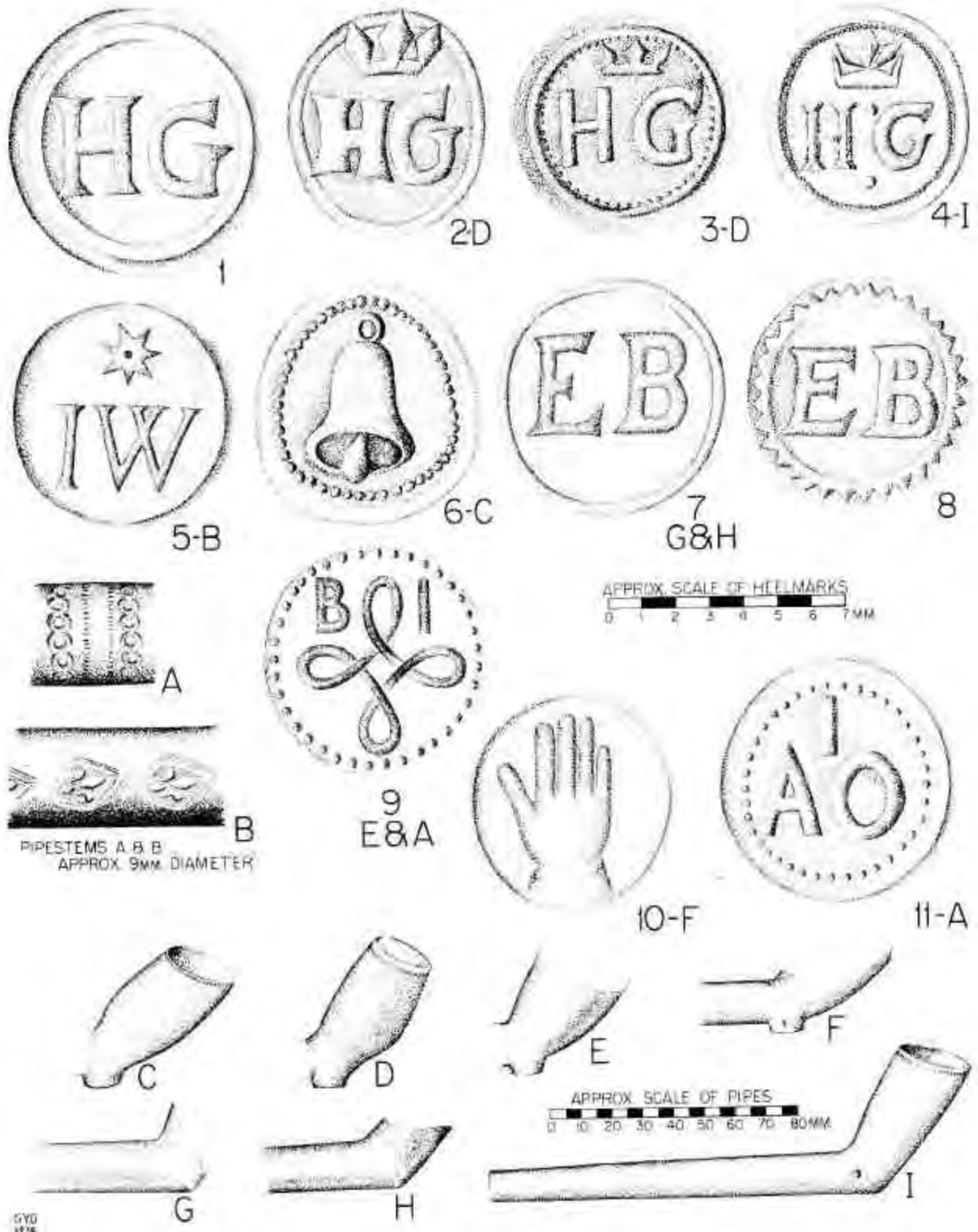


PLATE 3



ing about 18mm from the stem-bowl junction. Their New York distribution is not as wide as 1GH and the mark is less prevalent when they occur together.

- 4I Impressed H:G heelmark of unknown maker or owner surmounted by a five-point crown surrounded by a beaded circle and, to date, occurring only on funnel elbow angle white clay "trade" pipes recovered from Caughnawaga. The bowls of these pipes show a slight eversion and, if found elsewhere, will probably have an even more limited distribution than 1, 2D and 3D, for they appear to be of a finer class of pipe made at Gouda or Amsterdam. These well-made, polished, thin-walled pipes, numbering 15, exhibit an interesting feature- a raised dot, on the lower right side. This mark is unique to Dutch pipemaking and may be an earlier attempt of Amsterdam or Gouda guild of pipe makers to differentiate classes of pipe according to quality (Walker 1971:62). Stem bore diameters measured 6/64th in. on 7 measurable specimens and 6/64th+ in. on 6 measurable specimens. The letters are generally 2mm in length and 1.5mm in width. The overall mark ranges from 5 x 5mm to 7 x 7mm. Minimum thickness of stem at stem-bowl junction is 10.5mm; maximum is 11.8mm.
- Summarizing 1, 2D, 3D and 4I, two directions emerge, indicative of their evolution and distribution; the plain HG could have been followed by the HG and three-point crown which, in turn, was followed by the HG and five-point crown, thus representing a developmental sequence of production or, being the largest representative sampling of pipes from Caughnawaga, could indicate a mixing of both quality and style, as suggested by the historical and analytical data. Neither the maker nor the mark are recorded in England or in Holland, but identical letters have been recorded from 17th century glass wine bottle seals excavated at Jamestown and probably made for one Henry Gawler who lived there in 1683 (Hudson 1961:82-3). Atkinson, pers. comm., suggested that they were made in America and Brongers and Friederich, from Holland, suggested that they were English. Naturally, the inclination of the author is toward the Dutch origin.
- 5B: Impressed heelmark of unknown Dutch pipemaker or owner occurring on 17th century belly-bowl white clay "trade" pipes ranging between 7.5 and 9 in. in length. The letters IW are surmounted by a seven-point star and are 2mm in length. The overall mark on the 2 recovered specimens were 5 x 5mm on one and 6.5mm x 6.5mm on the other. Both had stem bore diameters of 7/64th in. About 25mm along the top of the stem from the bowl towards the bit-end or mouthpiece are impressed at random 3 fleur-de-lis, which are exclusively Dutch. Fifteen similarly marked stems were recovered at Caughnawaga with impressing generally along the top of the stem. At Caughnawaga, where the design was the same, the mark ranged from 4 x 6mm to 7 x 7mm. Varieties of the fleur-de-lis occur on almost every 17th century site in New York State where Dutch pipes are present. Diagnostic studies are forthcoming. The IW mark is not registered on the Gouda pipemakers guildboard in Gouda, but is recorded from 1730/1746 to Jan Weijman and Joost Witsius (Geselschap 1961 Laansma, 1960). Considering the style of the bowl, the author feels that these dates are too late for the time period under consideration. The Amsterdam area is the suspected origin.
- 6C: Impressed bell heelmark of unknown Dutch pipemaker or owner occurring on a variety of finely made 17th century belly-bowl white clay "trade" pipes which probably ranged between 7.5 to 9 in. in length. The bell is 5mm in length on a mark that ranges from 5 x 5mm to 6 x 6mm on a heel usually 7 x 8mm. Maximum thickness of the stem at stem-bowl junction varies from 8mm to 10.5mm. Of 6 specimens recovered all had stem bore diameters of 7/64th inch. The mark is registered on the Gouda pipemakers guildboard and between 1730 and 1746 was owned by Cornelis Sout (Geselschap 1961 and Laansma, 1960). From consideration of the bowl style, it

is felt by the author that this placement is again too late for the period in question. However, it must be remembered that the period of occurrence of a style or mark may not have been as lengthy in New York as in Holland. It must also be remembered that the Gouda lists of pipemarks and records, though known to have existed, are missing for the period prior to 1724.

7G & H, 8: Impressed EB heelmark occurring on four 17th century funnel elbow angle and four belly-bowl "trade" pipes recovered from Caughnawaga. Elsewhere, it occurs in a wide variety of styles and lengths and the mark occurs more frequently than any other for the 17th century. Encircled by a plain dotted or sawtooth ring, the EB letters range from 2mm in height and 1.5mm in width to 2mm in height and 2mm in width. The overall mark is round or oval and varies from 5 x 6mm to 6 x 6mm. At Caughnawaga, stem bore diameters varied from 6/64th+ to 8/64th inch. The minimum thickness of the stem at stem-bowl junction ranges from 9mm to 12mm. On the right side of one of the belly-bowls similar in shape to F also is found the possible quality mark of the Dutch pipemaker, a small raised dot. Concerning the origin of the EB maker, Omwake stated:

*"It is much more difficult to ascertain the origin of the EB heelmarked pipes . . . the letters EB were the initials of at least eleven English pipemakers, but only three were working at the time of the Susquehannock fort . . . Edward Biggs of Henley, 1653; Edward Battle of Bristol, 1660; and Edward Beaste of Marlborough, c. 1670. In Holland the EB mark was registered in Gouda in 1672 in the name of Adrian Van Der Cruys. . . . The mark is not positively known to have been in existence at a date prior to 1672 . . . but the use of the EB heelmark in Holland at least a quarter of a century prior to its registry in the name of the merchant Van Der Cruys seems clearly indicated (Omwake 1959:132-3).*

Edward Battle, of Bristol, operating in 1660, has been chosen by some authors as the pipemaker responsible for the EB pipes. Concerning him, Atkinson flatly stated that he "doubted that Edward Battle sent any of his products near America." (Atkinson: pers. comm. 24 Feb., 1973). The author agrees with the Atkinson statement and feels that Holland was the probable origin, suggesting that EB material from OND 3-4, Moot/Sullivan Oneida site might have had its origin on the inbound Rensselaerwyck in 1644 from Amsterdam (Bennett-Cole 1972:22).

Twenty six pipe samples were subjected to the Binford formula for the MSV4-7 Stone Quarry Oneida site (Collection of John Stillman) with a resultant date of 1649.315. This site date was revised by Pratt in 1969 to 1640-1650. Published lists of 17th century Amsterdam pipe makers, not being known, required a genealogical search using the Dutch court records as a guide. In the meantime, inquiries were made periodically by the author of Dr. Simon Hart, Director of Gemeentelijke van Amsterdam. His superb research and infinite patience have identified the pipemaker probably responsible for the early EB New York samples. Dr. Hart (letter dated 16 April, 1975 No. 175.468). stated:

*"In reply to your letter dated March 3, 1975, I can inform you that your EB pipemaker has probably been found. . . . He is Eduwaert Burt, tobacco pipemaker, from Zerrij [Surrey, England] living in the Koksteeg [center of Amsterdam]. . . . His banns of marriage were published 29 June 1630 where he signed his name Edward Bird. At the time of his death, May 20, 1665, he was living in the Rozengracht, near the center of Amsterdam.*

(He will be dealt with at length in the forthcoming article *EB Pipes-Their Place in History*.)

- 9E & A Impressed heelmark of unknown Dutch pipemaker or owner occurring on 17th century belly-bowl white clay "trade" pipes falling somewhere in length between 7.5 in. to 9 inches. A beaded circle surrounds the mustard flower or stylized Alcantara cross, which is surmounted, left to right by the less ornate initials BI or BJ. The overall mark is generally 6 x 6mm on a protruding heel. Again, a slight bow can be found in the stem similar to the HG funnel types. 42mm along the stem from the heel towards the bit-end or mouthpiece begins a hand-impressed series of runs of dots and roulettes, another definitive feature of Dutch pipemaking. The total of rouletted stems found at Caughnawaga was 50. Stem bore diameters measure 6/64th to 6/64th+ in. for the 3 specimens recovered. The thickness of the stem at stem-bowl junction is 10.5mm. The mark is unknown in England but is registered on the guildboard of the Gouda pipemakers.
- 10-F Impressed heelmark of unknown Dutch maker or owner occurring on 17th century belly-bowl white clay "trade" pipes of between 7.5 and 9 in. in length. The hand or glove mark is encircled by a plain flat ring on a protruding heel which ranges from 6.5mm x 7mm to 7 x 8mm in diameter. The mark is generally 5 x 5mm. Of four specimens recovered all had stem bore diameters of 6/64th + inch. On the right side of heel of F again appears the raised dot believed to be the quality mark of the Dutch pipemaker. This mark, and variants thereof appear on the Gouda pipemakers guildboard where they are registered to various pipemakers throughout the 18th century but have an obvious 17th century origin. The mark occurs on 17th century English pipes where it is called the "gauntlet" but differs considerably from the Dutch in both mark and bowl style (Atkinson 1962:183, figure 12).
- 11-A Impressed heelmark of unknown Dutch pipemaker or owner occurring on 17th century belly-bowl white clay "trade" pipes falling in length between 7.5 and 9 in. in length. The less ornate initials A-I-O, read left to right, are encircled by a beaded ring. The mark is 5 x 6mm on a heel 6 x 7mm. The one recovered specimen had a stem bore diameter of 6/64th inch. This mark is recorded in neither England nor Holland. Encircling the stem beginning 30mm from the stem-bowl junction is the typical Dutch runs of dots and roulettes (Plate I, A). Of the 50 recovered stems exhibiting this feature 39 show a clean break at the point of rouletting. Seven specimens showed a 1 mm reduction in stem bore size where rouletting occurred, a point to consider when applying mathematical formulae such as Binford's.

#### References

- Alexander, L. I.  
1967 English Clay Tobacco Pipes. *Quarterly Bulletin of the Archaeological Society of Virginia*, Vol. 21, No. 3 (March).
- Atkinson, D. R.  
1962 Makers' Marks on Clay Tobacco Pipes Found in London. *Archaeological News Letter* (London), Vol. 7, No. 8 (April).  
1965 Makers' Marks on Clay Tobacco Pipes Found in London. (Part II). *Archaeological News Letter* (London), Vol. 7, No. 11 (January-February).
- Barber, D. M.  
1966 *Kaolin Pipe Stems, An Analysis of Their Value to Local Archaeology*. Reprinted from Museum Service Bulletin of the Rochester Museum of Arts and Sciences (May-June).
- Beauchamp, W. M.  
1898 *Earthenware of the New York Aborigines*. Bulletin of the New York State Museum, Vol. 5. No. 22 (October).

- Bennett, M. and Cole, R.  
 1973 The Moot Site/Sullivans/Ond 3-4. *Bulletin of the Chenango Chapter, NYSAA*, Vol. 14, No. 1 (June).  
 1974 The Upper Hogan Site Ond 5-4. *Bulletin of the Chenango Chapter, NYSAA*, Vol. 15, No. 2 (October).
- Binford, L. R.  
 1962 A New Method of Calculating Dates from Kaolin Clay Pipe Stem Samples. *Southeastern Archaeological Newsletter*, Vol. 9, No. 1 (June).  
 1972 The Binford Pipe Stem Formula: A Return from the Grave. *The Conference on Historic Sites Archaeology Papers 1971*. (June).
- Brodhead, J. R.  
 1854 *Documents Relative to the Colonial History of the State of New York*. (Procured in Holland, England and France and edited by E. B. O'Callaghan M.D.) 14 Volumes, Albany: Weed, Parsons and Co., printers.
- Calver, W. L.  
 1931 Historical Clay Pipes. *New York Historical Society Quarterly Bulletin*, Vol. XV, No. 3 (October).
- Cresthull, P.  
 1972 Tables and Graphs Relating to the Harrington, Binford and Hanson Tobacco Pipe Stem Data. *The Conference on Historic Sites Archaeology Papers 1971*. (June).
- Fox, J. W.  
 1972 Kaolin Pipes from Indian Island. *Man in the Northeast*, No. 3 (Spring).
- Friederich, F. H. W.  
 1964a Pipologie I. *Westerheem: Journal of the Archeological Society of Western Holland*, Vol. XIII, No. 1 (February).  
 1964b Pipologie II. *Westerheem: Journal of the Archeological Society of Western Holland*, Vol. XIII, No. 2 (April).  
 1964c Pipologie III. *Westerheem: Journal of the Archeological Society of Western Holland*, Vol. XIII, No. 3 (June).  
 1964d Pipekoppen. *Fibula*, Vol. 5, No. 1 (January-March).  
 1970 Pipologie IV. *Westerheem: Journal of the Archeological Society of Western Holland*, Vol. XX, No. 4 (August).
- Geselschap, J. E. J.  
 1961 *Inventaris van de Archieven van de Pijpnering te Gouda*. Gouda, Netherlands.
- Gifford, S.  
 1940 Tobacco Pipes Found at Fort Ticonderoga." *Bulletin of the Fort Ticonderoga Museum*, Vol. 5; No. 4 (January).
- Grassman, T.  
 1969 *The Mohawk Indians and Their Valley*. (Being A Chronological documentary record to the end of 1693). Published by J. S. Lischynsky; printed by Eric Hugo, Schenectady, New York.
- Hanson, L. H.  
 1971 Kaolin Pipe Stems: Boring in on a Fallacy. *The Conference on Historic Sites Archaeology Papers 1969*, (4) Part One.  
 1972 A Few Cents More. *The Conference on Historic Sites Archaeology Papers 1971* (22) (June).
- Harrington, J. C.  
 1954 Dating Stem Fragments of Seventeenth and Eighteenth Century Clay Tobacco Pipes. *Quarterly Bulletin of the Archeological Society of Virginia*, Vol. 9, No. 1 (September).
- Heighton, R. F. and Deagan, K. A.  
 1972 A New Formula for Dating Kaolin Clay Pipestems. *The Conference on Historic Sites Archaeology Papers 1971* (20) (June).

- Hudson, J. P.  
1961 Seventeenth Century Glass Wind Bottles and Seals Excavated at Jamestown. *Journal of Glass Studies*, Vol. 3, Corning, New York.
- Laansma, S.  
1960 *Pijpmakers en Pijpmerken 1724-1865*. De merken zijn geordend volgens de namen van de eigenaars. Gouda Netherlands.
- Omwake, H. G.  
1958 Kaolin Pipes from the Schurz Site. *Bulletin of the Archaeological Society of Connecticut*, No. 9 (December).  
1959 White Kaolin Pipes from the Oscar Leibhart Site. *Susquehanna Miscellany*, edited by Witthoft and Kinsey, The Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania.  
1967 Evaluation of an Assortment of White Kaolin Pipe Bowls and Stem Fragments Surface Collected from an Apparent Colonial Period Refuse Disposal Area near Chestertown, Maryland. *Bulletin of the Archeological Society of Delaware*, Nos. 5 and 6 (New Series).
- Walker, I. C.  
1967 Statistical Methods for Dating Clay Pipe Stem Fragments. *Post-Medieval Archaeology*, Vol. 1.  
1971 The Manufacture of Dutch Clay Tobacco Pipes. *Journal of the Council for Northeast Historical Archaeology*, Vol. 1, No. 1 (Spring).  
1971 An Archaeological Study of Clay Pipes from the King's Bastion Fortress of Louisbourg. *Canadian Historic Sites: Occasional Papers in Archaeology and History*, No. 2, National Historic Sites Service, National and Historic Parks Branch, Department of Indian Affairs and Northern Development, Ottawa, Ontario, Canada.
- Personal Communications
- Bigford, R.  
1973 Oneida Collections loaned to author.
- Bridges, S.  
1972 Information concerning Kingston Stockade. 4/14/72.
- Casler, E.  
1974 Information supplied for Caughnawaga 6/6/75.
- De Angelo, G.  
1975 Letters and graph dated 2/3/74.
- De Orio, R.  
1976 Manuscript on Young Farm Site sent 4/1/75.
- Hart, S.  
1975 Letter dated 10 April 1975 178.465 de Gemeenearchivaris van Amsterdam; Gemeentelijke Archiefdienst van Amsterdam.
- Huey, P.  
1972 Personal communication 3/23/72.
- Larner, K.  
1975 Information on Freeman Mohawk Site 4/5/75.
- Mohawk-Caughnawaga Museum  
1973 Information on FDA 13, Bauder Mohawk Site.
- Onondaga Historical Society  
1974 Information on Onondaga material, courtesy James Bradley.
- Pratt, P.  
1972 Personal Communication 11/29/72 with revision of Oneida dated 3/15/69.
- Schmahl, G.  
1972 Personal Communications and extracts from author's unpublished mss dated 1963.

- Schoone, F. A. M.  
 1975 Letter from Keeper of the Records, Gemeente Rotterdam Archiefdienst, 1975/ W.111/N dated 25 March 1975.
- Staten Island Historical Society  
 1974 Letters and pipe information from Robert J. Anderson, Staff Archaeologist, dated 2/4/74
- Stillman, J.  
 1975 Various letters and generous use of his Oneida material.
- Swart, J.  
 1972 Personal communications March 19, 1972 and use of the Gandagaro Mohawk material.
- Van der Want, D.  
 1973 Firma P. J. Van Der Want AZN, personal communications dated June 6, 1973 and generous gifts of the Laansma lists and photographs of the pipemarks on the Gouda pipemakers guildboard.
- Wemple, H.  
 1971 Personal communications and pipe information supplied 2/25/71.
- Wray, C.  
 1975 Personal Communications dated May 1, 1975; information supplied on the Seneca pipes.

NEW EVIDENCE OF THE FROST ISLAND PHASE  
 IN THE LOWER GENESEE VALLEY

Neal L. Trubowitz

SUNY at Buffalo

Pandora E. Snethkamp

SUNY at Binghamton

Investigation of the Genesee Expressway corridor and rights-of-way during the summers of 1973 and 1974 by the State University of New York at Buffalo Archaeological Survey extended the spatial boundaries of the Frost Island phase into the lower Genesee Valley, New York. Earlier documentation (Parker 1922; Ritchie 1965; Hamell 1969) gave only scattered evidence of the phase in this region. The recent data, in conjunction with previously reported sites, indicate that the Frost Island phase has not been well documented in the valley due to a lack of systematic investigation rather than its absence or scarcity.

Before proceeding further, the terminology used here must be defined. New York State investigators have generally followed Ritchie's scheme of Frost Island as a phase within the Susquehanna tradition (Ritchie 1965). Data gathered in the Delaware Valley have been described as the Susquehanna phase within the Broadspear tradition by Kinsey (1972). The Frost Island phase and the Susquehanna phase are different names for the same archaeological unit possessing traits sufficiently characteristic within a limited spatial and temporal distribution to distinguish it from all other units. The primary identifying trait of this archaeological unit is the Susquehanna Broadspear projectile point (Witthoft 1953; Ritchie 1961). Soapstone (steatite) vessels and early ceramic types (Vnette 1 and Marcey Creek Plain) are also included by different authors as unit markers. Ritchie's New York State terminology is used here rather than Kinsey's, both of which have generally replaced Witthoft's term, the Susquehanna Soapstone Culture.

The Genesee River Valley basin lies in the eastern portion of the Great Lakes Region of North America. The basin is roughly elliptical in shape, with a north-south major axis of approximately 100 mi. and a maximum width of about 40 mi. The basin is bordered on the west by the Lake Erie and Niagara River basins, on the south by the Allegheny and Susquehanna River basins, and on the east by the Oswego River basin. The Genesee River rises in the Allegheny Plateau a few miles south of the New York-Pennsylvania border and descends to Lake Ontario over 157 mi. away, draining an area of 2,479 sq. mi. (Engineers 1969).

The portion of the Genesee Valley crossed by the proposed Genesee Expressway runs from the village of Dansville at its southern limit, to the outskirts of the city of Rochester, a linear distance of 49 mi. This path corresponds to the lower half of the Genesee Valley, which crosses the Erie, Huron and Ontario Lake Plains. Moving south to north, the highway corridor passes through the subdrainages of Canaseraga Creek, the Genesee River at Geneseo, Conesus Lake, Honeoye Creek, and the Genesee River at Rochester. These are the subdrainages of the main valley in which Frost Island phase sites have been reported as a result of highway investigations.

The sites are found on three kinds of landforms in the valley: the floodplain, the terraces above the floodplain, and the glacial uplands (see Table 1). The glacial uplands consist of hummocky and rolling morainic topography and drumlin fields. At present there has not been sufficient investigation to determine whether the four upland Frost Island phase sites (UB 368, Rush 5; UB 1193, Sinclair 3; UB 1194, W. Kingston; UB 1351, Halpin) are merely stray finds indicative of dispersed hunting patterns or a type of limited activity area. (The UB designation refers to the site number file maintained at SUNY at Buffalo.) At Sinclair 3, Douglas Sinclair found two Susquehanna Broad points near a spring on his property .9 mi. west of Conesus Lake. Sinclair's collection from the site also includes Archaic and Woodland material, and it is likely that the spring was a factor in attracting prehistoric peoples to the spot.

The terraces above the floodplain are glacial lake deposits, which rise 20 to 50 ft. above the floodplain. The sites on these terraces include UB 1203, R. Wadsworth 1; UB 1204, R. Wadsworth 2; UB 1219, Wadsworth Pasture; and the Macauley Complex (represented by UB 1088 on Plate 1 and in Table 1). The Macauley Complex is under investigation by Wendell Rhodes, Department of Anthropology, State University College at Geneseo, and will be reported on in detail elsewhere. It consists of ten terrace sites, three of which (#6, #8, #9) have yielded Frost Island phase material. The other three sites were reported during highway survey in 1973 by SUNY at Buffalo from these sites is pictured in Plate 2. The Milton Thompson family of Warsaw, New York, has collections from the R. Wadsworth 1 and R. Wadsworth 2 sites, including 20 Susquehanna Broad points and some soapstone. Winfield Gardner of East Groveland, New York, has Susquehanna Broad points from the Wadsworth Pasture site. All of the terrace sites contain components from other periods of occupation.

The Claud 1 site (UB 1205) was located during highway survey in 1973 and currently represents the second reported floodplain Frost Island phase site in the lower Genesee Valley. The first reported site, Cda 20-4, was published in the *NYSAA Bulletin* (Hammell 1969:16-17) and is not covered here. The area containing the Claud 1 site was part of the Canaseraga swamp until the early 20th century, when it was drained by a private investor. Portions of the swamp still exist in the lowest lying areas of the floodplain near the site, and a series of intermittent seasonal streams on the east and northeast of the site flow into swampy areas. The land presently

Table 1. Frost Island Phase Site in the Lower Genesee Valley

Site	UB #	Diagnostic Material		Landform	Elevation Above Sea Level (feet)
		Soapstone	Susquehanna Broad Points		
Cda 20-4		X	X	Floodplain	550-570
Claud 1	1205	X	X	Floodplain	ca. 565
Macauley Complex	1088	X	X	Terrace	600-610
R. Wadsworth 1	1203		X	Terrace	580-600
R. Wadsworth 2	1204	X	X	Terrace	580-600
Wadsworth Pasture	1219		X	Terrace	570-600
Halpin	1351		X	Glacial Upland	550-555
Rush 5	368		X	Glacial Upland	ca. 630
W. Kingston	1194		X	Glacial Upland	870-880
Sinclair 3	1193		X	Glacial Upland	1040

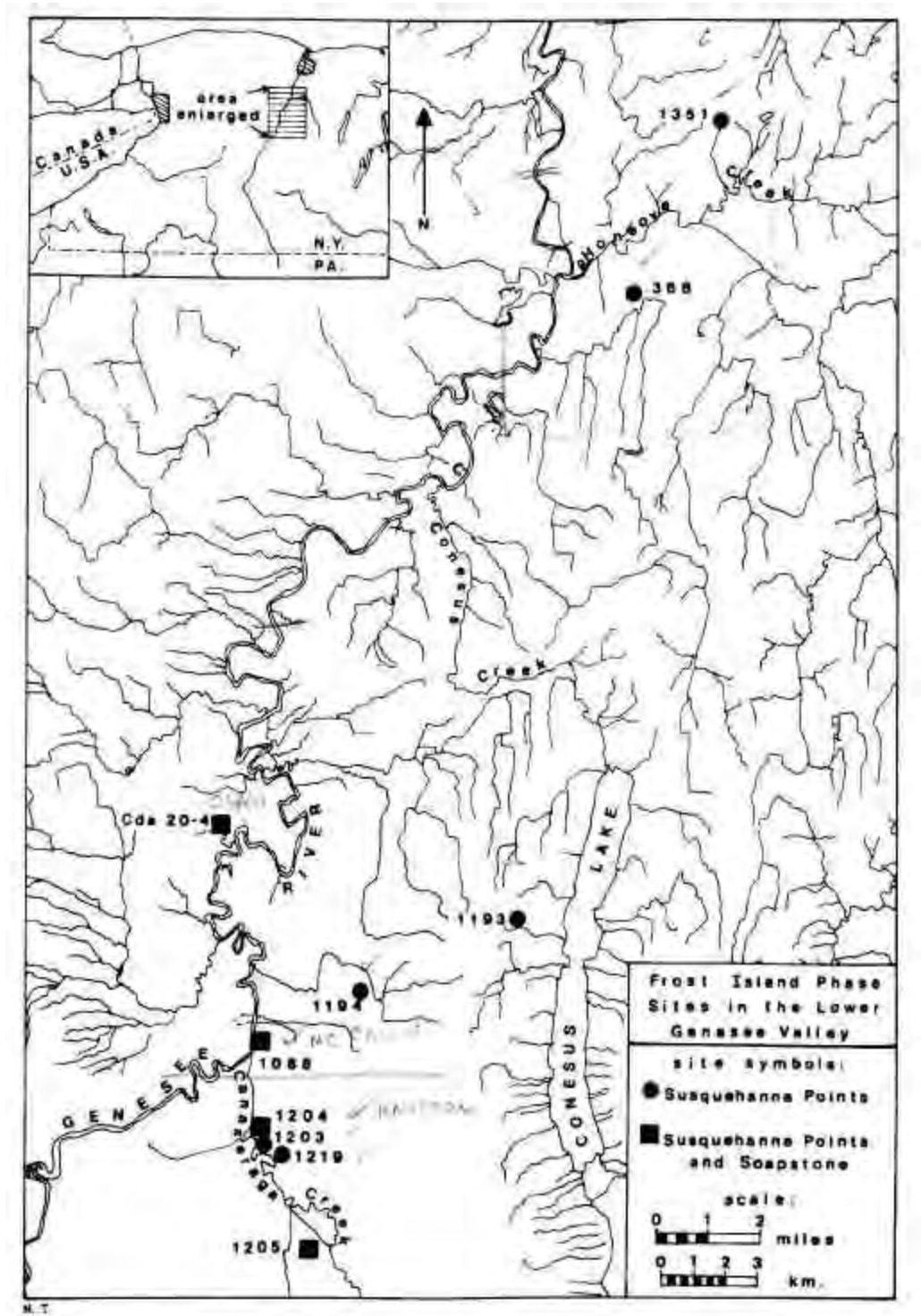


PLATE 1. Site Location Map.

under cultivation contains remnants of these streams in the form of low-lying depressions which fill with water during the spring thaw. The site sits on a slight knoll rising 2 to 3 ft. above the surrounding uncleared portions of the floodplain. Continual plowing has disturbed the higher sections of the site and obscured the original topography. The site's limits are approximately



250 ft. by 400 ft. as defined by surface scatter. Three surface collections have been made since the site was discovered, recovering 422 (summer 1973), 22 (spring 1974, no debitage collected), and 320 (summer 1974) items, mostly chippage. The exact provenience of all collected material was recorded to within 1 ft.

Limited testing has been undertaken on Claud 1 including three 5 ft. x 5 ft. squares and two 10 ft. x 10 ft. squares, each to a depth of 3 ft. below the surface, except for one 10 ft x 10 ft., half of which was excavated to 5 ft. below the surface). After the plow zone had been removed, excavation units were taken down in .3 ft. levels by shovel skimming, in the absence of clear natural stratigraphy. All dirt was sifted through 3/8 in. mesh. Though outlines were difficult to distinguish, 5 features were recorded and the soil from these features was floated (through 40 mesh screen) rather than sifted.

The 1974 10 ft. x 10 ft. excavation was placed in an area that had a heavy surface concentration of gray Onondaga flint. In this unit 4 features (one of which contained many hickory nut fragments, genus *Carya*) were located at the base of the plow zone. Their upper portions had been destroyed by plowing. These features, and scattered charcoal flecks, flint chips, and nutshell fragments in the surrounding undisturbed soil matrix, indicate that the Frost Island phase component is partially intact at the depth of 1.1 ft. below the surface.

Two possible Lamoka components were discovered in 1973 at depths of 1.4 and 2.3 ft. below the surface, but there is no clear stratigraphical separation and the distinction is made on the basis of depth alone. The markers for these components are 2 projectile points stylistically similar to the Michigan Dustin point, which were found *in situ* below the Frost Island component. The fifth feature, considered part of the shallower Lamoka component, was partially delimited by one of the 5 ft. x 5 ft. units at a depth of 1.43 ft. below the surface. Flotation remains from the excavated portion of this feature yielded the following identifiable genera of plants: *Carya* (hickory nut), *Galium* (bedstraw), *Polygonum hypericum* (Saint Johnswort), and *Chenopodium*. Analysis of the other flotation remains is not complete at this time. Interpretation of the Lamoka components is complicated by the recovery of at least four Lamoka points on the surface.

Ground stone artifacts include 3 manos, 10 pestles or abraders, 4 anvil stones, 25 pitted stones with from one to four indentations, and 16 other ground stone tool fragments. Some of these are shown in Plate 5. Thirty-five bifaces of gray Onondaga flint cannot presently be assigned to a particular component. One untyped body sherd was recovered from the plow zone of the 1974 10 ft. x 10 ft. square. It is 1.12 cm thick, smooth surfaced, and grit tempered. Also excavated in association with the Frost Island phase floor were two stylistically similar corner-notched projectile point bases. An unidentified side-notched projectile point fragment of non-local flint and a Madison point were found on the surface.

Analysis of the data is still in progress, but based on work completed it is clear that the Claud 1 site will be difficult to interpret. The Claud 1 Frost Island component seems to represent a seasonal camp with limited knapping activity. The recovery of hickory nutshell fragments and the ground stone tools indicate one food resource. Presently many hickory trees are in the vicinity of the site even though the area has been lumbered over.

The recovery of artifacts in the Genesee Valley made from alien materials (rhyolite and soapstone) indicates trade networks and/or movements of groups. Possible routes for this material from sources in Pennsylvania are through the Cohocton and Canisteo River Valleys to the southeast. Sneathkamp has viewed collections from both valleys, which contain Frost Island phase materials. One of these collections that of Mr. Robert Lawrence, is from a multicomponent site (Archaic and Transitional) near Wayland, New York, some 20 mi. southeast of Claud 1 at the head of the Cohocton drainage. The Lawrence site (UB 551) Frost Island phase component consists of rhyolite and gray Onondaga flint Susquehanna Broad points, and ovate knives and drills

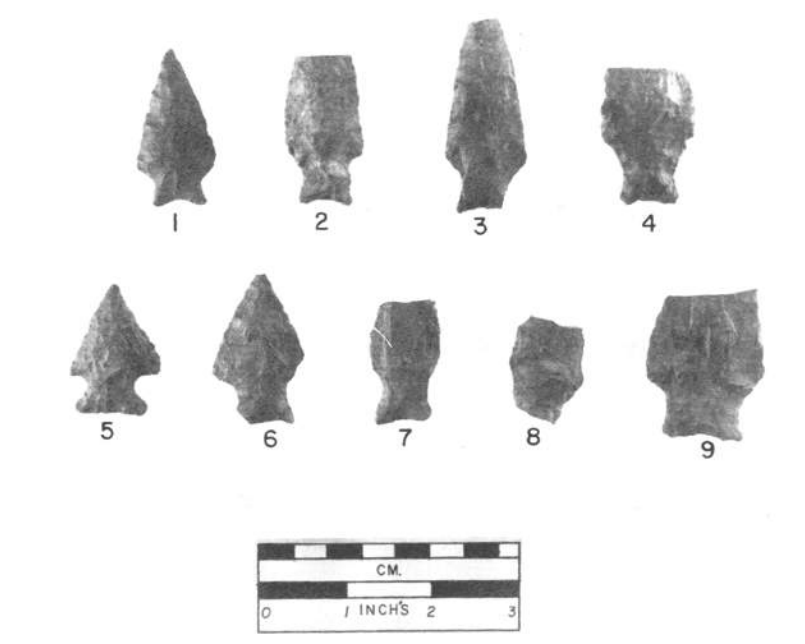


PLATE 2. Artifacts from Several Frost Island Phase Sites. All figures are Susquehanna Broad projectile point variants except Fig. 8, which is the base of a knife or a biface blank. Sites: Fig. 1, Rush 5 (UB 368); Fig. 2, Halpin (UB 1351); Fig. 3, W. Kingston (UB 1194); Fig. 4, Wadsworth Pasture (UB 1219); Figs. 5-8, R. Wadsworth 1 (UB 1203); Fig. 9, R. Wadsworth 2 (UB 1204). Materials: Fig. 1, brown Onondaga flint; Figs. 2-9, gray Onondaga flint.

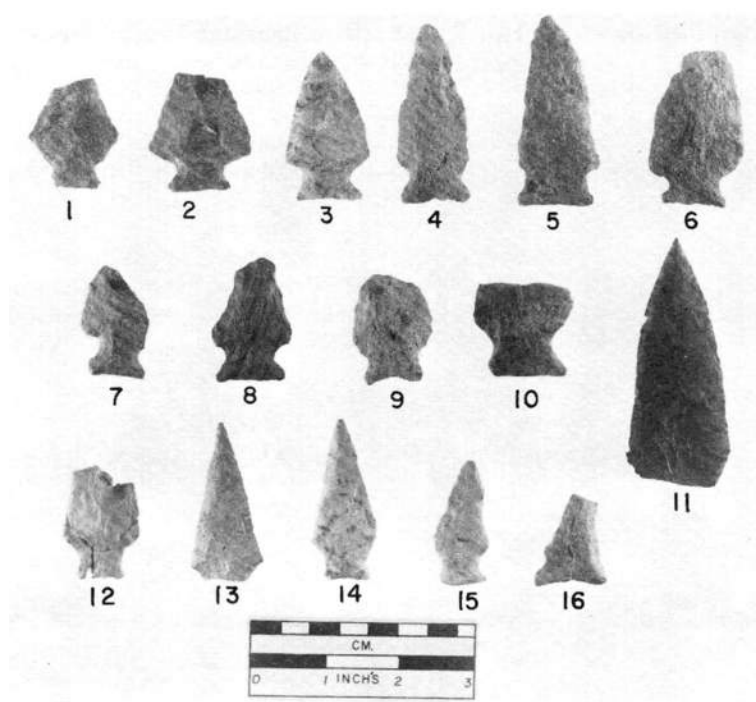


PLATE 3. Frost Island Phase Material from the Claud 1 Site (UB 1205). Figs. 1-10, 12-15, Susquehanna Broad projectile points; Fig. 11, pentagonal knife (broken); Fig. 16, drill. Materials: Figs. 1-10, 15-16, rhyolite; Fig. 11, brown Onondaga flint; Figs. 12-13, Patinated Onondaga flint; Fig. 14, white Onondaga flint.

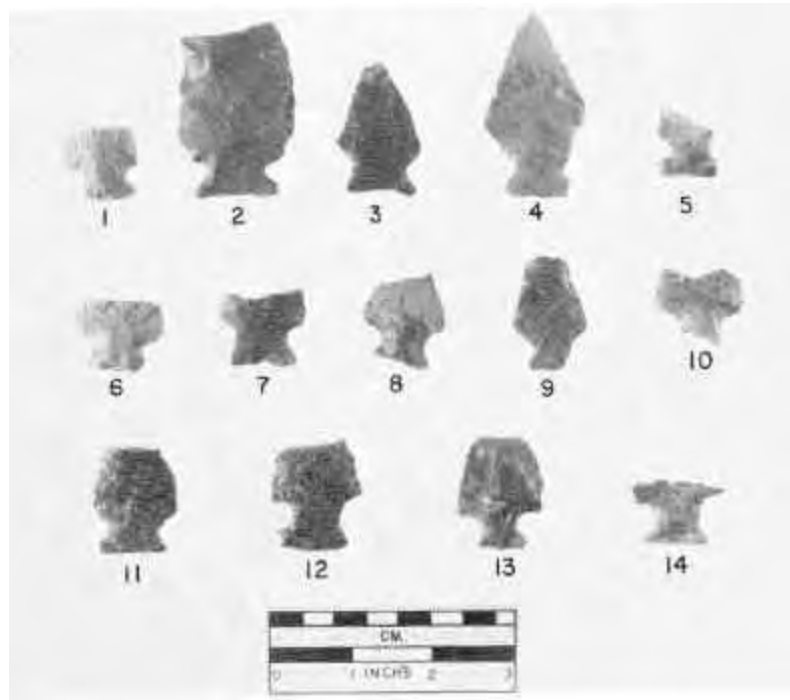


PLATE 4. Susquehanna Broad Points from the Claud 1 Site (UB 1205). Note wide variation in proportion, especially Figs. 12-14. Figure 13 may be a Perkiomen point. Material: Fig. 1, rhyolite; Figs. 2-4, brown Onondaga flint; Fig. 5, white Onondaga flint; Figs. 6-14, gray Onondaga flint.

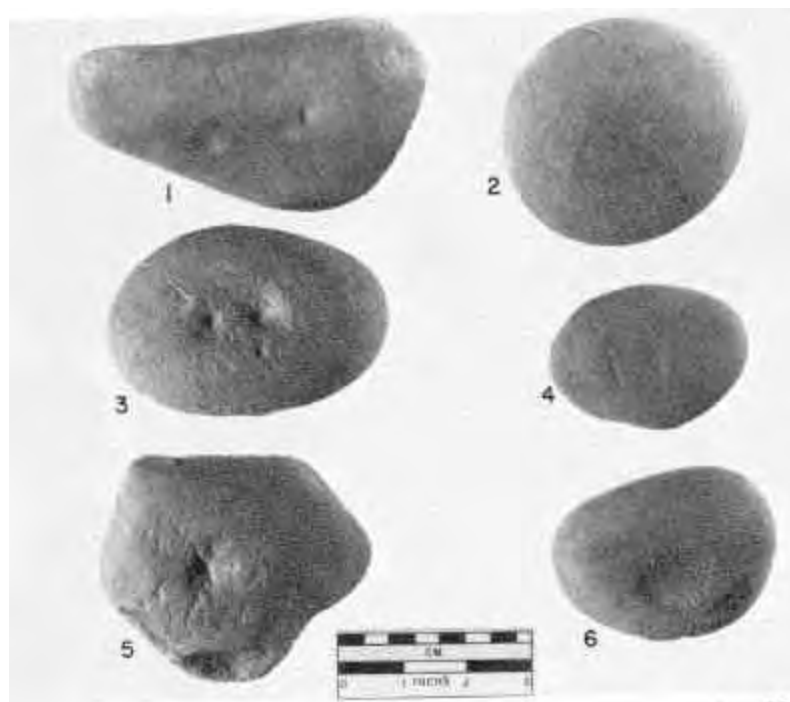


PLATE 5. Representative Ground Stone Artifacts from the Claud 1 Site (UB 1205). Figs. 1, 3-6, pitted stones; Fig. 2, mano. Note plow scars on Figures 2-5.

made from the brown Onondaga flint which is also found on Claud 1. Frost Island phase material is also found in the upper Genesee Valley; Trubowitz has recorded the collection of Robert Graham, which contains many Susquehanna Broad points from his floodplain property on the Genesee River near Portageville, New York.

Since Witthoft's definition of the Transitional period, there has been much discussion concerning whether its archaeological assemblages represent an adaptation to the environment sufficiently distinct to separate it from Archaic and Woodland period adaptations. The distinctions have been drawn on the basis of variations in artifact assemblages rather than environmental location of sites. The locations of the sites in the lower Genesee region fit those described as typical of the Frost Island phase (Witthoft 1953; Ritchie 1965), none of them being more than a mile from the main river (the Genesee), its larger tributaries (Honeoye Creek, Canaseraga Creek, etc.), or large bodies of water (Conesus Lake). These environmental locations are not significantly different from Archaic or Woodland sites in the valley. The relationship of different artifact assemblages and settlement systems to the environment will have to be studied if answers are to be found for "Transitional" questions.

The sites discussed here do not represent the results of a systematic survey specifically aimed at locating Frost Island phase sites; they were located or reported during survey of the Genesee Expressway corridor. More material and sites are certain to be represented in numerous private collections which have not been examined by the authors. This article is not intended as an exhaustive study; its purpose, rather, is to call attention to the existence of Frost Island phase material in the lower Genesee Valley which indicates a more extensive occupation of the area by the peoples of this phase than has been assumed in the past.

#### Acknowledgements

The authors wish to thank all those whose cooperation has resulted in this article. This includes many property owners; tenants; collectors; SUNY at Buffalo crew chiefs and field assistants; the Rochester Museum and Science Center; and the Department of Anthropology, State University College at Geneseo. Special thanks go to William P. Wadsworth, owner, and the Claud Brothers and Henry Everman, tenants, for allowing SUNY at Buffalo to continue its investigations of the Claud 1 site.

Gordon Schmahl, Technical Specialist, Department of Anthropology, SUNY at Buffalo, photographed the plates. Roger Moeller, Department of Sociology-Anthropology, Dickinson College, Carlisle, Pennsylvania, identified the flotation remains reported for Claud 1.

Funding for the Genesee Expressway Archaeological Preservation Program is provided by the Federal Highway Administration and the New York State Museum and Science Service, State Education Department, in proportion to Federal-State support of the highway. In addition, the Undergraduate Research Council of SUNY at Buffalo provided a grant of \$250 for Snethkamp's analysis (Snethkamp n.d.) of the 1973 Claud 1 material independently of the Preservation Program.

#### References

- Engineers, U.S. Army, Corps of, Buffalo District  
 1969 Genesee River Basin Survey Summary Report. Department of the Army.
- Hamell, George R.  
 1969 A Frost Island Phase Campsite in the Genesee Valley. *The Bulletin*, New York State Archeological Association, No. 49, pp. 16-17. Ann Arbor, Michigan.
- Kinsey, W. Fred III  
 1972 Archaeology in the Upper Delaware Valley. A Study of the Tocks Island Reservoir, Anthropological Series No. 2. The Pennsylvania Historical and Museum Commission. Harrisburg, Pennsylvania.

- Kraft, Herbert C.  
 1970 The Miller Field Site in New Jersey and its Influence Upon the Terminal Archaic and Transitional Stages in New York State and Long Island. *The Bulletin*, New York State Archeological Association, No. 48, pp. 1-13. Ann Arbor, Michigan.
- Parker, Arthur C.  
 1922 *The Archaeological History of New York State: Part Two*. New York State Museum Bulletin Nos. 237, 238. Albany, New York.
- Snethkamp, Pandora E.  
 n.d. The Claud 1 Site: A Stratified Susquehanna- Lamoka Component in the Genesee Valley.
- Ritchie, William A.  
 1961 *A Typology and Nomenclature for New York Projectile Points*. New York State Museum and Science Service, Bulletin No. 384.  
 1965 *The Archaeology of New York State*. The Natural History Press. Garden City, New York.
- Witthoft, John  
 1953 Broad Spearpoints and the Transitional Period Cultures in Pennsylvania. *Pennsylvania Archaeologist*, Vol. 23, No. 1, pp. 4-31. Milton, Pennsylvania.

#### THE OAK ORCHARD WATERSHED ARCHAEOLOGICAL SURVEY

Pandora E. Snethkamp  
 Sydne B. Marshall

SUNY Binghamton  
 Columbia University

The Oak Orchard Watershed Archaeological Survey, financed by the Department of Agriculture, Soil Conservation Division, was conducted in preparation for the Environmental Impact Statement being prepared for the Oak Orchard Watershed Project, Public Law 566. This survey was made possible by the continuing efforts of the New York Archaeological Council to encourage and promote examination of prehistoric and historic remains threatened by destruction.

In May 1974, monies were appropriated by the Department of Agriculture for an archaeological survey of the Oak Orchard Watershed Project area. During the last two weeks of May 1974, a crew of three to four individuals, professional and amateur, experienced in archaeological survey methods in western New York, surveyed portions of the Elba Muck and surrounding environs. The purpose was to determine what impact the proposed Oak Orchard Watershed Project would have on the archaeological remains in the area.

The project area encompassed the area known today as the Elba and Manning Mucks. Figure 1 illustrates the original extent of the Oak Orchard Swamp before it was drained for cultivation during the early 1900's.

The area to be surveyed by the SUNY crew was defined by maps of the Oak Orchard Watershed Project as provided by the Soil Conservation Department. In addition, portions of the surrounding knolls and slopes adjacent to the drainage channels that were to be affected by the project were surveyed. The channel network affected by the project amounted to approximately 80 mi. of channels, or a total of 160 mi., if both sides of the channels are considered. Of this, approximately 25 mi. (14%) of land adjacent to the channels as well as 175 a. of land immediately adjacent to the Muck were surveyed.

The Oak Orchard Watershed Survey posed unique problems with regard to applying systematized survey methods and in choosing an adequate sample which would predict the effect that the Watershed Project would have on the archaeological resources of the area. It was necessary to survey areas directly adjacent to the project area in order to confirm the existence of archaeological sites in the area and their relationship to the project area.

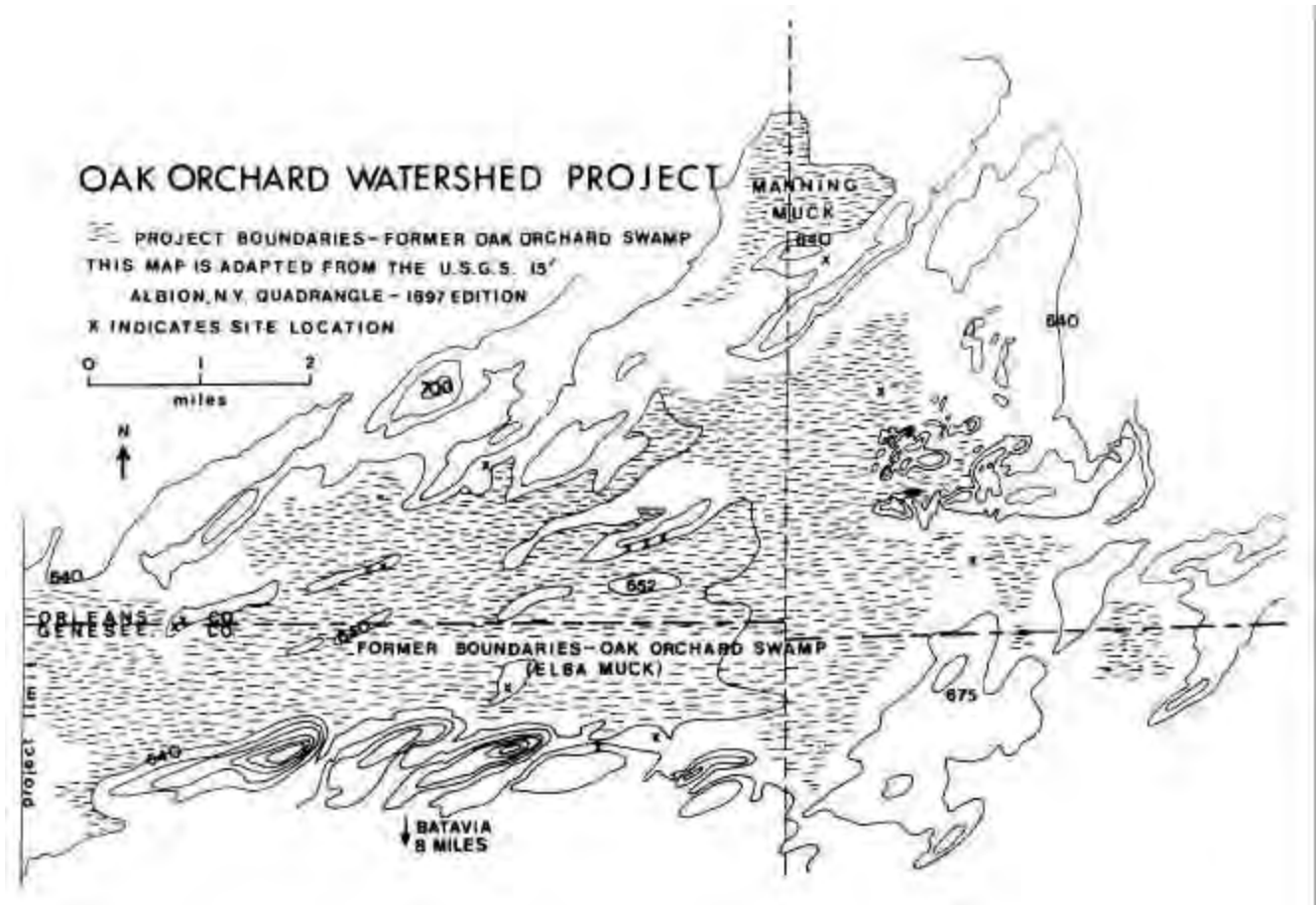


Fig. 1. Oak Orchard Swamp before it was drained for cultivation about 1900-1905.

The survey strategy was divided into three major phases.

1. The first three days were spent surveying the areas directly adjacent (0 to 25 ft.) to channels that would be affected by the project. The first day included checking channel profiles every 1,000 ft. for evidence of any buried occupations. During this period one stray Meadow wood point base (Muck site) was located within 15 ft. of a channel.

2. The following hypothesis was then tested. Based on the USGS fifteen minute, 1897 series, quadrangle map (Figure 1) it was found that the area surveyed the previous three days was originally part of the Oak Orchard Swamp. If the 1897 series map was indicative of the topography as it existed prehistorically, evidence of aboriginal occupation would be expected on the knolls and surrounding slopes of the Elba and Manning Mucks. Three of the knolls that existed on the 1897 series map were checked for evidence of aboriginal occupation during the next three days. A total of six sites was located on the three knolls that were checked. All of the areas surveyed were within 1,000 ft. of a channel and corresponded to an elevation line on the USGS topographic maps of greater than 335 ft. The sites ranged from flake scatter areas to flake and tool concentration areas, representing limited activity sites. The surface collections from these sites did not include any diagnostic artifacts, e.g. projectile points, that would have indicated the cultural affiliation of the sites. These sites should be periodically resurveyed in search of diagnostic artifacts.

3. The last three days were spent checking various plowed fields on the slopes adjacent to the channels on the periphery of the Elba Muck. This included at least two plowed fields on the north, east, and south sides. Plowed fields were chosen on both the knolls and slopes because they represent the optimal conditions under which archaeological sites can be located.

The 175 a. surveyed on the knolls and slopes were covered in the following manner: the crew members lined up approximately 20 to 30 ft. apart and walked a transect across the field; the process was repeated until the entire field was surveyed; if any artifacts were located, the area was intensively surveyed to define the limits of the site and surface collect it. During this period six sites were located on the slopes. These were primarily flake scatter and flake concentration areas.

The discovery of 14 new sites, previously unrecorded, suggests the exploitation of the area by aboriginal populations whose settlement systems involved seasonal occupation by relatively small groups. The sites yield evidence of limited activity and seasonal procurement areas (site list), probably representing segments of a seasonal round of sites utilized by small

Site	Topographic Location	Nature of Site
Butcher	Slope	Flake Scatter Area
Dash I	Knoll	Flake Scatter Area
Dash II	Knoll	Flake and Tool Concentration Area
Dash III	Knoll	Flake Concentration Area
W. J. Davis	Slope	Flake Concentration Area
Delano-Steele	Slope	Flake Scatter Area
Gavenda	Slope	Flake Scatter Area
Markey I	Knoll	Flake and Tool Concentration Area
Markey II	Knoll	Flake and Tool Concentration Area
Muck	Muck	Stray Find Area
Oak Orchard	Knoll	Flake Scatter Area
Peglow	-----	Private Collection
Watson I	Slope	Flake Scatter Area
Watson II	Slope	Flake Scatter Area

nomadic groups. In the Oak Orchard Swamp a wide variety of migratory birds and waterfowl, as well as fish and land animal resources, was likely the focus of procurement activities and thus the prime attraction for occupation of the area.

Occupation was substantiated by the presence of some core and flake tools, unifacial tools and lithic debitage, i.e. waste flakes indicative of various stages of lithic tool manufacture activities. The stone used for manufacturing was local Onondaga flint. While glacially deposited nodules of the Onondaga flint material are not present in the surveyed area, a large quarry site in the vicinity of Indian Falls may well have served as the source for the materials used in the Oak Orchard Swamp.

It is not presently possible to state specific cultural affiliations for these sites. The absence of pottery from the collections indicate that these could represent Archaic-related sites, preceramic manifestations of peoples following a hunting and gathering pattern.

Intra-site relationships are difficult to define at this early stage of analysis. On the basis of the surface collections, it is possible to distinguish relative differences in the densities and variability of cultural material found at each site. It is this evidence which serves as an indicator of three types of sites which categorize the Oak Orchard archaeological finds. The 14 sites fall into very preliminary categories (Fig. 2); 1. "flake scatter area,,", widely dispersed scatter of cultural material within the area of a plowed field, or unit being surveyed; 2. "flake concentration area", denser distribution of flakes and cultural material within a relatively discrete area; 3. "flake and tool concentration", a relatively dense distribution of flakes with the presence of bifaces, cores and possible tools within a relatively discrete area. The one exception is the Muck site (Figure 4), represented by a single projectile point fragment, here considered to be a stray artifact in an area previously inundated by water in the former swamp environment.

Collections from the 14 sites located by the archaeological survey reflect a range of lithic manufacturing processes. Speculated interrelationships between the sites must be made based on the flaking debris characteristics of the collections. Of particular interest are the apparent relationships that exist among the Markey sites and among the Dash sites. The Markey sites, located only 1,000 ft. apart, yield similar artifact assemblage inventories. Particularly dis

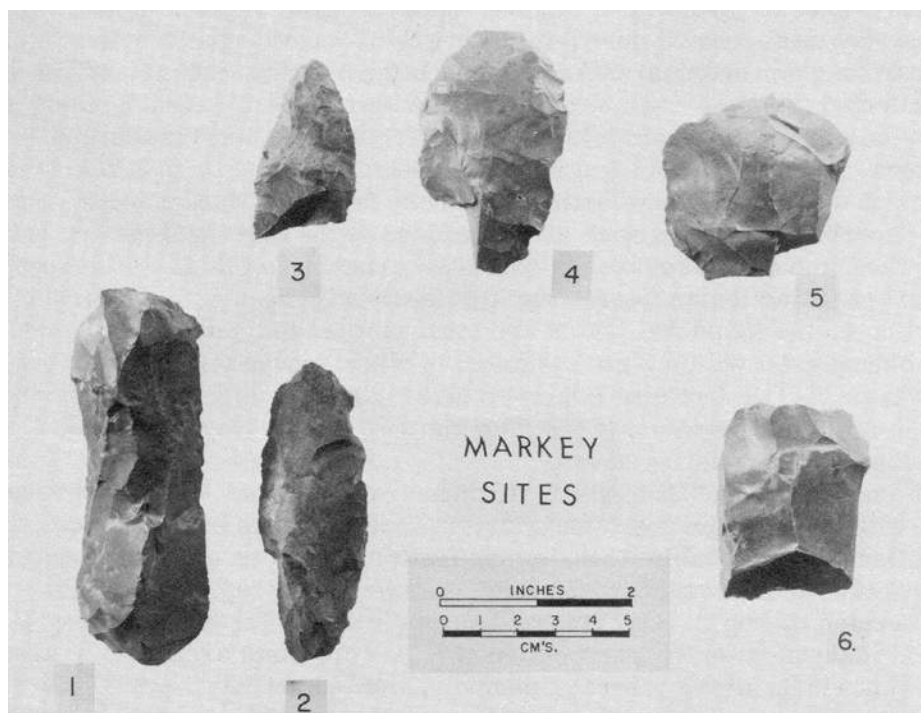


Fig. 2. Markey Sites; 1-2, Unifacially retouched blades; 3-5, bifaces; 6, utilized core.

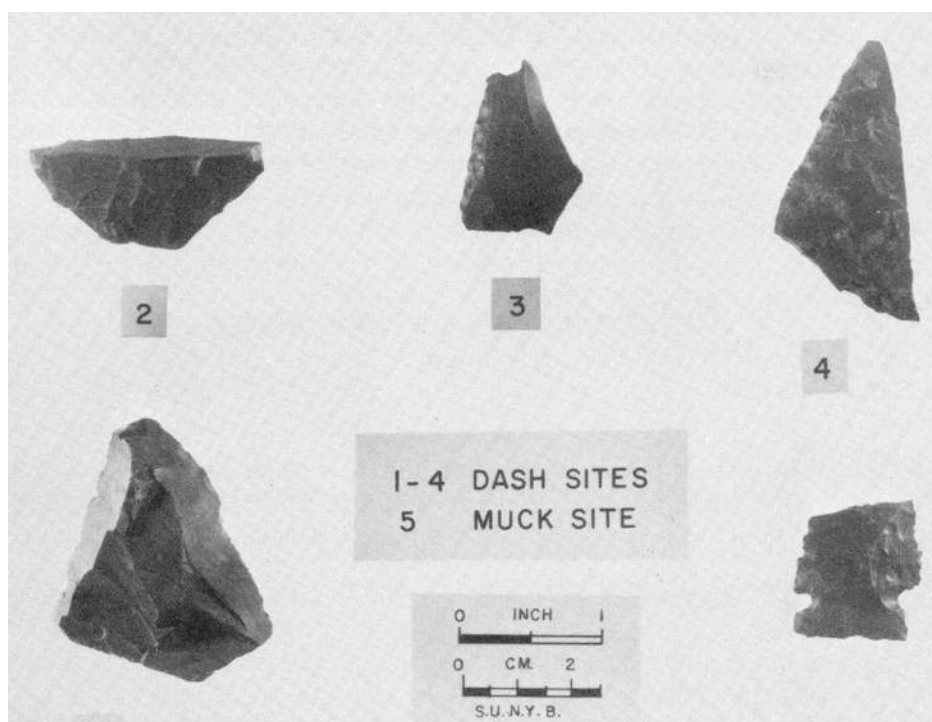


Fig. 3. Dash Sites and Muck Site; 1, scraper; 2-4, biface fragments; 5, Meadowood point base.



tinctive are the presence of a variety of bifacial, unifacial and core tool types (Figure 2). These two sites are the only sites located during the survey that have large decortication flakes in addition to the hard and soft hammer flakes representing bifacial thinning and retouch activities. The material collected from the Dash sites, located within 3,000 ft. of each other, as well as stray flakes located across the Dash field, are similar to each other but distinctive from the Markey collections. The bifacial tool fragments collected from the Dash 2 site have much finer retouch and bifacial thinning characteristics than those from the Markey sites. (Figure 3). Core tools and large decortication flakes such as those found at the Markey sites are not found at the Dash sites. The Dash site assemblages consisted primarily of bifacial thinning and retouch flakes. This brings to attention an interesting hypothesis with regard to the former Oak Orchard Swamp. While sites on the individual knolls are most similar to those on the same knoll, totally different assemblages exist within 2 mi. distance, in other occupation areas. It is necessary to check other knolls in the Oak Orchard Swamp to test further the strength of this observation. At the time of the initial survey, such a test was not possible due to obliteration of the ground surface in many areas by vegetative cover.

It should be noted that no "flake and tool concentration" areas were discovered on the slopes, whereas sites of all types were found on the knolls. A possible exception is the material in the Peglow collection, a probable Archaic manifestation from an area adjacent to the Manning Muck. The site was not surveyed by the SUNY group due to crop cover.

The sites located during the Oak Orchard survey confirm the exploitation of the swamplands by prehistoric peoples. In the perspective of New York State archaeology, these sites contribute to the knowledge of the nature of periodic, limited activity sites within a seasonally rich resource area.

The authors would like to thank Mr. Bernard Ellis, Senior Staff Geologist, Syracuse, N.Y. and Mr. Bill Ellis, Batavia, N.Y., both of the Department of Agriculture, Soil Conservation Department, for their valuable assistance and cooperation during the execution of the project. In addition we would like to thank Mr. J. Mortellaro and Mr. Peglow for their assistance during the actual fieldwork. Thanks are due to the numerous land owners who granted us access to their land. We would also like to thank Dr. Marian E. White, Russell G. Handsman, and Neal L. Trubowitz, for their assistance. The Department of Anthropology, SUNY Buffalo, served as headquarters for the project. Their technical specialist, Gordon J. Schmahl provided the photographs. Our appreciation is also extended to other members of the crew, David Noll, Gail McGloin, and Sharon Wirt. We would especially like to thank the Department of Agriculture, Soil Conservation Department for granting funds in support of this project.

#### THE WOELLER SITE (MDA 8-4)

Stanley Vanderlaan NYSAAF

Morgan Chapter

In 1958, while investigating the possibility of Indian occupation on a small knoll near Oakfield, Genesee County, New York, the writer recovered a flint scraper and several flint chips. The major portion of the knoll was covered with a thick crop of alfalfa which concealed the extent of the site.

In the spring of 1961, after weather conditions had caused the alfalfa to die out in many places, we found pot sherds, bone fragments, and flint chips over an area of about 5 acres. In some places woodchucks had dug out pottery, flint chips and charcoal, indicating pit locations. While requesting permission to investigate further on the site the landowner, Mr. Roy Woeller, told us that an old gentleman once told him that there had been an Indian village there and he remembered seeing remains of earthworks. Because of many years of cultivation no trace of earthworks now exists.

The site is located on a slight northeast slope with approximately 60 ft. higher ground about .25 mi. to the south and west. A spring, flowing year around, still exists on the northeast corner of the site and flows into the Oak Orchard swamp a mile to the north. Oak Orchard Creek drains this swamp and eventually flows into Lake Ontario some 20 mi. to the north. The well known Oakfield Fort lies slightly over a mile to the south and the Ganshaw Site .75 mi. to the northwest. The Woeller Site lies at an elevation of 710 to 720 ft. above mean sea level, the same as the Ganshaw Site but about 50 ft. lower than the Oakfield Fort. Tonawanda Creek flows east to west 5.5 mi. to the south. About 2 mi. to the south is the continuation of the Onondaga escarpment where flint quarrying by Indians is evident. The well known Spirit Lake flint mines lie 6 mi. to the southwest. It is likely that the Woeller Site was part of a "town" visited by the Rev. Samuel Kirkland in 1788. Six miles west of Batavia "he rode to the open fields and arrived at a place called by the Senecas Tegatainedaghque (Tegataineaaghgwe, Beauchamp 1907:83), which imports a doubly fortified town or a town with a fort at each end . . . distant about 2 miles (Parker 1922:561)." It is possible that the presence of 3 large sites: Ganshaw, Woeller and the Oakfield Fort, and 2 smaller ones, NOK and WOK, may have appeared to be one large "town", as they are all within a 2 mi. distance.

The entire site has been plowed scores of times in the years past creating a problem in that about 10 in. of soil had to be removed in order to find in situ evidence of occupation. When the site was plowed, several darkened areas stood out clearly from the normal soil coloring. Since these darker spots were not in low areas, which would suggest refuse dumps, they probably were long house or lodge sites. Because of erosion and deeper plowing with modern farming equipment, pits were plowed into and turned to the surface. It was by looking immediately after plowing that we were able to locate many pits which we later excavated. Most of the pits were inside the darkened areas, but some were outside.

Since the previously mentioned alfalfa was to be plowed under shortly, Mr. Woeller gave us permission to excavate and some of the more promising areas were checked into. After the plow zone was removed, the sizes of the pits and fireplaces could be determined. Most of the smaller features were remains of fireplaces, but the larger ones appeared to be storage pits that, in most cases, had been turned into refuse pits. In all, 26 pits were excavated from 1961 through 1968 by the writer and his father, Jacob Vanderlaan. Most of these pits appeared to have been man-made, but some may have been natural depressions. All were saucer shaped except one which was bell shaped. As was the case at the Ganshaw Site, the Woeller pits were generally shallow compared to the many deep ones at the Oakfield Fort where usually sandy soil was encountered. The Woeller pits varied in depth to the maximum of 38 in. deep (pit 12) and varied in distance across to the largest of 8.5 ft. by 9 ft. (pit 1). While one was in fact a form of ditch it was designated pit 3. It was a man-made depression which varied in depth from 20 to 24 in. below the surface and was 44 to 47 in. wide which we followed for 27 ft. It curved slightly as we followed it. While its location with respect to the rest of the site is puzzling, it was probably part of the above mentioned ditch accompanying the earthworks for a palisade. It is possible that only a portion of the site was palisaded. The ditch was quite productive of artifacts. As Chart #1 shows, an average of nearly one bone awl was found per foot as we followed it. This chart reveals the contents of each pit and the total material recovered from pit excavation. To shorten the chart, only artifacts which occurred in 4 or more pits are listed. The lesser occurrences of artifacts are noted later in this report.

In addition to the material shown on Chart #1, we found in pit 3 (the ditch) a bone tube 2.25 in. long and .5 in. across, decorated by incising, 3 phalange bone cones or beads, 2 flakers, a bone scraper and a bone sinew rubber. A flint stemmed point was found in pit 9 and an un finished side notched point in pit 17. Two fire making flints (strike-a-lites) were found in pit 9 and one in pit 14. A round flat stone nearly 2 in. across and .25 in. thick with a small hole drilled from both sides through the center was also found in pit 9. Fresh water clam shells were in evidence in pit 22. A piece of iron pyrite was recovered from pit 12. Flint knives were found in pit 3, 12, and 22. Pit 10 produced 2 stone mortars and pits 11 and 12 one each. Pits 14, 21 and 22 each produced a stone roller pestle. Pit 12 was unusual in that, in addition to being a very

## THE WOELLER SITE — FREQUENCIES OF MATERIAL RECOVERED FROM PIT EXCAVATIONS\*

	Pit Nos.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL FROM PITS
FLINT CHIPS (in lbs.)		9	7	17	1½							2	5	½	3		1	4	½	1		1½	4	1	2	1	½	61½ lbs.
BONE (in cups)								1	1½		1	4				1	2		1½	1½			¼	4¼				18 cups
CHARCOAL (in cups)					½			1	½		1				1	1	½	1	1	1	½	¼	2	¼	6	½	¼	18¼ cups
POTTERY (in lbs.)		58	8	50	10	1½	1	3½	2	8	9	9	30	8	9	1	6	8	2½	4½	2	7	12	2½	57	2	1	312¼ lbs.
RIMS OF DIFFERENT VESSELS		41	16	55	7	5	1	3	8	16	17	21	32	3	10	4	6	18	3	8	7	5	17	4	31	4	3	345
ANVIL OR HAMMER- STONES		3	3	2					2	2	2	4	1		1			1	1	1	1	1	1	1	2			28
WHETSTONES		4	1	2							2				2										1			12
COMPLETE TRI- ANGLES		1		4	1						1		3		1							1			1	1		14
BROKEN TRIANGLES		1	2	1		1	1		2			2	1		1							1	1		1	1		16
UNFINISHED TRI- ANGLES		1	2			1							4					3						5	1			17
FLINT SCRAPERS		3	1		5																				3	1		13
WORKED FLINT PIECES		3	3	33	2		1	3	3	9	3	7			3	2	2	7			2	1	1	2	12	1		100
BONE AWLS		7		24				1	4				3				1	2		1	1			3				47
BONE BEADS		1														1					1			1	1			5
PIPE STEMS		2		3					1				1		2			1	1		1				1			13
PIPE BOWLS OR FRAGMENTS		5	2	7			1		1		1	3		1				2		1	1	1	1	1	1			28
BEAKERS REPRESENTED		1		3					1												1							6
WORKED SLATE OR SHALES				1				1		1														3				6
CELTS					2			1					1									1						5
CHARRED CORN									x	x	x				x						x	x		x	x	x	x	
CHARRED NUT SHELLS												x	x								x			x				

\*Material which occurred in three or less pits is not shown.

x Indicates presence

large pit, 38 in. deep and 7 ft. east-west by 9 ft. north-south, it contained about 2 bushels of fire cracked rocks. A decorated section of a rim of a pottery vessel, in pit 22, had been ground to make a round gaming device (?) 1 in. across. A fired mass of clay resembling a pipe bowl was found in pit 14. It appears to be a pipe in process which may have been broken or dropped before it was finished.

Some pot sherds (pits 3 and 13) show evidence of having been repaired by drilling small holes on opposite sides of cracks and drawing the crack together probably with sinew. This undoubtedly was done during the winter when it was nearly impossible to make new pottery vessels. As was the case at the Ganshaw Site and Oakfield Fort, some pot sherds from the Woeller Site (pit 1) show evidence of having been repaired by the addition of wet clay and being refired. This type of pot repair seems to be a rarity and to my knowledge occurs only in the Oakfield Phase.

Exterior bossing occurs at the Woeller Site (pit 17) as it does at Ganshaw and the Oakfield Fort. This was done by pressing a decorating implement into the inside of the unfired pot to cause a slight protrusion to appear on the exterior of the vessel. This type of decoration is rare in New York State, but occurs in Pennsylvania and is quite common on certain Glen Meyer sites in Ontario.

Rims of 345 different pottery vessels have been recovered from the Woeller Site. This is from a total of 312.5 lbs. of pot sherds. Following is a breakdown of the technique and designs found on the first 159 rims of different vessels recovered.

WOELLER SITE (MDA 8-4)

Technique of Decoration	Quantity of Rims	Additional Decoration						
		Top	Int.	Top & Int.	Rolled Collar	Short Collar	No Collar	Rims with Castellations
Punctuation	45 (28%)	7 (16%)	3* (7%)	7* (16%)	11 (24%)	15 (33%)	19 (42%)	6 (13%)
Undecorated	18 (11%)	4 (22%)			4 (22%)		14 (78%)	3 (17%)
Cord Wrapped Stick	28 (17%)	8* (29%)	1 (4%)	10 (36%)	6 (21%)	8 (29%)	14 (50%)	10 (36%)
Interrupted Linear	22 (14%)	1 (5%)	2 (9%)	1 (5%)	14 (64%)	8 (36%)		3 (14%)
Incised Oblique	6 (4%)	3* (50%)		1 (17%)	3 (50%)	2 (33%)	1 (17%)	2 (33%)
Ontario Horizontal	22 (14%)	1 (5%)	3 (14%)		14 (64%)	5 (23%)	3 (14%)	6 (27%)
Cord Roughened	17 (11%)	1* (6%)	1 (6%)	1 (6%)	2 (12%)	11 (65%)	4 (24%)	5 (29%)
Incised & Cord Wrapped Stick	1 (1%)			1 (100%)	1 (100%)			
	159	25 (16%)	10 (6%)	21 (13%)	55 (35%)	49 (30%)	55 (35%)	35 (22%)

(\*) One done by cord wrapped stick

35% of the rims have additional decoration other than the exterior decoration

A study of the clay pipe materials shows that only about 25% of them have a design or decoration on them. One has two incised horizontal lines around the rim, one is encircled by interrupted linear lines around the rim, and two are decorated by punctation.

Two complete beakers or toy pots were decorated, one by punctation forming 5 U-shaped designs, the other by vertical bands of dot punctation all around the sides alternating with vertical bands of dash punctation.

Surface collected flint artifacts from the Woeller Site are as follows: 112 scrapers; 83 unfinished triangular points; 39 broken tips; 30 broken triangular points; 17 complete triangular points (median size 22 by 37mm.); 9 "strike-a-lites" (tear drop shaped); 7 knife fragments; 3 broken & 2 complete side-notched points; 3 broken & 1 complete corner notched points; 2 pieces of Ohio Flint Ridge flint; 1 3 in. spearpoint; 1 stemmed point; 1 large thick blank or blade 2.75 in. long; 1 complete knife 2.75 in. long, and 108 worked pieces of flint.

The spearpoint and notched points may represent an older, small occupation of the site as these were all found on the surface near the spring.

Surface collected stone artifacts follow: 31 anvil and/or hammerstones; 3 whetstone sharpeners (sandstone); 1 roller pestle; 1 "greenstone" celt; 4 sandstone celts from 4 to 9 in. long.

Thanks to Mr. John Guilday of the Carnegie Museum for the following report on the bone material recovered from pits at the Woeller Site.

*Animal remains from the Woeller Site include: white-tail deer, elk, bear, raccoon, red fox, wolf, dog, fisher, pine marten, beaver, woodchuck, muskrat, chipmunk, red squirrel, gray squirrel and snowshoe hare.*

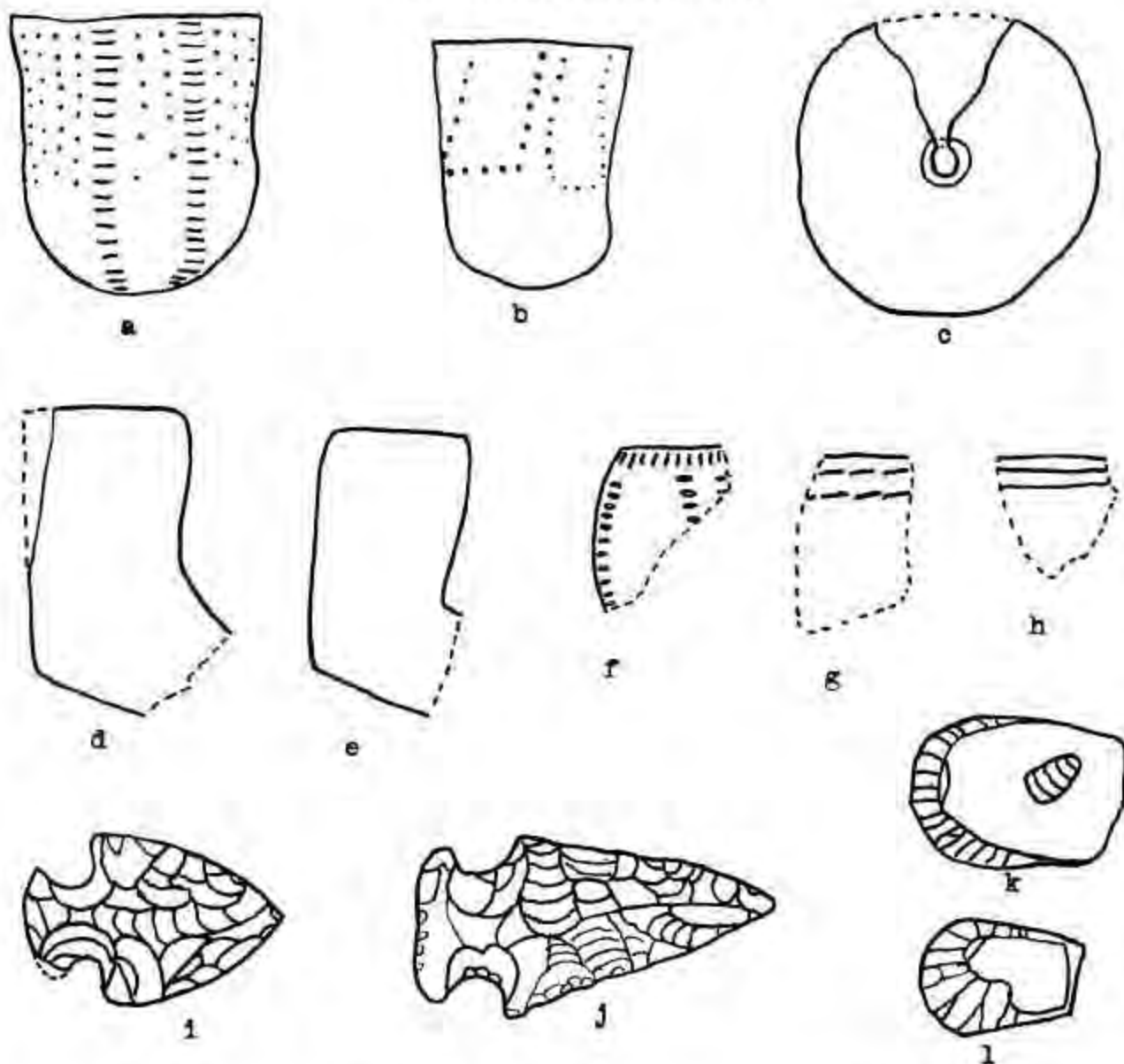
*Bird remains are scarce, other than passenger pigeon, which is common, and include ruffed grouse and turkey.*

*Reptile remains include wood turtle and snapping turtle. Amphibians-frog, Fish-catfish, sucker, walleye pike, sturgeon, bass. The sample is such a small one that I hesitate to make any comments on it other than to note the fact that prominent butchering marks were noted on several of the deer bones. Deer, I would say, constituted 75% of the sample. At the Oakfield Fort Site both deer and bear were found in relatively equal numbers- 5 to 3, while elk was represented by one drilled canine tooth. At Woeller, bear was very scarce and elk represented by a single molar.*

*The number of birds, other than passenger pigeon, was extremely low. Passenger pigeon was prominent at both the Ganshaw and Oakfield Fort sites. The continued scarcity of wild turkey may indicate that we are approaching the northern limits of its range. Many bones appeared charred and some dog gnawed. One deer frontal had an attached antler which probably indicates a fall/early winter death for the animal. Another antler had been naturally shed, an event which occurs in early winter. Aquatic resources seem to have been freely utilized and the occupation, on the basis of this sample, probably indicates a multi-seasonal occupation; but I don't think the evidence is strong enough to say unequivocally that this is the case.*

*In its entirety the sample appears to agree very well with that of the Ganshaw Site, especially in the lack of birds, and disagrees in this respect from that of the Oakfield Fort Site. Sturgeon, represented by 3 fragments, were most probably taken during spring spawning runs. A minimum of one large sturgeon was present. Sturgeon was also recorded from the Oakfield Fort Site.*

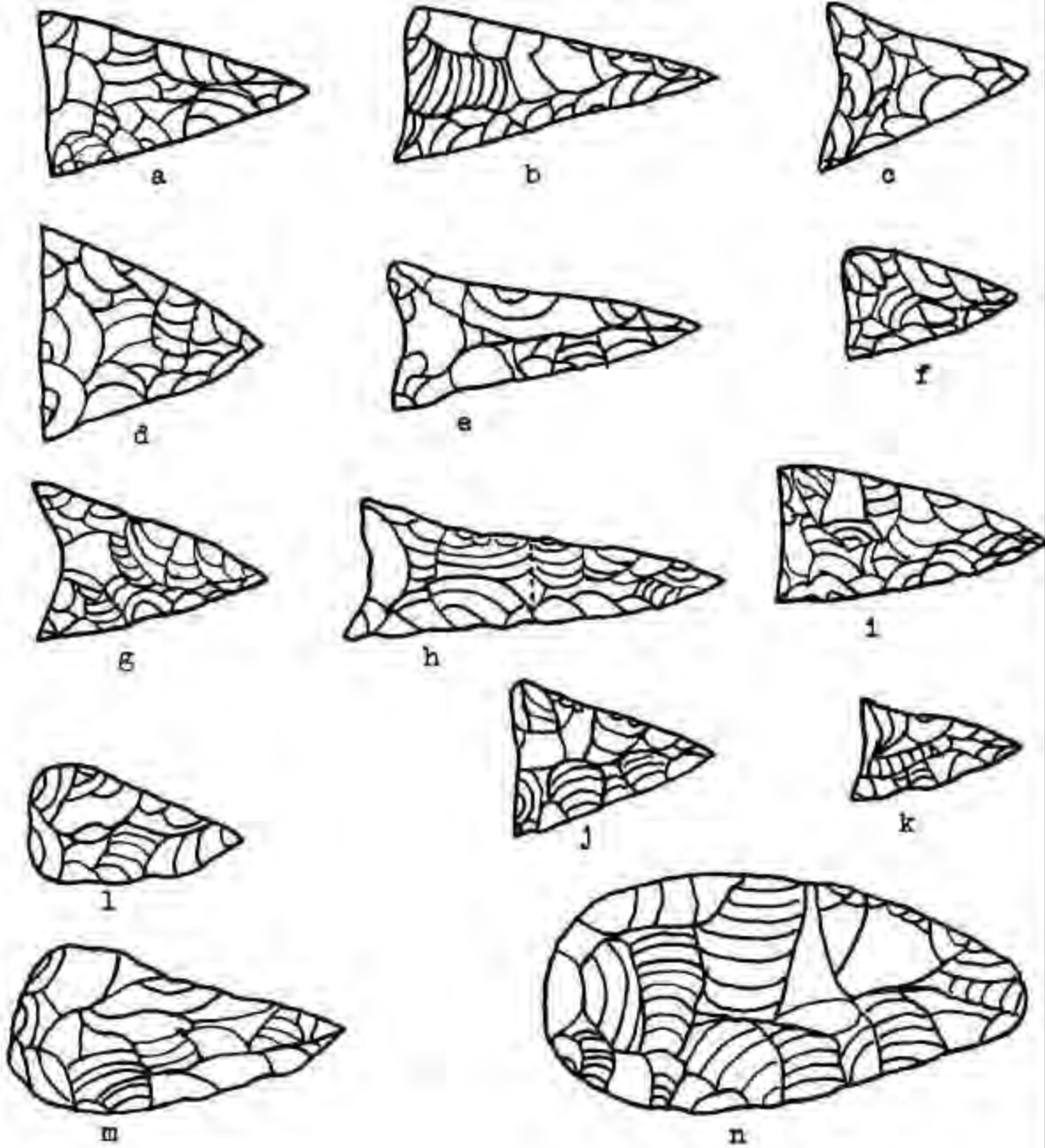
THE WOELLER SITE (MDA 8-4)



- a, b clay beakers or toy pots
- c sandstone pendant
- d-h pipe fragments
- i, j sidenotched points
- k, l scrapers

Actual Size

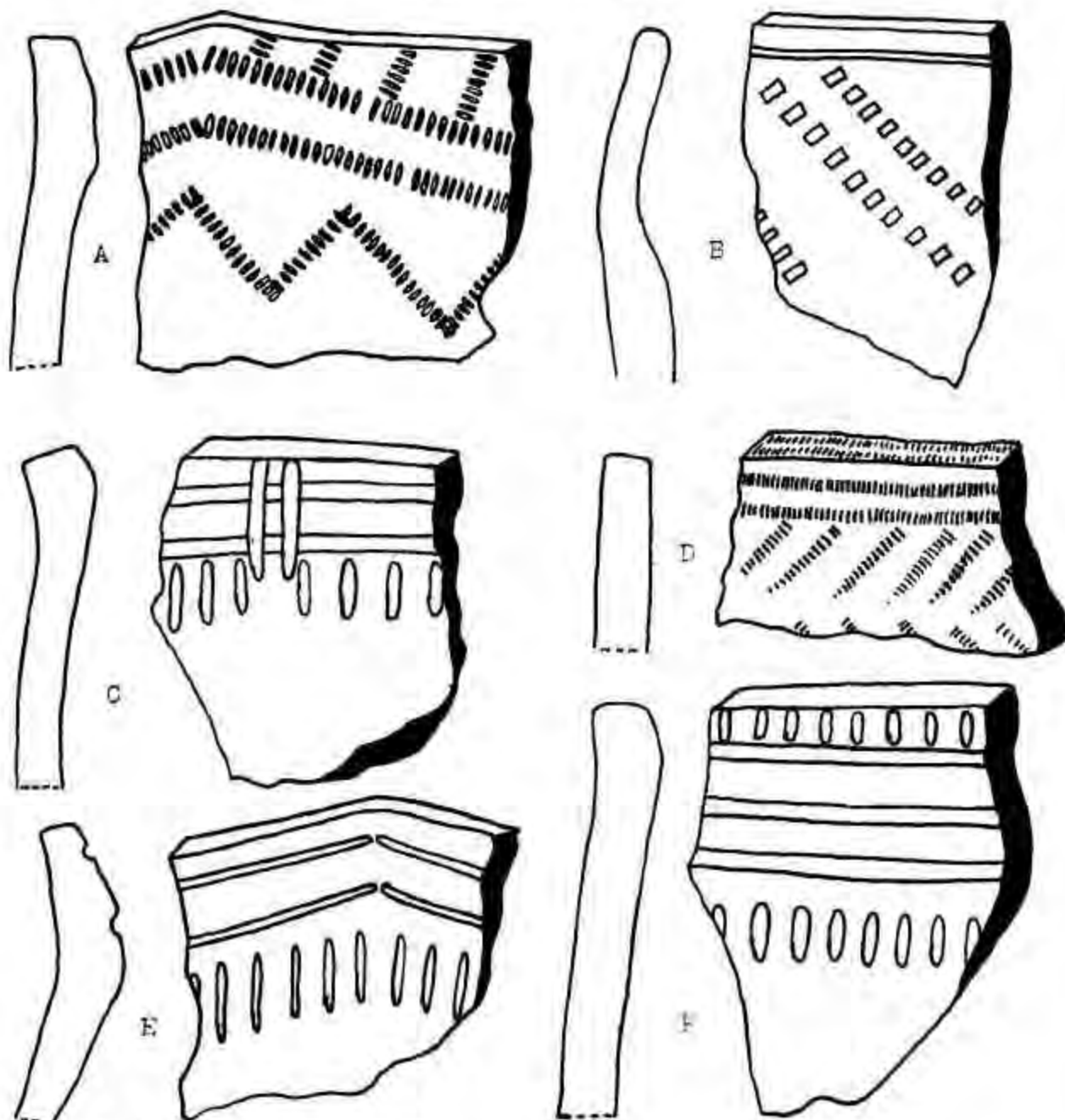
THE WOELLER SITE



a-k triangular points  
 l, m strike a lites  
 n knife or blade

Actual Size

THE WOELLER SITE

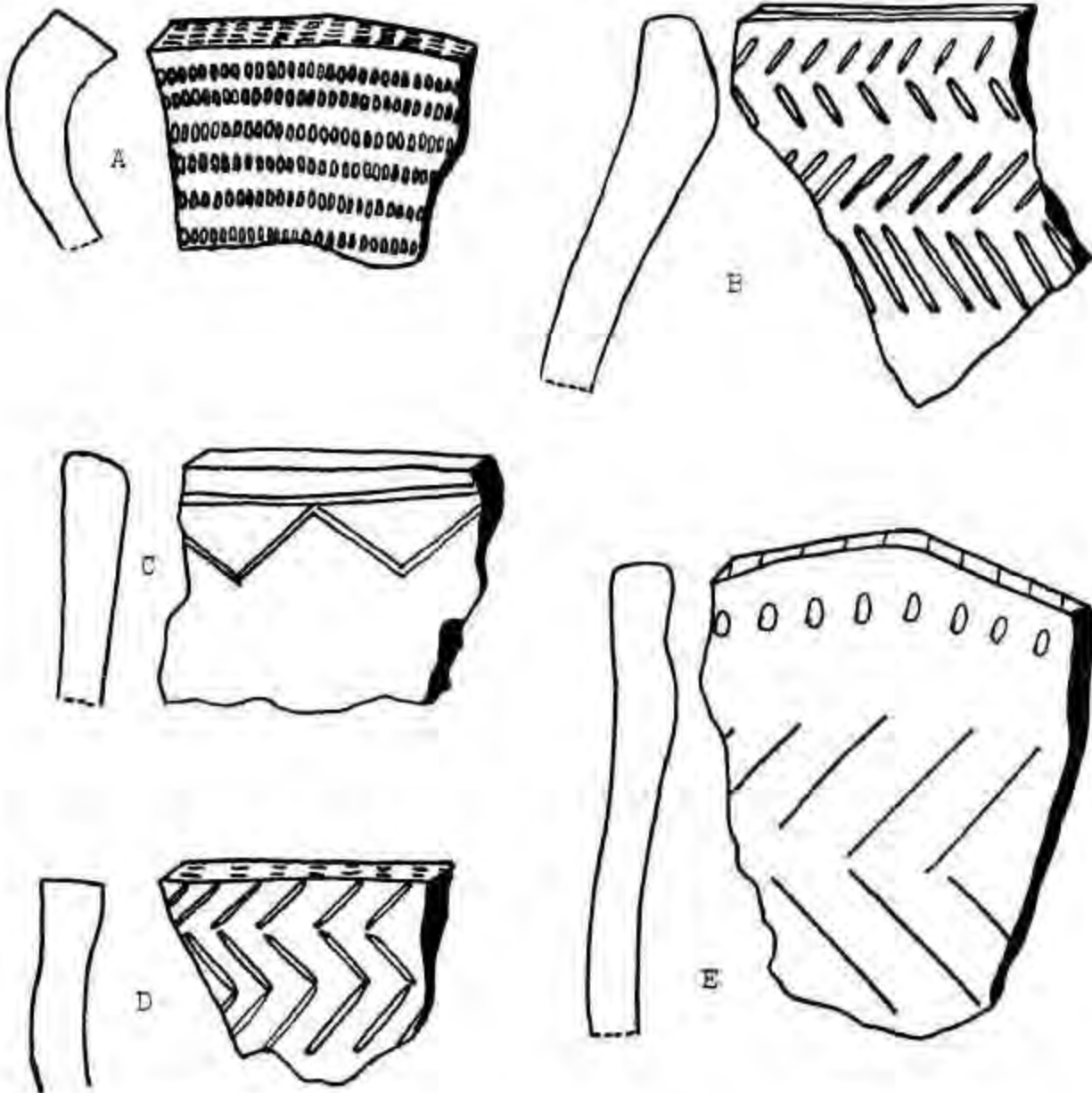


A, D Cord Wrapped Stick  
B Punctuation  
C, E, F Ontario Horizontal

Actual Size



THE WOELLER SITE

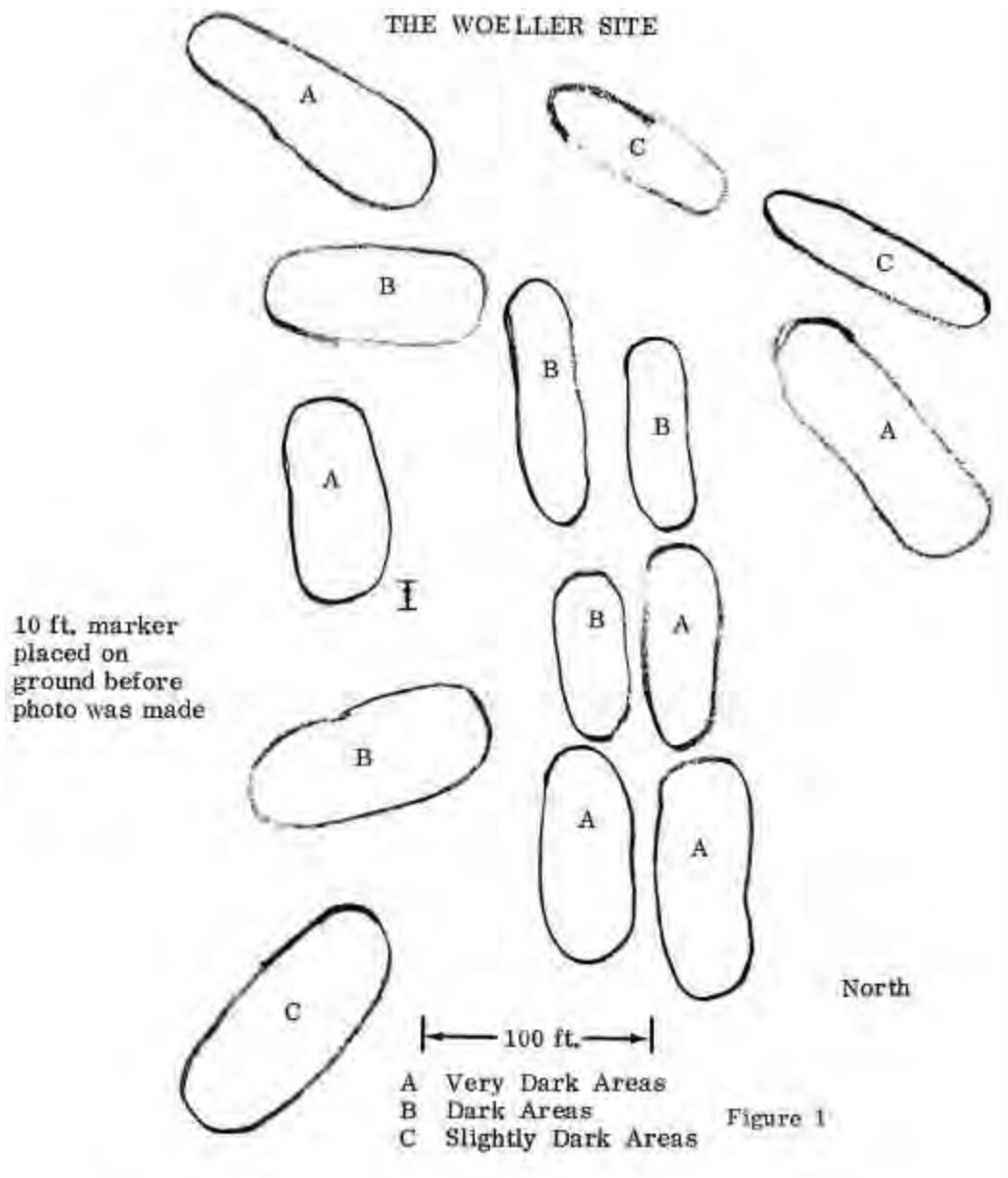


- A Cord Wrapped Stick
- B, D Incised Oblique
- C Ontario Horizontal Variant
- E Incised Oblique Variant

Actual Size

*It is probable that a larger sample from the Woeller Site would have resulted in a greater number of recorded species, and that the absence of migratory birds is more apparent than real.*

As on any heavily occupied site, several darkened areas were to be seen, and in 1965 an aircraft was utilized to make photographs. These were taken when the field was freshly plowed and worked and had been thoroughly drenched by heavy rain. The resultant color slide was not too clear as to where the dark areas began and left off. Knowing that brightness variations can be more easily seen at low light levels, layer after layer of tinted glass was placed over the projector until the screen was nearly dark. This caused the change points to be much more noticeable and a drawing was made. This is not to imply that these are all longhouses as some dark areas could be natural, others could be refuse areas, optical illusions or dark areas on the camera or projector lens. Nevertheless this method has interesting possibilities. See Fig. 1.



From a study of pottery designs and techniques of decoration it appears that the Woeller Site fits in time between the Ganshaw Site and the Oakfield Fort. A comparison of the four largest known sites comprising the Oakfield Phase follows.

	GANSHAW SITE	WOELLER SITE	OAKFIELD FORT	NOK
SHORT COLLARS	20%	30%	44%	56%
ABSENCE OF COLLARS	39%	35%	21%	12%
HAVE CASTELLATIONS	13%	22%	37%	31%
INTERIOR DECORATED*	6%	6%	6%	3%
BOTH TOP AND INTERIOR DECORATED*	11%	13%	8%	1%
SCALLOPED MULTIPLE CASTELLATIONS	---	---	---	4%
EXTERIOR BOSSING	4 ex.	1 ex.	1 ex.	--
MAXIMUM COLLAR HEIGHT	3/4"	7/8"	1-1/4"	1-3/4"
UNDECORATED	15%	11%	8%	1%
PUNCTATION	39%	28%	18%	19%
CORD WRAPPED STICK	15%	17%	10%	4%
HURON INCISED	---	---	1%	12%
ONTARIO HORIZONTAL	4%	14%	36%	51%
MAXIMUM NO. OF HORIZONTAL LINES	4	4	7	11
RIMS OF DIFF. VESSELS IN THIS STUDY	283	159	324	70
AUTHORS GUESS DATE OF SITE ( $\pm 50$ YRS.)	1250AD	1275AD	1300AD	1325AD

\*INCLUDES EXTERIOR DECORATION

This chart shows the tendency toward more and larger collars in the more recent times of the Oakfield Phase and for these to be more and more decorated. Vessels with top and interior decoration both have nearly completely disappeared by the end of this 4 site period, as have undecorated pots. This chart also shows rather fast pottery decoration changes, such as Ontario Horizontal at Ganshaw which is only 4%, changing to 51% at NOK in approximately 75 years. If this was the peak of this type of decoration and this rate of change persisted, Ontario Horizontal as a type of vessel decoration may have died out in another 75 years. It would be more reasonable, however, to assume that it took about 100 years to reach its peak and another 100 years for its decline, making about a 200 year span for its occurrence. Since Ontario Horizontal is completely gone at Shelby (about A.D. 1520) and yet occurs in 15% of the rims at Kienuka, a Niagara County site existing not over a hundred years before Shelby, an approximate date for the disappearance of Ontario Horizontal in the Western New York area would be A.D. 1450-1475. Two hundred years before this would be about A.D. 1250-1275 for the beginning period of Ontario Horizontal and the Oakfield Phase at the Ganshaw Site.

This type of supposition leaves much room for error so, until a reliable method of dating sites in this time period is discovered, we can only guess at these sites' true dates.

#### Acknowledgements

My sincere thanks to Mr. Roy S. Woeller and son, Mr. Roy C. Woeller, for permission to work the site, for detouring around us with their farming equipment and for marking the locations of many pits as they plowed. My father, Jacob Vanderlaan, helped with the labors, for which I am most grateful and Dr. Marian White gave advice on the manuscript. Thanks also to the present owners, Mr. Gordon Lamb and Mr. Leslie Lamb; for allowing me to continue investigations on the site.

## References

- Beauchamp, William M.  
1907 Aboriginal Place Names of New York. Bulletin No. 108. N.Y. State Museum and Science Service. Albany, N.Y.
- MacNeish, Richard S.  
1952 Iroquois Pottery Types - A Technique for the Study of Iroquois Prehistory. Bulletin No. 124. The National Museum of Canada. Ottawa, Canada.
- Parker, Arthur C.  
1922 The Archaeological History of N.Y. State. Bulletin 235-38. N.Y. State Museum and Science Service. Albany, N.Y.
- Pechuman, L. L.  
1958 The Oakfield Site, Genesee County. The Bulletin. New York State Archeological Association 14:2-4 November 1958
- Vanderlaan, Stanley G.  
1962 The Nok Site (MDA 9-4) The Bulletin. New York State Archeological Association 26:15-17 November 1962  
1965 The Ganshaw Site (MDA 3-4) The Bulletin. New York State Archeological Association 35:3-19 November 1965
- White, Marian E.  
1958 An Iroquois Sequence in New York's Niagara Frontier. Pennsylvania Archaeologist, Vol. 28 Nos. 3-4, December 1958, pp. 145-150.  
1961 Iroquois Culture History in the Niagara Frontier Area of New York State. Anthropological Papers, No. 16, Museum of Anthropology. University of Michigan, Ann Arbor, Michigan.

## Book Review

The Prehistory of the Indians of Western Connecticut-Part I, 9000-1000 B.C. by Edmund K. Swigart, Shiver Mountain Press, Washington Depot, Connecticut 1974, 49 pp., 25 plates, 10 figures.

*The Prehistory of the Indians of Western Connecticut* is an interim report of the activities of the Shepaug Valley Archaeological Society in a 13 by 19 mile area of the Housatonic Watershed of Western Connecticut between 1971 and 1974. Since the inception of the Society in 1971, it has grown from a small nucleus to over 1000 members, through whose efforts an education and research center was funded and, in recent months, a fulltime archaeologist hired to oversee both the center and future SVAS excavations.

The present monograph makes no pretense of being an in-depth scientific study, but rather styles itself as "broader and somewhat less technical," serving at least to place the data recovered by SVAS in the public forum. The study centers around ten partially or fully excavated sites, grouped into four main habitat types, (lake, river and small stream margins, and uplands) with fifteen other sites included on the basis of surface collections. The overall intent is to delineate in preliminary fashion the cultural prehistory of the region.

The Paleo-Indian evidence in the area is predictably meager. Although no C-14 dates are available for Western Connecticut, Swigart assumes the Paleo-hunters were present before 8635 B.C. on the basis of findings at the Debert site. The four sites yielding Paleo-material lie on terraces over-looking old glacial lakes, and indicate hunting activity only. (Swigart hypothesizes that the upland environment was too harsh for semi-permanent encampments.) Six Clovis points and one possible scraper constitute the inventory and indicate a low population density.

Population was likewise low in the Early Archaic. Fourteen bifurcated points were recovered, mostly through surface collection, on lake, river and small stream sites. The Middle Archaic Neville and Stark points, defined by Dincauze as an outgrowth in the Stanley tradition, were found in greater abundance in the study area (45 specimens from five sites) suggesting a bettering of climatic conditions between 4000 and 6000 B.C. and a consequent increase in population.

The Neville/Stark occupation is followed by a much heavier Laurentian occupation, beginning with a scattering of Otter Creek points and ranging through the Brewerton varieties to Vosberg. A C-14 date of 2390 B.C.  $\pm$  120 years was obtained for the latter from a rockshelter in Naugatuck. Laurentian occupation was in evidence on sites of all four habitat types. Using as a yardstick the number of points lost per 100 years, Swigart judges the Laurentian population to be over five times that of the earlier cultures. Unfortunately, most of the artifactual evidence is from surface collections. Only two excavated sites yielded Laurentian material, and these revealed no post molds or associated features. Swigart postulates that three atlatl weights and two large Vosberg-like blades that were found by a collector "where they had fallen out of a gravel pit embankment on a high glacial terrace" (p. 12) constitute the remains of a cremation burial but, on the basis of the evidence he supplies, the assumption seems gratuitous.

Closely on the heels of the Vosberg occupation or evolving out of it, a small quartz triangle tradition appears (Squibnocket and Beekman) dated between 2235 B.C. and 2110 B.C., and manifests considerable population density. Swigart judges it to be five times its predecessor, again on the basis of his points-lost-per-hundred-years index. Two excavated sites yielded living floors: hearths, pits, post molds, work areas and domestic implements, as well as floral and faunal remains.

Mixed with and immediately following the small quartz triangle tradition appears a small-stem point and side-notched point tradition which Swigart 'lumps' because of the limited time span the manifestation occupies, rather than attempting to classify it as Lamoka, Sylvan Lake, Normanskill, Wading River, etc. This cultural group represents "by far the greatest population of Indians ever to live in Western Connecticut", (p. 14) with 1438 artifacts having been recovered (49.4% of the total projectile point sample) on 24 of the 25 study sites. Radio-carbon dates for this culture range from 2515 B.C.  $\pm$  240 years to 1850 B.C.  $\pm$  120 years. On the Shepaug River site (6LF2), two miles west of and roughly contemporaneous with one of the major small quartz triangle sites, extensive excavation revealed a living floor with a multitude of firepits, pot boilers, an acorn cache, several caches of tools and a number of workshops. No faunal material was found in the Shepaug River firepits, however, suggesting to Swigart that stone boiling in bark containers was the preferred cooking technique. This cultural group dramatically disappears with the appearance of the broad blade culture of the Transitional Period.

Swigart dates the beginning of the broad blade complex in Western Connecticut at about 1700 B.C., with the first point type in evidence being subsumable under Dincauze's Atlantic Phase (a Terminal Archaic manifestation in Massachusetts), and suggests that the initial influence came from Massachusetts. He sees the Snook Kill culture that develops from this initial influence to be either an amalgam of northern and southwestern (New Jersey and Pennsylvania) influences, or a largely south western culture (Lehigh Broad) that had concentrated itself in Massachusetts and was reflected back into Western Connecticut. Whereas the lithic materials of choice for the small triangle and small-stem point manifestations were the locally available quartz and quartzites, the broad blade makers favored materials from New York and Pennsylvania. An anomaly noted is the apparent association (on two sites) of Snook Kill points and Vinette I ceramics. On the basis of the depth of the Snook Kill deposits, Swigart suggests that the occupation may have been long enough to bring it within the 1300 B.C. date that Ritchie sets for the earliest manifestation of Vinette I pottery in New England.

No steatite bowls or sherds were found in the Snook Kill complex, despite the fact that they are a diagnostic attribute of the parent culture in New Jersey and Pennsylvania. 118 postmolds were recorded on 6LF2 (the Snook Kill site Swigart concentrates on). They are hypothetically reconstructable (via the connect-the-dots method) into two alternative dwelling patterns,

either of them flimsy in construction, with no included hearths. From the house patterns plus what have been tentatively identified as carbonized blueberries, Swigart hypothesizes that the site was a temporary berrying camp subsequently destroyed by fire. Other Snook Kill manifestations in the study area include: 1) a cremation burial with 64 Mansion Inn-type blades and other associated artifacts similar to eastern Massachusetts assemblages; and 2) an additional possible cremation burial with three Normanskill cruciform blades. Since neither of these was excavated under scientific conditions, no conclusions can be drawn.

Following the Snook Kill manifestation, the third highest in population density in the study area, a typical and smaller Susquehanna component with steatite association appears. No charcoal was found in any of the Susquehanna related hearths; therefore the occupation cannot be dated. Swigart sees an in situ development of the Susquehanna culture into the subsequent Orient phase which SVAS carbon dates place between 1230 B.C.  $\pm$  220 years and 1115 B.C.  $\pm$  175 years. 6LF2 yielded an Orient living floor with two house patterns and again no associated hearths. Swigart takes this living floor to be another berrying station. The Orient tool kit is comparable to that in other areas, particularly with respect to the characteristic Orient base on all hafted tools and to the smoothed interior and exterior of the steatite pots.

With the details of the Orient phase occupation, *The Prehistory of the Indians of Western Connecticut* closes. To follow is a monograph treating the Woodland through Proto-Historic Periods. One would hope that in Part II the major deficiencies of Part One can be remedied. The photo graphs are poor, revealing little more than the outline of the artifacts in many cases. The various plan views of living floors are amateurish and at times confusing. More adequate proof-reading could have avoided the amusing reference on page 32 to "the typical took kit . . ." and numerous other typographical errors; although after the third reference to Vignette I (sic!) pottery I became convinced that this was more than a typo.

Turning to more substantive comments, the monograph is what it claims to be - i.e., "broad and somewhat less [than] technical". It tends to be understandably sketchy, since it attempts to condense 8000 years of prehistory into 27 pages of text. More detail would have been appreciated, particularly with respect to the Shepaug River site (6LF2) which appears to be the only stratified site described. How deep were the depositions? Was there any cultural stratigraphy? What was the excavation plan? How tightly was this and other excavations controlled? (References to 300+ excavators on a site are frightening.) I also would like to have seen more justification of the projectile-points-lost-per-hundred-year index of population density. Too many other variables could have produced the same results. More could have been done with respect to the subsistence settlement system in the study area. A more complete comparison of sites in and between habitat types might have revealed interesting variations and correlations and would have fulfilled the expectations held out by the Introduction-i.e., that the study was made to "identify not only cultural living patterns but also environmental relations." Finally, I must take exception to the evolutionary sequences of projectile points postulated in the illustrations (and not justified in the text.) To construct such sequences solely on the basis of the geometric outline of points, paying no attention to possible differences in flint knapping techniques, associated assemblages, settlement patterns, etc., is to be anthropologically atavistic. In a word, the monograph is cursory, too cursory. If the 'laundry lists' of artifacts found on different sites had been entabulated, the text could have concentrated more on analysis and interpretation. If a map had been provided, with site locations indicated, the reader could have understood the study area better.

The work has many flaws, some of which I have indicated. But this review should not be read as a condemnation. The monograph represents the preliminary results of thousands of man-and-woman-hours of work by SVAS members. It is an honest first step toward making sense out of the prehistory of the region and makes no pretense about being an exhaustive account. Where Swigart goes out on a limb or speculates, he labels it as such. Where more work needs to be done, he tells the reader. One could wish that more amateur societies and their presidents displayed a comparable degree of dedication to the prehistory of their region. Given such a basis, and given SVAS's equally firm commitment to its archaeological self-improvement, one can anticipate more and more scientific sophistication in subsequent reports.

Elizabeth M. Dumont

NEW YORK STATE ARCHAEOLOGICAL ASSOCIATION  
Minutes of the 59th Annual Meeting  
April 18-20, 1975  
The Chenango Inn, Norwich, New York

Executive Committee Meeting

President Elizabeth M. Dumont called the Annual Meeting of the Executive Committee to order at 8:15 pm on Friday, April, 18, 1975. All Chapters were represented and the following members of the committee were present:

President Elizabeth M. Dumont, Inc. Orange County	*Charles F. Hayes III, Lewis H. Morgan
Vice President Charles E. Gillette, Van Epps-Hartley	*Richard McCarthy, Lewis H. Morgan
Secretary William F. Ehlers, Inc. Orange County	Ted Payne, Metropolitan
Treasurer, J. Thomson Fuller, Inc. Orange County	*Roberta Wingerson, Metropolitan
James Walsh, Auringer-Seelye	Alvin Wanzer, Mid Hudson
*Richard LaBrake, Auringer-Seelye	Frank J. Hesse, Upper Susquehanna, Inc.
O. B. Schuessler, Chenango	Helen Gutierrez, Upper Susquehanna, Inc.
Monte Bennett, Chenango	Stanley Jaskiewicz, Triple Cities
Neal Trubowitz, Frederick M. Houghton	Dolores Elliott, Triple Cities
*Dolores Lalock, Frederick M. Houghton	Paul Huey, Van Epps-Hartley
Alfred E. Dart, Inc. Long Island	Dr. Kingston Larner. MD, Van Epps-Hartley
*Edward Johanneman, Inc. Long Island	Barbara Harris, William M. Beauchamp
*Marilyn Sternitzke, Inc. Orange County	*Vicky B. Jayne, William M. Beauchamp
*Helen Tolosky, Inc. Orange County	Louis A. Brennan, Editor, ESAF Representative, Metropolitan

Committee Chairmen present:

Awards and Fellowships-Theodore Whitney, Chenango  
Chapters and Memberships -Carolyn Weatherwax, Auringer-Seelye  
Constitution-Henry Wemple, Chenango  
Education-Carolyn Schrier, Inc. Orange County  
Finance-Dolores Lalock, Frederick M. Houghton New York Indian-  
Charles S. Pierce, Frederick M. Houghton  
Nominating-Kingston Larner, Van Epps-Hartley  
Program-Annual Meeting-Theodore Whitney, Chenango  
Program (NYSAA) -Elizabeth Dumont, Inc. Orange County  
Publications -Roberta Wingerson, Metropolitan  
Public Relations-Vicky B. Jayne, William M. Beauchamp  
Local Arrangements-Stanford Gibson and Mrs. Jack Frink, Chenango

Past Presidents present:

Dr. Marian E. White, Frederick M. Houghton	Earl F. Casler, Van Epps-Hartley
Charles F. Hayes, III, Lewis H. Morgan	Charles S. Pierce, Frederick M. Houghton

1. Roll Call completed, a motion to accept the minutes of the 58th Annual Meeting, as printed, in The Bulletin, was made by Marilyn Sternitzke, seconded by Robert Predmore. Motion was carried.

2. The Secretary reported that 1500 copies of the Revisions to the Constitution and By Laws were printed, assembled and distributed. Informational Handbook, Vol. 7 and 8 and minutes of the 58th annual meeting and the November Executive Committee meeting were printed, 1000 ESAF meeting notices, and 1000 ESAF Bulletin #62 were mailed. 95 letters received and 82 written, 182 packages were mailed, 964 membership cards were issued. Four issues of Vol. #5 and two issues of Vol. #6 of the Newsletter were written and mailed during the fiscal year. Exempt Organization Certificates were applied for and received.

3. Treasurer J. Thomson Fuller reported as follows:

April 1, 1974			
Publications Fund:	\$ 7,125.10**		
General Fund	<u>617.89</u>		
			\$ 7,742.99
March 31, 1975			
Checking Accounts:	\$ 2,633.48		
Savings Account	<u>5,075.94**</u>		\$ 7,709.42
Publications Fund	\$ 7,142.29**		
General Fund	<u>567.13</u>		
			\$ 7,709.42

\*Alternates

\*\*Includes \$1,000.00 set aside for Life Memberships.

	<u>General Fund</u>	Publications Fund	<u>Total</u>
April 1, 1974	\$ 617.89	\$ 7,125.10	\$ 7,742.99
Receipts	<u>579.00</u>	<u>3,287.92</u>	<u>3,866.92</u>
	\$1,196.89	\$10,413.02	\$22,609.91
Distributions	<u>629.76</u>	<u>3,270.73</u>	<u>3,900.49</u>
March 31, 1975	\$ 567.13	\$ 7,142.29**	\$ 7,709.42

4. Report of the Vice President. Charles Gillette reported activity with the Franklin B. Hough Chapter and efforts to reorganize that group. He also reported his appointment of liaison officer to the NYSAA and NYAC and this report will appear under committees.

5. President's Report: President Dumont reported visits to the Inc. Long Island, Auringer-Seelye and Triple Cities Chapters. The January meeting of NYAC was reported, as well as the launching of the membership drive. Dr. Dumont made note that NYAC meetings are open to all NYSAA members but President Bert Salwen should be contacted so that a proper size meeting room may be obtained. The president reported that NYAC is also compiling a data bank of New York historic and prehistoric sites. Forms for reporting are available through NYAC and the cooperation of NYSAA members is suggested by Dr. Dumont.

6. Report of Committees:

a. Awards and Fellowships-Theodore Whitney. The policy of this committee is to make its report at the Saturday night banquet. Mr. Whitney reported the following awards:

Fellowship Award-Dr. Bruce Rippeteau

Certificate of Merit-Marjorie B. Pratt, Lewis Dumont, Elizabeth Dumont, Henry Wemple, Richard E. Hosback, Monte Bennett

Meritorious Service-Linda Rawleigh, Howard Chamberlin, Chloe Zemek

b. Chapters and Memberships -Carolyn Weatherwax. Mrs. Weatherwax reported that total membership for 1974 was 819 memberships, with 1032 members. Members by chapters were as follows: AuringerSeelye=25; William M. Beauchamp=53; Chenango=82; Frederick M. Houghton=55; Inc. Long Island=163; Lewis H. Morgam=104; Metropolitan=58; Mid Hudson=13; Inc. Orange County=178; Triple Cities=73; Upper Susquehanna Inc.=37; Van Epps-Hartley=84; Members at Large=107.

Mrs. Weatherwax explained the membership drive to Committee members and distributed the material to each chapter. Bumper stickers, brochures and printed material are available from the Chapter secretaries. c. Constitution and By Laws-Henry Wemple. In accordance with Chapter VI, paragraph (g) of the NYSAA

c. Constitution and By Laws, the Constitution of the William M. Beauchamp Chapter has been reviewed and accepted as conforming to the revised NYSAA Constitution.

d. Editor-Louis A. Brennan. Though contributions continue to be received next year's volume may fall short of the offering of the past two years. Papers can be held up if money is short but it is the firm belief of the editor that contributions should be printed as expeditiously as possible. Contributors should not be kept waiting since authorship is often important to the careers of the contributors. With the exception noted, all material received is in one stage or another of publication. The situation should cause no concern. After 15 years in the editor's seat, the editor finds that the future always takes care of itself. "I reveal this situation for one principal purpose. Readers may sometimes wonder why the Bulletin never seems to change outwardly or inwardly. The reason for the format has been explained before and remains the same: it is the cheapest format that suits our purposes. These are: large pages for best reproduction of pictures and tables, and for the use of large legible type. Paper was once the least expensive item in publication, but it has increased in price to the place where it probably would save a little to use smaller type, and less paper. But I doubt that the saving would be worth the loss of readability. My most nagging problem is getting people to do reviews. I mean real reviews, not book notes. I'd like to have a list of those who are willing to do real reviews. This is a job that requires sober judgment and a sound prose style and volunteers are wanted. Although I do not anticipate enough copy to fill 100 pages during 1975-76, the appropriation should be about \$2500.00."

e. Report of the Eastern States Archaeological Representative-Louis A. Brennan. "All that is important or interesting to know about the ESAF meeting in Bangor, Maine, last October will appear in due time in the ESAF Bulletin. This includes, as usual, my report. If I have overlooked anything that should have been in the report, I will be pleased to hear about it. It follows a rather stereotyped form, but for good reason; the purpose is to get into the Bulletin the names of all those who have contributed something to New York Archeology during the year and to assert the state of vigor and organizational health of NYSAA. My understanding of the purpose of the report is that it does not include a review of the field and research accomplishments of the year; that is what we have our own journal for.

It seems to me that ESAF annual meetings are not as well attended by New Yorkers as they should be. The papers are of substance and the opportunity to discuss subjects in the area of archeology is unique. The program now has settled into a pattern of two and a half days of papers, Friday, Saturday and half day Sunday and there are very few that can not be heard with profit. The alternative is parochialism,"

\*\*Includes \$1,000.00 set aside for Life Memberships.



f. Finance-Dolores Lalock. The Finance Committee has audited the books of the Treasurer as of December 31, 1974 and finds them to be in order.

Income for 1974 was \$25.97 less than the budgeted amount. Expenditures were less than the budget by \$581.68. As there were expenditures for only two Bulletins in 1974 the increase of \$851.155 in the publications Fund shown in the Treasurer's Report is a temporary balance and indicates that the fund is not build ing up a reserve for Occasional Papers. It is therefore recommended that the increase in dues suggested at the fall meeting is necessary if the organization wishes to publish Occasional Papers in the future.

g. Fiscal-Budget-Edwin S. Phillips. Due to the absence of Mr. Phillips, Charles Pierce read the proposed budget for the NYSAA for the year ending December 31, 1975. The budget as proposed is as follows: Estimated Receipts. . . . . \$4,107.00

Estimated Expenditures:

President	\$	25.00	
Vice President		--	
Treasurer		250.00	
Secretary		465.00	
Awards & Fellowships		18.00	
Chapters & Memberships.		20.00	
ESAF Rep. & Editor		35.00	
N. Y. Indian		15.00	
Legislative		--	
Finance		--	
Librarian - Archivist		--	
Newsletter		--	
Nominating		100.00	
Publications		3,000.00	
Public Relations		50.00	
Program		<u>100.00</u>	<u>\$4,100.00</u>

Excess of estimated receipts over estimated expenses = \$ 7.00

Estimated receipts are an estimate of dues received from Chapters.

Estimated expenditures were compiled from information received from officers and committee chairmen.

h. Grants-Vicky B. Jayne. This committee was formed at the Executive Committee meeting in October 1974 to fill the need among the Chapters for a central information center regarding monies that may be available for Chapter and/or individual projects. Another function of the committee is to assist in the writing of grant proposals when necessary. So far the major focus has been to begin collecting information: agency, amounts usually awarded, criteria, application dates, etc. "Eventually I hope to have this information available in booklet form (loose leaf so additions and changes can be kept current) for each of the Chapters. Other members of the NY5AA-Chapter affiliated or at large-should contact me if and when they hear of any grants so that this may be circulated to each chapter immediately through the secretaries. Also, if one has received monies previously, we should know the pertinent data as a possible future source for inclusion in the booklet. This cooperation will be of much help and will cut down on the time it will take to complete this project. This committee should be enlarged to include two or three additional members."

i. Legislative. Due to the death of Chairman Charles Merritt, this committee is without report and the Chairmanship remains unfilled,

j. NYSAA/NYAC Liaison Officer-Charles E. Gillette. Mr. Gillette's report relates generally to the NYAC meeting of January 25-26, 1975, of which copies of the minutes were mailed to Chapter Secretaries. Mr. Gillette states, "As Liaison Officer, I would like to do more than just report meetings. If any member of the NYSAA is troubled by what he feels or hears regarding NYAC, I hope that he feels free to transmit this to me so that I might advise the proper people of his concern."

k. Librarian-Archivist-John McMaster. Mr. McMaster reports that the library is getting cramped for space. Two hundred periodicals from archeological and other scientific groups are received from one to twelve times each year. Bound volumes equal fifty. "One of the strengths of our library is the fine collections of publications from BAE, Peabody Museum, Smithsonian Institution, Viking Fund, and Wenner-Gren Foundation."

l. New York Indian-Charles S. Pierce. The Indians of New York are not as united as in the past. Two factions exist-the Traditional Group, who wish things to be as they were in the past: the return of the Chiefs of the Nations and the overthrow of the Constitutional type government which control them now. They are only a small group, a few hundred throughout the state. To give you an idea, of their number, among the Seneca on two Reservations, Allegheny and the Cattaraugus, there are over six thousand, of which thirty are the Traditional Group. Their leader, Meredith Quinn, a Santee Sioux, is legal advisor to this group. A participant of Wounded Knee, Quinn has been rejected by his own people. Most unrest is found in the Mohawks who presently hold a girls camp in the foothills of the Adirondacks. There may be some good come out of it but their approach is wrong and illegal. There are avenues open to them but for lack of money they are unable to start in the courts. The President of the Seneca Nation has the power to ask the Traditionalist to leave and has done so. Now it is in the courts.

m. Nominating-Kingston Lerner, M.D. "Your Chairman has had a very relaxing year due in part to our two year term of office, but particularly because of the efficiency with which the Association affairs are being managed by the current officers. This coming year will, perhaps, be less relaxing. In the last report I commented on the apathy of the membership concerning the operation of the State Association. One can only hope that the Chapter Presidents and Secretaries may look about within their own Chapters and find competent individuals who might be coerced into assuming the responsibilities of managing a portion of our Association affairs."

n. Program (Annual Meeting) -Theodore Whitney. As printed in the Annual Meeting Program, April 18-26, 1975.

o. Program - Elizabeth M. Dumont. "To assist Chapter Program Chairman in planning Chapter meetings, we are continuing to add to the NYSAA's library of traveling tape and slide shows. The 1974 addition to the library is a show on Cultural Resource Management, which is being prepared by Dolores Elliott and the SUNY/Binghamton group. Given the current emphasis on site location and preservation rather than salvage excavation, this program should be of interest to all. The 1975 lecture and slides being planned is, Techniques in Historic Archeology. Ed Lenik has expressed an interest in this program. Finally, I would like to add a word of encouragement to Chapter Program Chairman. Yours is a most important job: whether or not a Chapter has stimulating meetings which attract attendance and community interest is up to you. Keep at it. Your activities are vital to the organization."

p. Publications-Roberta Wingerson. "This committee is represented by each Chapter. Three issues of the Bulletin, Nos. 60, 61, 62, were published, containing 118 pages. This consistently meritorious effort is due to Editor, Louis Brennan; Charles Hayes and Linda Rawleigh handle the distribution. A manuscript by Peter P. Pratt, "Archaeology of the Oneida Iroquois." was received and reviewed but due to the Festschrift commitments, funds were unavailable to publish the paper. The Festschrift is well under way through the efforts of Charles Hayes, and Bob Funk. Since we do not have sufficient funds, at this time, to publish a Research and Transactions, we recommend that available funds be held in reserve until the full cost of the Festschrift is known."

q. Public Education-Carolyn Schrier. This committee was formed in November 1974 and much of the time has been spent trying to get Chapter representation to the committee. A meeting was planned for Saturday, April 19.

r. Public Relations-Vicky B. Jayne. A letter requesting a volunteer or appointee from each Chapter was sent to the secretaries. To date, the William M. Beauchamp, Chenango, Inc. Orange, Van EppsHartley and Triple Cities have members on the committee. Also requested was that chapters publicize their events and activities. A set of guide lines to assist in writing notices and/or feature articles has been drawn up and circulated. It was also suggested that this committee work with the membership committee to formulate means of increasing NYSAA membership. Each Chapter has been asked to publicize its meetings, speakers and annual meetings in the local media. Additional members are needed on this committee and it is hoped that all Chapters will be represented soon.

NOTE: Many reports have been condensed. A copy of each report submitted is attached to the original minutes and appears on file in the archives.

#### 7. Old Business

a. The Membership Drive was previously discussed under committee reports. President Dumont suggested that the Bumper Stickers be sold to the Chapters for 50~ each and that the chapters could resell them at their own price. Frank Hesse noted that the Upper Susquehanna Chapter was more interested in the quality of their members rather than quantity.

b. The subject of Incorporation was brought to the floor. Mrs. Browning stated that our Charter by the Board of Regents was the equivalent of Incorporation and that contributions were deductible. It was also suggested that we seek legal advice.

c. Dues structure brought a lengthy discussion. A suggestion was made to bring the problem before the General Membership. Motion: The General Membership be asked to suspend the By-Laws and empower the Executive committee to debate the question of an increase in dues to become effective January 1, 1976. This decision to be made after serious discussion by the Executive Committee and full examination of the Association's finances. The raise in dues not to exceed \$1.00 for Husband/Wife, Active, and Student memberships. The increase to be split 50-50 between the Chapters and the Association. Motion was made by Mrs. Jayne and seconded by Edward Johanneman. Motion-carried 3 opposed.

d. Certification. President Dumont spoke briefly of a proposed certification program for professionals and non-professional which would deal with public lands and monies. This would effect public archeology and refers to government lands where sites, studies and excavation are involved. Mrs. Elliott noted that the Triple Cities Chapter was not in favor of the program. Note was made that NYAC was formulating such a program.

A Motion was made that a committee be established to review the programs of other states and the proposals of NYAC. Motion was made by Ted Payne and seconded by Mrs. Wingerson. Motion was carried.

e. Lithic materials were brought by the Chenango, Auringer-Seelye and Inc. Orange County Chapters. All Chapters were requested to furnish samples of their local materials. The samples would then be distributed among the chapters for research, Lewis Dumont will distribute the samples and continue the project.

h. NYSAA/NYAC Weekend. A proposal to entertain a joint work shop and social weekend between the two organizations was planned. Dr. White suggested that one of the state parks in the Syracuse area be the site of the meeting. Members could bring campers, tents etc. and Saturday and Sunday morning be used for workshops such as mapping, UNIT Reference System, Historical Archeology etc. and that Saturday night be set aside for social activities. The suggestion was met with good interest from the committee members.

i. Sales tax exemption. Certification for non-profit organizations was applied for and the exemption was sent to the Rochester Museum. Copies will be mailed to the Chapter secretaries.

j. President Dumont spoke of the program to sponsor students to the annual meeting. Some Chapters were continuing this program which cost little and gave recognition to the most prominent student in each chapter. Money raising schemes were discussed to support this program.

#### 8. New Business

a. Association Fund Raising. Advertisements in the Bulletin were suggested. The opinion was that this may cause conflict of interest due to impact studies being conducted by chapters for large corporations and foundations,

b. The "pot hunter" problem was discussed at length but no conclusions were arrived at.

c. The 1975 Budget was brought to the floor for discussion. Mrs. Lalock noted that an error had been made concerning publication monies. A motion was made to accept the budget as it will be corrected. Motion made by Mr. Fuller and seconded by Mrs. Sternitzke. Motion was carried with 1 opposing vote.

d. The Annual meeting for the Society for Pennsylvania Archeology was announced,

e. The Auringer-Seelye Chapter will host the 1976 NYSAA annual meeting. The meeting will be held in Glens Falls or Saratoga Springs. James Walsh has been appointed Program Chairman.

f. Motion to adjourn was carried and meeting was adjourned at 12:02 am,

#### Minutes of the 59th Annual Business Meeting

1. A quorum being present, President Dumont brought the meeting to order at 8:25 am.

2. Motion was made and carried to accept the minutes of the 58th annual meeting as printed in The Bulletin.

3. The Treasurer's report was read and accepted.

4. The President, Vice President and Secretary waived the reading of their reports.

5. Old Business - None.

#### 6. New Business

a. The archeological weekend proposed jointly by the NYSAA and NYAC (Executive Committee minutes) was discussed and the feeling of the members present was to continue the plans.

b. President Dumont outlined the proposed certification program and appointed Charles Gillette as Chairman, to contact other states with such programs and to suggest a suitable plan for the Association.

c. Dr. Dumont announced that the 1976 annual meeting will be hosted by the Auringer-Seelye Chapter and would probably be held in Saratoga Springs. James Walsh will be the Program Chairman.

d. Resolutions of Commendation.

Resolved: that the New York state Archeological Association hereby express its appreciation to Theodore Whitney and the Members of the Program Committee for their exceptional efforts in preparing and executing the details necessary for a successful program for the 59th annual meeting at Norwich, New York. Seconded by Barbara Harris. Motion-carried,

Resolved: that the New York State Archeological Association express its appreciation to Stanford Gibson and Mrs. Jack Frink, Co-Chairman of the Local Arrangements Committee, for their meritorious efforts and preparations for making this a most successful 59th annual meeting at Norwich, New York. Seconded by Carolyn Schrier. Motion-Carried.

e. President Dumont explained the proposed Membership Drive to the members. All material has been distributed to the Chapters. She expressed the hope that each and every member would get behind the drive and make it a success. All material except the bumper stickers is without charge and these are being sold to the Chapters for 54 each. The Chapters in turn may sell to members at a profit.

f. An increase in dues may be necessary if we are to continue to publish Research and Transaction papers, the President announced. A committee, Dolores Lalock, Edwin Phillips, Tom Fuller and Bill Ehlers were appointed to look into the Association Finances and to find ways to save money. President Dumont stated that the only alternative to an increase in dues was to get behind the membership drive and to increase the membership. A motion passed in Executive session was read by President Dumont.

Respectfully Submitted,  
W. F. Ehlers  
Secretary