

# The Bulletin

Number 79      Summer 1980

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# the bulletin and journal

of Archaeology for New York State





## EXCAVATIONS AT THE STREET SITE, OTSEGO COUNTY, N.Y.: A PRELIMINARY REPORT

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### HISTORY OF RESEARCH AT THE STREET SITE

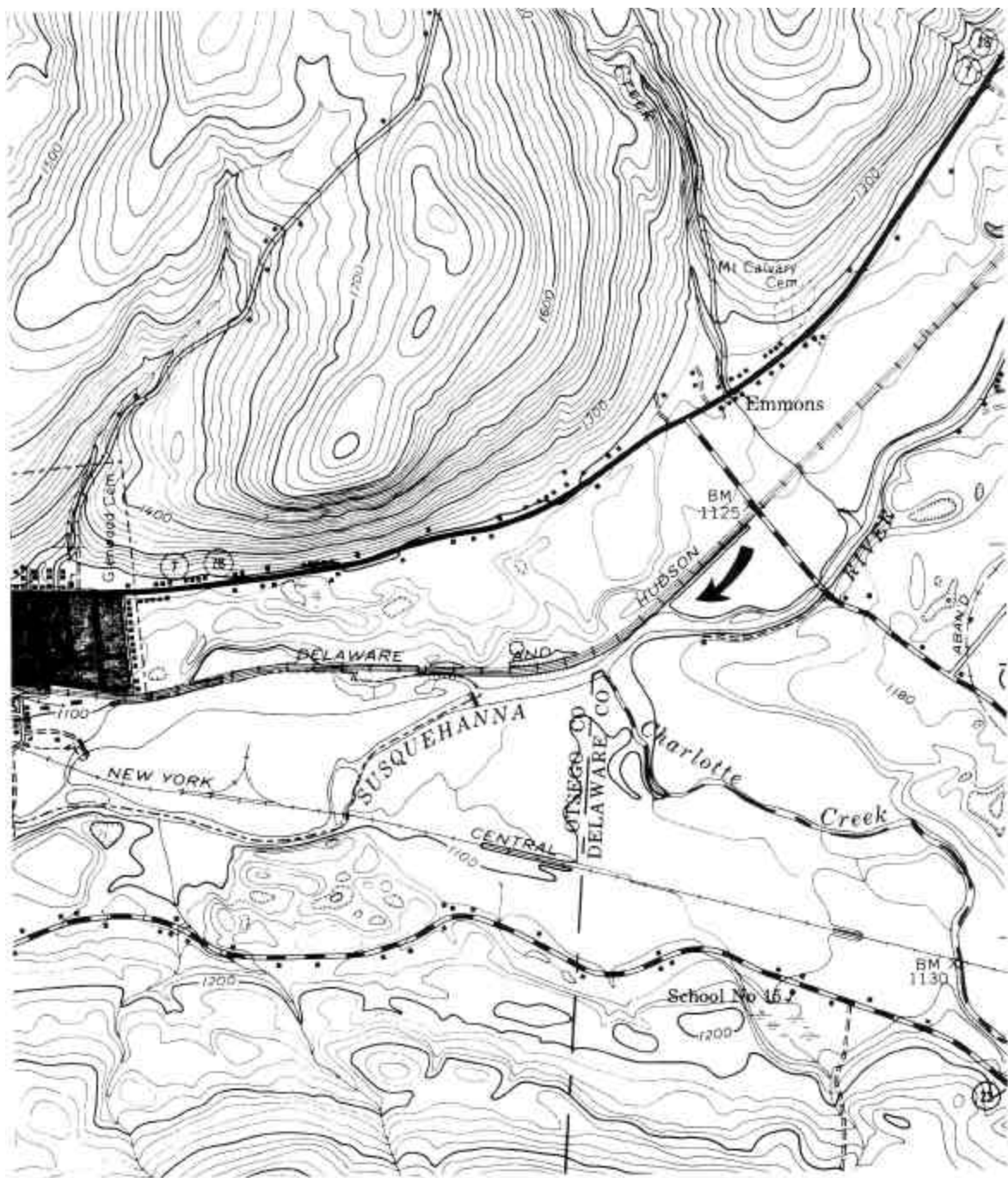
In 1971 a local collector reported to the New York State Archaeologist the findings of the site just east of the city of Oneonta, New York (see fig. 1). This locale, the Street Site, is situated on the floodplain near the confluence of the Susquehanna River and Charlotte Creek. In 1971 and 1973, a small field crew from the New York State Museum carried out limited excavations on the site (Funk and Rippeteau 1977:24-25). This work indicated that the site was a shallow but stratified area of occupation with little evidence of disturbance. Just below the plow zone was a possible Early Owasco (cf. Ritchie 1969; Ritchie and Funk 1973) living floor identified by a small sample of ceramics, Levanna projectile points (Ritchie 1971:87) and other artifactual material. Below this floor, and separated from it by a band of sterile silt, was another floor which produced material of Late Point Peninsula Tradition, Hunter's Home Phase affiliation (cf. Ritchie 1969; Ritchie and Funk 1973). This level was C-14 dated at A.D. 1100  $\pm$ 75 (Dic-209) and A.D. 820  $\pm$  85 (Dic 645). Evidence indicated an additional three or four deeper floors.

In the summer of 1977, the senior author directed a summer archaeological field school from the S.U.N.Y. College at Oneonta on the Street Site. This work was conducted as one aspect of a research program on upper Susquehanna prehistory initiated in 1971 by State Archaeologist Robert E. Funk. During the last two weeks of the regular field season the combined crews of the field school and New York State Museum continued the investigation at the site. Over 40 people were involved in the project, including 30 undergraduate students. Field supervisory responsibilities were shared with Beth Wellman of the Anthropological Survey, N.Y. State Museum and Science Service. The State Museum crew, aided by volunteers, remained on the site for an additional two weeks following the end of the regular summer session.

The primary research goals of the 1977 season were to determine the full areal extent and cultural affiliation of the Street Site, and to determine horizontal relationships of cultural remains on restricted loci within the site, i.e., to delineate activity areas.

The testing procedure consisted of a systematic sampling of locations along a grid system constructed over the site locale. A total of 122 test squares were dug at 10 foot intervals over a great part of the suspected site area (c. 5 acres) (see fig. 2). Stratigraphic profiles and generalized floor plans were recorded for each of these test units.

The excavations at several loci resulted in the intensive investigation of approximately 900 sq. ft. of area to an average depth of 2 ft. This, when added to the nearly 400 sq. ft. excavated during the 1973 season, brought the total excavated area to about 1300 sq. ft. (see fig. 2). During both the 1973 and 1977 excavations, discrete levels of occupation were encountered. The combined levels represent a period of approximately four centuries. Importantly, although each floor, hence each component, was part of a very large system of vertically and horizontally stratified components or floors, investigations thus far show that the majority of these components are separated from others by a band of sterile silt.



**Figure 1.** Street Site Location (Arrow) (After U.S.G.S. Oneonta, N.Y., 7.5 minute quadrangle, 1943).

Field work resumed during the summer of 1978. A field crew consisting of 20 students enrolled in the summer archaeological field school from SUNY Oneonta, and two field assistants, was directed by the senior author. Six weeks were spent block excavating two loci situated adjacent to loci excavated in previous seasons (see fig. 2). Excavation techniques and strategies were designed to yield information regarding the horizontal and vertical distribution of components, artifacts, refuse and features. This would supplement previously collected data and permit the precise definition of activity areas, general internal settlement patterns and any internal culture change within the sequence of components.

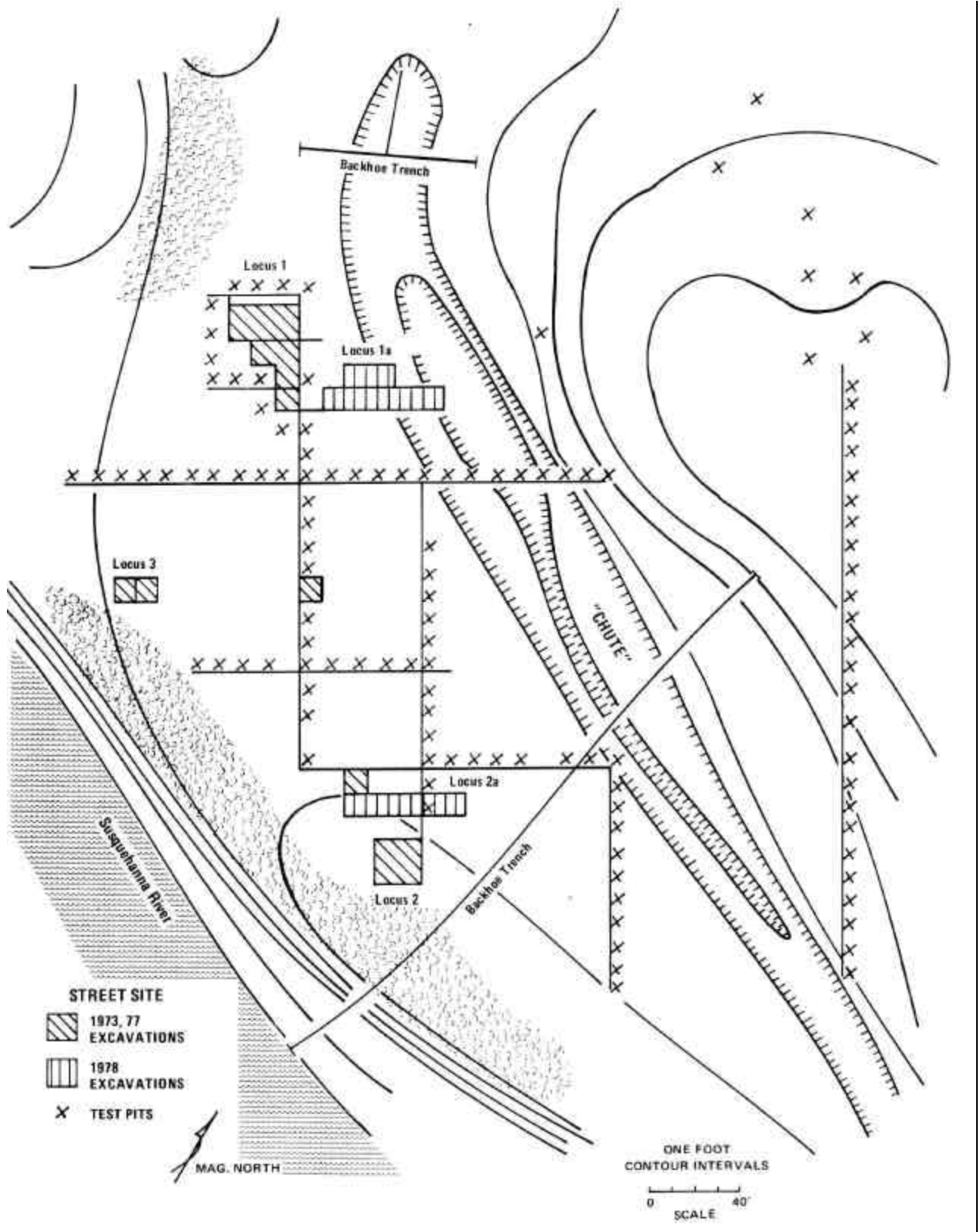


Figure 2.

Along with the archaeological data, geological and environmental information was sought. The mapping of the surficial geology and of subsurface stratigraphic units was carried out by Robert J. Dineen of the New York State Museum and Science Service. In addition, soil samples were obtained for sedimentological analysis. It is hoped that an analysis of the sediments will (1) assist in the placement of the as yet unknown number of components on site in a relative chronological order, and (2) help to ascertain whether the horizontal termini of occupational floors reflect the full extent of the original occupation, or are a result of cut-and-fill action by the river during various aggrading and degrading processes. Microanalysis of sediments may establish whether a given occupational zone represents a single occupation or, in fact, several superimposed occupations. Analyses are incomplete at this date, but are in process. Dr. Richard F. Yuretich of the Earth Science Department at SUNY Oneonta is directing the sedimentological research.

Another collection of soil samples from features, floors, culturally sterile zones, etc., are presently being processed and analyzed by Dr. Robert T. Simmonds of the Earth Science Department, SUNY Oneonta, and Dr. Currie D. Marr, Department of Biology, SUNY Oneonta. They are being examined for opal phytoliths, useful in establishing environmental episodes, and for the presence of both wild and domesticated plant species (cf. Pearsall 1978; Carbone 1977).

About 1200 sq. ft. of site was excavated to an average depth of 3 ft. during the 1978 season. This brings the total figure for the several seasons of work to approximately 2500 sq. ft.

### RESULTS OF THE 1973, 1977 AND 1978 FIELD SEASONS

The systematic testing procedure applied to the Street Site provided information on site boundaries. It appears that the total area of occupation covers approximately 5 a. of floodplain. That the site does not extend beyond the boundaries established by field research is directly predicated on the peculiar topographic situation. The site is located on an area of the floodplain that during a part of the year is isolated from the main body of the floodplain by water. Geological consultants (Robert Dineen, New York State Museum and Science Service, Geological Survey; Dr. P. Jay Fleisher, Department of Earth Science, SUNY College at Oneonta) have indicated that during times of freshets or high water, e.g., increased water volume following the winter thaw, the site locale would have been periodically cut off due to the presence of a high water channel ("shute") behind or just north of the site (see fig. 2). Therefore, occupation of the site would have been prevented by the presence of a surrounding body of water and marshy or flooded conditions at ground surface. Limited testing of the floodplain outside the 5 a. area did not locate significant evidence of human habitation. It is noted that even though systematic testing or sampling procedures can provide a fairly accurate representation of subsurface contexts, the exact and absolute boundaries of any site are difficult to ascertain (cf. Chartkoff 1978). Nevertheless, we believe that the full horizontal extent of the Street Site has been determined.

The excavations have also yielded useful information on the archaeological cultures represented by the components at the site. It appears from the C-14 chronology, including several new dates (R. Funk and B. Wellman, personal communications), that the total period of occupation is approximately 400 years, i.e., from c. 700 A.D. to c. 1100 A.D. This places the sequence in the latter part of the Middle Woodland period through, possibly, the early Late Woodland period. The components on the site represent the Kipp Island and Hunter's Home Phases, which terminate the Point Peninsula Tradition (cf. Ritchie 1969; Ritchie and Funk 1973). These associations are evidenced by diagnostic projectile point types and pottery types, both reliable indicators and temporal markers well-substantiated in the New York sequence.

The data also permit preliminary statements regarding the seasonality of the site. The presence of butternuts (*Juglans cinerea*) in a number of the components isolated suggests an early to mid-fall occupation. This resource is generally available throughout October (Yarnell 1964:67-68). This does not preclude occupation at other times of the year, although it does not appear likely that the site would have been habitable during the spring and possibly early summer. Again, high water would have made access difficult and would have rendered the ground surface wet and marshy. Flotation and screen-washing of soil samples to recover additional botanical data is in process at this time, and results are inconclusive.

Calcined bone fragments have also been recovered from features and living floors over the site. Although much of the material is so fragmentary that it is unidentifiable, a significant portion provides insight into faunal resources. Dr. John G. New, Department of Biology, SUNY Oneonta, has done a preliminary study of the

identifiable material. It appears that the great majority represents small mammals. Most long-bone fragments are of chipmunk and squirrel size. The largest, positively identified mammal is the white-tailed deer (*Odocoileus virginianus*), represented by a portion of the distal end of a metacarpal or metatarsal. Intermediate-sized mammals such as the raccoon (*Procyon lotor*), woodchuck (*Marmota monax*), and rabbit (*Sylvilagus sp.*), all common to a floodplain environment, are poorly, if at all, represented. Avian fauna is also present, although species identification is not completed at this early date. No evidence for fishing, either artifactual or osseous, has been recovered as yet.

Analyses of lithic and ceramic artifact classes are just underway. The ceramics can be placed into two predominant types, Point Peninsula Corded and Jack's Reef Corded (cf. Ritchie and MacNeish 1949; Ritchie 1969; Ritchie and Funk 1973). Tentatively, rim arc projections indicate relatively large vessels, e.g., 2-plus gallons in volume. The archaeological context of the ceramic sherds places them, in almost every instance, in direct association with a hearth. In and about the sherds is found calcined bone, perhaps showing that small mammals were prepared in these vessels. The condition of sherds from the vessel bases suggests that over a period of time, the effect of continual but fluctuating heat from the hearth, and possibly the periodic shifting of the vessels once they were in place, resulted in the failure of the ceramic body. An analysis of sherd quality and the processes involved in pottery failure is being planned by Daniel Young, Department of Art, SUNY Oneonta.

The analysis of lithic material is incomplete at this date. However, a number of tentative observations can be made. There is a considerable amount of chipped stone material. Within this class are projectile points, primarily of the so-called Levanna type (Ritchie 1971). These are triangular forms diagnostic of late Middle Woodland and early Late Woodland periods. Jack's Reef Corner-notched and Pentagonal points (Ritchie 1971) are in the minority, providing evidence for the earliest occupations on the site. Metric attributes have been recorded from these items and they await edge ware analysis. As with most contemporary lithic studies, the form-function dichotomy is recognized and an attempt will be made to clarify tool use (cf. Ablor 1971; Sheets 1975).

Non-projectile point chipped tool forms such as end and side scrapers, drills and knives, are very few in number. The vast majority of chipped material consists of utilized flakes and debitage. Several thousand flakes have been recovered, of a number of categories. Of these, nearly 6500 have been studied. Results of the analysis are thus far inconclusive. However, study of chipping debris suggests that lithic material was brought on-site at a blank, perform or completed stage of manufacture. The near absence of waste-cores and tabular flakes, and a relatively low frequency of primary and secondary decortication flakes supports this hypothesis for now. Small retouch flakes predominate, showing that most of the lithic manufacturing activity was directed at tool modification including trimming and marginal retouch [cf. White 1963 for lithic definitions used here.].

The source or sources of the lithic material is difficult to ascertain. This is due primarily to the fact that much of the lithics on-site are at, or near, a finished state. Consequently, nodules and other forms of raw, unmodified material are absent. Raw material could have been derived from two sources. Locally, glacially and/or stream-transported chert cobbles and pebbles appear in and along drainages. This material can be traced to Onondaga limestone outcrops some 25 to 30 miles north of the site, the second source of raw material. If the glacially and/or stream transported material was being employed, decortication flakes should exhibit water-worn surfaces. In contrast, material quarried at the source should exhibit rough, non-water-worn surfaces. In our analysis thus far, few of the decortication flakes display water-worn surfaces, while the majority have rough surfaces. We might hypothesize that some of the raw material on-site had been quarried at the chert source, and carried into the region by local populations. However, Funk (personal communication) contends that a pebble industry clearly predominates in the Susquehanna Valley, and that little, if any, raw material was quarried at its source for use by local groups. It is possible that the rough cortex we see on flake surfaces represents impurities inside chert cobbles and pebbles, often occurring when stress fractures fill with extraneous material. This scoriaceous material often resembles, or at times, is the cortex of a chert nodule; certainly, further investigation will be required.

Rough stone tools constitute a minor category in the total lithic assemblage. Several hammer and anvil stones have been recovered. Pitted stones, traditionally associated with various nutting activities, are absent. This suggests that a different technology was employed to exploit butternuts vis-à-vis hickory nuts or acorns. As an aside, bone, wood, or fiber tools are absent.

Analyses of sediments and paleoenvironmental data (phytoliths), as previously mentioned, are in process. It has been determined that soil samples do contain a large variety of phytoliths. However, identification of species represented has not been completed at this date.



### Summary

In summary, the results of research accomplished thus far are as follows: 1) The Street Site is an area of prehistoric occupation comprising approximately 5 a. of floodplain at the confluence of the Charlotte Creek and the Susquehanna River east of the city of Oneonta, New York. 2) The site represents a horizontally and vertically stratified multicomponent occupation, with the majority of components separated from one another by sterile silts. The exact number of components is undetermined. 3) The Street Site was apparently occupied by a number of human groups from about 700 A.D. to 1100 A.D. archaeologically; they are affiliated with the late Point Peninsula Tradition. 4) Occupations are small, probably representing one or several family units present at any one time. 5) The site appears to have been seasonally occupied, most likely in early to mid-fall, based upon geological evidence and the presence of floral resources, e.g., butternuts.

The authors feel that it would be premature and speculative to offer further observations or interpretations at this time. Evidence available presently and the fact that analyses are for the most part incomplete supports this position. Plans are being formulated for the 1979 field season, and a research design is being developed to achieve a number of goals.

The first goal is to establish the occupational history of the site. This task will be difficult due to the complex geological and cultural factors in operation, e.g., the association of floodplain depositional episodes and strata and cultural levels or occupations is not clear; also intra- and inter-occupation settlement patterns have not yet been explicated. We have yet to fully expose a total component, or determine the exact stratigraphic relationship of one component to another. Radiocarbon dating can provide broad temporal parameters, but it does not yield sufficient resolution to establish the chronological relationships of several seasonal occupations closely aligned stratigraphically and temporally. It is not feasible to C-14 date each discrete cultural level. Instead, geological techniques (floodplain sediment studies) will be employed during the next field season to gain precise control over the sequence of occupations and the identification of individual components on-site. This will hopefully be accomplished by correlation of vertical and horizontal depositional units over the site with the locations of archaeological components, thereby establishing the relative chronological order of occupations. This work, supplemented by data from previous field seasons, should be of great assistance in realizing this goal.

A second, on-going goal is the isolation and full investigation of as many discrete components as possible. This will allow for clear statements regarding the context of Middle to late Woodland period occupations including adaptive strategies, settlement pattern and settlement system information. Data recovered here will also be used to attain the following goal.

The third goal is to lay the foundation for the development of an archaeological sampling procedure. Continued efficient and precise data recovery and recording will provide an information bank against which a series of sampling strategies can be tested. This goal interfaces with the previous two allowing for the use of the same body of data to solve several different methodological, technical and theoretical problems. If a sampling procedure is designed and successfully tested, it will have application to other floodplain sites in the region where there is both horizontal and vertical stratification and where there is a similar geological history. Also, the procedure could be applied not only to Woodland period multicomponent, stratified sites, but to other periods as well which exhibit a similar stratified context.

A fourth goal is to reconstruct the paleoenvironment at the Street Site throughout the period of its occupancy. As noted by Pearsall (1978), phytolith analysis can and has been applied in areas where there is poor botanical preservation. Traditionally, flotation and pollen analyses have been employed to recover plant remains. However, floodplain soils are often acidic and oxidizing environments, destroying floral elements including pollen grains. Also, the migration of pollen grains, when present, in the often coarser floodplain sediments, makes such analysis problematical. But phytoliths, i.e., silica bodies present in the epidermal cells of some plant species, are virtually indestructible and offer considerable potential for detailed environmental studies and reconstruction. Flotation and screen washing procedures should recover carbonized plant remains to assist in dietary and environmental interpretations.

### Acknowledgements

The authors would like to acknowledge and express thanks to the following individuals who have offered assistance, expert advice, or information throughout the project: Dr. Mary M. Street, after whom the site is

named, has graciously provided access to her property for purposes of excavation; Robert J. Howell, of Emmons farm; Robert B. Nichols, Drs. P. Jay Fleisher, John G. New, Robert T. Simmonds, Currie D. Marr, Richard F. Yuretich, SUNY Oneonta; Robert Dineen, N.Y. State Geological Survey; Cara Tannenbaum, SUNY Albany; Joanne S. Rutshouser and Ronald Embling, Graphic Arts, SUNY Oneonta; Robin Whitbeck, typist; the 1977-1978 SUNY Oneonta field Crews recovered the data; Beth Wellman, N.Y. State Museum and Science Service Anthropological Survey, 1977 co-director; lastly, the support, advice and experience of Dr. Robert E. Funk, N.Y. State Archaeologist.

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#### THE MERRICK-OCEAN SITE: THE LATE WOODLAND FEATURES FROM MASSAPEQUA, LONG ISLAND

Donna Ottusch

Inc. Long Island Chapter

#### INTRODUCTION

This paper deals with the analysis of two aboriginal shellfish features excavated by Daniel Kaplan and Walter Saxon, Nassau County Museum, in 1971. Normally it might be assumed that the data from such a small site-remnant would be insufficient to warrant publication. However, the once vast archaeological resources of

Long Island's south shore (see, for example Tredwell 1912:54-57) appear to have been largely obliterated by rapid and intense development in the post World War II period, and there are few published reports. Given this situation, any substantive data are an appropriate contribution to the archaeological literature of this region.

The features were located in Massapequa State Park at the northeastern corner of Memck Road and Ocean Avenue. On the USGS Amityville, N.Y. 15' Quadrangle, the approximate coordinates are 40°39'S9" north latitude and 73°28'14" west longitude. The terrain is a glacial outwash plain which slopes gently towards the Great South Bay; the elevation is 9 ft. above mean sea level. Approximately 100 ft. east of the site is Massapequa Lake, dammed in 1836 from two southerly flowing streams to form a trout pond. Within 200 ft. east of the shellfish features on the south side of the lake a cache of jasper blades was recovered in 1970. The cache was radiocarbon dated at no later than 435 B.C. by a sample of fresh water peat which had been deposited directly above the blades (Kaplan and Mills 1976:27).

## HISTORY

Until the late 19th Century, the locality where the features were subsequently discovered was part of a large farm owned by David S. Jones and his descendants. From a detailed property map made in 1844 it is apparent that the site was located in a large field (Cornelius:1844). Though the property subsequently passed to the Brooklyn Water Works and later to the Long Island State Parks Commission, and despite the addition of nearby intersecting streets, the features apparently remained undisturbed.

## Excavation

On Nov. 10, 1971, Edward Johannemann accidentally encountered workmen digging up shellfish valves while grading for the installation of a sidewalk. Recognizing that this was an archaeological deposit, he immediately notified the Museum. Arrangements were made for a temporary cessation of work, and on Nov. 11 and 12 the features were completely excavated. While each feature was excavated as a discrete unit, time did not permit the recording of exact artifact proveniences within each feature.

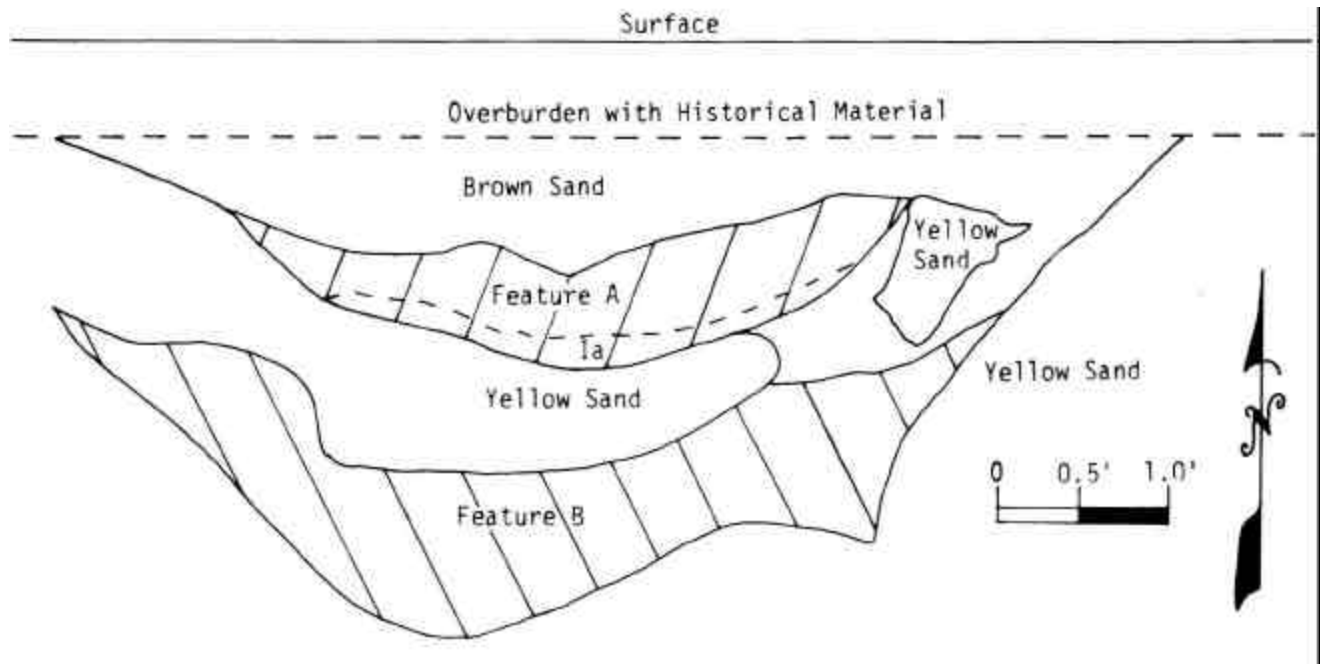
Two superimposed shellfish features, separated by a deposit of yellow sand, were exposed. Based on Walter Saxon's unpublished field notes and scale drawing (Fig. 1), the stratigraphic sequence was as follows: the overburden consisted of a very compact dark brown sand layer .6 ft. thick; beneath this was a second dark brown sand layer .5 ft. thick and containing occasional shell fragments, not a general soil layer, but essentially confined to the uppermost area above feature "A".

As seen in cross-section (Fig. 1), Feature "A" was a shallow, crescentic-shaped pit measuring approximately 4 ft. across on the east-west axis and .3 ft. to .6 ft. thick. Though partly destroyed by construction activities the pit may have been oval in plan-view, perhaps measuring about 3.1 ft. on the north-south axis. A thin lens, layer Ia, of very dark charcoal stained soil was readily discernible in the bottom of the feature. Shellfish valves, primarily quahog (*Merccenaria mercenaria*) were dispersed throughout the upper portion of the feature but concentrated in Ia. However, sherds and animal bone fragments were more abundant in the upper portion of "A" than the lower lens. Fire cracked and reddened rocks were scarce.

Feature "A" was vertically separated from Feature "B" by an .6 ft. to .9 ft. thick stratum of yellow sand and gravel. Some brown mottling was noted, perhaps the result of the leaching of organic matter from Feature "A". Apparently charcoal specks and fire cracked rocks were not encountered. A small quantity of pottery sherds and animal bone fragments, not positively attributable to either feature, were recovered from this layer.

Feature "B", the lower of the two crescent-shaped features, lay directly beneath the yellow sand and gravel layer. The maximum thickness of this charcoal-stained, greasy-textured deposit was approximately 1 ft.; the bottom of "B" was about 3.4 ft. below ground surface. In plan-view the feature was an irregular oval, measuring approximately 5.6 ft. east-west by 2.8 ft. north-south. A compact deposit of shellfish fragments was found throughout the pit. Again, quahog was predominant although smaller quantities of other species were encountered. A few bits of charcoal were recovered. Cultural material was abundant in this feature, including over 50 sherds, a small amount of lithic material including the base of a Levanna point, over 200 pieces of animal bone and the charred remains of a horseshoe crab (*Limulus polyphemus*).

The matrix surrounding the two pits was a yellow sand and gravel. Cultural material was recovered in this stratum along the periphery of the two features.



**Figure 1.** Cross-section, Features "A" and "B", Site #147. From original drawn by Walter Saxon, 11/12/71.

**ARTIFACTS: DESCRIPTION**

The two shellfish pits yielded three categories of artifacts, pottery, lithic and bone.

*POTTERY*

**Table 1:** Distribution of Sherd Types

	Feature "A"	Yellow Sand	Feature "B"	No Provenience	Total	Percent
Bowmans Brook Incised	18	4	5	3	30	24.0
Bowmans Brook Incised variant	1	1	25	1	28	22.4
Untyped Smoothed Over Cord Marked	17	—	3	4	24	19.2
East River Cord Marked	8	7	2	—	17	13.6
Miscellaneous	8	1	16	1	26	20.8
Total	52	13	51	9	125	100
Percent	41.6	10.4	40.8	7.2	100	

A total of 125 potsherds and a clay pipestem fragment were recovered from the two pits and the intervening sand. Virtually equal quantities were found in each feature. The ceramic types represented are Bowmans Brook Incised, a Bowmans Brook variant and East River Cord Marked. There is also an unnamed shell-tempered type with smoothed over cord-marking on the exterior surface, and a miscellaneous untyped category.

The distribution of sherds by type is shown in Table I. Briefly all four types were found in both features, though in widely varying quantities. The most common type of Feature "A" was Bowmans Brook Incised (34.6%) but the untyped smoothed-over cord-marked was well represented, (32.7%). Equal quantities of East River Cord Marked and miscellaneous untyped sherds (15.4%) were also recovered from this feature and its periphery. Within Feature "A", 27 (51.9%) sherds were found in the upper portion, 12 (23.0%) from the lower or Ia lens and 13 (25%) in the sand matrix surrounding the feature.

The yellow sand stratum yielded primarily East River Cord Marked (53.8%), Bowmans Brook Incised (30.8%) and a single example of Bowmans Brook Incised variant (7.7%).

Bowman Brook Incised variant (49%) was the most abundant pottery type in Feature "B", followed by miscellaneous untyped (31.8%), Bowmans Brook Incised (9.8%), untyped smoothed over cord marked (5.9%) and East River Cord Marked (3.9%).

The majority of the sherds from this site are shell tempered (78 pieces, 62.4%). The second most common contains a combination of quartz, quartzite and what appears to be shale (31 sherds, 24.8%). The third category exhibits a micaceous temper (11 sherds, 8.8%). A few sherds are quartz tempered (5 pieces, 4%).

All sherds were classified using Smith's (1950) typology, the basic reference for Coastal New York pottery.

**Bowmans Brook Incised (Plate 2:3, 4, 6, 7, 11):** All sherds exhibit a temper of crushed, angular fragments of quartzite, quartz and shale or a similar stone. The orange paste is moderately compact and generally appears to be well fired. Surface color is orange, and fire-smudging and discoloration are common. Decorated sherds exhibit parallel bands of wide-line incising often oriented at right angles, or diagonally to one another. A single horizontal row of punctates appears on the interior surface a short distance below the lip. The average thickness of these sherds is 6.4 mm. Sample size consists of 3 rims and 27 body sherds of which 11 are decorated.

**Bowmans Brook Incised variant (Plate 2:1, 2, 5):** The sample comprises 2 rim sherds, 3 shoulder and 23 body fragments. These shell-tempered sherds exhibit a moderately compact paste and appear to be well fired. The average thickness is 8 mm. The surface color is a mottled tan and light orange, with frequent fire smudging and discoloration. Surface decoration consists of a series of short diagonal incised lines arranged in parallel, essentially vertical rows. They begin directly below the rounded lip and extend to the shoulder, approximately 50 mm in length. The individual incised lines range in length from 7 mm to 8 mm. There appear to be smoothing marks on the interior of the sherds, and on the exterior of the plain body fragments, a function of the manufacturing process.

**Untyped Smoothed-Over Cord-Marked:** The 24 body sherds are flaky in texture with a average thickness of 6.7 mm. Surface color ranges from a mottled light tan to a dark brown with frequent fire smudging and discoloration. The crushed shell temper is variable in size; one large fragment is clearly scalloped. A majority of the sherds exhibit irregular fractures, but coiling is hinted at. The surface treatment is a smoothed over cord marking with what appears to be random linear brushed lines. This may have been purposely created but the scarcity of sherds bearing such markings does not confirm it.

**East River Cord Marked (Plate 2:8,9):** The sample size includes 2 rim sherds and 15 body fragments. From the gently outflaring rim to the diagonal smoothed over cord marking, this is a classic East River Cord Marked type as described by Smith (1950:192). On the exfoliated body sherds only traces of the cord marking can be detected. The paste is compact and partially leached of the crushed shell temper. Surface color is a mottled light tan and dark brown with fire smudging common. The average thickness of these sherds is 7.4 mm.

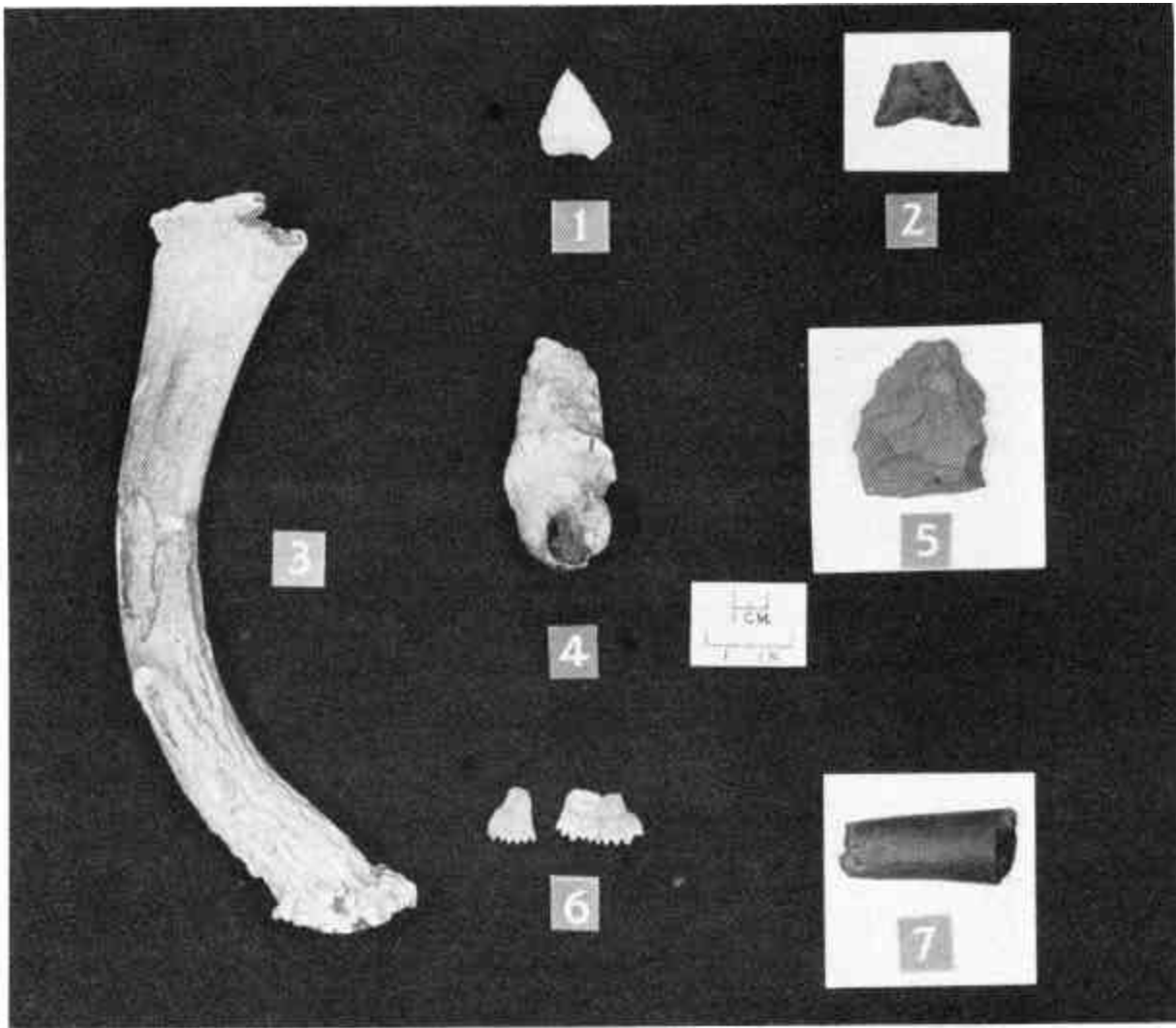
**Miscellaneous:** A total of 26 unidentified body sherds were recovered from the two features. These body sherds are either too small or exfoliated to be classified. The aplastic is both grit and shell. Three of the sherds show smoothed over cord marking. Ten exfoliated plain body sherds with a micaceous temper and a single grit tempered sherd exhibiting a line filled triangle motif (Plate 2:10) are associated with Feature "B". The miscellaneous sherds exhibit both irregular fracture breaks and signs of coiling. The surface colors range from brown to orange.

A thick gray grit tempered pipestem fragment (Plate 1:7) with a hole diameter of 8 mm was recovered from Feature "B".

## VESSELS

A minimum of 6 vessels are represented, 2 of which are Bowmans Brook Incised, and one each of Bowmans Brook variant, East River Cord Marked, untyped smoothed-over cord-marked and micaceous tempered pot. The individual vessels were not concentrated in either pit, but scattered haphazardly throughout both features. Though several interpretations are possible it is suggested that all 6 or more vessels were broken around the periphery of Feature "B" during its presumably brief period of use. Some of these sherds were then thrown or otherwise gravitated into pit "B"; the remainder were accidentally incorporated into the purposely deposited yellow sand layer and Feature "A". These events occurred over the span of perhaps a few days.

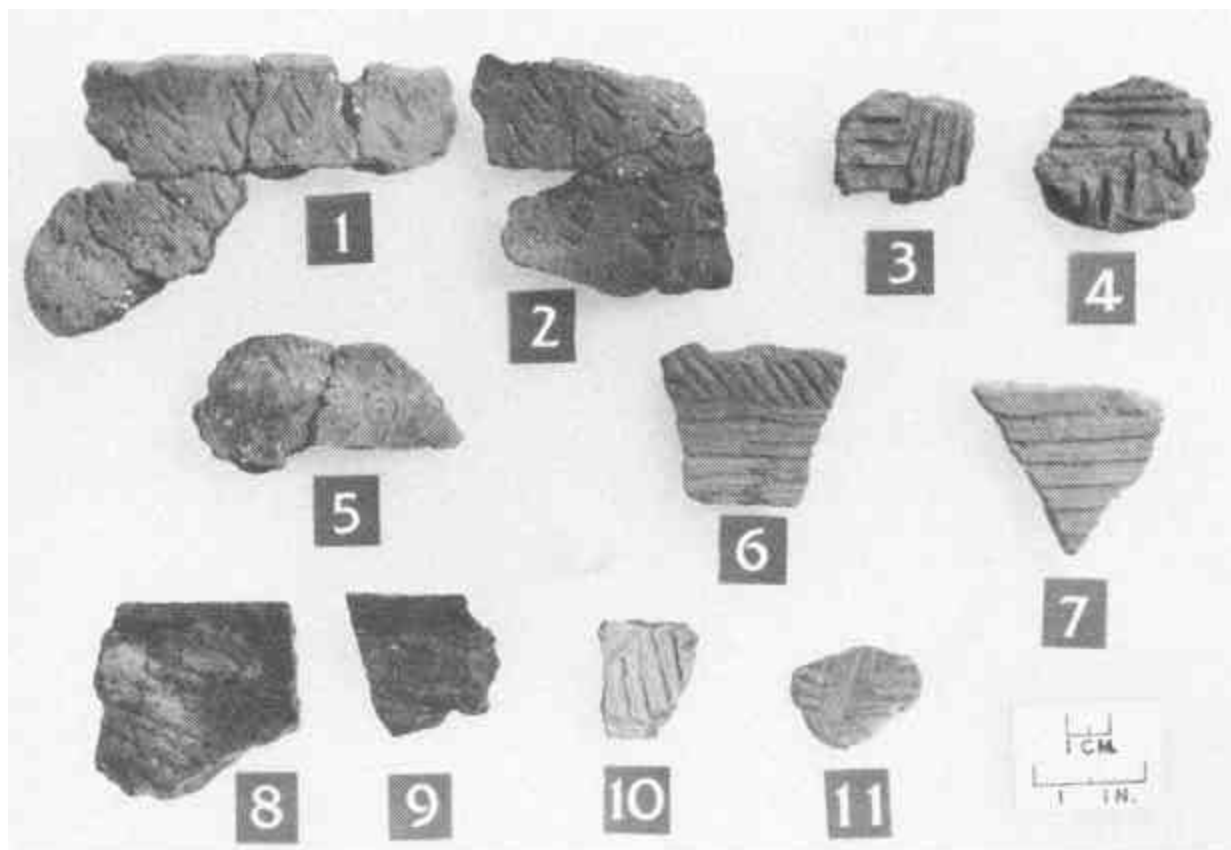
There are a minimum of 2 coiled Bowmans Brook Incised vessels, on the basis of surface decoration, paste and thickness. One pot (Plate 2:3,4) is represented by 4 body sherds which appear to be from the top of this 7



**Plate 1:** 1. Quartz Levanna Point; 2. Chert Levanna Point Base; 3. Shed Deer Antler; 4. Unshed Deer Antler; 5. Chert Preform; 6. Turtle Carapace with Notched Edge; 7. Pipestem Fragment.

mm thick vessel. Single sherds were recovered from Feature "A", the yellow sand stratum, Feature "B" and the backfill. All sherds were incised. The second pot (Plate 2: 6, 7, 11) is represented by a total of 23 sherds, 7 of which are incised, and 3 rims. These sherds were found scattered throughout the two features, with 17 in Feature "A", 3 in the yellow sand layer, 4 in Feature "B" and 2 sherds of unknown provenience. The average thickness of this vessel is 5.9 mm.

Bowmans Brook Incised variant (Plate 2:1, 2, 5): This coiled vessel appears to be confined to Feature "B", although a single sherd was in the yellow sand, Feature "A" and the backfill. It appears to be 5 in. in diameter at the lip, with a slightly outflaring rim and rounded shoulder. This vessel is similar to Bowmans Brook Incised and can readily be seen as a close relative. The rows of short incised lines are indicative of a relationship to Bowmans Brook Incised; it appears as part of the decorative motif on several vessels and sherds identified as Bowmans Brook (Staats 1974:4, Fig.1). Though the decorative technique has been listed as a form of punctating, a Bowmans Brook-like vessel from the Iona Island Ridge Rockshelter site in the lower Hudson Valley (Funk 1976:174, Pl.71) appears quite similar to the specimen from Merrick-Ocean.



**Plate 2:** 1, 2, Bowmans Brook Incised Variant Rims; 5, Bowmans Brook Incised Shoulder Sherd; 3, 4, 6, 7, 11, Bowmans Brook Incised Sherds; 8, 9, East River Cord Marked Rims; 10, Untyped Incised Sherd.

Untyped Smoothed-Over Cord-Marked: The majority of the sherds comprising this vessel were recovered in Feature "A", 11 from the upper portion, and 5 from Ia. A single sherd was found in the yellow sand periphery. Three sherds were recovered in Feature "B" and 4 are of unknown provenience.

East River Cord Marked (Plate 2: 8, 9): This coiled vessel is concentrated in Feature "A" and its periphery in the yellow sand layer. Two sherds were also recovered in Feature "B".

The sixth vessel is represented by 10 body sherds with a distinct micaceous temper. This pot is associated with Feature "B" but is also represented in "A" by 4 fragments. The average thickness is 6.3 mm.

#### *LITHIC AND BONE INDUSTRY*

The lithic industry is poorly represented, with a total of 3 worked stones and 8 trimming flakes. The majority of the material, which was recovered from Feature "B", comprised 6 quartz flakes, a chipped quartz "turtleback" or core and a black chert Levanna base (Plate 1:2). The upper portion of Feature "A" yielded one quartz flake and a thin piece of gray slate which appears to have been worked.

Worked or utilized bone was limited to the 2 pieces of notched turtle carapace (Plate 1:6) from feature "B". Experimentation with clay suggests that these items could have been used as a pottery decoration tool. The two sting ray spines recovered from Feature "B" may have been used as awls.

Thirteen of the 20 pieces of turtle carapace may be from a cup. All were found in Feature "B" except for one fragment from the upper portion of "A". This 55 mm piece is apparently from the tail or caudal end of the turtle; it has been ground down and the spine and other protuberances removed. The majority of the turtle

carapace appears to have undergone scraping and smoothing on the interior surface. One of the fragments has a drill or mending hole 1.5 mm in diameter. A few of the pieces are charred.

### FAUNAL REMAINS

A total of 739 pieces of bone were recovered from the two shellfish features, 167 identified as to class and 6 to species, while the remaining 572 pieces were unidentifiable. At least 77% of the specimens were highly fragmented and complete bones were rare even among the smaller animals represented; this is probably due to splitting of bone for the extraction of marrow.

A minimum of 9 individuals are represented; 44.4% are mammals, 33.3% are aquatic life forms, 11.1% bird and 11.1% are reptiles. A high percentage of identifiable bone is ascribable to the horseshoe crab and to the White-tail deer. The remaining individuals represented are box turtle, bird, sting ray, raccoon, grey fox and a single example of fish and bay. A soil pH of 6.8 to 7.0 strongly suggests that the faunal skeletal representation has not been diminished by soil acidity.

All faunal remains were submitted to Lynda Willett, Nassau County Museum, for identification; the subsequent analysis was performed jointly by Willett and the writer. The osteology reference collection at the Museum and available literature were utilized as comparative examples. Evidence of human modification such as butchering and charring was noted. The remains recovered are discussed below.

**Table 2:** Faunal Remains

	Feature "A"	Yellow Sand	Feature "B"	No Provenience	Total	Percent
Horseshoe crab	—	—	84	—	84	11.4
White-Tail Deer	8	—	37	—	45	6.0
Box Turtle	1	1	18	—	20	2.7
Bird	—	—	8	—	8	1.1
Grey Fox	—	1	2	1	4	0.5
Raccoon	—	—	2	—	2	0.3
Stingray	—	—	2	—	2	0.3
Fish	—	—	1	—	1	0.1
Brown Bat	—	—	1	—	1	0.1
Unidentified Remains	43	14	170	29	256	34.6
Unidentified Aquatic Remains	—	—	316	—	316	42.8
Total	52	16	641	30	739	100
Percent	7.0	2.2	86.7	4.0	100	

*Horseshoe crab* (*Limulus polyphemus*): A total of 84 pieces attributable to the horseshoe crab were recovered from Feature "B", including portions of the carapace or exoskeleton, tail and the appendages or limbs. A good portion of the spine was recovered including the end which is attached by a muscle to the body of the crab. The remains, which are thoroughly charred, appear to include the soft parts which the firing process carbonized into a delicate chambered structure in between the exoskeleton. This was apparent only when the archaeological remains were compared to an experimentally charred modern horseshoe crab.

"The horseshoe crab prefers sandy to muddy shores below the low-water mark where it burrows beneath the surface. *Limulus* is edible, its meat being, it is said as good as that of the lobster" (Arnold 1968:295). It is also possible to find stray horseshoe crabs along the beaches, washed ashore both dead and alive. A perusal of the available literature reaffirmed that horseshoe crab was utilized as a food source, at least in the historical period by the Wampanoag Indians of Massachusetts.

Horseshoe crab ". . . was used extensively in the nineteenth century, if not earlier. First of all it was an item of food. It was boiled and the eggs or roe were eaten much as lobster eggs were eaten at one time. Some also ate the meat from the legs" (Speck & Dexter 1948:262).

White-tail Deer (*Odocoileus virginianus*): The deer is well represented in both features. The upper portion of Feature "A" yielded the majority of deer bone for this pit (75%), while the lower lens contained only two fragments (25%). The deer bone recovered from this pit comprised portions of the pelvis, femur, pubis, metacarpal, 2 phalanges and 2 teeth (a molar and a pincher or incisor). Feature "B" yielded the majority



(82.2%) of deer bone at this site, including 14 ribs, a phalange, a left and right butchered mandible. Also found were fragments of vertebrae, cranium, femur, metapodial, ulna, hock and one molar. Two pieces of antler were recovered along with the mid-section of an antler tine; both of the former were burned. In contrast to Feature "B" only a few fragments of the bone from Feature "A" were burnt. Judging by heft and appearance it is suspected the majority of the unidentified bone is also deer.

*Box Turtle* (*Terrapene carolina*): A total of twenty turtle carapace pieces including four plastron fragments were recovered primarily from Feature "B". Several of the carapace fragments were burnt and the majority exhibited faint butchering or scratch marks on the interior surface. Although turtle may have been eaten at this site, and the four plastron fragments suggest this, the remains are strongly suspected to have comprised a cup. Turtle carapace fragments do not necessarily denote seasonality; Smith (1950:123) notes, that turtle carapace was often utilized as cups. Although box turtle "hibernates in soft soil below the frost line, often going down two feet" (Palmer & Fowler 1975:532) it is possible to recover them almost year around.

*Bird*: All eight bird fragments are from Feature "B". The sample consists of seven humerus fragments and a butchered coracoid bone. The bird(s) represented appear to have been small to medium in size judging only by the size and heft of the bone. The genus and species are unknown.

*Grey Fox* (*Urocyon cinereoargenteus*): The 4 pieces represented include a heel bone and a left mandible, both from Feature "B". The yellow sand stratum yielded a single right mandible complete with dentition which exhibited moderate attrition. A molar was also recovered, from a unknown provenience. Fox can be hunted essentially throughout the year.

*Raccoon* (*Procyon lotor*): Two butchered fragments, a humus and a mandible complete with dentition were recovered from Feature "B". The dentition exhibits little attrition. The raccoon is a fairly predictable food resource as it can be trapped or snared along streams and marshes. During the cold spells raccoons will not hibernate but usually den up in hollow trees or ground burrows (Burt & Grossenhecker 1976:51).

*Sting ray*: Two sting ray spines were recovered from Feature "B". It is speculated that these were utilized as awls. The genus and species are unknown.

*Fish*: The only representative is a thin delicate operculum bone from Feature "B". The species and genus could not be identified.

*Brown Bat* (*Myotis lucifugus*): The bat is represented by a small delicate mandible fragment from Feature "B". The mandible is believed to be an accidental inclusion rather than an indication of diet.

*Unidentified terrestrial bone*: The majority of the specimens were highly fragmented. This again, may reflect the practice of splitting bone for the extraction of marrow. The area above Feature "A", yielded a total of 9 fragments including 2 pieces of saw cut bone from the Historical period. Feature "A" yielded 43 (16.8%) fragments, the yellow sand 14 (5.4%) and Feature "B" 170 (66.4%). This includes the fragment of a right mandible and 9 ribs, one of which was butchered. A total of 29 (11.3%) bone fragments of unknown provenience were also recovered. In contrast to Feature "B", "A" and the yellow sand yielded very little charred and butchered bone.

*Unidentified aquatic remains*: A total of 316 (42.8%) charred fragments were recovered from Feature "B". It is suspected that the majority of these are part of the horseshoe crab but there is strong evidence that a second crab-like creature is represented. There are at least 20 fragments that, upon comparison, bear little resemblance to a modern intentionally charred horseshoe crab. Many of these fragments are too small and charred to be properly identified.

## SHELLFISH

In the upper portion of Feature "A", quahog (*Mercenaria mercenaria*) was dominant, with scattered fragments of oyster (*Crassostrea virginica*). The lower lens, Ia., contained quahog but remains of soft clam (*Mya arenaria*) were also present. Feature "B" contained a variety of shellfish, primarily quahog but in smaller quantities soft clam, oyster, ribbed muscle (*Mediolus demissus*), blue muscle (*Mytilus edulis*), gastropods or mud snails (*Nassarius obsoletus*) and channeled whelk (*Busycon canaliculatum*) and pieces of columella are represented. Unfortunately, the proportions of each are unknown, only a representative sample having been retained.

### SEASONALITY

A careful analysis of the deer antler remains reveals a December-January occupation.

The four antlers recovered from Feature "B" include two shed (Plate 1:3), one large charred mid-section and an unshed fragment (Plate 1:4). Considering that the antlers are neither worked nor otherwise modified, it is felt that they are representative of the season the site was occupied. The shed specimens show no evidence of having been gnawed, which suggests that they did not lie on the ground for an extended period of time. According to Evans:

" . . . whether attached to the skull or shed (Clark, 1954). Each species of deer shed its antlers at a particular and fairly precise time of the year, and in some cases the antlers are immediately eaten to replace calcium loss. Shed antlers may therefore be used to indicate when a site was occupied fairly accurately, while unshed or part-grown antlers indicate a range of a few months (1978:62-63)."

Upon close examination it was noted that at least 3 different deer are represented based on morphology. There appear to be 2 different deer that shed their racks and 1 individual whose antlers were forcefully removed.

The 2 shed antlers indicate a period of December to January although February could be considered. Antler ". . . drop off sometime in mid-December, Wislocki gives December 10 through January 25 as the extreme range during which the antlers are shed. My experience tends to suggest that most are shed in the early half of this period" (Henke 1971:9). The unshed antler suggests a time period of July to January.

Before the shedding season (December-January), shed antler would not be found unless it had survived from the prior year. Subsequent to this season unshed antler would not be found because this (January-April) is the incipient stage of antler growth.

### CULTURAL AFFILIATION

A sample (GX-6037) of quahog shells retained from Feature "B" was submitted to Geochron Laboratories, Cambridge, Massachusetts for carbon 14 analysis. The determination was  $975 \pm 110$  C-14 years B.P., 975 A.D. with C-13/C-12 ratio correction. The uncorrected age was  $580 \pm 110$  C-14 years B.P. (1370 A.D.). The date and the cultural material suggest an East River affiliation, possibly with the Bowmans Brook culture. This culture is characterized by East River Cord Marked, Bowmans Brook stamped and Bowmans Brook incised pottery; turtle carapace dishes and fish spine awls are also common (Smith 1950:122-23). Although "none of the sites have been radiocarbon dated", Ritchie (1965:269) agrees with Smith's (1950:107) "beginning date for the culture of around A.D. 1100".

### DISCUSSION

At the time of occupation the site was located approximately 100 to 200 ft. west of two parallel fresh water streams. These streams were part of a major drainage system which emptied into Great South Bay approximately a half mile away. From this bay and its intertidal marsh the shellfish were collected and transported to the site. The creek may well have been navigable for canoes. The immediate site areas may have been in brush and woods as shown on U.S. Coast Survey Map T-45(1835). After use as a shellfish baking pit, Feature "B" became a refuse receptacle. The pit was covered with yellow sand, probably to provide a base for Feature "A".

Given its greater quantity and variety of food and artifact remains, Feature "B" appears to have been used longer or by a greater number of people than Feature "A".

Feature "A" is believed to have been utilized shortly after Feature "B"; the presence of fragments from the same vessels in each of the two pits strongly supports this assumption. Feature "A" appears to have been primarily used for shellfish baking. It was covered with a layer of refuse. The majority of the cultural and animal remains were in the upper portion of this feature.

The cultural and food remains found in the yellow sand stratum and in the sand surrounding Feature "A" are probably the result of activity associated with covering feature "B" and the preparation of the upper pit.

These features are essentially unmovable artifacts without context. It cannot be ascertained whether the pits reflect a momentary stopover on the seasonal round of food-getting activities, or merely the chance remnant of a much larger, semi-permanent settlement. Memck Road which lies directly south of the shellfish baking pits was probably a trade route, at least in the 17th century (Kaplan and Mills 1976:28). If this route was utilized at the time of occupation it may have encouraged a series of small living sites or temporary encampments along its path. The recovery of diversified food remains testifies that the Indians were taking advantage of a variety of woodland fauna and the rich aquatic environment.

### SUBSEQUENT SURVEY

In the summer of 1978, further archaeological investigations were conducted at this locality to determine if the installation of a pending bikeway would impact archaeological resources. At the site locality, 23 hand angled holes and the same number of two-foot deep test pits were dug. Cultural material recovered was primarily of recent historical date. Prehistoric artifacts consisted of a quartz Levanna point (Plate 1:1), 11 quartz trimming flakes, a chert preform (Plate 1:5) and a small exfoliated pot sherd. All material recovered was found between .35 ft. and .7 ft. in the brown loam stratum. The prehistoric artifacts were found in association with such recent refuse as glass, coal, nails and lumber, suggesting disturbance by the construction activity that took place in 1971 and before. Mottling of the upper brown loam and subsoil layer, and extensive patches and lenses of fill reflect these events.

### Acknowledgements

The writer wishes to express her appreciation to the following Museum staff members: Daniel Kaplan for photography, Lynda Willet for the faunal analysis, and Ronald Wyatt for guidance, help and encouragement. The Friends of the Nassau County Museum kindly funded the radiocarbon date.

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### BOOK NOTES

*6LF21: A Paleo-Indian Site in Western Connecticut*. Roger W. Moeller. Occasional Paper No. 2. American Indian Archaeological Institute. Washington, Conn. 160 pp. 22 pls. \$12.50.

It is probably the wrong thing to say, in a review of a significant Paleo-Indian excavation, that the report is a literary pleasure to read. To paraphrase Mae West, who said something like it in another connection; in an affair like this pleasure has nothing to do with it. But when the report is luminous with candor, spiced with tart comment on archaeological cant, common-sense in cognitive tone and clear in exposition, modest but cogent on the importance of the discoveries made and, finally, conveying something of the feeling for digging up a Pale-Indian site as an experience, what else is there to say?

Off the top I have two complaints: the price of \$12.50 is decidedly premium for a 160 pages, 22 plate, soft-cover beefed-up booklet, and how could anyone be impressed by a site on which no more imagination in the naming has been expended than to call it 6LF21? Moeller, who handles marketing service for AIAI and for the Eastern States Archeological Federation, could have done better with a box-top contest with an RWM initialed trowel as first prize. In the long roll of Bull Books, Plenges, Thunderbirds, Shawnee-Minisinks, Deberts and Dutchess Quarry Caves, who is going to remember 6LF21?

These impertinences aside, 6LF21 is the first and only acceptable pristine fluted-point-yielding, C-14 dated, Paleo-Indian site in the Northeastern United States (Debert is in Canada) discovered undisturbed and excavated totally under expert direction. For one reason or another Shawnee-Minisink, Thunderbird, Dutchess Quarry Cave and Bull Brook, where C-14 dates have been obtained, don't make it. The yield was one authentic but less than perfect fluted point that might be classified, if it needs to be classified, as eastern Clovis; two apparently complete "miniature" fluted points made on flakes and two similar but incomplete points; channel flakes; graver tips; graver spurred tools; Paleo-type scrapers; a drill; knives; pick-up flake tools; considerable debitage; and an adequate sample of charcoal which assayed at 10,190 C-14 years B.P. It is a minimum but, by now, basic and typical assemblage of Paleo-Indian material culture; and no more than that; certainly nothing to approach the variety and complexity of the Plenge site or even the Reagan or Bull Brook sites. One could call it a generalized Paleo fluted point manifestation. And, true to Eastern Paleo, there was no bone preservation.

Moeller labored over his data to give them the full attribute-descriptive, analytical-statistical treatment to the end, he makes clear, that future excavators of such sites will have all the metrics, the statistical parameters and the solved quantifications they need to do in depth comparisons. 6LF21 may well boast the most thoroughly threshed out, mathematically mulled over assemblage of Paleo material culture at the 10,000 B.P. time level in the East. Moeller gave it his best shot. But the fact is, however odious comparisons are and however non-objective it may be to indulge in rankings, 6LF21 is not all that much site.

It is a single component, short-term occupancy site - Moeller seems to favor the creation of the debitage by a single knapper-almost feature-less, its remains certainly not reflective of the full range of material culture of the campers, its diagnostics typical enough, but no more than that. I do not overlook the fact that the dated charcoal may have come from a post, that the wood analysis indicated the intrusion at that time level of oak trees into Connecticut, nor that the site is located in the most unusual, for Paleo-hunters, environment of a flood plain. But somehow these facts are not conjunctive.

The scene suggests, to me, an Archaic pattern camp set, but then I am one of those (perhaps the only one) who believes that the Archaic pattern went with the woodlands environment and fluted points do not necessarily mean that the makers were not following a woodland adapted hunter-gatherer regimen. I would like to have had the evidence at 6LF21 come together into a clearer picture of who and what its occupants were. The clues may be in the lithic technology. Moeller has read his Errett Callahan, whose exhaustive analysis of biface manufacture in the Eastern Clovis tradition (in *Archaeology of Eastern North America*, Vol. 7) he has followed carefully. There can be no doubt about the distinctive lithic tradition of the Paleo fluted point makers but exactly what they were doing with their points at the dawning of the Holocene in the Northeast, given the mosaic (as it now seems) of environmental situations, we had better wonder about more seriously. I cannot, I suppose, blame Moeller, given what he had for not being more daringly speculative, but the fact is that we are stalemated in our understanding of the Paleo horizon in the East and we are not being helped much by all the bivariate and multivariate and various other variate formula approaches to the explication of miniscule samples of cultural materials and assemblages the very provenience of which rest on typological conventions and not on empirical circumstances of stratigraphy. Those who, beguiled by current trends in mathematical archaeology, try to imitate students blessed with sites rich in cultural materials, in the treatment of half a dozen (or less) diagnostic pieces in the search for technological and other kinds of change over time are playing a futile game; and perhaps a dangerous one. The conclusions that get into the literature from such high-minded but data-baseless operations have a habit of flourishing like the broad-leaf plantain.

The subject of the Paleo horizon in the East, that is, the region east of the Mississippi, the horizon of at least a millenium, probably two, recognized by the presence of generalized fluted lanceolate projectile points, is the most difficult, confusing and frustrating field of ignorance in American archaeology. Although I cannot cite any reference to confirm the guess, I am sure that a year's work would establish that 50 times as many fluted points have been discovered east of the Mississippi, from 25 times more sites and loci, as in the Plains west. But our concept of the fluted point Paleo horizon has been shaped by the western sites where, it seems tolerably clear, the makers were exploiters of the most available food resource of the environment, the herds of big game. For the east, where there is scarcely a county that cannot boast the find of at least one fluted point, where fluted points have been found in every kind of situation from Florida to Nova Scotia, from the sea shore to the 2500 ft. high ridges of West Virginia, where single sites have produced more fluted points than whole states in the West (at last count the Sandy Springs site on the Ohio near Portsmouth had produced 129 points and bushels of Paleo tools) we haven't an inkling of Paleo lifeways or economic adaptations. What we need in eastern Paleo studies is to forget the Martins and the Haynes' and promulgate a whole new set of imaginative propositions to inspire us and to be tested. The Paleo fluted point horizon in the East is not what it was in the West and, if we take the view that where there is the most evidence of it is where it originated then we have a whole new prehistory to write.

The foregoing is not intended as a stricture against the Moeller report. Far from it. The Moeller report is a stimulant to such thought. We seem to be cursed, in the East, with Paleo sites that nature has mischievously truncated. As Moeller laments, we simply do not have the site situations that reveal the character of the Paleo presence. It is undoubtedly far more complex than we suspect, we who take our clues from Plains Paleo. Does anybody really believe that Eastern Paleo is confined to the ca. 10,000 to 11,000 millenium? I don't. There is far too much of it in the East, and it is far too widely distributed. The 6LF21 report is a thorough, scholarly and pleasurable report but, in sum, it is a modest one. As it had to be. That's all there was; there wasn't any more.

L.A.B.

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*Vermont's Stone Chambers: An Inquiry Into Their Past.* Giovanna Neudorfer. Vermont Historical Society. Montpelier. 102 pp. Illustrated. 1980.

Dr. Barry Fell has had as much influence on archaeology, as it is perceived by the public, as any personality on the scene in the past decade. And personality he is, not an archaeologist, nor historian, nor anthropologist, nor even a hobbyist. Call him a fantasticist; not a fantasist, but a purveyor of the meretricious. He has half the people in the Northeast believing that they are surrounded by the monuments of European cultures that he himself invented to explain those monuments which had not needed explanation until he took it into his head that they did. To produce the kind of effects he has takes personality; nothing else will do it. But when you cease to be amused by him and are fed up with a surfeit of his claims the antidote is the volume under notice here, Giovanna Neudorfer's *Vermont's Stone Chambers*.

I well remember the day that I accompanied Gary Vescelius and Junius Bird on an excursion through western Connecticut to check out some dozen of these semi-subterranean stone structures that Fell calls temples of European "Megalithic Missionaries". We looked into one particularly well preserved specimen that was being used as a casual outbuilding by the owners of the fine old, 19th century restored farmhouse about 100 ft. away asking the owners what they knew about it. Yes, they did; they told us it was a megalithic temple.

I can do no better by way of bringing the Neudorfer volume to your favorable attention than by quoting from the foreword by William Fitzhugh; As follows:

"The publication of Giovanna Neudorfer's study of Vermont stone chambers is a time to reflect on the conditions that brought this project into being, as well as to applaud an important piece of scholarship. Fifteen years ago these chambers rested peacefully in the Vermont uplands, and most who knew of their existence did not consider them at all unusual. Today the chambers are notorious, having been touted as the remains of European Neolithic or Bronze Age settlers. Based on vague architectural similarities with Neolithic monuments in Western Europe and on the occasional presence of markings, thought to be inscriptions written in various early writing systems, these claims have been advanced by individuals who generally lacked training in archaeology, history or linguistics. Nevertheless the theories took root and received a large public exposure in non-academic publications and popular media. Conferences were held and pitched battles ensued as opposition arose from professional scholars. Unfortunately most of the professional criticism was directed at procedural or methodological fallacies in these studies. Little new evidence was advanced to support alternative explanations. The discussion, in fact, showed that little was known about the origin and function of these structures. One wonders, then, how the controversy could have developed. An in fact stone chamber shows clearly how such ideas are born and flourish in American society."

The stone chambers were, of course, for the most part root cellars, storage structures for winter-keeping foods for man and stock. The Fellers will scorn such a mundane function, but the truth is that they are found all over the northeast quadrant, from Maine to Ohio, wherever winters are severe enough to require protective storage. As Fitzhugh pointed out, 15 years ago nobody had seen the necessity of investigating these outbuildings. Now Neudorfer has done it, and soundly.

*Meadowood Phase Settlement Pattern in the Niagara Frontier Region of Western New York State*. Joseph E. Granger Jr. Anthropological Papers No. 65. Museum of Anthropology, University of Michigan, Ann Arbor. 1978. 403 pp. 35 plates. \$8.

The enormous industry that went into this doctoral dissertation of Granger's, into the amount of raw data reported and analyzed, into the synthesis of regional relationships, into the explication of settlement patterns and systems and into interpretation should give it the status of a landmark in southern Great Lakes regional prehistoric studies. If I understand Granger's placement of the Meadowood Phase, it is terminal Archaic not so much by reason of non-ceramic content or other standard criteria of the Archaic-Woodland boundary as in a measurable shift toward sedentism in settlement custom. Thus the Meadowood Phase looks both ways; it is still semi-Archaic in the practice of the seasonal round of hunting and gathering, but its settlement pattern is beginning to take on the character of larger semi-permanent living loci related to a basic fishing economy. If this is what he is saying the implications should provide us with a set of propositions for testing for the rest of the state. We are beginning to understand, I believe, that the Woodland consists of something more than the addition of ceramics to the Archaic trait list and that we need to know why. Ceramics, after all, had been manufactured elsewhere within contiguous regions of the present United States for over a millenium before they were adopted in the Northeast quadrant. What was environmentally new that suggested that ceramics were a useful and appropriate new kind of equipment for its exploitation? A new food resource or method of preparing

it? That does not seem likely, since we know of no significant environmental change and since stone pots and boiling baskets were already in the food preparation repertory. We are closing in here, it seems to me, on several possibilities, including the fact that sedentism made ceramic pots, fragile, cumbersome, a chore to make but makeable by women on the grounds, a real advance in food preparation for increasingly sedentary living.

A monograph of the size of *Meadowood Phase Settlement Pattern* (403 pp.) is almost impossible to review justly and adequately. It requires a reviewer who knows as much about the subject as the author and I am no specialist in the Meadowood Phase. One is impressed with the amount of data gathered and analyzed, the amount of description and metrification and quantification done, the amount of literature consulted and the kind of syntheses arrived at. The primary identification of Meadowood was by Ritchie and, by and large, that seems to hold up. What Granger has done is to add bulk to the original image and some expanded understanding to how it existed on the landscape of ca. 3000 C-14 years ago. Granger is, no doubt about it, the authority on Meadowood. Yet one cannot help feeling that here, as in the matter of the Paleo Indian (see above) we have reached impasse. We have gone as far as we are going to go with our present "methodologies" (a ridiculous word) and lines of investigation. We are searching for the wrong answers and asking the wrong questions. We are counting debitage looking for the minutiae of cultural change when we are without any holistic view of change or general field theory of what influenced it. Yes, we have placed our faith in the tenet of environmental determinism which, though it is now the fashion to repudiate it philosophically, is nevertheless almost the sole explanation we rely on for cultural change. (And we don't even use that imaginatively). Environments determine, right enough, among a great many options; but people choose how they are to be determined.

There was a place, the chapter on the systemics of settlement pattern, where I thought Granger was going to break new ground. He touched on the demographics of hunter-gatherer population, the organization of task groups, bands and tribes or sub-tribes, what linguists call the linguistic tribe. These groups are not adventitious in size, though they can fluctuate within limits. The efficient band, the group that can effectively support itself by hunting-gathering techniques, has been shown to require the association of about 25 persons, including children of less than full productivity. The linguistic band is actually the breeding group, the population pool which supports the necessity for providing mating pairs within the constraints of incest and other regulatory taboos. Its number, observed all over the world and verified by computation, is about 500, though some say tribal affinities can be maintained on as few as 250. Somewhere within these numbers, and the concomitant of the amount of territory needed to support bands and tribal associations of bands, as they are affected by environment and its vicissitudes, lies the answers to the chronology, the distribution and the anthropology of what we call cultures as identified by their artifacts. Now that archaeology has become anthropology (or nothing) societal dynamics ought to become a part of it.

*The Meadowood Phase* will repay the time spent on studying it as a text not only for what it says, which is a great deal, but for what it will do to the reader's broadening of his sense of task as an archaeologist.

L.A.B.

*The Middle Woodland Ceramics of the Winooski Site, A.D. 1-1000.* James B. Petersen. New Series Monograph No. 1, Vermont Archaeological Society, Burlington, 1980. 50 pp., 3 tables, 10 figures, 14 photographs. \$3.75.

This monograph is a descriptive analysis of 32 prehistoric ceramic vessels from the Winooski site, (VT-Ch-46). The Winooski site, listed on the National Register of Historic Places, is located on the Winooski River in Chittenden County, Vermont. Two distinct ceramic assemblages from the site are discussed, using a ceramic sample recovered by the Burlington Chapter of the Vermont Archaeological Society in 1972-1973, and a supplementary sample later recovered from an eroding portion of the site.

A lengthy description of these two ceramic assemblages provides data for the poorly known Middle Woodland period of Northeastern prehistory, ca. A.D. 1-1000. The earlier assemblage, designated the "early Winooski ceramic series", is assigned to the early Middle Woodland period, ca. A.D. 1-300. The later assemblage, designated the "late Winooski ceramic series", is assigned to the late Middle Woodland period, ca. A. D. 600-1000.

The concluding comparative section places the site within a regional framework. Ceramics from the Winooski site are compared with contemporaneous ceramics from other sites in the Lake Champlain drainage basin as well as the larger Northeastern region. This comparison allows provisional placement of the early Middle Woodland occupation of the Winooski site within a large area of cultural interaction centered in the Great Lakes - St. Lawrence basin. The relationships of the late Middle Woodland occupation(s) of the Winooski site appear to have been more provincial.

This ceramic analysis provides the first publication of detailed data from the Winooski site, data significant in both local and regional contexts. Pen and ink drawings, descriptive table, maps, and photographs have been included as a graphic complement to the text.

Publication Notice

**64th Annual Meeting  
of the New York State Archaeological Association**

**April 18-19-20**

**Syracuse, New York**

**Program of Papers**

**Saturday, April 19**

9:50 A. M. *The Kings Road Site Cox 244: Paleo Man Revisited.* Thomas P. Weinman, William M. Beauchamp Chapter.

10:15 A.M. SYMPOSIUM ON THE "LAURENTIAN" ARCHAIC  
Chair: Dr. James Bradley, William M. Beauchamp Ch.  
Discussant: Dr. James Tuck, Memorial University of Newfoundland.  
*Perspectives from New York State*, Dr. Robert Funk, New York State Museum.  
*Perspectives from New England*, Dr. Dena Dincauze, University of Massachusetts.  
*Perspectives from Canada (St. Lawrence Valley)*, Dr. James V. Wright, National Museum of Man, Ottawa.  
*Discussion*, Dr. James Tuck, Memorial University of Newfoundland.

SYMPOSIUM ON HISTORICAL CERAMICS RESEARCH IN NEW YORK STATE

Chair: Charles F. Hayes III, Lewis H. Morgan Chapter  
Discussant: George R. Hamell, Lewis H. Morgan Chapter

*Part One: Ceramic Overviews*

1:30 P.M. *An Overview of 17th Century Historical Ceramics in New York State*, Rich Goring, New York State Department of Historic Preservation.

2:00 P.M. *Classification and Economic Scaling of 19th Century Ceramics*, George L. Miller, National Historic Sites and Parks, Canada.

2:30 P.M. *Historical Ceramics from Western New York State*, Daniel M. Barber, Lewis H. Morgan Chapter.

*Part Two: Specific Site Reports*

3:15 P.M. *The English Ceramic Sequence from the Requa Site, Philipse Manor*, New York, Louis A. Brennan, Pace University.

3:45 P.M. *Origins of the English Ceramics from the Requa Site, Philipse Manor*, New York, Roberta Wingerson, Metropolitan Chapter



- 4:15 P.M. *Historical Ceramics from the Engelbert Site: An Evaluation of Artifacts from a Salvage Operation*, Charles Semowich, Triple Cities Chapter.
- 4:45 P.M. *Summary and Discussion*, George R. Hamell, Lewis H. Morgan Chapter.
- 7:00 P.M. Banquet Address  
*Maritime Archaic: Overview and Recent Discoveries*, Dr. James Tuck, Department of Anthropology, Memorial University of Newfoundland.

**Sunday, April 20,**

Morning Session-General Papers

Chair: Gordon C. De Angelo, Beauchamp and Chenango Chapters

- 9:00 A.M. *In Search of Ste. Marie de Ganmentaha*, Dr. Peter P. Pratt, Beauchamp and Chenango Chapters; Dr. Marjorie Pratt, Beauchamp and Chenango Chapters; Dennis Connors, Director, Office of Museums, Onondaga County Parks Department; Gordon C. De Angelo, Beauchamp and Chenango Chapters.
- 9:30 A.M. *Investigations in Limnoarcheology*, Ronald W. Hynes, Underwater Archeology Ass'n., Finger Lakes.
- 10:00 A.M. *Remains of the Salt Industry in Syracuse*, Bruce Naramore, Salt Museum Site Manager, Onondaga County Parks, Museum Office.
- 10:35 A.M. *Trade Beads Among the Five Nations' Iroquois*, Dr. Peter P. Pratt, Beauchamp and Chenango Chapters.
- 11:05 A.M. *Seneca Doorkeeper Combs of the 17th Century*, George R. Hamell, Lewis H. Morgan Chapter.
- 11:35 A.M. *Indian Hill, a Prehistoric Site*, Ferdinand LaFrance, William M. Beauchamp Chapter.
- 12:05 P.M. *Parting Words*, Barbara L. Hams, William M. Beauchamp Chapter.