

The Bulletin

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The Bulletin



and Journal of The Archaeology of New York State



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EDITORIAL NOTE

This issue of the *Bulletin and Journal* comes to you because Van Epps-Hartley Chapter made a munificent \$1000 donation to the publication fund in response to our editorial appeal in the Silver Anniversary number. Otherwise the Association has not responded generously enough to issue number 77. It will be forthcoming when funds are available. L.A.B.

THE OTTER CREEK NO. 2 SITE IN RUTLAND COUNTY, VERMONT

William A. Ritchie NYSAAF

Van Epps-Hartley Chapter

INTRODUCTION

Otter Creek No. 2 is a stratified, multi-component site situated on the east bank of Otter Creek, in Brandon Swamp, Brandon Township, Rutland County, Vermont. Its exact location on the U.S.G.S. 7½ Minute, Sudbury Quadrangle, is 43°50'17" N. Lat., 70°08'48" W. Long.

Between June 23 and September 25, 1970, aided by a grant (No. 2562) from the Wenner-Gren Foundation for Anthropological Research, and with approval of the Department of Anthropology of the University of Vermont, the writer, assisted by Richard T. Passino, conducted an archeological survey of western Vermont. During the course of this investigation 15 river, creek, swamp, pond and lake shore areas were examined, 18 prehistoric sites were located and tested, and four large archeological collections were studied. The results were incorporated in a report to the Wenner-Gren Foundation, and copies of the site data were sent to Prof. William A. Haviland, Chairman, Department of Anthropology, University of Vermont (Ritchie 1970).

The Otter Creek No. 2 site was discovered near the end of the survey period by Passino and was briefly tested by him and the writer, yielding fragmentary Levanna type points and very small potsherds, apparently of late Woodland provenience. It was recommended in my report that the site be further investigated.

During the following year Mr. and Mrs. Passino returned to the site for more extensive testing. An area of deeper, darker soil was located farther back from the creek which produced Otter Creek type projectile points. This was reported to the writer who had retired as New York State Archeologist in April of that year, hence was unable to conduct a major field operation. The Passinos therefore undertook excavation of the site with professional advice and periodic field participation from the writer, whose summer home on Lake Champlain facilitated his association with the work which ended in 1977.

Sometime during the spring of that year, some person or persons unknown, discovered the excavations, destroyed a portion of the grid and dug a few random holes in both the already explored and the small unexcavated remainder. Fortunately this was the only disturbance suffered by the site in the course of our work there, and it is extremely doubtful that it affected in any significant manner, the results as herein reported.

The Otter Creek No. 2 site occupies a low rise on a generally level area of the creek bank, here about 3.5m above the normal summer water level. Spring inundations occasionally cover the site and obviously had done so many times in the past, resulting in several layers of alluvium later to be described.

Presently, the site and surrounding region are thickly wooded with a second or third growth of maple, canoe birch, white and red oak, beech, ash and a few additional arboreal species, together with thickets of alder, hazel and other bushes, creating a dense, dark, heavily mosquito-infested, and thickly root-interlaced locus, very difficult to explore.

Test pitting disclosed the full extent of the dark midden soil to be approximately 15m on an east-west axis, 9m on a north-south axis, with the major older portion of the site occupying a lesser expanse measuring roughly 12m by 7m.

With some difficulty, involving removal of the brush and a few of the smaller trees, a 1.5m grid was staked out and excavation proceeded by a combination of vertical and horizontal troweling, following as

Front Cover. *Historic Montauk pottery from Pantigo Hill Site, Easthampton 7/1524-5. Photograph Courtesy of Museum of the American Indian, Heye Foundation.*

closely as possible the root-bound individual soil zones and maintaining, where feasible, a meter or more of horizontal exposure at all times. Considerable portions of the site material were passed through a screen with about 7mm mesh. In much of the deposit, clear zonal demarcation was lacking, a predicament complicated by old root channels, small rodent burrows, treefall and other disturbances, all aggravated by often poor lighting conditions.

STRATIGRAPHY

The depositional unit throughout the main body of the site, consisted of four members, varying considerably in individual and total thickness. Zone 1, topped by a few cm of recent duff or A soil, was a dark brown clay loam with considerable admixed sand, 20 to 25 cm thick. It appeared to owe the major portion of its bulk to recurrent accumulations of alluvium from high river levels. Its small industrial content, found principally in the southwestern section of the site, the locus of our preliminary testing in 1970, is now referable to the late Middle Woodland period in Vermont.

Zone 2 was a tan-colored alluvial soil, 15 to 30 cm in thickness. It, too, seemed to represent the results of repeated alluviation of the site. Its archeological content was much larger and more varied than that of Zone 1.

Zone 3, a black clay loam with a thin scattering of charcoal granules, ranged in depth from about 8 to 23 cm, and was the chief occupation horizon of the site. As nearly as could be determined, nearly everything clearly associated with Zone 3 pertained to the Vergennes phase.

Zone 4, a second level of tan alluvium, 7 to 9 cm deep, contained considerable clay and carried random eroded pebbles up to about 3cm in diameter. Archeologically sterile, it was probably flood-laid directly over the irregular, friable, seamed and fissured bedrock, consisting of the Beldens Member of the Chipman Formation, of Upper Early Ordovician age. The rock is an interbedded buff-brown dolostone and a white to blue-gray limestone, both slightly marbled into a low-rank metamorphic rock.

The low rise on which the site rests is evidently part of an anticline similar to many such geological features scattered throughout the Brandon and neighboring swamps. Many of the prehistoric sites within this portion of Vermont occur on such anticlines which protrude only some 6 to 12 m above the normal summer water level of the swamps, themselves the vastly shrunken remnants of the ancient Champlain Sea.

FEATURES

Despite close observation, the site seemed devoid of pits, hearths, postmolds and identifiable area of industrial activity, all of which, except possibly postmolds, would have been discernible even with the thick tangle of roots nearly everywhere prevailing. A few scattered human burials, later to be described, constituted the only features found. Fire-shattered rock fragments and debitage of stone chipping occurred sporadically but in no concentrations. What was noted, however, in Zone 3 were a few randomly distributed "hot-spots" or small loci a few feet in diameter, especially productive of artifacts. These may have indicated the presence of lodge floors, but no hearths were uncovered.

Food animal bone refuse, lacking in Zone 1, very rare in Zone 2, was present in Zone 3, together with a small number of organic artifacts, a matter of much importance since this is the only recorded instance of the preservation of osseous food and industrial remains on a site of the Vergennes phase in the United States. Mention will later be made of the probably related Alumette Island site in the Ottawa River of Canada, on which bone implements occurred. The Otter Creek No. 2 site animal bones served a second significant purpose in providing, as noted below, the only radiocarbon date for the Vergennes phase in the United States.

ARTIFACTS

With a reasonable regard for space limitations and reader interest, the artifact assemblages from the Otter Creek No. 2 site will be described and discussed as economically as is feasible and consistent with what I regard as the minimum essential requirements. The artifacts from each zone will be inventoried, quantified and the constituent materials noted.

With few exceptions, the chipped stone implements have been manufactured from two predominant rock varieties, quartzite and flint. The quartzite, *unless specifically noted, is the Cheshire variety, a white*

or light gray to faintly pink or buff-colored vitreous rock of Lower Cambrian age. The Cheshire formation outcrops along the front range of the Green Mountains from the northern border of Addison County, Vermont to the Massachusetts border. It is a dominant formation along the eastern edge of Otter Creek from Pittsford, Vermont south.

Glacial boulders and smaller masses of this rock occur widely over the entire area and debitage from the site clearly reveals this as the principal sources of the raw material. Pebble, cobble or boulder fragments with cortex surfaces are common. There may, however, have been some use of outcrop faces since quarry sites of Cheshire quartzite are known. An especially large one and several smaller stations occur on the east side of Bristol Pond, near Bristol, Addison County, Vermont. The scarcity of quartzite cores suggests, however, that little use was made of quarry sources.

The second major artifact material, less extensively employed than the quartzite, is Beekmantown flint of Lower Ordovician age and all *references to flint* in the artifact descriptions will be to this variety, unless otherwise noted. Beekmantown flint has a wide distribution in northeastern New York and adjacent Vermont and it occurs in several areal facies, ranging from the light gray of the Fort Ann to the black of Mount Independence. It is mainly of medium to dark gray in color and is available from pebble size upward in the glacial drift and as bedrock outcrops. Several quarry-workshop sites are known both in New York and Vermont.

ZONE 1 ARTIFACTS

Finds in this upper level of the site were very meager and most of them occurred, as already noted, in the southwestern section. They comprised the following items:

Projectile points. 9 of Levanna type (Ritchie 1961:31), 3 intact, 2 of flint, 1 of quartzite; 6 fragmentary, 1 of flint, 2 of Glenerie flint, 3 of quartzite (Plate 1, figs. 1, 3, 4). A narrow triangular point of quartzite (Plate 1, fig. 2), resembling the Squibnocket type (Ritchie 1969b; 244), seems out of context in Zone 1 and probably originated in Zone 2.

End scrapers. 1 of triangular form with damaged base of flint; 1 "thumbnail" form of Onondaga flint (Plate 1, fig. 5).

Potsherds. Rare and of small size, most are referable to late Middle Woodland styles, and are formally described in Ritchie and MacNeish 1949. There are 8 sherds of St. Lawrence Pseudo-Scallop Shell in rocker-stamp motif, one a narrow, pinched, outflaring rim sherd (Plate 1, figs. 8, 9); 6 St. Lawrence Pseudo-Scallop Shell, one a nearly straight rim with corded-stick notching (Plate 1, figs. 6, 7, 12, 13, 14); 3 Point Peninsula Rocker-Stamped, 2 dentate, 1 corded (Plate 1, figs. 10, 15, 16); 1 Vinette Complex Dentate (Plate 1, fig. 11); and 4 Point Peninsula Plain.

Interior surfaces of all are smooth, except for the Vinette Complex Dentate sherd which shows slight channeled scraping. All are sparingly tempered with coarse quartz aplastic; 4 of the 6 St. Lawrence Pseudo-Scallop Shell sherds also have a cellular structure possibly from the leaching out of limestone tempering. There is also a small fragment of an undecorated obtuse angle elbow pipe.

ZONE 2 ARTIFACTS

As previously mentioned, this level of the site was far more productive of artifacts than Zone 1, and qualitatively it was the most varied of all zones, yielding scanty remains referable to Middle and Early Woodland, Transitional and Late Archaic complexes. While certain of the items referred to this horizon may have originated in either of the adjacent zones and have been vertically displaced by unascertainable mechanical means, the evidence supports the assumption of successive brief occupations by a number of culturally diverse small groups over a lengthy temporal span, during which Zone 2 was being formed by successive alluviations, but with little soil accumulation. Consequently, a number of separate minor components were compressed into a short vertical distance. Unlike Zone 1, component loci in Zone 2 could not be distinguished by either plotting the horizontal or vertical distribution of the artifacts.

In the following inventory, the artifacts assigned on the basis of physical stratigraphy to Zone 2, are described in the culturally sequential order established for the general region (Ritchie 1965, 1969a), although this was not always reflected in their respective recorded depths, due probably to the mode of deposition and subsequent disturbances.

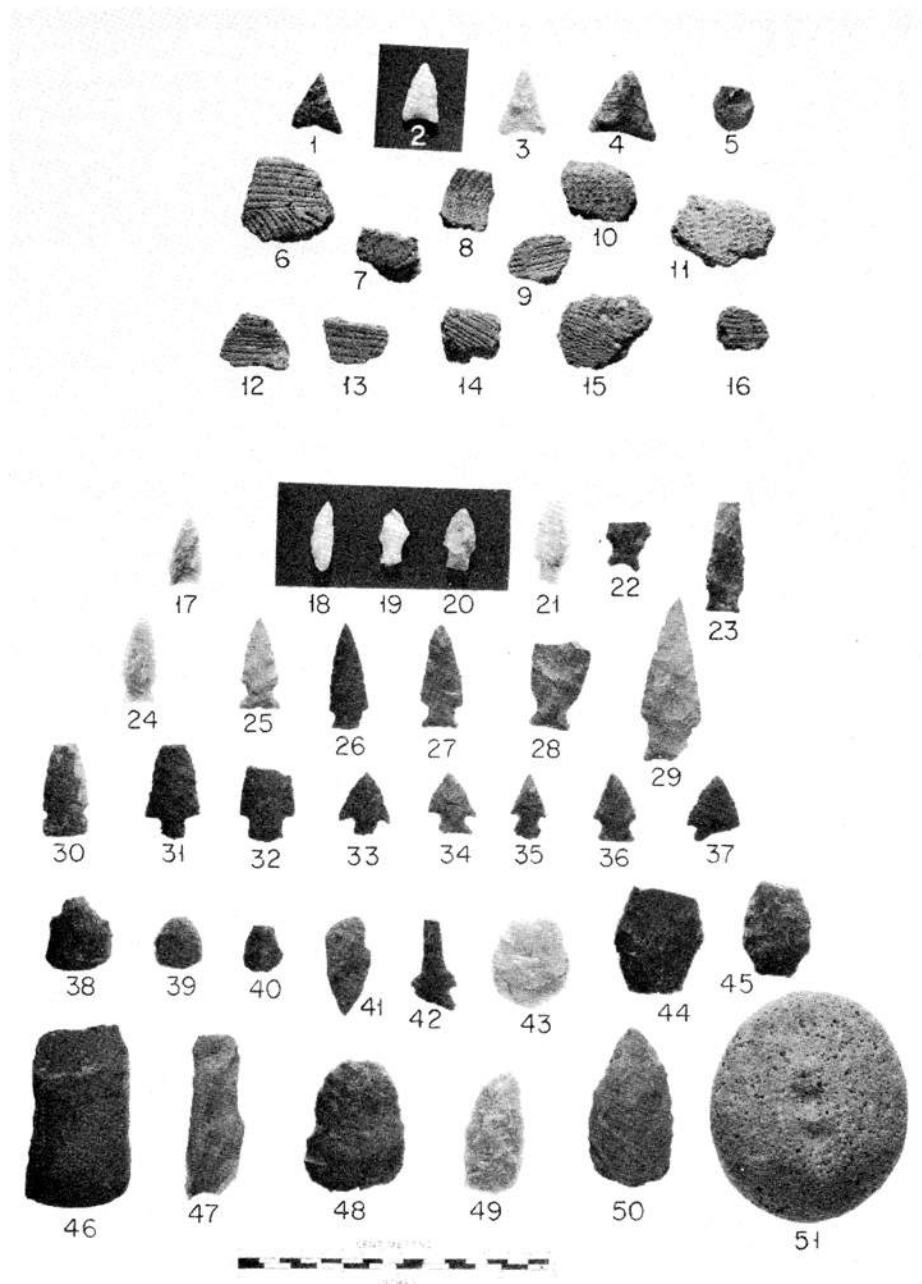


Plate 1. Artifacts from Zone 1, 1-16 and Zone 2, 17-51. 1, 3, 4 Levanna points, 2 Squibnocket Triangle point, 5 end scraper, 6-9, 12-14 St. Lawrence Pseudo Scallop Shell potsherds, 10, 15, 16 Point Peninsula Rocker-Stamped sherds, 11 Vinette Complex Dentate sherd. Material: 1, 4 Beekmantown flint, 2, 3 quartzite, 5 Onondaga flint.

17 Brewerton Eared-Notched point, 18 Squibnocket Stemmed point, 19-21 Wading River points, 22, 23 Orient Fishtail points, 24, 25, 27 Normanskill points, 28, 29 Susquehanna Broad points, 30 Meadowood point, 31 Neville Stemmed (?) point, 32 broad stemmed point, 33, 34 Jack's Reef Corner-Notched points, 26, 35 corner-notched points, 36 side-notched point, 37 bifurcated-base point, 38-40 end scrapers, 41 strike-a-light, 42 corner-notched drill, 43, 48 ovate knives, 44, 45 weakly stemmed knives, 46 adz, 47 prismatic flake knife, 49, 50 trianguloid knives, 51 bipitted muller. Material: 17, 24, 43, 49 Cheshire quartzite, 18-21 quartz, 22, 27, 28, 30, 34, 35, 39, 40, 41 Onondaga flint, 23, 29, 47 Deepkill (Normanskill) flint, 25, 26, 31-33, 36, 38, 42, 48 Beekmantown flint, 44, 45 Glenarie flint, 46 basalt, 50 slate, 51 garnetiferous schist.

Projectile points. Typologically the most recent of the identified projectile point styles is the Jack's Reef Corner-Notched (Ritchie 1961:26) with 5 examples, 2 of Onondaga flint, 2 of flint, 1 of quartzite (Plate 1, figs. 33-34). Such points elsewhere pertain to the Kipp Island phase of the late Middle Woodland period (Ritchie 1965:232, 1969a: 234; Ritchie and Funk 1973:154) and to the succeeding Hunter's Home phase (Ritchie 1965, 1969a:253). There is one example of an unmistakable Meadowood point (Ritchie 1961:35), made of the characteristic western New York Onondaga flint, and assignable to the Early Woodland period (Ritchie 1965:179, 1969a:180; Ritchie and Funk 1973:99). (Plate 1, fig. 30).

Three imperfect examples of Orient Fishtail points (Ritchie 1961:39), 2 of Glenerie flint, 1 each of Deepkill and Onondaga flint, suggest weak peripheral influence of the Orient phase of the Transitional period in this region, so distant from its source (Ritchie 1965:163, 1969a:164) (Plate 1, figs. 22, 23). Also pertaining to the Transitional stage are the 2 examples of the Susquehanna Broad point (Ritchie 1961:53) illustrated in Plate 1, figs. 28, 29, 1 of Onondaga flint, 1 of white-weathering Deepkill flint. This point style in New York pertains to the Frost Island phase (Ritchie 1965:155, 1969a:156; Ritchie and Funk 1973:71)

Of Late Archaic provenience are 4 Normanskill points (Ritchie 1961:37), 2 of quartzite, 2 of flint (Plate 1, figs. 24, 25, 27). This point style characterizes the River phase in New York (Ritchie 1965:124, 1969a:125; Ritchie and Funk 1973:52). Contemporaneous with the River phase in upstate New York was the Sylvan Lake complex of southeastern New York (Funk 1976:247) and the closely related Squibnocket complex in coastal New York and southern New England (Ritchie 1969b:215). Four projectile points from Zone 2 can be attributed to types characteristic of this complex, viz., 3 Wading River points (Ritchie 1969b:241, 1971a:131) (Plate 1, figs. 19-21), and 1 example of a Squibnocket Stemmed point (Ritchie 1969b:243, 1971a:126) (Plate 1, fig. 18). All are of white quartz, the almost invariable material for such points in the coastal area.

The only remaining typologically identifiable projectile point from Zone 2 is a Brewerton Eared Triangle (Ritchie 1961:18) of quartzite, shown on Plate 1, fig. 17. It pertains to the Laurentian tradition and was probably derived from Zone 3.

Of special interest is a bifurcated-base point found at a depth of 28cm in Zone 2. It has unfortunately lost half its base, but clearly it must be referred to an untyped category of this Early Archaic style (Plate 1, fig. 37). It seems to have resembled the specimen shown on Plate 34, fig. 4 of Ritchie 1961:115. The material is a black flint of uncertain provenience.

There is an unclassified remainder of 9 points from Zone 2, which can briefly be described as follows: 5 broad, straight-stemmed points, sans tips, 1 of quartzite, the others of flint (Plate 1, figs. 31, 32). One of these figure 31, bears a strong resemblance to the Middle Archaic Neville Stemmed type (Dincauze 1976:26). One short, broad, side-notched point of flint (Plate 1, fig. 36) and 1 broad and 2 narrow corner-notched points of flint (Plate 1, figs. 26, 35) complete the list.

Knives. To this category I have attributed 3 trianguloid bifaces, 2 of quartzite, 1 of slate, illustrated on Plate 1, figs. 49, 50; 3 ovate bifaces, 2 of flint, 1 of quartzite (Plate 1, figs. 43, 48); and 2 bifaces with sloping shoulders and weak stems, probably of Glenerie flint from the Hudson Valley, suggesting the knife form of the Frost Island phase (compare Plate 1, figs. 44, 45 with Plate 38, figs. 16, 21 in Ritchie and Funk 1973). Some of the above artifacts may be point preforms rather than knives. There is a single large, thick prismatic flake knife with lightly chipped edges, resulting perhaps from use (Plate 1, fig. 47).

Scrapers. There are 10 end scrapers, 5 of thick, humpback style (Plate 1, figs. 38, 39) and 4 made from thin spalls with a steeply chipped scraping edge, all of flint (Plate 1, fig. 40).

Drills. There are but 2 specimens, 1 a point fragment, 1 an expanded corner-notched basal section, both of flint (Plate 1, fig. 42).

Strike-a-light. A triangular flint biface with characteristically battered base is the sole representative of this device found on the entire site (Plate 1, fig. 41).

Adz. The only pecked and polished stone implement from Zone 2 is the plano-convex adz of basalt with broken poll pictured on Plate 1, fig. 46.

Pitted muller. The artifact list from Zone 2 is completed with mention of the multiple bipitted (2 conical pits on either face) grinding stone or muller illustrated on Plate 1, fig. 51. Only the surface not shown is smoothed. The material seems to be a fine-grained garnetiferous mica schist. It has a maximum thickness of 52mm.

ZONE 3 ARTIFACTS

The principal occupation of the site pertained to Zone 3, the black clay loam horizon already described. Considering its rather small magnitude, a surprising quantity of industrial material was taken from it, nearly all of which perfectly accords with the complex I have redefined as the Vergennes phase (Ritchie 1965:84, 1968). With the exception of the Bridge site in Clinton County, New York, most of which was destroyed by sand removal (Ritchie 1968:3), and the KI site in Rutland County, Vermont (Ritchie 1965:84, 1968, 1969a:84), Otter Creek No. 2 is the most productive station of the Vergennes phase known and it has made several notable contributions to our knowledge of this early Laurentian culture manifestation in the Northeast. As is usual on these sites, there is a preponderance of projectile points.

Projectile points. The diagnostic Otter Creek type projectile points constitute over 78% of the total projectile point content of zone 3. Predominantly large and heavy missiles, they undoubtedly served to arm javelins or short spears, propelled by throwing sticks or atlatls. The bannerstone or atlatl weight is present, but rare, in the Vergennes culture, as further noted below.

The inventory of Otter Creek points comprises 34 intact specimens, 14 of quartzite, 16 of flint, 4 of slate. Fragmentary examples include 14 base sections, representing an estimated $\frac{1}{2}$ to $\frac{2}{3}$ of the total point length, 10 of quartzite, 4 of flint, and 3 short base fragments, 2 of quartzite, 1 of flint.

Since the Otter Creek point type has already been formally described (Ritchie 1961:40), no lengthy account of the examples from this site is required. A representative series is illustrated on Plate 2, figs. 20, 24-46. The intact points range in length from 48mm to 100mm, in breadth from a maximum of 25mm to 36mm, and in thickness from a maximum of 7mm to 11 mm. Large points are in the majority; of the sample of 26 used as the basis of the illustrations, 11 range between 77-100mm, 7 between 63-71 mm, and 8 between 46-59mm.

In definite and intimate association with the prevailing Otter Creek points were 9 intact and 2 fragmentary examples of the Vosburg style (Ritchie 1961:55), most of which are pictured on Plate 2, figures 11, 12, 16-19, 21-23. Five whole and 1 base fragment are of quartzite, 3 complete and 1 broken specimens are of flint, and 1 is of slate.

Of some interest and, I believe, significance, are the 3 specimens illustrated as Vosburg points (Plate 2, figs. 11, 16, 17) in which the Vosburg style of corner-notching occurs on one side, the chipped and ground side-notching of the Otter Creek variety on the other.

There is from Zone 3 a small untyped residue of 10 projectile points, as follows: 1 narrow point with a very long lobate stem (Plate 2, fig. 1). The material is a fine gray quartzite and the form is identical with certain specimens found as burial goods in the "Red Ochre" or Moorehead cemetery complex of Maine. This style has a rare representation in private collections I have seen in the Lake Champlain region. Three broad, weakly stemmed of quartzite (Plate 2, figs. 10, 14, 15); 1 narrow stemmed of flint (Plate 2, fig. 2); 1 crude stemmed of quartzite, possibly a reject (Plate 2, fig. 3); 1 narrow, weakly side-notched with rough unfinished base of flint (Plate 2, fig. 4); 1 base fragment of felsite with wide, nearly rectangular, notches, having a close counterpart in a late Archaic form in Maine (Plate 2, fig. 5); 1 broad side-notched, sans tip, of Little Falls dolomite flint (Plate 2, fig. 6); and 1 broad, side-notched of quartzite (Plate 2, fig. 13). There are also 3 fragmentary points or knives of possible Plano style, made apparently of the local Beekmantown flint. All are triangular, 2 have straight, 1 a slightly concave base. The chipping differentiates them from all other points on the site, conforming to the collateral or parallel ribbon flaking technique (Plate 2, figs. 7-9). The base and lateral edges are sharp except in figure 7 where they have been lightly ground. The thickness ranges from 4 to 6mm. These artifacts found at sundry depths and loci in Zone 3, recall generally similar aberrant pieces found by the writer on the Oberlander No. 1 site at Brewerton, New York, where they occurred in a Brewerton Laurentian context (Ritchie 1940: Plate XXV, figs. 13-16). They seem also to show similarities to the probable Plano points from Thompson's Island in the St. Lawrence River near Cornwall, Ontario, Canada (Ritchie 1965:17) and to similar fragmentary specimens found on the Gaspé Peninsula in Quebec (Benmouyal 1978:60). These points seem clearly out of context in the Vergennes component in Zone 3 and, like the bifurcated-base point from Zone 2 (Plate 1, fig. 37), they are doubtless admixtures from some earlier sojourn.

Knives. The extraordinary number of 35 chipped stone knives was found in Zone 3. Certain of these, however, may actually have been projectile point preforms or even rejects. There are several recognizable styles, the most numerous being ovate with 16 examples, 12 of quartzite, 3 of flint, 1 of slate. Four are of small size, 57-72mm long, 32-43mm wide, 10-15mm thick (Plate 3, figs. 12, 15, 17); 5 are large, 85-95mm

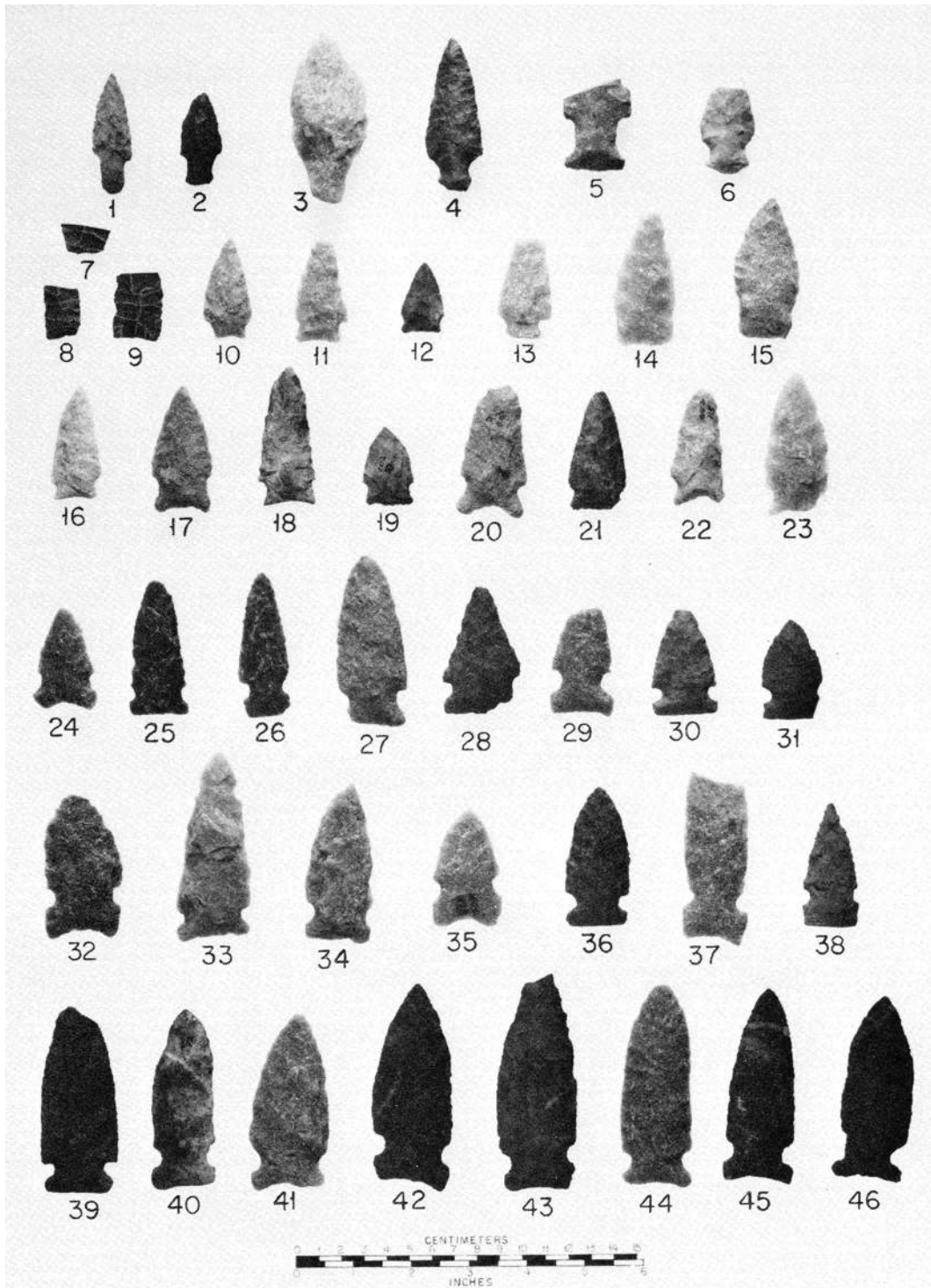


Plate 2. Projectile points from Lone 3. 1-2 narrow stemmed points, 3 crude stemmed point, 4-6, 13 side-notched points, 7-9 fragmentary Plano (?) points, 10, 14, 15 broad weakly stemmed points, 11, 12, 16-19, 21-23 Vosburg points, 24-46 Otter Creek points. Material: 1 quartzite, 5 felsite, 6 Little Falls dolomite flint, 18, 19 slate, 3, 10, 11, 13-17, 20, 22-24, 27, 29, 32-35, 37, 41, 44 Cheshire quartzite, 2, 4, 7-9, 12, 21, 25, 26, 28, 30, 31, 36, 38-40, 42, 43, 45, 46 Beekmantown flint.

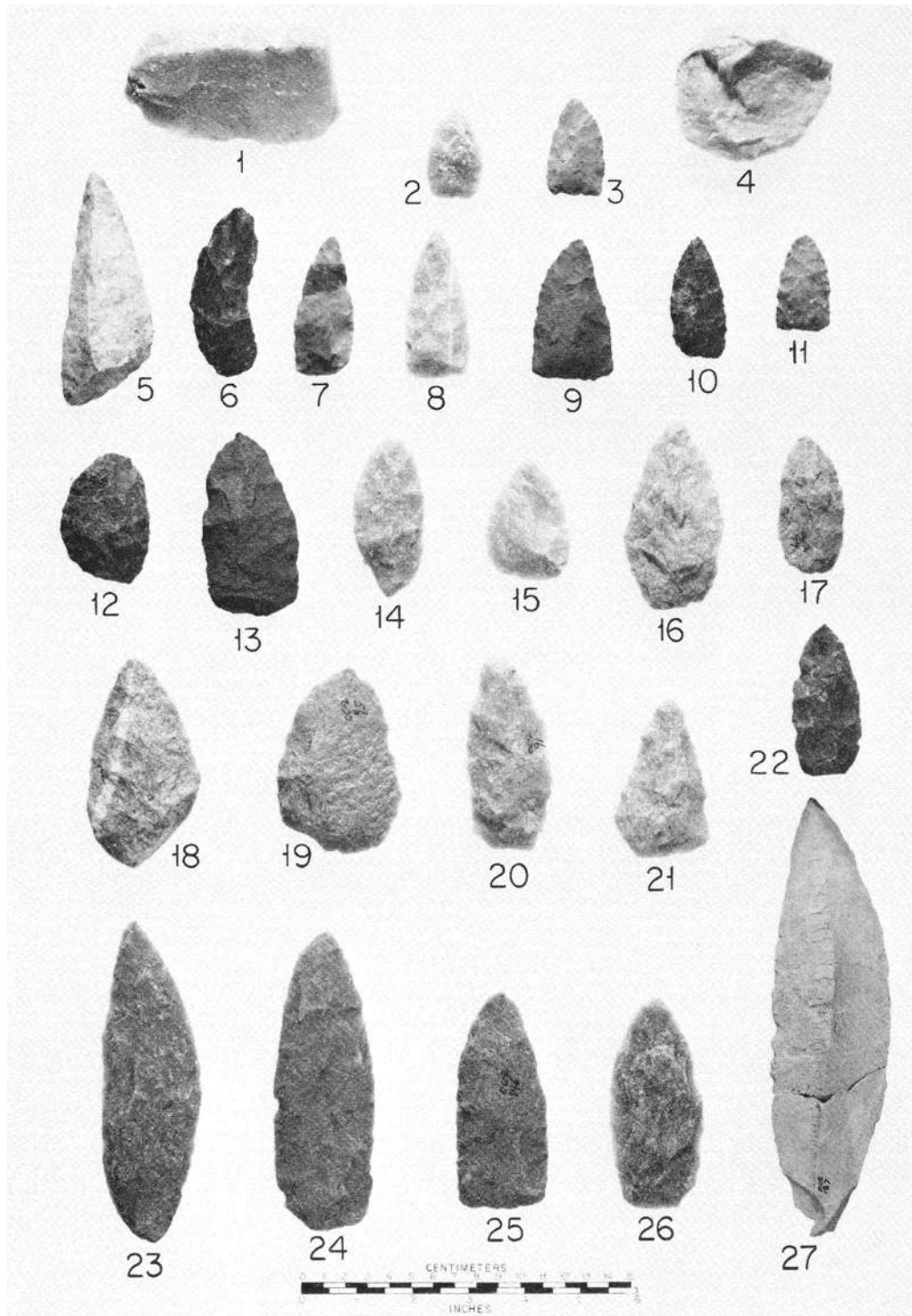


Plate 3. Knives from Zone 3, 1, 4, 5 made from large spalls, 12-21, 23 ovate, 2, 3, 7, 11, 22, 24-26 triangular or trianguloid, 6 crescentic, 27 ulo-like. Material: 1, 2, 4, 5, 8, 14-21, 23-26 Cheshire quartzite, 6, 7, 9-13, 22 Beekmantown flint, 27 slate.

in length, 48-58mm in breadth, c. 15mm in maximum thickness (Plate 3, figs. 13, 16, 18, 19); the majority range in size between these groups (Plate 3, figs. 14, 20, 21). These are biface tools save for a few examples made by chipping one-face of a thick spall (Plate 3, fig. 19).

There are 14 triangular or trianguloid knives, nearly all biface, of 3 general size groups. The smallest group has 4 examples, 1 of quartzite, 2 of flint, 1 of Glenerie flint, ranging in size from 45-57mm long, 23-25mm wide, 5-8mm thick (Plate 3, figs. 2, 3, 10, 11). The midsize group of 5, 2 of quartzite, 3 of flint, is illustrated on Plate 3, figs. 7-9, 22). The length range is 64-74mm, breadth 30-40mm, thickness 5-10mm. Five pertain to the largest group, 4 of quartzite, 1 of flint (Plate 3, figs. 24-26). Length range is 87-137mm, breadth 40-15mm, thickness 6-15mm. The finest knife in the entire series is the elliptical quartzite specimen pictured on Plate 3, fig. 23, with a maximum thickness of only 15mm.

There are 3 very thick (20-23mm) quartzite spall knives, one retaining some of the cobble rind. In 2 instances the cutting edge has been chipped from only one face (Plate 3, figs. 1, 4). Marginal chipping occurs on both faces and long edges of figure 5, Plate 3.

The crude, ulo-like knife shown in Plate 3, fig. 27, was found in 3 well-separated pieces. It, too, is a uniface tool, but made from a large slate spall, triangular in cross-section, with a maximum thickness of 14mm. The edges have been trimmed with small flakes only on the surface shown. A unique curved biface knife of flint sharply chipped along the concave edge, rough on the convex side, is shown on Plate 3, fig. 6.

Scrapers. Five kinds of scrapers have been recognized from Zone 3. There are 5 simple end scrapers made from thick spalls, 3 of quartzite, 1 of white quartz, 1 of flint (Plate 4, figs. 10-14); 1 unusual, long, thick (25mm), humpback, double-ended scraper, made from a split quartzite pebble and chipped entirely around the periphery (Plate 4, fig. 7); an end scraper fashioned from a reworked Otter Creek flint point (Plate 4, fig. 9); and 2 side-scrapers of Glenerie flint. Shown on Plate 4, these are figure 8, a thick spall (18mm) retouched along both sides, and figure 15, a rough crescentic spall, 17mm thick, retouched along the curved edge shown in the illustration, for use as a side scraper or knife. The only indication of use on all these tools is a slight edge polish on figures 7, 9, 11.

Finally, there are 5 massive end scrapers fabricated from large split quartzite pebbles, roughly trimmed on the upper side and chipped to a steep scraping edge along all or most of the periphery. As with the smaller scraping tools, very little or no edge wear is evident when examined with a 10X hand lens. The length range is 72-113mm, the breadth 65-85mm, the thickness 22-45mm (Plate 5, figs. 1-4).

Drill. The sole example of a chipped flint drilling tool, pictured on Plate 4, fig. 16, has a broken base and no evidence of wear on the tip.

Choppers. Best described as heavy chopping tools are 3 biface chipped quartzite specimens, 2 pictured on Plate 5, figs. 8, 9. Magnification of the cutting edges reveals only faint traces of crushing or rubbing from use. The true use of these tools may have included heavy hide scraping.

GROUND SLATE ARTIFACTS

Stemmed knives or projectile points of ground slate or bone and semilunar knives or ulos of rubbed slate or chipped silicious stone are among the diagnostic implements of the Laurentian tradition, and in particular, of its Vergennes phase (Ritchie 1965:79, 1968, 1969a:79). The Otter Creek No. 2 site, while small, yielded a good representation of both classes, although with only two exceptions, in a fragmentary state. Regional slate or phyllite was the material employed.

Ground slate points. Point base fragments, numbering 3, have multiple serrated stems, 2 are barbed, 1 is indeterminate due to damage. (Plate 4, figs. 19, 20, 26). The single intact black slate point, shown on Plate 4, figure 24, has horizontal shoulders and a straight multiple serrated stem. The vertically split half of a red slate point (Plate 4, fig. 22) has a multiple serrated and barbed stem. Blade fragments, numbering 4 (Plate 4, figs. 18, 23), include an extraordinary, very fragmentary and partially restored segment (not illustrated) biconvex in cross-section 190mm long, 50mm wide and 8mm thick, ground from a slab of phyllite, which was found on the bedrock. Unlike anything known to me from the Vergennes phase, its closest analogy would seem to lie with the long slate spearpoints of the Maritime Archaic cemetery of Port au Choix, Newfoundland, particularly with the variety shown in figure 5 of Plate 17 in the site report (Tuck 1976:209). One point fragment has been reused by grinding the base smooth and placing a single ground notch just above it on either side (Plate 4, fig. 25).

Ulos. This category comprises 6 fragmentary specimens including, apparently, 3 pieces of the same

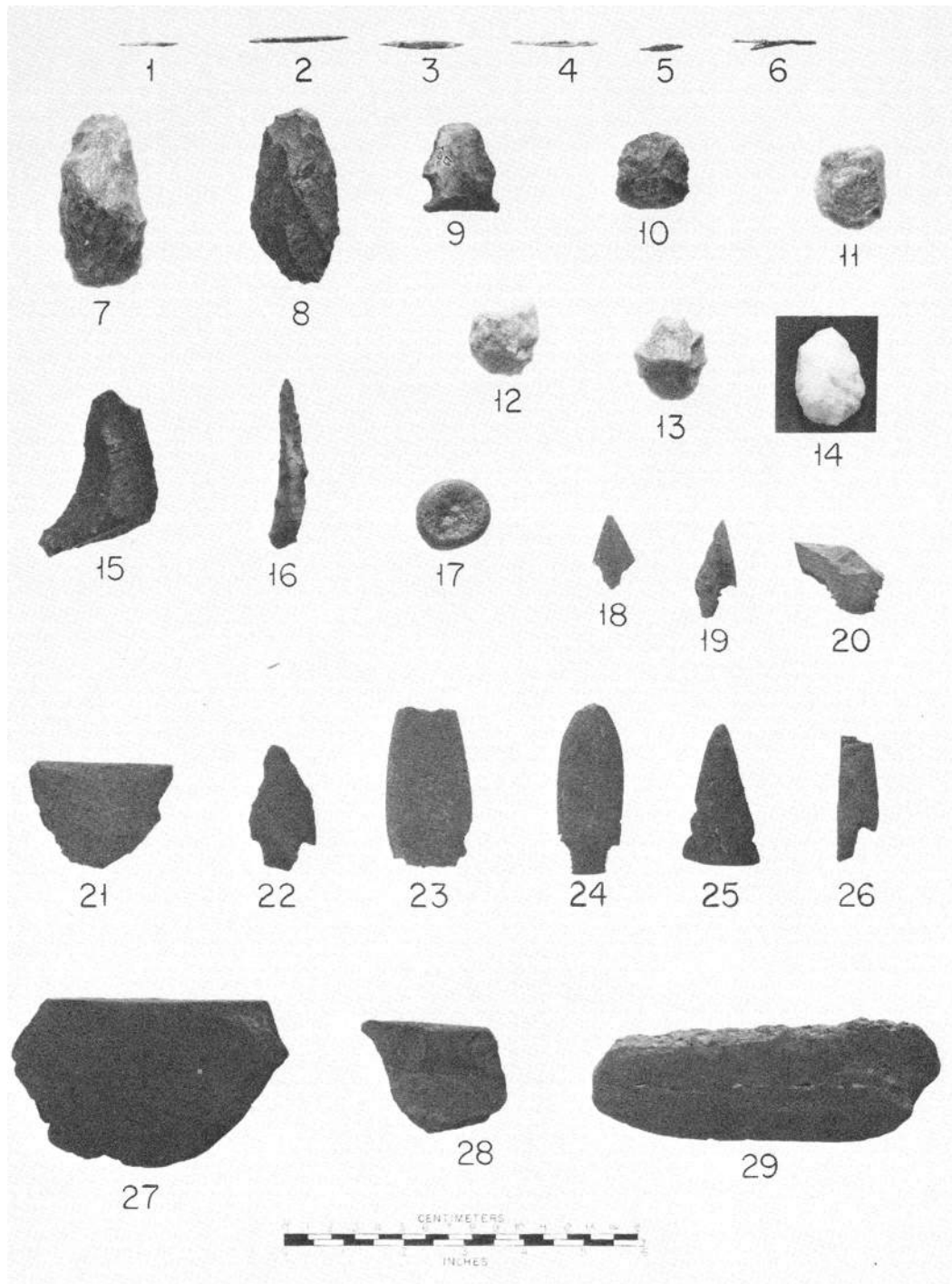


Plate 4. Gorges, scrapers, drill, paintstone, ground slate points and ulos from Zone 3. 1-6 copper gorges, 7 double-ended humpback scraper, 8 side scraper, 9 end scraper from Otter Creek point, 10-14 simple end scrapers, 15 "spoke-shave" scraper, 16 drill, 17 graphite paintstone, 18-20, 22, 23, 26 ground slate point fragments, 21, 27, 28 ulo fragments, 24 ground slate point, 25 reworked ground slate point, 29 ulo. Material: 8, 15 Glenerie flint, 9, 10, 16 Beekmantown flint, 7, 11-13, Cheshire quartzite, 14 quartz, 18-28 slate, 29 phyllite.

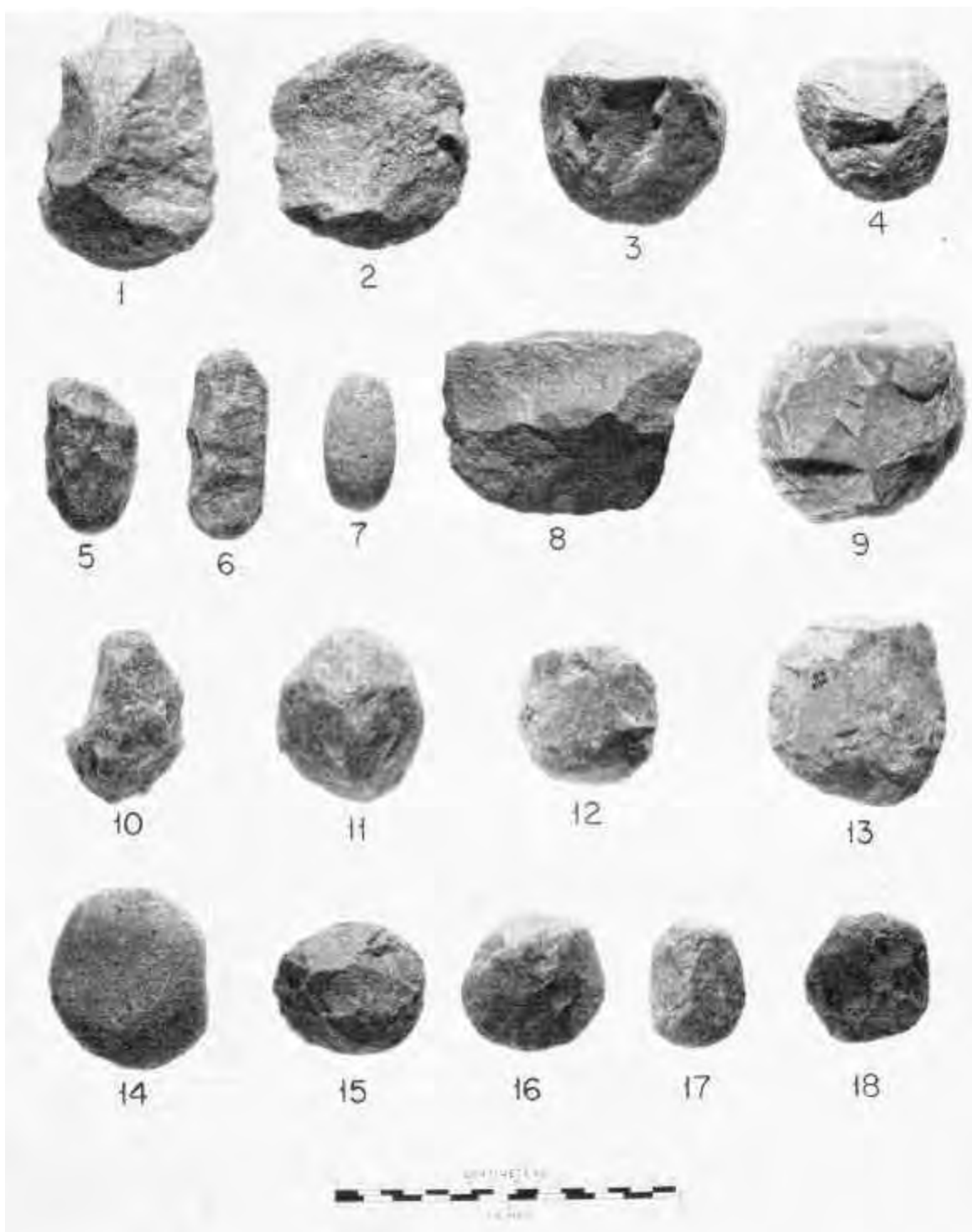


Plate 5. Scrapers, choppers and hammerstones from Zone 3. 1-4 massive end scrapers, 5, 6, 10-13, 15-18 chipped pebble hammerstones, 7 plain pebble hammerstone, 8, 9 choppers, 14 combined hammerstone and muller. Material: All Cheshire quartzite except 7, 14 of unidentifiable quartzite.

implement found close together; one ulo with a thickened or ridge handle (Plate 4, fig. 28); 2 slate ulos in process by chipping and grinding (Plate 4, figs. 21, 27); and one complete specimen of phyllite, 7mm in maximum thickness (Plate 4, fig. 29).

WOODWORKING TOOLS

Celts. Regarded as celts or ungrooved axes because of their biconvex cross-section are the 2 implements shown on Plate 6, figs. 7, 8. Both are probably of phyllite. Figure 7, well made and polished on every surface, has a maximum thickness of only 13mm and shallow pecked notches for hafting on either edge near the poll. Figure 8 has been chipped into shape and the long edges exhibit preliminary pecking. Maximum thickness is 20mm.

Adzes. There is a small thin adz fragment of green slate and a crude, knobbed, piano-convex specimen with poll shaped by pecking to accommodate a handle (Plate 6, fig. 9). The bit has been battered apparently from secondary use as a hammer. The material is a deeply weathered soft brown stone resembling graywacke. Maximum thickness is 33mm.

Gouges. A characteristic tool of the Vergennes Laurentian culture, the gouge is here represented by 4 good examples, illustrating two typical forms, the short-channeled, with 3 specimens, (Plate 6, figs. 3-5), and a fully-channeled tool shown in Plate 6, fig. 6. Figure 5 is roughly chipped and pecked from limestone, has a battered worn-out lip, and measures 16mm in maximum thickness. Better made is figure 3, which is evidently pecked from a schistose rock, now deeply weathered brown. The bit is still sharp, the poll rounded, the maximum thickness 25mm. Similar in treatment and form is figure 4, a very well made implement, probably of basalt, 17mm in thickness. The finest example is figure 6 which has been ground and polished over the entire surface. The slightly damaged lip is very thin and sharp, as in figure 4 and, like it, the material is a very fine grained igneous rock, probably basalt, which has weathered a light gray. It is 30mm thick. A very similar specimen was found by the writer at the base of the Brewerton Laurentian Oberlander No. 1 site at Brewerton, N.Y. (Ritchie 1940 Plate XXVII, fig. 15).

Plummet. Because the stone plummet is a well-established trait of the Vergennes phase and the Laurentian tradition, we were surprised to find at the otherwise productive Otter Creek No. 2 site only one example. Illustrated on Plate 6, fig. 2, it is carefully made from a quartzite pebble, has a slightly knobbed stem, and is 32mm thick. It lay near the base of Zone 3 only 1.5cm above the bedrock.

Bannerstone. Although there is little doubt that the classic Otter Creek projectile point of the Vergennes phase served to arm the javelin or short throwing spear, very few atlatl weights have ever been found on sites of this culture (Ritchie 1968:3; 1969a:85, 86). Plate 6, figure 1 shows the one example from Otter Creek No. 2, a crude, bipennate form with unperforated centrum, apparently broken in process of pecking from a slab of limestone. Like the plummet, it came from near the bottom of Zone 3.

Abrading stones. Grinding or abrading stones for smoothing and polishing stone and bone artifacts occurred in several varieties. There are 3 specimens of a long, rectangular or tabular form of sandstone, one worked on both faces, the others on all 4 sides (Plate 7, figs. 18-20). Figure 19 is scarified at one end from use as a hammerstone. On one edge are 2 shallow annular impressions, 5mm in diameter, perhaps produced by grinding smooth, broken sections of hollow bird bone to use as beads. There is a thin, horizontally split slate piece bearing 9 roughly parallel incised lines, about 20-30mm long, on the smooth face (Plate 7, fig. 17). This tool may have functioned in the sharpening of bone awl points. Two long ovate whetstones made of phyllite (Plate 7, figs. 14, 15), exhibit considerable wear on both faces.

Finally, there are 2 slate rod-shaped pieces, bearing long narrow, and on one specimen, also short oblique incised lines (Plate 7, figs. 12, 13). These highly specialized tools may have been employed in sharpening the curved bits of stone gouges. They are a distinctive trait of the Vergennes phase having been found also on the KI site (Ritchie 1969a:86) and the Bridge site (Ritchie 1968:3). They are practically identical with the stone "rods" found at the Hirundo Archaic site in Maine (Sanger, et al 1977:465) and in the doubtless related "Red Ochre" or Moorehead cemetery complex in the same state.

Hammerstones. Of the 30 hammerstones excavated from Zone 3, 27 pertain to a variety diagnostic of the Vergennes phase. They are derived from small to large pebbles, all of quartzite, save 1 each of white quartz and sandstone. The shape varies from roughly spherical with 15 examples (Plate 5, figs. 11-13, 15, 16, 18) through ovate, 9 examples (Plate 5, figs. 10, 17) to elongate, 3 specimens (Plate 5, figs. 5, 6), and the size from 60 x 43 x 23mm to 90 x 78 x 44mm. Many still retain portions of the pebble rind, and all exhibit varying degrees of battering, not always confined to the peripheral edges.

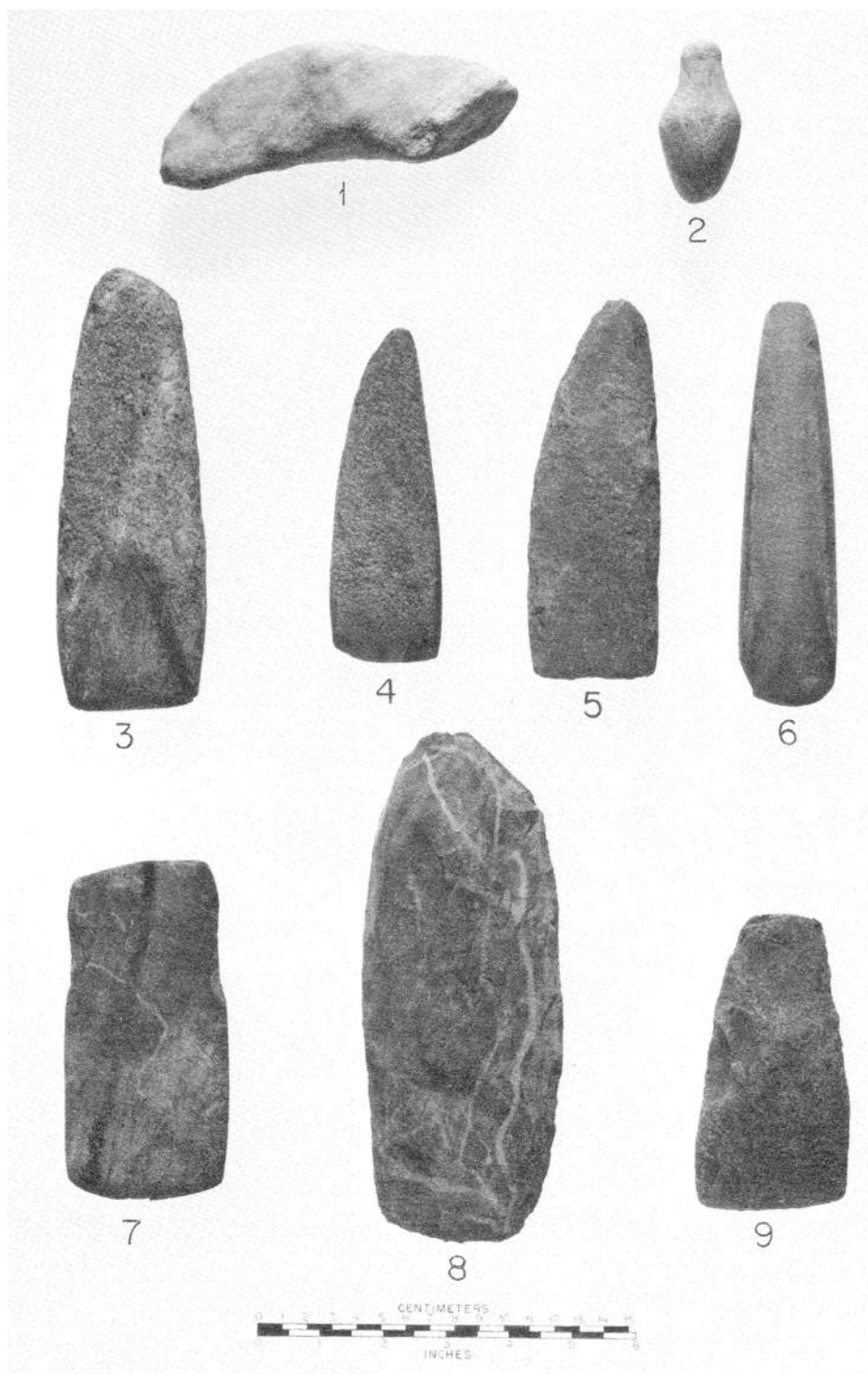


Plate 6. Woodworking and other implements from Zone 3. 1 bannerstone in process, 2 plummet, 3-5 short-channeled gouges, 6 fully-channeled gouge, 7 notched celt, 8 celt in process, 9 knobbed adz. Material: 1, 5 limestone, 2 quartzite, 3 schistose rock, 4, 6 basalt, 7 phyllite, 8 slate, 9 graywacke.

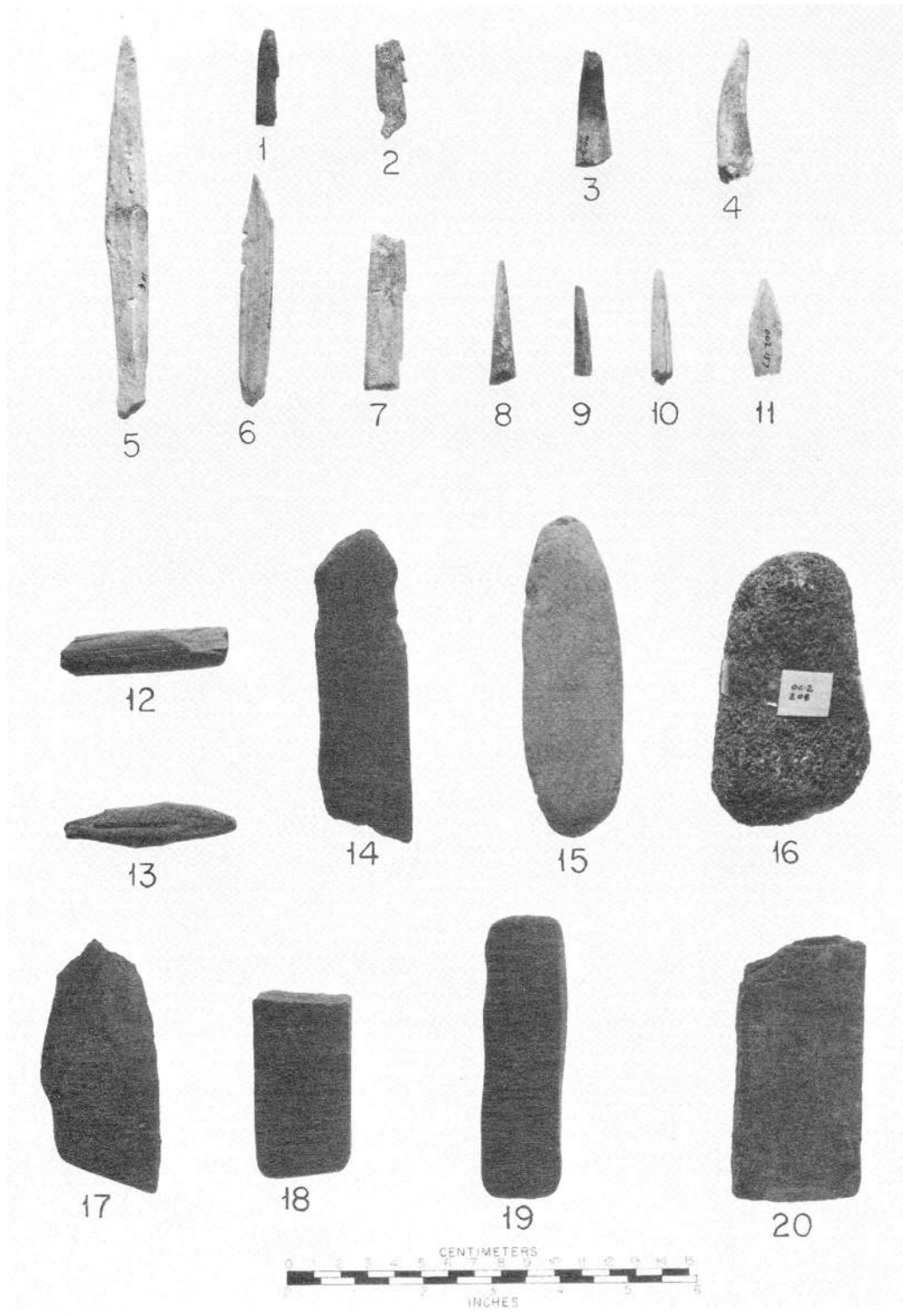


Plate 7. Bone, antler and stone implements from Zone 3. 1, 2, 6, 7 fragmentary barbed bone points, 3, 4 slightly worked antler tines, 5 bone spearpoint, 8-11 fragmentary bone awls, 12, 13 stone rods, 14, 15, 17-20 abrading stones, 16 muller. Material: 12, 13, 17 slate, 14, 15 phyllite, 16 porous volcanic rock, 18-20 sandstone.

There are also 2 small, elongate, natural quartzite pebbles, not of the prevailing Cheshire variety, nearly round in cross-section and scarified at both ends (Plate 5, fig. 7).

Also found in Zone 3 were 12 heavy hammerstones, consisting of natural cobbles, weighing approximately 3-5kg, of quartzite, granite, syenite and unidentified rocks, showing irregular areas of bruising or scarification, apparently the rude tools for shattering the pebbles and smaller cobbles of quartzite and flint, in the initial reduction process of chipped stone manufacture.

Mullers. A combined hammerstone and muller, made from a large quartzite pebble, not of the prevalent Cheshire variety, is shown on Plate 5, fig. 14. It has complete edge battering and one smooth face, apparently from service as a grinding stone. The maximum thickness is 42mm. Of very extraordinary and probably exotic material, a highly porous coarse volcanic rock, is the implement depicted on Plate 7, fig. 16. Naturally shaped like a human foot, it has one well-polished surface and was certainly employed in rubbing or grinding. The maximum thickness at "heel" is 33mm, at "toe" 22mm.

Paintstone. Unique from the site is the graphite paintstone shown on Plate 4, fig. 17. It has a thickness of 18mm and the entire object has been ground to produce the characteristic gray pigment. Graphite occurs in considerable quantities in the Ticonderoga, New York area, only some 24km west of the site.

NATIVE COPPER ARTIFACTS

The extensive role of the hunter in the economy of the Vergennes phase as represented at the Otter Creek No. 2 site is attested to by the large number of projectile points and knives and the preservation of food animal remains. Less evident is testimony for the fishing activity. Nothing that could be regarded as a netsinker was present here, or indeed on any of the few known Vergennes phase sites. Stone plummet usually occur on these sites, although only 1 was found at Otter Creek No. 2. Moreover, despite favorable soil conditions, later to be described, fish bone was absent. However, a few items of fishing gear, made of copper and bone, signify some degree of reliance on food from Otter Creek and other probably local sources.

Gorges. The gorge, as I have several times described it, was an ancient device of bone, copper or perhaps other materials, to be attached at the center to a fish line and concealed in an impaled bait. When taken by a fish, the gorge turned transversely in its gullet or stomach. Some species of waterfowl may also have been captured by this means.

I believe from evidence I have discovered on many prehistoric sites, and described in numerous reports, that the gorge was frequently used on a trot-line or set-line, to which a number of such contrivances were attached at intervals by short dropper-lines to a long line anchored to the bottom. The plummet would have been suited to this use, as well as employed as a sinker for a line and single fishhook. Such coarse and common fish as bullheads, suckers, eels, yellow perch, sunfish, etc. are readily taken by these means, and evidence preserved on other sites shows they were highly favored as Indian food.

There are 5 examples of the native copper gorge from Zone 3, ranging in length from 20-44 mm (Plate 4, figs. 1-5), plus a possible sixth gorge (fig. 6) which may represent the partial separation of 2 annealed and united strands of metal, or less likely, a fragmentary eyed copper needle. Eyed bone needles are a rare element of the Laurentian culture (Ritchie 1945: Plate 10, fig. 15) and they have been reported for a probable Vergennes site in Quebec (Ritchie 1968:3-4). In cross-sections, figs. 1, 2, 4 are round, figs. 3, 5 rectangular. The copper gorge is a recognized trait of the Vergennes, Brewerton and Frontenac phases, as are certain other implements of native copper not found at the Otter Creek No. 2 site (Ritchie 1965, 1969a).

BONE AND ANTLER IMPLEMENTS

Although the yield of osseous artifacts from the Otter Creek No. 2 site is very limited both quantitatively and typologically, it is still significant as constituting the only such material known from a site of the Vergennes phase in the United States. The Alumette Island site in the Ottawa River, Quebec, apparently related to this phase, produced a number of bone implements, including multiple unilaterally

barbed points with angular barbs. The site, still undescribed, was excavated by Clyde Kennedy, who in 1966 kindly showed me his collection in Ottawa (Ritchie 1968:3).

Barbed bone points. There are 4 fragmentary, multiple, unilaterally barbed points from Zone 3, made from flat or round (1 example) sections of mammal long bones. The barbs on all but one are weak (Plate 7, figs. 1, 2, 6, 7). They were doubtless items of fishing equipment. The mode of hafting is indeterminate due to breakage.

Spearpoint. An unusual bone spearpoint with a weak basal knob to facilitate hafting, was found in 2 pieces several feet apart on the same level in Zone 3. It has been cut and ground from a thick (7 mm) segment of large mammal leg bone (Plate 7, fig. 5).

Awls and Punches. Five small bone awl fragments (Plate 7, figs. 3, 4, 8-11) and 3 short pieces of deer antler tines, all broken at the base, and exhibiting some slight evidence of use, possibly as chipping tools, complete the organic artifact inventory from the site.

DEBITAGE

Spalls, flakes, chips, a few cores, and many preforms, most of them broken, comprise the rejects of the stone knapping industry. None of this was found in Zone 1, and it was scarce and limited to flint in Zone 2. Zone 3, however, yielded a considerable quantity, with a heavy preponderance of Cheshire quartzite. As already stated, this material seems chiefly to have been worked from local or regional sources of glacially derived pebbles, cobbles and perhaps small boulders, as indicated by the retention of the rind or cortex on some of the discards. There were no prismatic cores and but a minute number of short prismatic-like flakes of quartzite. There were, however, a few pieces resembling globular cores, and certain of the flakes and smaller spalls bear striking platforms. It is difficult from the evidence to determine just how much use was made of quarry outcrops, such as those at Bristol Pond, already mentioned, distant only some 8km north of the site and accessible by water for most of the way.

Flint detritus seems entirely referable to the Beekmantown series and, although a few broken flint pebbles occur in the wastage, the apparent sources of this material were the regionally available exposures in the Lower Ordovician limestones. Several such outcrops with associated quarry-workshops are known to the writer in both Vermont and New York, at no great distances from the site.

The inventory of debitage from Zone 3 consists of the following: of quartzite, 68 thick fragments or cobble spalls, 260 flakes and chips; bifaces, or point and knife preforms, broken in process, 56 point sections, 37 base sections, 9 medial sections. Of flint, 67 spalls, 2 core fragments, 89 flakes and chips, mainly smaller and thinner than those of quartzite. Of white quartz, 14 flakes and chips.

Techniques of manufacture of quartzite implements apparently involved fracturing of the raw material with the larger and heavier hammerstones described above. Reduction of the thick spalls so produced may have been accomplished with the more numerous small specialized hammerstones, utilizing, in some degree, stationary anvilstones of sandstone slabs or flattish surfaces of small quartzite or other boulders, which had a very sparse distribution on the site. Some of the lightest hammerstones probably functioned in further reducing the trimmed spalls into preforms or even into certain of the larger chipped artifacts. However, antler beam or even hardwood baton hammers might have been employed in this phase of the process, with bone and antler flakers being used in final marginal retouching.

Flint implements were probably produced with small hammerstones and pressure flakers, the latter perhaps represented by the 2 apparently utilized antler tine fragments already described. While no prismatic flint cores were discovered, Plate 1, fig. 47 illustrates a thick prismatic flint flake knife, and a small number of short prismatic flakes with striking platforms were present.

Close inspection of the flakes and chips of all materials found revealed none with indications of modification or use.

FOOD REMAINS

Although direct evidence of subsistence was restricted to the osseous remains of mammals, birds and reptiles, and a small amount of fishing gear seems clearly indicative of the use of fish, there is very little

to suggest the inclusion of plant foods in the diet. Stone mortars and pestles were absent (perhaps wooden ones were employed) and only 2 mullers were discovered, 1 a multiple pitted nutting stone (?) and muller in Zone 2 and a combined hammerstone and muller in Zone 3. Nevertheless, it is hardly likely that the sundry occupants of the Otter Creek No. 2 site neglected seasonally available vegetable foods.

At 8 widely separated points in the site soil samples, each of at least a liter, were taken in Zones 2 and 3, primarily for soil acid determination. Portions of these samples were dried, passed through a fine screen, and flotated. Since Zone 3 contained a high clay content, and because no recognizable pits or hearths were found anywhere on the site, large scale treatment of this kind seemed unwarranted.

Examined under a 10X hand lens, the residue revealed only a small number of wood charcoal granules and even fewer bits of calcined or carbonized bone, larger pieces of which were occasionally uncovered in troweling, particularly in Zone 3.

ANALYSIS OF BONE REFUSE

Except for an occasional scrap of bone in Zone 2, totaling 17 mammal long bone fragments too small for identification, but probably from the white-tailed deer, all osseous material was derived from Zone 3, the Vergennes phase level. Twenty-seven soil tests were made with the Hellige-Truog Soil Reaction Tester at various sections and depths of all zones, including the subsoil which rested upon alkaline limestone bedrock, with nearly uniform results, ranging from a pH of 7.0 (neutral) to 8.0 (slightly alkaline), with most readings at 7.0 to 7.5. The fortunate preservation of bone of the great age of this site seems all the more remarkable at these low alkaline levels.

The preserved animal remains did not include any derived from fish, although the presence of fishing gear, viz., the barbed bone points, copper gorges and plummet, would indicate that fish constituted some part of the diet. This is further suggested by the presence in the soil tests of very high levels of phosphorus, the equivalent of 200 pounds to the acre, probably resulting from loss through decay of a considerable quantity of smaller bones, including those of other animals as well as fish. The following bone identification sustains this interpretation.

It must clearly be stated that the carefully collected bone refuse had only a random distribution in Zone 3. Nowhere was found a definite deposit or accumulation of bones, such as the writer has noted and described on many other archeological sites in the Northeast. Moreover, as is usual, all mammal long bones had been broken open, transversely and longitudinally, for marrow extraction. Also, as is generally true, remains of the white-tailed deer heavily predominated. No obvious butchering marks were noted, but a few of the bones bore rodent gnawings. All identified species of mammals, birds and reptiles were, and most of them still are, common in the local environment.

Bone Refuse from Zone 3 (totals in parentheses). White-tailed deer (*Odocoileus virginianus*), mandible fragments, 1 with teeth (2); antler fragments (5); distal extremity of humerus, right 2, left 1, too fragmentary to determine 1 (4); distal extremity of tibia, right (1); proximal extremity of ulna, left (1); head of femur (1); proximal extremity of cannon bone (2), distal extremity of cannon bone with loose epiphysis, immature (1); head of scapula, right 1, left 1 (2); astragali, right 5, left 4, too fragmentary to determine 3 (12); calcaneum (1), magnum-forelimb (1); naviculocuboid-hind limb (1); phalangeal bones (6); long bone fragments, longitudinally split and broken (27); probably from deer (98). Thus deer of all ages were taken and apparently the entire carcasses of the animals were brought to camp for butchering.

Black Bear (*Ursus americanus*). Molar teeth (2); canine teeth (2); metatarsals (2); phalanges (5); proximal section of right femur (1).

Beaver (*Castor canadensis*). Mandible fragments (2); molar teeth (24); incisor tooth fragments (2); fragmentary femurs, right 3, left 2 (5); fragmentary humeri, right 2, left 1 (3).

Muskrat (*Ondatra zibethica*). Left mandible (1).

Dog (*Canis familiaris*). Canine tooth (1), fragments of tibia, humerus, ulna (5); metatarsal (1), phalange (1). The distribution suggested a disturbed dog burial rather than food refuse.

Turkey (*Meleagris gallopavo*). Shaft of left humerus (1).

Great blue heron (?) (*Ardea herodias*). Portions of leg and wing bone shafts (6). Unidentified smaller birds, fragments of leg and wing bone shafts, minus condyles (4).

Wood turtle (?) (*Clemmys insculpta*). Plastron fragments (6).

Unidentifiable long bone fragments too small for species determination, but mainly from large mammals, probably deer and bear (180). Grand total 412.

BURIALS

The Otter Creek No. 2 site unfortunately yielded no complete human skeletons. Six very fragmentary burials were found scattered over the occupied area. All lay on or very close to the bedrock, and it seems reasonable to assume that all pertain to Zone 3 and the Vergennes phase. Although much of the bone is quite well preserved, as is the case with the other osseous elements, the remains occurred in a very fragmentary and dispersed order. Many bones were missing from each skeleton. The presence of some bone clusters suggests secondary or bundle interments, which were subsequently disturbed by such natural agencies as tree windfalls, root and small rodent displacement and perhaps by aboriginal activities.

Definite grave goods were lacking, although in three instances a single possible burial offering was noted and one burial was clearly accompanied by the skeleton of a dog.

The remains are identifiable as pertaining to 1 infant, 3 children and 2 adults, complying with the usual high mortality rate of sub-adults in early Indian populations. They may concisely be described as follows.

Burial 1. This feature consisted of only a few skull sherds and 17 teeth comprising 4 central incisors and 1 lateral incisor, all erupted, and 4 cuspids and 8 molars, all unerupted, indicating an infant of about 6 months of ages.

Burial 2. The 4 thin skull fragments and partial dentition (2 central incisors, 2 lateral incisors, 2 first molars, all erupted deciduous teeth, and 2 unerupted second molars) are referable to a young child approximately 2 years of age.

Burial 3. This burial pertained to a child with a dental age of between 6 and 7 years. The fragmentary bones lay in a loosely flexed position (orientation indeterminate) just over the bedrock. A copper gorge (Plate 4, fig. 1) occurred 8cm above the bones and may have been a mortuary offering. Present were 41 skull sherds, 4 small mandible and superior maxillary sections, and 18 teeth (of the permanent set 2 central incisors, 2 lateral incisors and 4 six year molars); 2 first and 2 second deciduous molars; and 4 second and 4 third unerupted molars. The post-cranial skeleton was represented by portions of 9 vertebrae and the sacrum, 8 pieces of the innominate bones, a scapular head, 12 rib portions, and 13 long bones, all sans extremities. A tabular whetstone (Plate 7, fig. 18) was found close to the skeleton and may possibly have been grave goods.

Burial 4. While this was the most complete skeleton recovered, it too was reduced to fragments and many bones were missing. The destruction is perhaps explicable by the location of the grave directly beneath a large tree whose roots had enveloped and clearly fractured and displaced many of the bones, while invading the marrow cavities of several of the long bones.

The skeleton, probably that of a large and robust male of middle age, lay directly on bedrock. Three-fourths of the mandible and a small portion of the maxilla, carrying a total of 15 teeth, remained. No caries or other dental pathology or loss of teeth in life are evident, but all teeth exhibit second or third degree attrition of the crowns.

The fragmentary long bones are large, with strong muscular attachments. The tibial shafts show the platycnemia common to these Indian bones. Two of 4 contiguous cervical vertebrae have pronounced marginal exostoses, suggesting a mild degree of spondylitis. The os pubis is too defective for age determination.

Among the skull sherds of this burial lay intermingled fragments of the skeleton of a large breed of dog. The 2 mandible and maxillary segments were submitted for positive identification to Dr. Barbara Lawrence, Museum of Comparative Zoology, Harvard University, who kindly confirmed the writer's analysis and stated, "In length and massiveness of jaw as well as size of teeth they resemble other materials in our collection from New England, particularly a small series from shell-heaps on Frenchman's Bay, Maine."

Although the comparative material is not at hand, I believe that these remains closely accord with those of the large breed of *Canis* I have found, also associated with human skeletons, in the Archaic Frontenac Island site in central New York (Ritchie 1945:7-8) and in the early historic Seneca cemetery at Dutch Hollow in western New York (Ritchie 1954:62).

Burial 5. Very little remained of this burial which was that of a child with a dental age of around 8 years. Present were a few skull sherds, the left half of the mandible with 4 teeth (1 permanent lateral

incisor, the first and second deciduous molars and the six year molar). Loose teeth comprised 2 six year molars, 2 unerupted third molars and 1 deciduous first molar.

Burial 6. Much of this very fragmentary skeleton, found in a subsoil depression, was lacking and a bundle burial is suspected. The bones denote an adult, probably a male of middle age. The 14 teeth remaining in the 3 mandibular and 3 maxillary jaw section,, present second to third degree attrition of the crowns. The upper central incisors had been lost in life, but no evidence of pathology appears on the alveolus or surviving dentition. An Otter Creek point (Plate 2, fig. 35), possible grave goods, lay just above the bones. However, as the burial was covered with the black, artifact- and refuse-bearing midden soil of Zone 3, this is debatable.

CHRONOLOGY

The fortunate preservation of bone refuse in Zone 3 permitted determination of the only radiocarbon date thus far obtained for the Vergennes phase in the United States. In November 1971 a sample consisting of fragmentary deer and beaver long bones was submitted to Isotopes, Inc. These had been collected the previous month by Passino and the writer from Zone 3, in direct and unequivocal association with Otter Creek projectile points and a ground slate ulo fragment. C-14 measurements, using bone collagen, yielded a radiocarbon date of 5070 B.P. \pm 210 years or 3120 B.C. \pm 210 years (I-6349), which was published in Ritchie and Funk 1973:340. This date accords well with the writer's age estimate of the Vergennes phase at between 3,000-3,500 B.C. (Ritchie 1968:5).

It is also in close agreement with 3,300 B.C. age determination for the probable Vergennes phase site on Allumette Island in the Ottawa River, Canada, excavated by Clyde C. Kennedy and previously referred to. Bone collagen from a human skeleton was employed in this radiocarbon date (Ritchie 1971b:4).

RESUME

Otter Creek No. 2 site is a multicomponent, but rather weakly stratified station, particularly with respect to its upper levels. These produced a small, but fairly wide assortment of industrial remains referable by current knowledge to cultural complexes ranging from late Middle Woodland to Late Archaic, but in all cases too scanty to attest to more than the briefest sojourn by any one group. Even the meager assemblage from Zone 1 which has been attributed to a late Middle Woodland occupation, exhibits elements which elsewhere in the Northeast are not wholly compatible with this attribution. Thus the potsherd with outflaring rim and thin, slightly flattened and decorated lip, ornamented in St. Lawrence Pseudo-Scallop Shell motif (Plate 1, fig. 8) and the sherd classified as Vinette Complex Dentate (Plate 1, fig. 11), have an earlier Middle Woodland provenience in central New York and the St. Lawrence Valley area. It is also doubtful that the Levanna type points associated with the scanty potsherds in Zone 1 are related to these ceramic forms. Clearer physical stratigraphy and less disturbance by already noted factors, would probably have disclosed that certain of the corner- and side-notched points referred to Zone 2, were actually part of this earlier Middle Woodland horizon (Plate 1, figs. 33-36). It seems therefore safest to assume that the complex as a whole spanned some indefinite portion of the Middle Woodland continuum hence, limited as it is, it cannot be referred to a single component.

Much the same can be said for the contents of Zone 2, which, even more obviously, had a rather indeterminate temporal range. However, unless the few items in each of the classified forms (a single artifact in the instance of the Early Woodland Meadowood point, Plate 1, fig. 30), represent in some cases older "relics" found and brought to the site by later people, which seems doubtful, it is necessary to conclude that over the ages the site was attractive as a camping place to a fairly wide range of small hunting bands. This interpretation gains weight from the similar cases of multicomponent representation involving the same elements, observed on many of the other areal sites tested in our survey.

The true archeological value of the site resides in Zone 3, unequivocally one of the few instructive components of the Vergennes phase, ranking in size and productivity with the KI and Bridge sites, despite which fact it fails to answer many important questions concerning this early phase of the Laurentian tradition (Ritchie 1965:79-83, 1968, 1969a:79-89, 1971a). The occupied area is too small to

have accommodated more than a few flimsy housing units, providing shelter for a tiny band comprising perhaps only a single extended family.

Nor is there reason to envision a year around occupancy. Of the identified animal remains, only the deer could have been taken throughout the year. No skull fragments of this animal were found to enlighten this problem, but the presence of an immature individual supports the other faunal evidence. We have no data on flora preserved as organic remains and very little indirectly in the form of food processing equipment.

The burials perhaps, are of some help here, since bundle interment is indicated in some instances, suggesting death elsewhere in winter camps, the preservation of the corpse, and its inhumation at the Otter Creek campsite which may well have been repeatedly the chief place of residence for most of the year, being within easy access of food sources supplied by woodlands, marshes and waterways, including huge Lake Champlain. It is important to record that all known major, and indeed most of the lesser Vergennes phase sites, are similarly situated to provide large and small mammals, aquatic birds, amphibians, reptiles and fish (Ritchie 1968).

Within the Otter Creek Valley and its adjacent large swamps, our survey located and tested 6 other sites with strong Vergennes phase components. All had to varying degrees been disturbed by prior excavators, but several gave promise of substantial rewards if professionally explored. The locations and data for these sites have been given to the Department of Anthropology of the University of Vermont and the State of Vermont, Division of Historic Preservation in the hope that they will conduct this work before the inevitable destruction of these potentially valuable sites.

Acknowledgements

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EARLY CERAMICS AND CERAMIC TECHNOLOGY IN THE UPPER HUDSON VALLEY

Hetty Jo Brumbach

S.U.N.Y.-Albany

INTRODUCTION

In preparation for writing this paper, I began by reading a number of monographs and studies on the subject of early pottery in the eastern United States, especially in the Northeastern and Middle Atlantic sections. What I found was a general similarity in the regional sequences of pottery development. However, I will present some primary data on early ceramics and ceramic technology from one geographic area, the upper Hudson Valley, that is the Hudson River drainage above Albany, New York.

Most of the information presented here is taken from a multicomponent site in the Village of Schuylerville in eastern Saratoga County in upstate New York. The archaeological site is located on the north bank of Fish Creek which flows from Saratoga Lake, first through the Village of Victory Mills and then through Schuylerville. Several hundred yards downstream from the site, Fish Creek joins the Hudson River. From this point, the Hudson flows almost due south approximately 180 miles to the Atlantic Ocean. Other sites in the Hudson River drainage in both Saratoga and adjacent Washington County have produced early ceramics and some of this material will also be described here.

The Schuylerville site was investigated and partially excavated in the summer of 1976. The project was funded jointly by the Anthropology Department of the State University of New York at Albany, the United States Environmental Protection Agency, the New York State Department of Environmental Conservation, and the Village of Schuylerville. The excavations were carried out in advance of the site's partial destruction by the construction of a sewage treatment plant.

CULTURAL STRATIGRAPHY

The cultural stratigraphy revealed at the Schuylerville site resembled the framework developed by Ritchie and Funk (Ritchie 1969; Ritchie and Funk 1973; Funk 1976) for New York State as a whole and for the Hudson Valley sub-region. The earliest evidence of occupation consisted of chipped stone bifaces of the Genesee type, according to Ritchie's (1961) typology of projectile points. These are believed to date to the period approximately between 1900 and 1600 B.C. The most recent prehistoric occupation at the site was a component of the Burnt Hill phase, a late Middle Woodland manifestation centered in the Lake George region with influences extending into parts of Lake Champlain and Saratoga Lake (Funk 1976:296-297). This was the major occupation at the site, and it appears to have been the remains of a

seasonally sedentary population which had aggregated into a small village at what was once a favorable fishing station. Since the Burnt Hill phase occupation has been dealt with more extensively elsewhere (Brumbach 1977), the earlier, ceramic-bearing levels will be emphasized here.

Unlike the late Middle Woodland component, which was characterized as the remains of a seasonally sedentary population deposited over a relatively short period of time, the early levels appear to represent the more casual camps of smaller social groups deposited over a much longer period of time. In addition to the Genesee points already mentioned, the early levels contained a variety of projectile points, some of which could be identified according to the Ritchie typology (1961). These included Snook Kill, Susquehanna Broad, Orient or Hudson Fishtail, and Meadowood type points. Additional bifaces could not be easily classified but were intergrades between the Susquehanna Broads and fishtail type points and resemble the Susquehanna Narrow or Drybrook points. Other diagnostic items recovered from these levels consist of sherds of steatite vessels and several different types of ceramics.

FAUNAL REMAINS

Soil samples from the Transitional and Early Woodland features were processed by wet screening and flotation to recover evidence of the food resources exploited by the site occupants. Small amounts of carbonized nuts, *Chenopodium* seeds, and calcined fragments of fish and mammal bones were recovered. Some of the mammal bone was identified as white-tailed deer and some of the fish remains are believed to represent small anadromous shad or herring that once used to ascend the Hudson and many of its tributaries. Until the early 1800's, large numbers of these fish ran up Fish Creek, hence its name, to spawn in the upper creek and in Saratoga Lake. In recent years, because of water pollution and the construction of dams and other obstacles in the rivers, these fish no longer spawn in the Hudson or its tributaries above Albany.

Thus the food remains recovered from the early levels indicate an economy based on the exploitation of wild game, fish, and food plants. Because of the uneven deposition of artifacts and other cultural material, occupation appears to have been confined to short visits.

EXCAVATION

During the initial site investigation, we found that the early levels, those represented by the Late Archaic Genesee points through Early Woodland Meadowood points, were not well differentiated. The remains of over 1000 years of culture history were foreshortened into a deposit not internally stratified and only a little more than one foot thick. We decided to excavate the site in arbitrary three-inch levels. Subsequent vertical analysis of diagnostic artifacts indicated that the site had not been greatly disturbed by man. Although we observed localized disturbances due to tree root and rodent activity, there was no evidence that the site had been plowed.

The late Middle Woodland component, which was more continuous, was estimated to have extended over two acres or more at one time. River erosion and historic building activities have reduced this to a little over one acre. The size of the underlying Late Archaic through Early Woodland components could not be estimated as accurately. Cultural material from this time period had been deposited over at least one acre and the original site may have approached the size of the overlying Middle Woodland occupation.

THE CERAMICS

Stratigraphic analysis of the material recovered suggested that Vinette 1 was not the earliest ceramic in the upper Hudson Valley. Two other forms of early ceramics were in use before the introduction of Vinette 1. Also, analysis of manufacturing technology suggests that although pottery in the upper Hudson area was not an independent invention but had been introduced through diffusion, that the earliest potters still underwent a period of experimentation before regularly achieving satisfactory results.

The oldest or first evidence of ceramic manufacture from the Schuylerville site consisted not of recognizable sherds but of fired lumps of both tempered and untempered clay which have been interpreted as the remains of the first experiments with pottery manufacture. These objects were initially difficult to identify because they lack recognizable surfaces or other distinguishing characteristics of clay vessel sherds. Most of the fragments are very small and some were recovered only through wet screening of feature contents. Because of their size it is difficult to say very much about these objects. They definitely are of fired clay, and while most do not appear to contain tempering material some contain small amounts of crushed or ground grit. In color, they range from buff to salmon to light brown. When analyzed for vertical distribution, they were found to be the deepest ceramic material recovered from the site.

In one area of the site, pieces of fired clay were recovered from a fire-cracked rock feature that measured 57 by 54 in. across and up to 6 in. thick. Feature contents consisted of fire-cracked rocks, small amounts of charcoal and fire-reddened soil, chert debitage, and whole and broken chipped stone artifacts. Similar appearing features, usually interpreted as roasting platforms for preparing fish or other food items, have been encountered on other northeastern sites and seem to be confined to the Transitional period, also referred to as the Susquehanna Soapstone culture or the "broad-spear" tradition. Although this feature was not dated because of inadequate charcoal, another one of the fire-cracked rock concentrations from the site yielded sufficient charcoal and was dated to 3105 ± 140 years B.P. (SI-3134) or 1155 B.C. (uncorrected). This date belongs to the New York State Transitional and falls between other dates obtained on Frost Island and on Orient components (Ritchie and Funk 1973:iv, Figure 1). It is probably an accurate date for the Susquehanna-fishtail intergrade type points recovered from the site. Although the fired clay pieces were not in association with the dated feature but with a morphologically similar one, the date is probably also accurate for the period of early ceramic manufacture in the upper Hudson Valley. Not contained within the undated feature but at different depths in the same 3 in. level were several chipped stone bifaces, identified as a Genesee, a Snook Kill, and a Susquehanna knife.

More of the fired clay fragments were recovered from another square within a level that underlay the very disturbed remains of a feature. Either a small tree or a large rodent had penetrated a fire hearth leaving behind an irregularly shaped stain containing charcoal and fire-cracked rock. Within this configuration, stratigraphically above the fired clay fragments, we recovered several sherds belonging to one or two steatite tempered vessels.

These sherds represent the oldest successfully made vessel recovered from the site. Undoubtedly, it was not the first made. Both the exterior and the interior surfaces of the sherds had been malleated or padded with some object wrapped with a loosely woven fabric. The fabric, which may have been part of a twined bag or perhaps a piece of loosely woven basketry, had been imprinted into the sides of the vessel when the clay was still plastic. Little study of the nature of the fabric has yet been done but it appears to have been made from a twisted plant fibre which varied in width from about 1.5 to 2.5mm. The sherds themselves measure 7 to 8mm thick.

Because only a few sherds were recovered, we were not able to determine vessel or rim shape. Since the sherds are curved, the parent vessel was not likely to have been modeled in the shape of a stone bowl which would have tended towards straight sides. Temper consists of a fair amount of ground and crushed steatite, some in fragments up to 5mm in diameter. The pot was well-fired and unusually hard for this time period. The clay was not thoroughly oxidized and some included organic material was not completely burned off. As a result, both surfaces of the sherds are a mottled medium brown. No evidence of a core, or poorly-fired interior was noticed.

There are no age estimates on these sherds since they were recovered from a disturbed feature and it is difficult to determine their original context. They were found at a higher level than some of the fired clay fragments and in the same level that contained Snook Kill points, although it is doubtful that they are associated. I would assume that the steatite tempered sherds go with either the Susquehanna Broad or the Susquehanna-fishtail intergrade points.

Since the sherds were tempered with steatite, which is not available naturally in the upper Hudson Valley, I would suspect the use of steatite vessels on the same time level. In the most intensely occupied area of the site, two steatite sherds representative of two different vessels were recovered from levels that also yielded Susquehanna Broad, Susquehanna-fishtail, Meadowood type points, Vinette 1 pottery and other early ceramics. Since it is unlikely that the site occupants would have imported steatite primarily for ceramic tempering, I suggest that the steatite tempered clay pots were contemporaneous or overlapped with the use of steatite for vessels.

The steatite sherds came from vessels which had been smoothed on both the exterior and interior surfaces, a trait more characteristic of the Orient phase than of the Frost Island phase, where the marks of the quarry pick are usually not removed from the vessel surface (Ritchie 1969:171-173). Visual examination of the soapstone has led us to conclude that at least one of the fragments may have derived from the Connecticut Valley in Massachusetts, possibly the quarry at Wilbraham (Marceau 1977:235). The second sherd, the rimsherd of a small vessel or cup was non-diagnostic as to origin.

Since the remains of only two steatite vessels were recovered, and reported finds of steatite are infrequent in the upper Hudson Valley, it does not appear that this material was widely traded into this area. The use of steatite as a tempering agent in Transitional period clay pots suggests an alternate explanation for the scarcity of steatite vessels. Broken soapstone pots might have been recycled for use as temper for the manufacture of clay vessels. The steatite tempered sherds are very hard and quite well fired. It is possible that steatite functions to improve firing conditions by acting as a flux and strengthening the bonds in the clay body. We found no evidence for the use of steatite bowls as grave furniture, as has been documented for the Long Island Orient (Ritchie 1969:175-178).

In terms of associations with other diagnostic artifacts, the steatite bowl sherds were recovered from 3 in. levels that also produced a Susquehanna-fishtail variant point and several fragments of Vinette 1 pottery. Whether or not the Vinette 1 pottery was contemporaneous with the steatite vessels and the steatite tempered ceramics as well, cannot be determined due to the small sample sizes and the foreshortened stratigraphy. In either case, it appears that the Transitional period was one of experimentation and rapid change. Several different wares or types of ceramics were probably in use at the same time.

Based on stratigraphic analysis, sherds identified as Vinette 1 ware were preceded slightly by sherds of a similar ware but characterized by cord-roughened exterior surfaces and smoothed interior surfaces. With the exception of the interior surface treatment, this material resembles Vinette 1 pottery. Similar appearing pottery has been recovered from Transitional or Early Woodland period sites in the lower Hudson Valley, Long Island (Salwen 1968:325-326), and in the Delaware Valley (Kinsey 1972:454-455). With the exception of the smoothed or possibly smoothed-over-cord interior surface, the sherds resemble Vinette 1 ware. They range between 5 and 11 mm thick and are tempered with quartz or quartzite and ground grit. Surface colors vary from salmon-buff, suggesting complete oxidation, to shades of dark brown. Some of the thicker sherds have dark interior cores, the result of incomplete oxidation of included organic material.

The exterior corded/interior smoothed sherds were recovered from a variety of contexts at the Schuylerville site: in several areas they were recovered from 3 in. levels also containing Vinette 1 sherds and the ubiquitous bifaces of the Susquehanna-fishtail intergrade type. Average depth places them slightly deeper than Vinette 1 ware, but the difference was not found to be statistically significant. Vinette 1 ware is characterized by having both the exterior and interior surfaces cord or fabric-malleated (Ritchie and MacNeish 1949:100). The sherds from the Schuylerville site appear to have been malleated or paddled by implements wrapped with a finely-twisted cord and with a loosely twined fabric. The purpose of the cord or fabric is to prevent the paddle or other implement from sticking to the wet clay. In the process of modeling the pot, the wall of the vessel is beaten or paddled to compact the clay, remove excess water, and to aid in shaping and smoothing. Paddling helps to bond the fillets or coils more efficiently than hand modeling or can be used after hand modeling to even the walls and achieve the desired degree of thinness. However, when the wet clay is struck with a wooden paddle, the clay will adhere to the paddle, ruining the vessel. In my own experimentation, I found that wrapping a paddle with string or lightweight cord or with a rough fabric like a corduroy prevented the clay from sticking to the paddle. I also found that small hand-modeled vessels that were also paddled, as opposed to being only hand-shaped, were more sturdy.

The Vinette 1 sherds, like the exterior corded/interior smoothed ones, were made with a variety of tempering material, including quartz or quartzite, crushed grit, and some granitic rock. In contrast, the Middle Woodland occupants of the site demonstrated different preferences: quartz and quartzite were rarely used while crushed grit, granite, and shale were preferred materials. Vinette 1 sherds ranged from 6 to 12mm thick and often showed great variability in this attribute. The material was too poorly preserved for reconstructing vessel shapes. One rim presented a thinned and rounded lip with a slight constriction below the lip. No decoration other than surface treatment was observed. Surface colors ranged from buff-salmon through very dark brown. The darkest colored sherds tended to be the most crumbly, probably because of the incomplete oxidation of the clay and included organic material.

Since we were working with small sherds, we could not easily determine the orientation of the cord markings. The classic description of this type indicates that the cording on the two surfaces is perpendicular to each other, with the markings on the exterior surface tending to be vertical and on the interior surface tending to be horizontal (Ritchie and MacNeish 1949:100). On most of the Schuylerville sherds, the cord markings were oriented perpendicular to the opposite side, but there were examples of both oblique and parallel orientations.

As already mentioned, Vinette 1 sherds were found in association with exterior corded/interior smoothed sherds, suggesting either a rapid change in ceramic technology or that the same potters made both varieties. The Vinette 1 material was also recovered with the Susquehanna-fishtail variants but not with the steatite tempered sherds. On a later time level, Vinette 1 sherds were associated with Early Woodland Meadowood type points.

One final comment about technology: some of the Vinette 1 sherds were characterized by the inclusion of what appears to be an organic substance. Whether or not this is the burned-on residue of food or organic material intentionally or unintentionally included in the clay is unknown. Ethnographic accounts of pottery manufacture in many parts of the world, including both North and South America, indicate that potters often add some kind of organic material to the clay or to the surface of the pot before or just after firing. The added substance, usually a resin or a grease, aids in making the clay more plastic and the fired pot less porous. In the case of the Vinette 1 ware, it is not possible to determine the origin of the organic residues. The fired clay fragments and the poorly preserved sherds that tended to underlie the Vinette 1 ware were not characterized by this trait. This may relate to a different use for the pots. The earliest clay vessels may not have been used for the same method of food preparation as the Vinette 1 ware and thus not have acquired the burned-on residues.

SUMMARY AND CONCLUSION

Occupation of the Schuylerville site during the Early Woodland period was not intense. Several Meadowood type points were recovered from levels that also produced small amounts of Vinette 1 sherds. There are few sites in the middle or upper Hudson drainage with substantial Early Woodland components, and those that have been excavated have not produced large quantities of ceramics. Apparently, pottery was not widely used in the valley until the Middle Woodland period. This may be due in part to the settlement system and methods of food preparation. It may also be due to a poorly developed ceramic technology. Certainly, the early ceramics I observed from the Schuylerville site are neither well made nor well fired in comparison with collections of Middle or Late Woodland material. Sometimes during the Middle Woodland period ceramics technology improved. Whether this relates to other changes in cultural behavior has not been demonstrated, but it seems likely. Increased sedentism and experimentation would contribute to a greater need as well as competence for producing ceramic vessels.

The sequence of ceramic development identified in the upper Hudson Valley resembles that of other areas in the Northeast. During the first part of the Transitional, sometimes referred to as the Frost Island phase, stone bowls and possible steatite tempered ceramics were in use. These earliest experiments with pottery were not always successful. Fragments of both tempered and untempered clay recovered at Schuylerville may be all that remains of the first experiments with making clay pots. Subsequently, results were more predictable, although experimentation with surface finish, temper, and modeling techniques continued. By the mid-part of the Transitional, when Susquehanna Broad points became more narrow and lost their crisp shoulders and started to resemble fishtail type points, most of the basic technology of ceramic manufacture had been acquired.

Stone bowls continued in use during this period. Broken bowls were recycled for use as beads and gorgets, probably also for pottery temper. When steatite was no longer available for temper, other materials were substituted. At Schuylerville, we observed the use of quartz, quartzite, grit, several kinds of crystalline rock, shale, and shaley-chert, among others.

Clay vessels of the Vinette 1 type continued to be manufactured throughout the Early Woodland period without noticeable changes in technology. Although the basic technology had been acquired by the end of the Transitional period, ceramic manufacture did not expand either in style or volume in the Hudson Valley until the Middle Woodland period at least 1500 years after the initial appearance of pottery in this area.

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CAN INCISED POTTERY GIVE CLUES TO PREHISTORIC BASKETRY?

Kathryn Browning-Hoffmann

Metropolitan Chapter

The archaeologist of the northeast is greatly handicapped in his study of prehistoric Indian cultures by the fact that almost all artifacts which were made of fiber, wood, bark, leather and other perishable materials have failed to survive. This not only complicates his work but actually hampers his appreciation of Indian life and art. For example, when seeking information on prehistoric Indian basketry from the Northeast, one finds only small, burned fragments or historic examples which are undecorated, simple plait basketry. (Plate 1.) Occasional examples show a slight variation in the thickness of the splints used or twill weaving, but no real attempt at design or decoration. Primary sources taken from accounts of early contact in the 1600's give quite a different impression of Indian basketry. In the *Journal of the Pilgrims at Plymouth* (Mourt 1622: pg 29), a description of a wigwam and its contents is:

There was also baskets of sundry sorts, bigger and some lesser, finer and some coarser; some were curiously wrought with black and white in pretty works, . . .

Another tantalizing glimpse is given in a book written by John Elliot, a missionary to the Indians of Massachusetts, for his supporters in England describing the progress of his work. (Elliot 1647: pg 5) In his account of a discussion between the Indians and his party during a visit to a native village, he writes:

This question sounding just like themselves we studied to give them as familiar an answer as we could, and therefor in this as in all other our answers, we endeavored to speak nothing without clearing of it up by some familiar similitude ... and therefore wee bid them looke upon that Indian Basket which was before them, there was black and white straws, and many other things they made it of, now though others did not know what those things were who made not the Basket, yet he that made it must needs tell all the things in it, so (we said) it was here.

It would appear from these quotes that prehistoric Indian basketry of the Northeast was made with some complexity and with decoration and design composed of variations in weave of at least black and white and possibly other colors of fibers. Now, one must ask, is there any way to substantiate

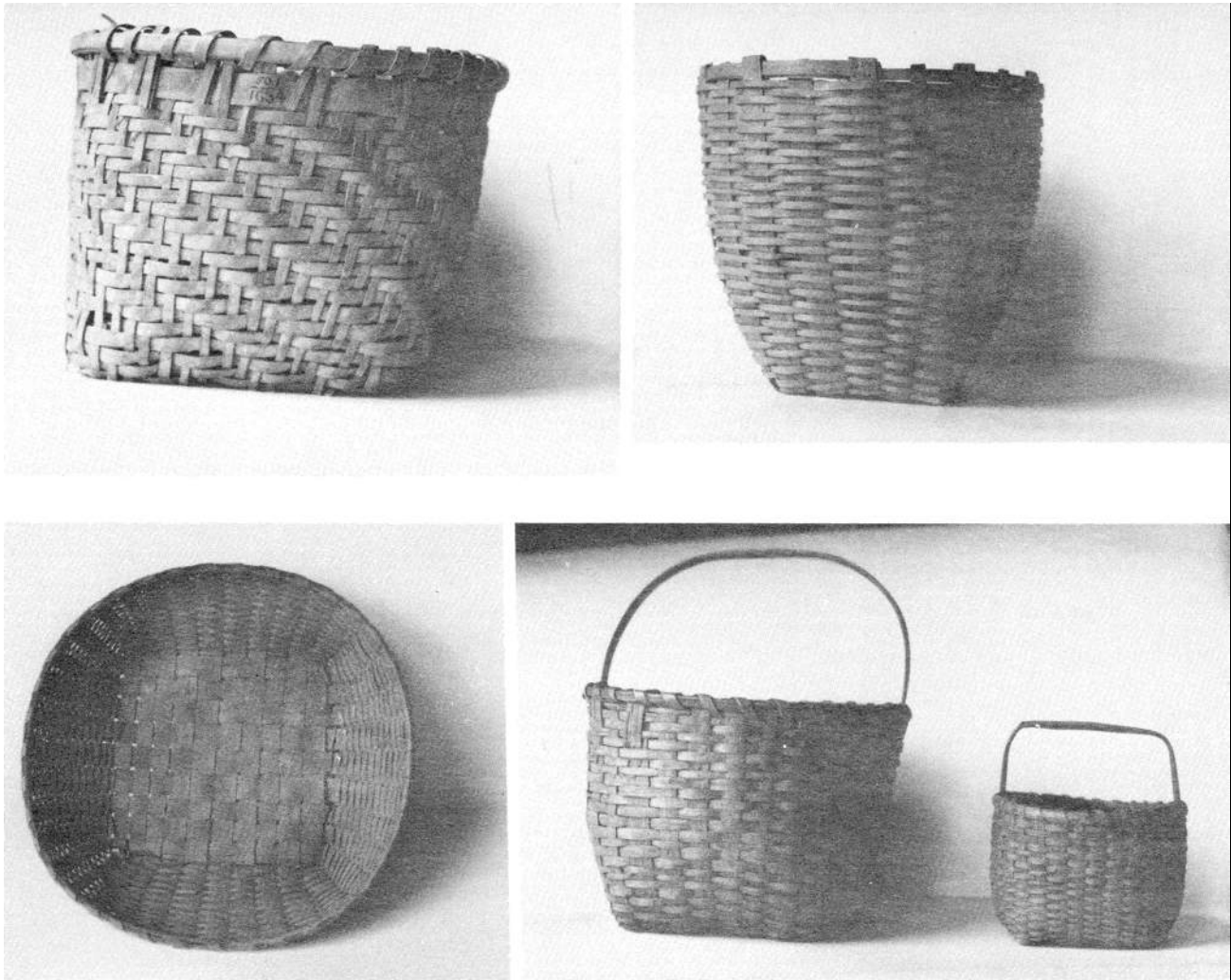


Plate 1. Examples of Shinnecock basketry. Collected in 1902 by M. R. Harrington for the American Museum of Natural History. Clockwise from upper left: 50.1/1634, 50/3485, 50/3487, 50/3486, 50/3483

archaeologically these reports, and is there any way to recover the designs themselves, especially those which would be truly prehistoric and not affected by contact with European influences. The key to the answers is found in certain pottery designs. It has been observed in the past that designs in one medium are sometimes imitated in another. In this case, basketry designs can be seen expressed as incised patterns on pottery.

One design, quite common on incised sherds, part of the Bowman's Brook type in the Long Island area, is a simple herringbone pattern. (Fig. 1a) This seems identical in intention to the plaiting pattern seen in the basket in Plate 2. In some cases, even the finishing of the top is copied. (Fig. 1b) Another basket design (Plate 3) is seen in four sherds in Figure 2. These baskets were made by the Chitimacha, an Indian people of the Southeast, but they could easily represent the vanished basketry of the Northeast. Figure 3 shows the incised pattern from a sherd found at Beach Haven, L.I. (Orchard 1928) which is seen in the baskets in Plate 4.

Another common incised pattern is that of the filled triangle motif which is known as East River incised on L.I. (Fig. 5). An obscure drawing published in 1680 in *Orbis Habitabilis* (Cumming, et. al. 1974: fig. 87) gives a possible clue to its origin (Plate 5a). The drawing shows two Indians exchanging a beaver

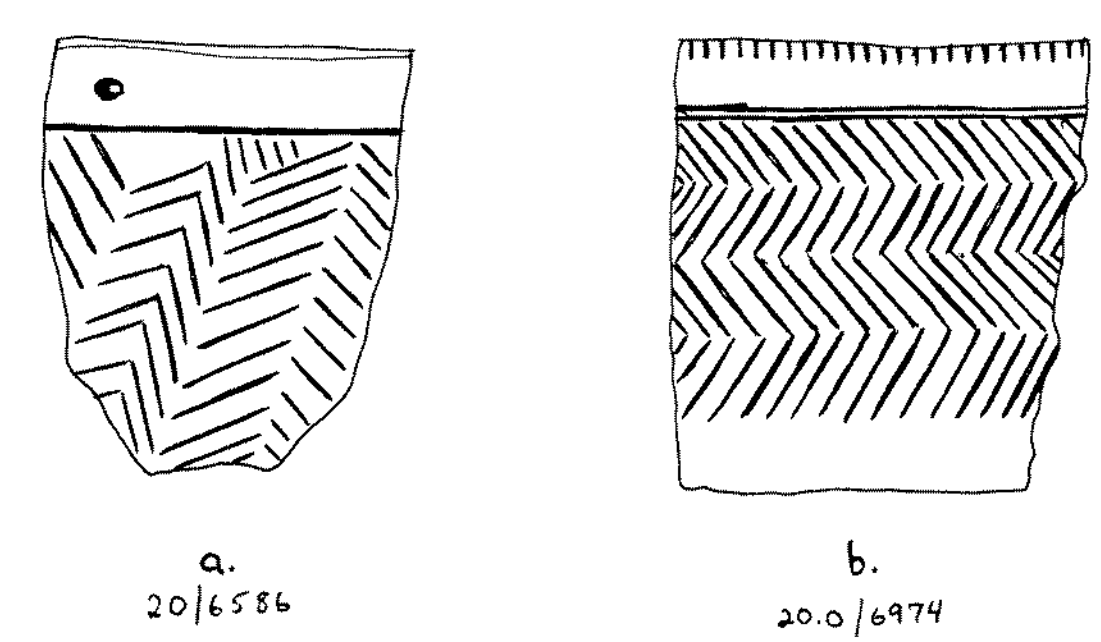


Figure 1. Potsherds showing herringbone pattern in incised decoration American Museum of Natural History

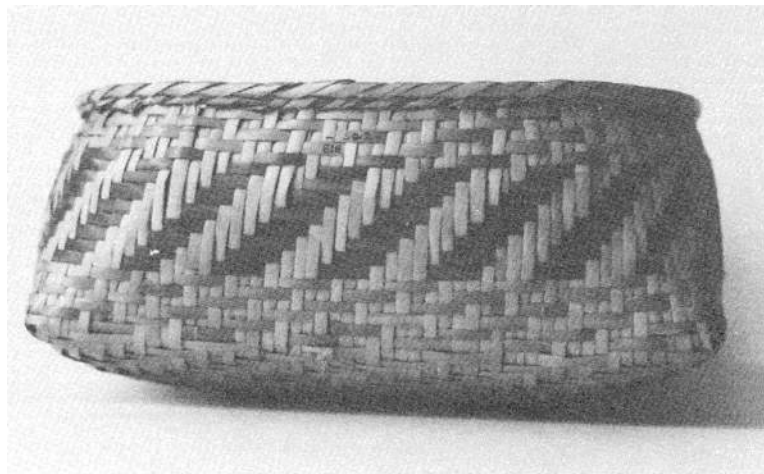


Plate 2. Chitimacha basket from the American Museum of Natural History 50.2/818

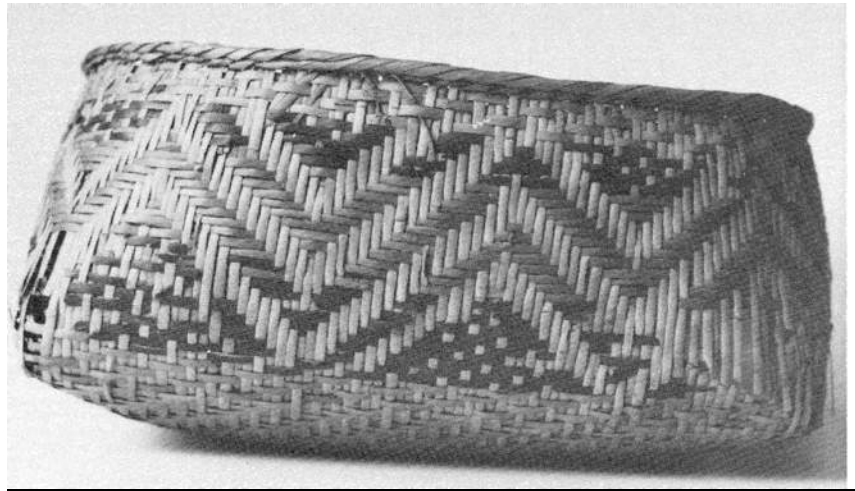


Plate 3. Chitimacha Basket. American Museum of Natural History 50.2/776.

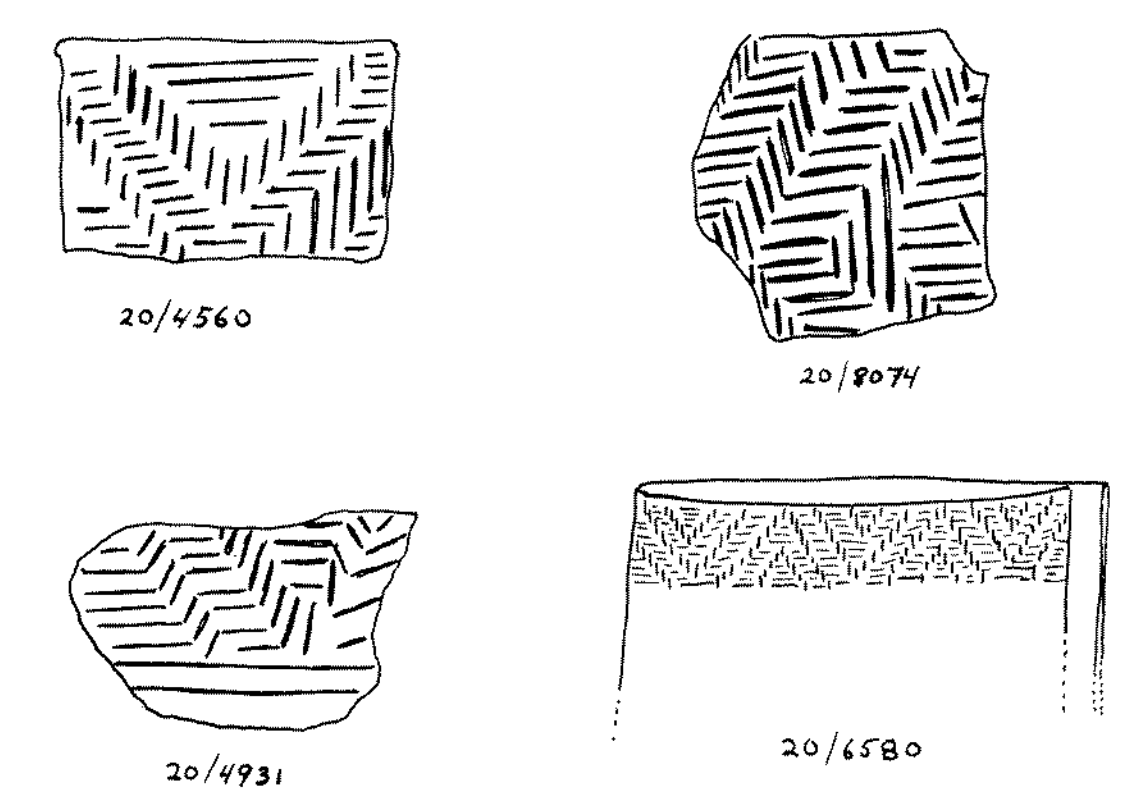


Figure 2. Bowman's Brook type potsherds from the collections of the American Museum of Natural History.

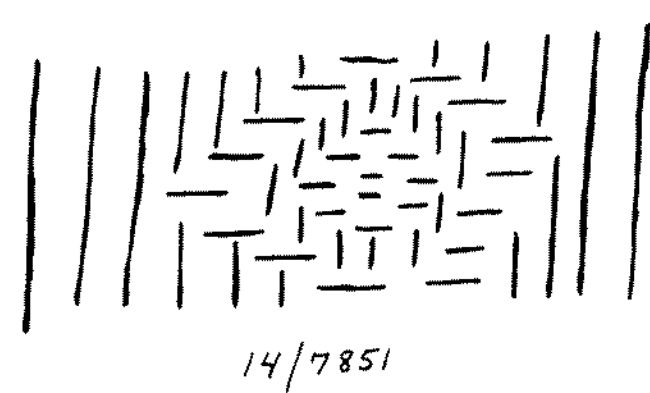


Figure 3. Pattern of incising from a potsherd found at Beach Haven, Port Washington L.I., N.Y. Museum of the American Indian, Heye Foundation



Plate 4. Chitimacha basketry with design similar to figure 3. American Museum of Natural History Clockwise from upper left: 50.2/810, 50.1/5937, 50.2/5513, 50.1/6484



Plate 5. a. View of New Amsterdam from Carolus Allard, *Orbis habitabilis* no. 79 1680. Notice basket under woman's left arm; b-d. Chitimacha baskets from the American Museum of Natural History (b -50.2/792A, c, d-50.2/819).

pelt against the background of New Amsterdam to depict the importance of the fur trade to the colony. Tucked under the woman's arm (on the right) is a basket, shown enlarged in Figure 4. Though the design may have been supplied by the engraver's imagination, it is possible that it was taken from an authentic basket. If so, the lines of the plaits bear a striking resemblance to filled triangles. The filled triangle motif is seen in Chitimacha basketry. (Plate 5 b-d) Note again the similarity between the finishing of the rim on the sherds and the pattern of overcasting used to finish off the basketry rims.

It is curious that if basketry was as varied and as important as is reported by early colonists that it would have so completely disappeared in such a short time. Among the Chitimacha, the art of basket-making is now being lost and can be attributed to two causes. When a design is invented, the original or pattern basket is kept so that it can be copied. Daughters are taught to make the designs from the pattern baskets of their mothers. If these pattern baskets are lost or sold, the design too is lost. Secondly, the processes of preparing the splints, dyeing them and making the baskets are quite time-consuming and do not interest the young people. Both of these factors probably contributed to the fast decline of basket-making in the Northeast. In addition, several years before the planting of the colony at Plymouth, there was a devastating plague that swept through New England and Long Island wiping out whole villages. Undoubtedly, many basketmakers died before passing on their skills.

However, one design in use today may be a holdover from prehistoric baskets. The almost unique pot shown in Plate 6 dates from the very end of the Woodland period. Several sherds with similar lobes were recovered from Fort Corchaug and termed Shantok incised. These lobes are unusual in that they were

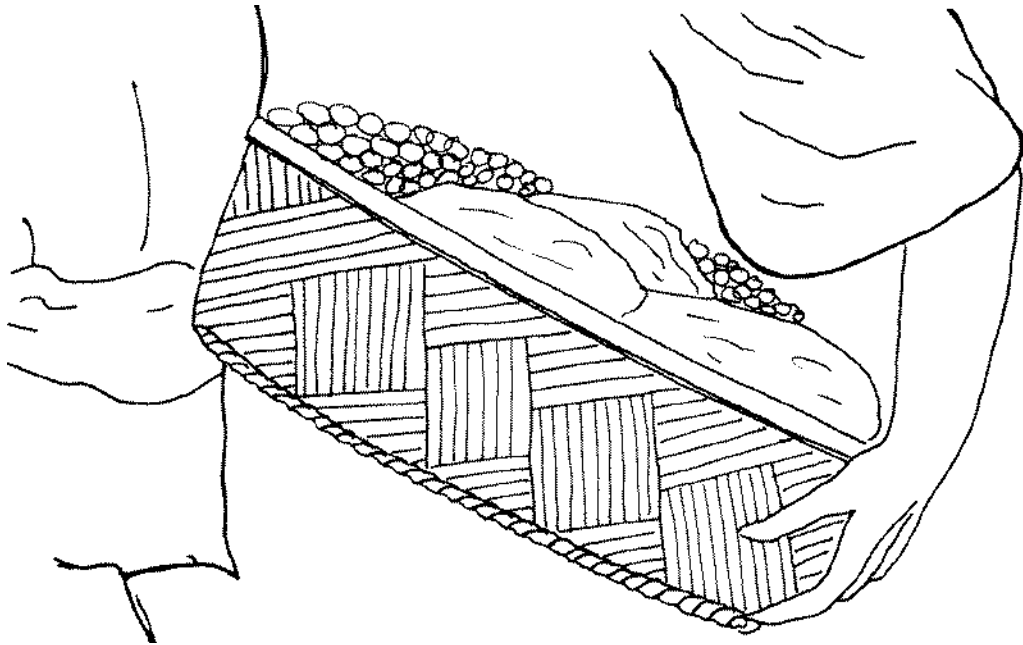


Figure 4. Enlargement of basket from drawing in *Orbis habitabilis* Plate 5a

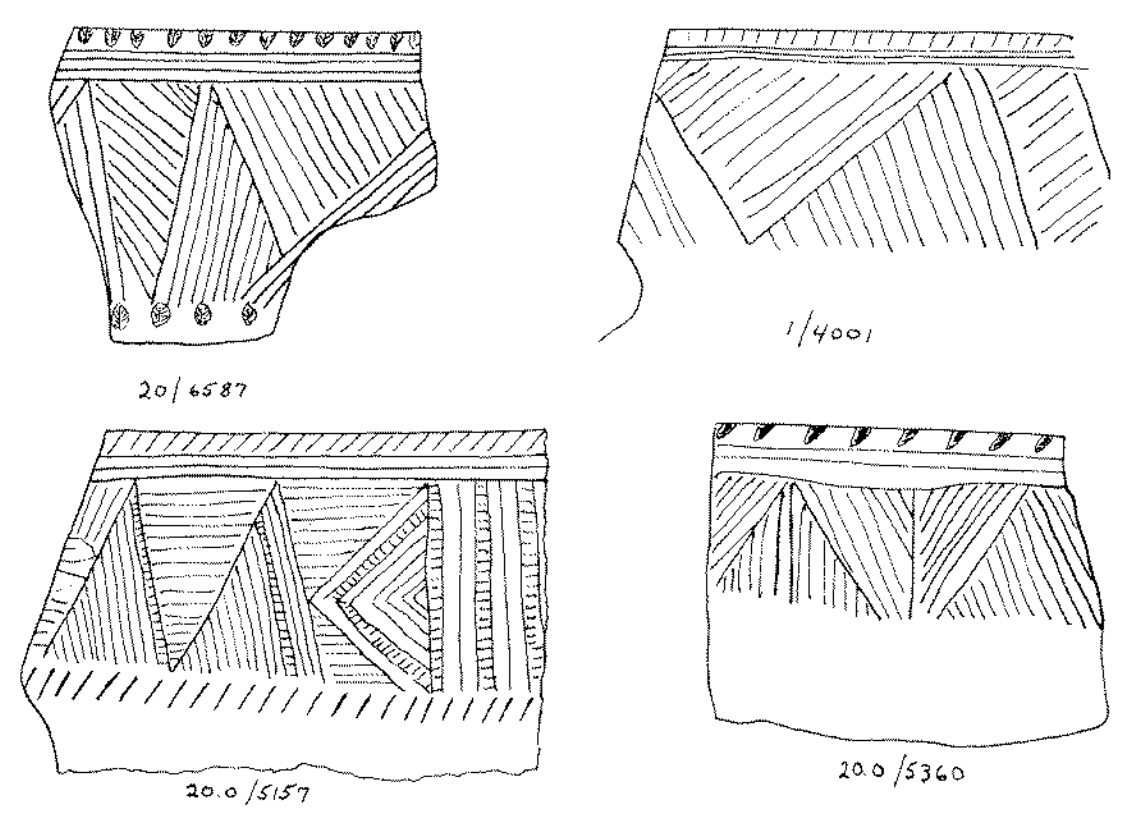


Figure 5. Four sherds showing incising in the style of East River incised decoration known as the filled triangle motif. American Museum of Natural History

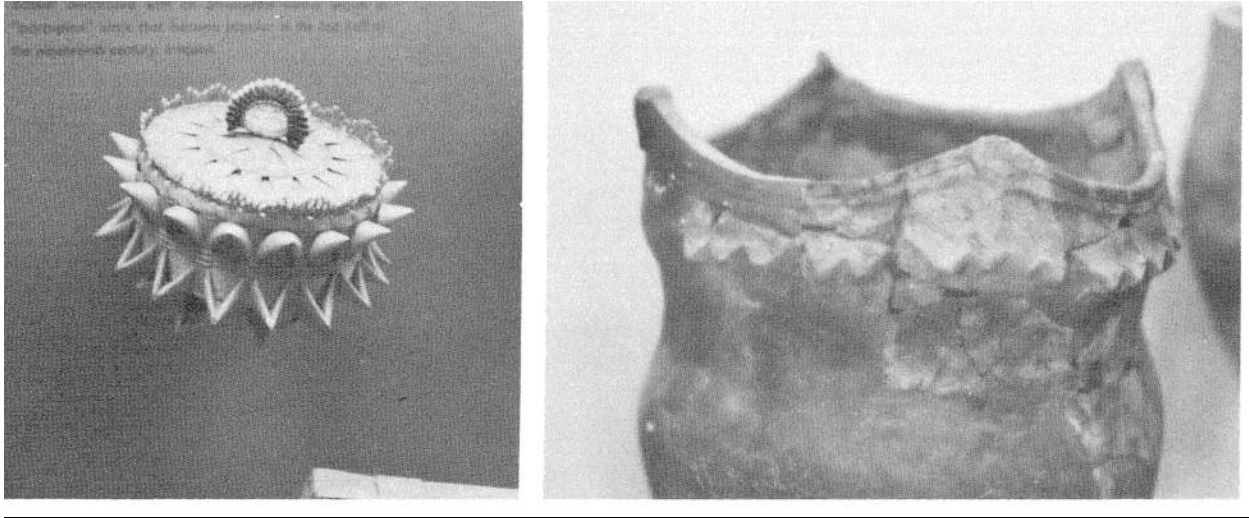


Plate 6. Comparison of porcupine weave on nineteenth century Iroquoian basket (Am. Mus. of Nat. Hist.) and nodes on Late Woodland pot found in Cutchogue (Inc. Long Island Chap.)

made from clay being added to the edge, rather than having been formed from pinching of the clay. The only clay pottery found in the historic Montauk Indian cemetery as reported by Foster Saville (Saville 1920) shows a European influence in shape but retains the same lobes. (Plate 7) These lobes may be an attempt to represent in clay the design in basketry known as porcupine quilling. (Plate 6).

There may be other pottery motifs that represent other basketry designs, or even designs in wood or leather. These are further avenues to explore. Figure 6 shows a simple incised pattern found on a sherd



Plate 7. Historic Montauk pottery from Pantigo Hill Site, Easthampton 7/1524-5. Photograph Courtesy of Museum of the American Indian, Heye Foundation.

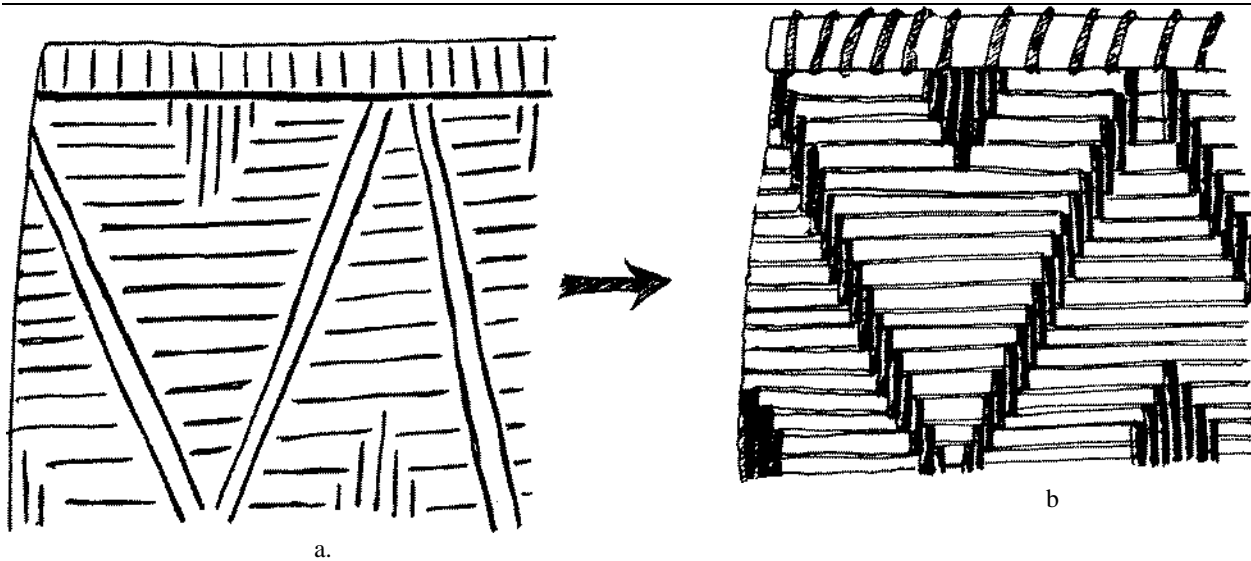


Figure 6. a. Potsherd showing incised pattern. 20/4451 American Museum of Natural History b. Hypothetical basket patterned after a.

from Port Washington, L.I. visualized as a design in the weave of a basket. If this is done with all sherds, a great deal of information can be built up leading to comparisons of basketry styles between sites areas and time periods and will allow light to be shed on a non-recoverable portion of prehistoric culture through an archaeologically recoverable portion.

I wish to thank Dr. Phillip Gifford and Dr. David Thomas of the American Museum of Natural History and Mary Hawkins of the Inc. Long Island Chapter of NYSAA for giving me access to the collections of their museums.

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A SERIOUS SITUATION

I am afraid that it is no longer possible to avoid the discussion of what can only be regarded as a trend that threatens the existence of state archaeological societies and the support they give to the practice of archaeology. I get around a good deal and I have, (remember that I spent years as a reporter as well as a professional writer) confirmed the reality of the trend in several states. It is, quite simply, an alarming decrease in the membership of state societies. In New York the fall-off has been about 30%; this might appear to be a localized phenomenon except that the Eastern States Archaeological Federation has suffered a decline in membership and the number of affiliate societies of the same order. The poor attendance at the ESAF annual meeting and conference in Ann Arbor in November was due to many factors, no doubt, and I can put my finger on a few, but basically what caused a drop-off to about 40% of the usual turn-out was a turn-off in interest of those who are by far the majority of the membership, the other-than-professionals.

I see no point bringing up the subject and then being less than blunt about it. The dissociation of professionals from the non-vocational avocationals, the aficionados, the buffs, the dilettantes, the amateurs, in short your average state society chapter member, has reached the state where there is almost no cordiality between them. When the older generation of archaeologists who were accustomed to work with non-professionals (often because it was the "amateurs" who knew where the sites were) have left the scene, the gulf between the professionals and the non-professionals will be too wide to be bridged by even a perfunctory handshake and a nod of "hello."

What is most bitterly to be regretted is that the younger generation of academically trained archaeologists are either being taught disdain for the non-professional or are somehow picking up this callow attitude from the walls of their environment. Evidently they are not aware that they are alienating their base of support, shirking their obligation to use their academic training for the good of the practice of archaeology and, worst of all, driving eager and willing hands beyond the fringe into the ranks of the looters and pot-hunters. Make no mistake about it, the frowns of a few (and they are relatively few) professionals will not prevent those who want to dig from digging, and they are the people who know where the sites are and can get to them. Frowns, bad-mouthing, disdain all make enemies, not helpers, not informed supporters, not members of state societies which publish the journals that more than one young academic has published his first effort in; and depends on to publish his more mature contributions.

I am the editor of both the *Bulletin* and the Eastern States Archeological Federation annual *Archaeology of Eastern North America*. It is not coincidence that the same financial plight befell them both in the same year. I do not know where the money is to come from to publish No. 76 of the *Bulletin*; I do not know where the money is to come from to publish Vol. 8 of AENA. What this means is that two issues of the *Bulletin* that should have come out during the 1979 publishing year are being postponed, issues that were scheduled to bring forth several pieces by contributors we have never published before, young people, I take it, who are to appear in print for the first time in a journal of general circulation. The languishing of AENA means that articles by some eight to ten academic archaeologists will have to remain in the files for another six months to a year or perhaps for all time.

Is it clear enough what will happen if NYSAA and ESAF wither and die? Who will provide the support for the journals in which academic and professional archaeologists are glad enough to appear and for the annual meetings which provide them with a platform from which to deliver their papers? The membership of NYSAA in its best years was about 1000; the membership in the New York Archaeological Council, the organization of professional and academic archaeologists in the state is about 50, and has sunk as low as about 30. I doubt very much that the professional and academic archaeologists of New York could finance a journal that costs about \$3000 per year. AENA is financed by its own sales, but the bulk of these sales do not come from the approximately 250-300 academics and professionals in the East. ESAF, at its healthiest, had a membership of over 10,000.

I have heard some say that the cause of failing membership is this inflation thing. Balderdash. The cost of belonging to state societies, which automatically confers membership in ESAF, has not risen appreciably in ten years. Did you know that state societies pay only about 10 cents per capita as their ESAF dues? And you can't even take your wife or girl friend to a movie for the cost of an annual membership in NYSAA.

I have made it my concern to discover what are the real causes of a decline, instead of what one would expect to be a normal demographic increase in public interest in indigenous archaeology, enhanced by the amount of publicity it is now receiving. This requires only a receptive mein, a listening ear, and what precipitates out of the inquiry are these complaints:

1. That they are not wanted, often actively resented, is quite clear to the average state society members. Sooner or later they will either overhear or perceive the attitude expressed by one young graduate student who said, impatiently, of amateurs "Why don't they go away and stop cluttering up the field?"
2. They, the professionals and academics, don't join our societies but they expect us to publish their papers and they take over our conferences with their jargonistic papers and special interest symposia.
3. They, the academics and professionals, are not interested in archaeology any more. As one society member said "Archaeology isn't fun nowadays." What he was summing up, of course, is the effect of two trends over the past five years or so: the rapid rise of contract archaeology and the increasing bias of archaeology not so much toward processual archaeology and archaeology as anthropology (which in my view, even for the layman, enrich the study of archaeology by a factor of ten) as toward the use of mathematical and computer tools in analysis and model-making. Add to these the emphasis on conservation of sites as opposed to excavation and the impression that archaeologists are no longer interested in archaeology, the kind of archaeology the society members are interested in, comes through vividly.

I have not attended a conference in the last three years (the total would be at least a dozen) where there was not at least one session devoted to cultural resource management, or contract archaeology. As aforesaid this subject and its ramifications is of minimal concern to the non professional. That should not be, of course; the layman should know about how the field is being re-oriented and given new shape by the governmental recognition of the importance of the recovery and conservation of cultural resources and he should be made aware that he can, and ought to, do his share. But the professionals do not, in their language, attitude and mode of presentation, take him into their confidence, as it were, about their preoccupation and the reasons for it; they speak only to each other, and lose the chance to enlist a larger army of supporters. What we are in need of are statements, and a form of address, that is directed to the total audience of the professionally committed and the non-professionally committed that will make clear the mutuality of commitment.

The use of mathematical and computer programmed tools in archaeology is here to stay. The academic-professionals should remember that the use of these tools constitutes a language not comprehensible, by and large, to non-professionals. Simple courtesy, then, and in the pursuit of liberal, humane and democratic objective of the widest possible understanding, they should translate their methods and procedures couched, in mathematical terms and formulae, into English prose where the readership or audience has not their technical background. I have seen this done, as an editor, very satisfactorily, though not often enough. Nor is this simply an extra chore, done with a gesture of condescension. What cannot be restated in the common syntax and vocabulary of our general verbal communication is bound to be suspect as thought. Read "Scientific American" and the major articles in "Science."

4. Finally, it is the feeling, well-founded, that the professionals and academics are trying to appropriate archaeology as an exclusive domain for their own hieratic designs.

If I (who has taught at the now extinct Briarcliff College and who now teaches at Pace University, and who has been doing contract archaeology for the past three years, who is research director for the Museum and Laboratory for Archaeology at the Westchester County facility of Muscoot Farm, who has spent the last three years digging an historical site and the 25 years before that digging in the prehistory of the Lower Hudson) seem to be lecturing academics and professionals exclusively, that is my exact intention. As the numbers of academics and professionals increase, as their status rises and their sense of identity and importance is upgraded, so does their responsibility for leadership in the whole archaeological enterprise. This enterprise cannot ever be exclusively a professional one. The reason is starkly simple: the field of activity is not an institutional laboratory, where the doors can be closed and marked "no admittance;" it is the land on which 220 million people now reside. Governments at all levels may make laws regulating archaeological activity on the lands they own, but they cannot effectively bar the public from these lands. (Recently two young men have sought me out to report that they have been

digging, in a public *New York City park*, a most important historical site; once they discovered what it was they were into they came seeking help in preserving it; it is being looted without interference by other young men without any scruples at all.) For the enormous acreage not under governmental control no government can pass constitutional regulations preventing the extraction of whatever is there. The only protection for cultural resources is public sensitivity to and respect for their irreplaceability. Nobody has more stake in creating that sensitivity and respect than the academic and professional archaeologist.

What inflation has actually done to archaeology is to make saleable its material culture, at levels that make it profitable to go to some pains to obtain them. No amount of lobbying with Congress or state legislatures is going to bring about the suppression of this market factor. What professionals and academics must do, then, in their own self-interest, is to join state societies and engage, congenially, in local chapter activities, providing leadership, preaching the gospel of conservation and right procedures and methods and doing what they can to attract would-be relic-hunters into the body of the respectful and respectable. State society members do not threaten the livelihood of the professionals; they will help protect it. Confraternity is much more rational and productive than conflict.

Something like this is, I feel sure, about to be done in New York. At its January meeting the New York Archaeological Council (NYAC), the organization of academics and professionals in the state, voted to hold its next regular meeting in Syracuse, simultaneously with the NYSAA annual meeting in April so that the two groups can become acquainted with each other's aspirations and personalities. I would hope that during this period the professionals and academics will find out which chapter it is most convenient for them to join and give their efforts to, and join it. For NYSAA's part I, as editor of the *Bulletin*, have agreed to provide some space in each issue for matters of concern to NYAC members. This is quite in keeping with the *Bulletin policy* of serving New York archaeology and I am sure that the nonprofessionals will find information of interest and value in the material.

But, at this straitened time, NYSAA has its self-interest also, and I feel we must re-institute a policy that was enunciated several years ago, but never actually enforced. It is that authors of manuscripts submitted must assert, as their affiliation, not the school or other institution where they are stationed, but their NYSAA chapter membership. The *Bulletin* is financed by the dues paid by members; it is hardly too much to ask that those who wish to publish their material in it and make use of its editorial services should contribute at least membership dues toward its maintenance. As of this moment almost anybody could write a predictive model for the *Bulletin*. As NYSAA membership continues to diminish it will fall off to the 12 to 15 pages per issue of the days when NYSAA membership stood at 500. And, because the health of a state society is dependent on the robustness of its publication, NYSAA will shrink to 200 members, and vanish.

L.A.B.