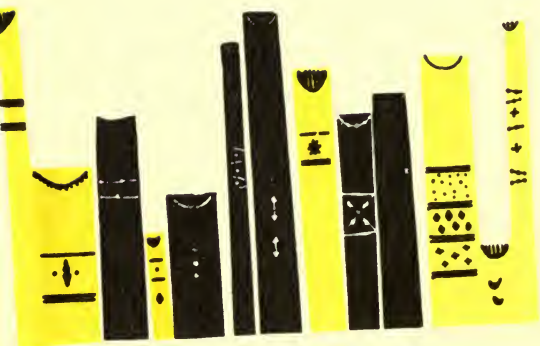




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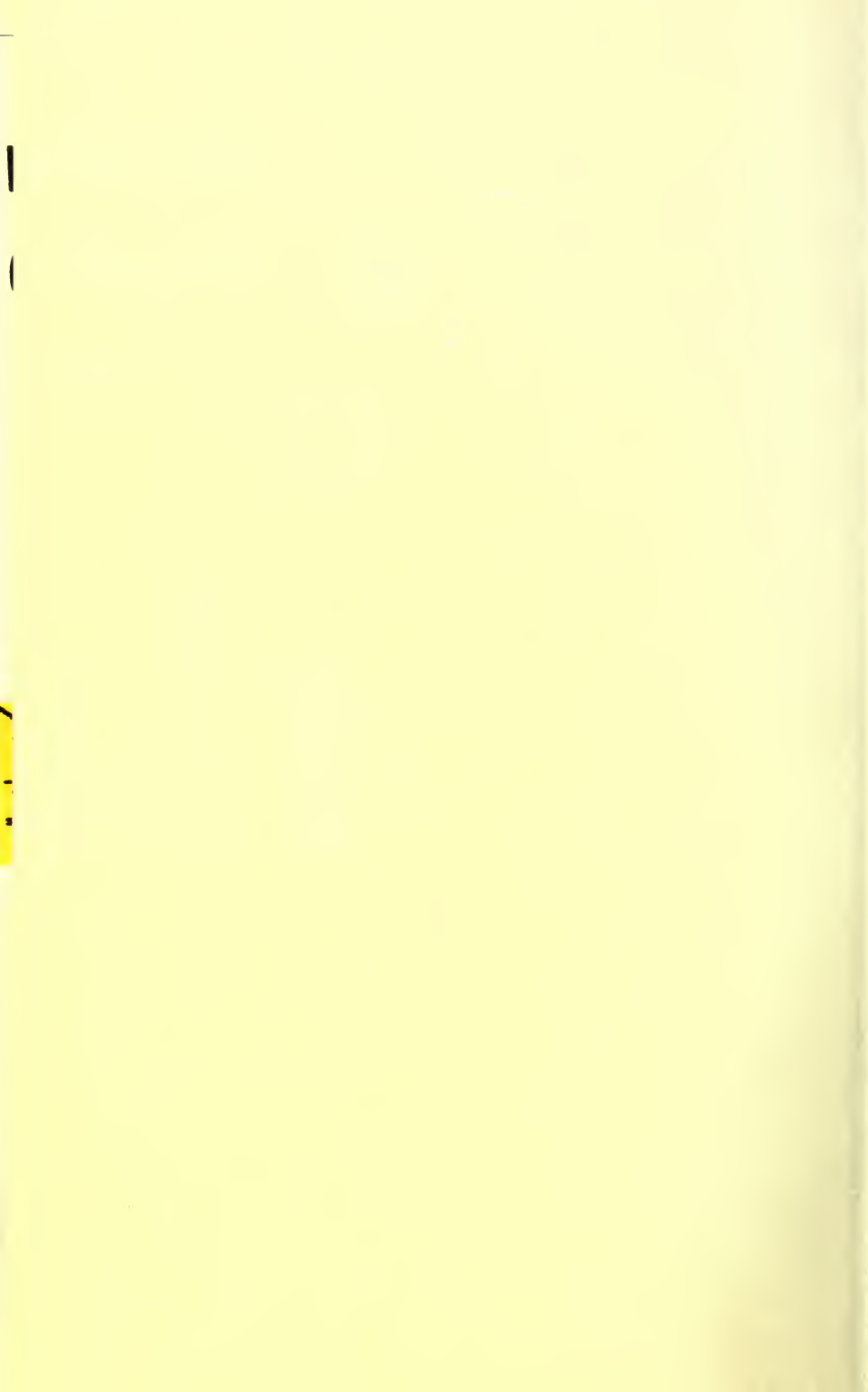


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Milwaukee, Wisconsin

Incorporated, 1903

For the purpose of advancing the study and preservation of  
Wisconsin Indian Antiquities

Meets Third Monday of Month, 8 P. M., Milwaukee Public  
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## EXCAVATIONS AT THE LAMB-5 SITE

(47-Sc-25)

Saint Croix County, Wisconsin

by

Jay Brandon

State Historical Society of Wisconsin

### INTRODUCTION

The site of the Eau Galle Reservoir dam lies in Pierce County, Wisconsin, approximately one-fourth mile north of the town of Spring Valley. The reservoir pool, at maximum elevation, will cover the downstream portions of several tributaries of the Eau Galle River in Pierce and St. Croix Counties. These tributaries are Lohn Creek and Lousy Creek flowing in from the east, and French Creek which joins the Eau Galle from the west (Fig. 1). Because of the hilly topography of the vicinity, the reservoir pool will be narrow relative to its depth, and will have a lengthy shoreline relative to its surface area.

Archaeological work done within the maximum pool area of the Eau Galle Reservoir was performed under the aegis of the State Historical Society of Wisconsin and was funded by the United States Department of Interior, National Park Service.

The initial archaeological reconnaissance of the reservoir was undertaken in 1962 with Mr. A. Dewey Buck heading the field party. Fifteen site locations were recorded that year.

In 1964, exploration of the reservoir was continued under NPS contract No. 14-10-0529-2747, with Mr. Hank Kerr as field supervisor. During that season, ten additional sites were located, two partially excavated and three tested.

In 1966, NPS contract No. 14-10-0529-2874 was awarded the State Historical Society of Wisconsin for intensive excavation of selected sites within the reservoir. Of the sites re-

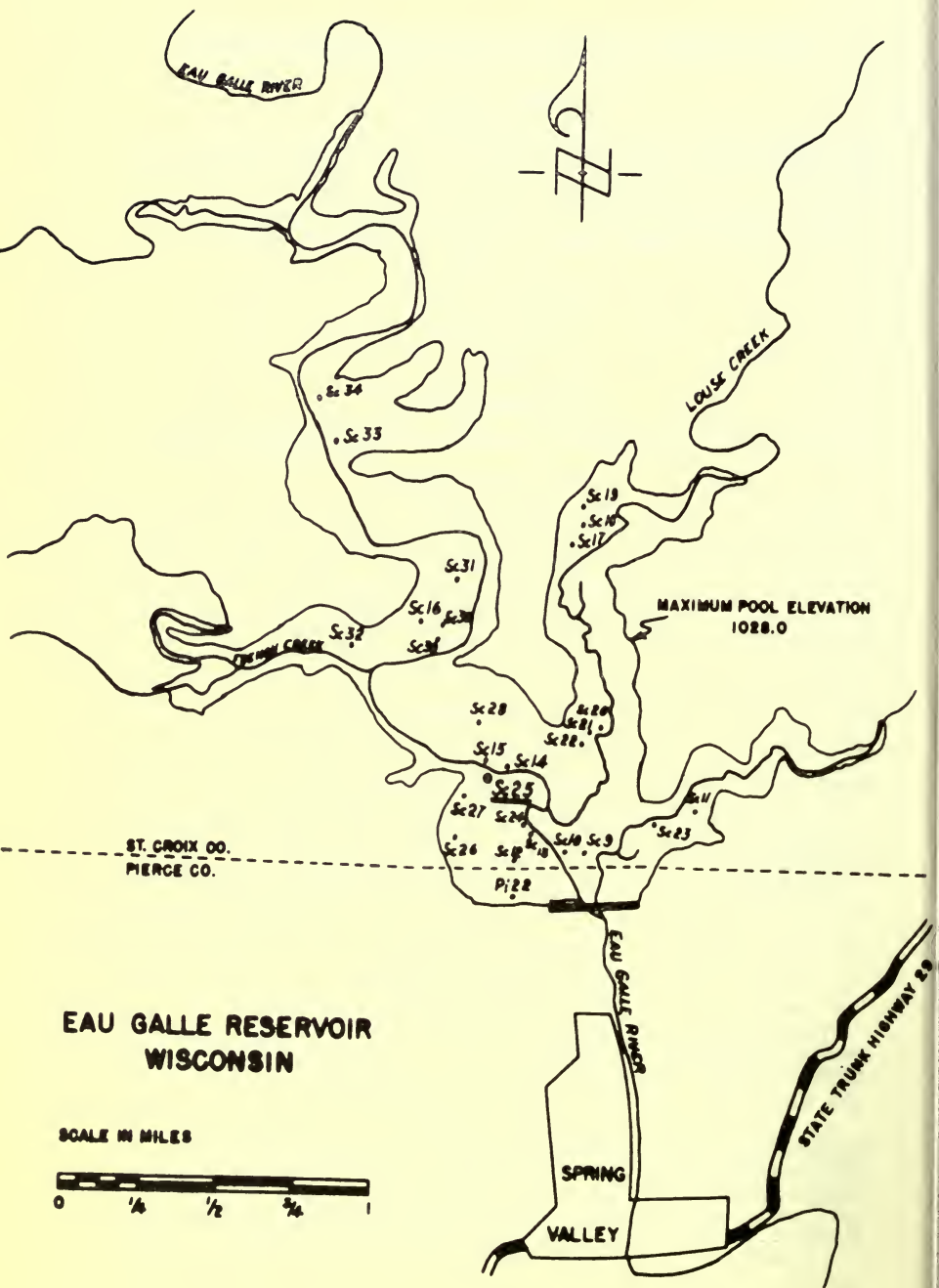


FIGURE 1

corded for the area, the only site available for excavation, which seemed promising, was the Lamb-5 site (47-Sc-25). This site had been partially excavated by Kerr in 1964, and his results indicated that it would be a productive site for this region. All the other seemingly good sites in the area were still under cultivation which precluded their being excavated. The crew was under the joint direction of Dr. Joan E. Freeman and Mr. Jay Brandon, both of the State Historical Society.

The material recovered from the Lamb-5 site by Kerr in 1964 is included in this summary report, and I have drawn heavily from the unpublished report (1965) of his work in the reservoir. In addition to Mr. Kerr, I wish to thank Dr. Joan Freeman, Mr. Manfred E. W. Jaehnig, and Mr. Ronald Lofman, for their valuable assistance in preparing the photographs, drawings, and maps included herein.

### Site Description

The Lamb-5 site (47-Sc-25) is situated on the first and second major terraces of the Eau Galle River where it flows eastward through St. Croix County, Wisconsin (Fig. 2). Reconnaissance of the second terrace, a cultivated field, produced the first evidence of a site. Several projectile points, knife fragments, and numerous flakes were found here, but tests revealed that this area (Grid "B") had been totally disturbed by cultivation, so no further work was undertaken.

Numerous large trees growing on the first terrace suggested that the land had never been plowed, and tests indicated an undisturbed site. The area was designated as Grid "A" (Fig. 3).

At the western end of the site the land rises abruptly to a height of more than one hundred and fifty feet. To the east (downstream) there is a gradual lowering of the land surface through a succession of small, irregular terraces, to a fairly wide, flat, flood plain. Land across the river to the North of the site, consists of a single terrace, eight feet above the river, lying on the same plane as Lamb-5 (Fig. 4). On this terrace are located two sites, Strum-1 and 2 (47-Sc-14 and 15). Both sites were under cultivation at the time Lamb-5 was excavated.

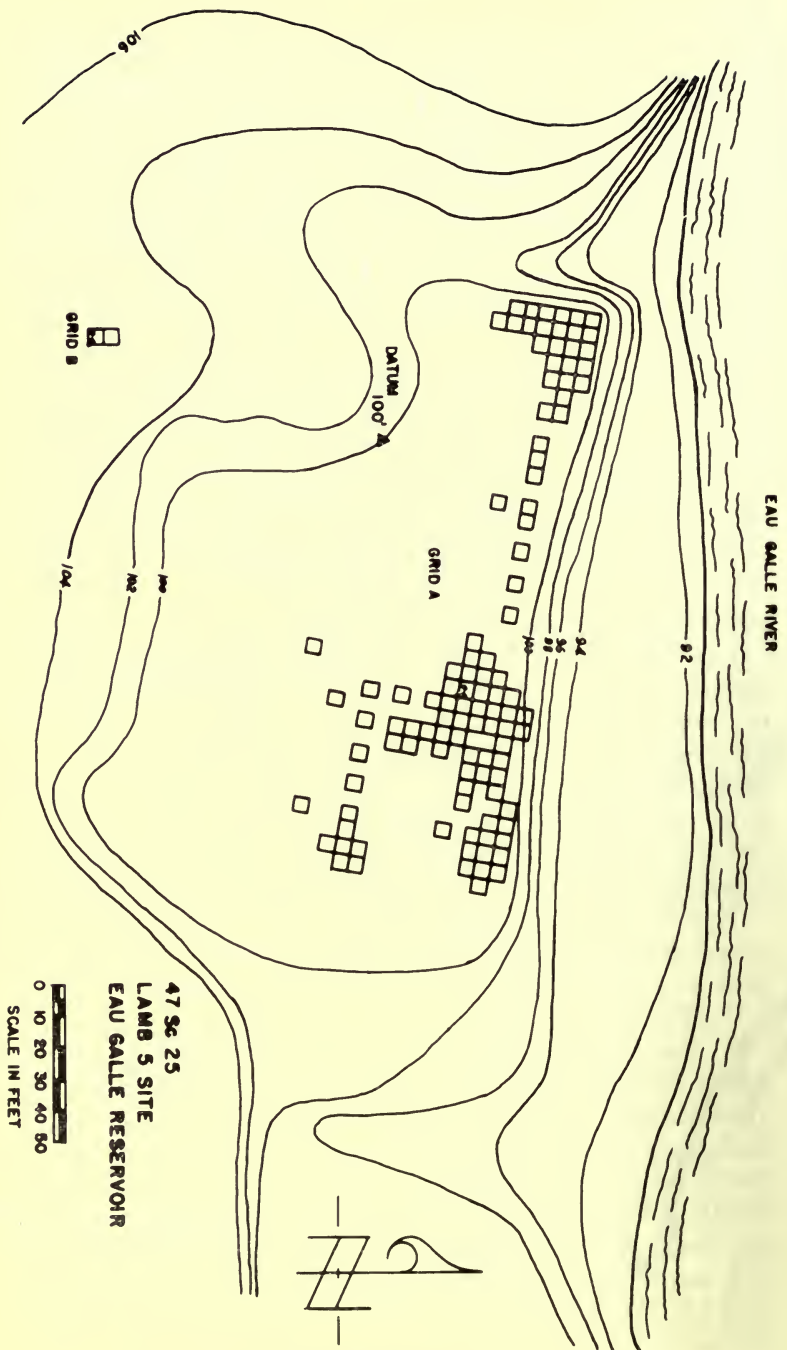


FIGURE 2

A grid system employing North-South and left-right directional coordinates was established, and each of the resulting 5' x 5' excavation units was identified by the grid point making its southeast corner. Each square was excavated in arbitrary 0.5 foot levels.

At the conclusion of two field seasons, totaling 7 weeks, 106 squares had been excavated with depths ranging from 1.0' to 4.5'.

### Observed Stratigraphy

#### Grid A

Stratigraphy at the site was consistent throughout. The humus zone below the grassy surface was of nearly uniform thickness varying from 0.3 to 0.5 feet. In color, it ranged from black to dark brown, and could best be described as loamy sand. Below this band the sand was similar in texture



**FIGURE 3: View of the Lamb-5 Site looking East.**

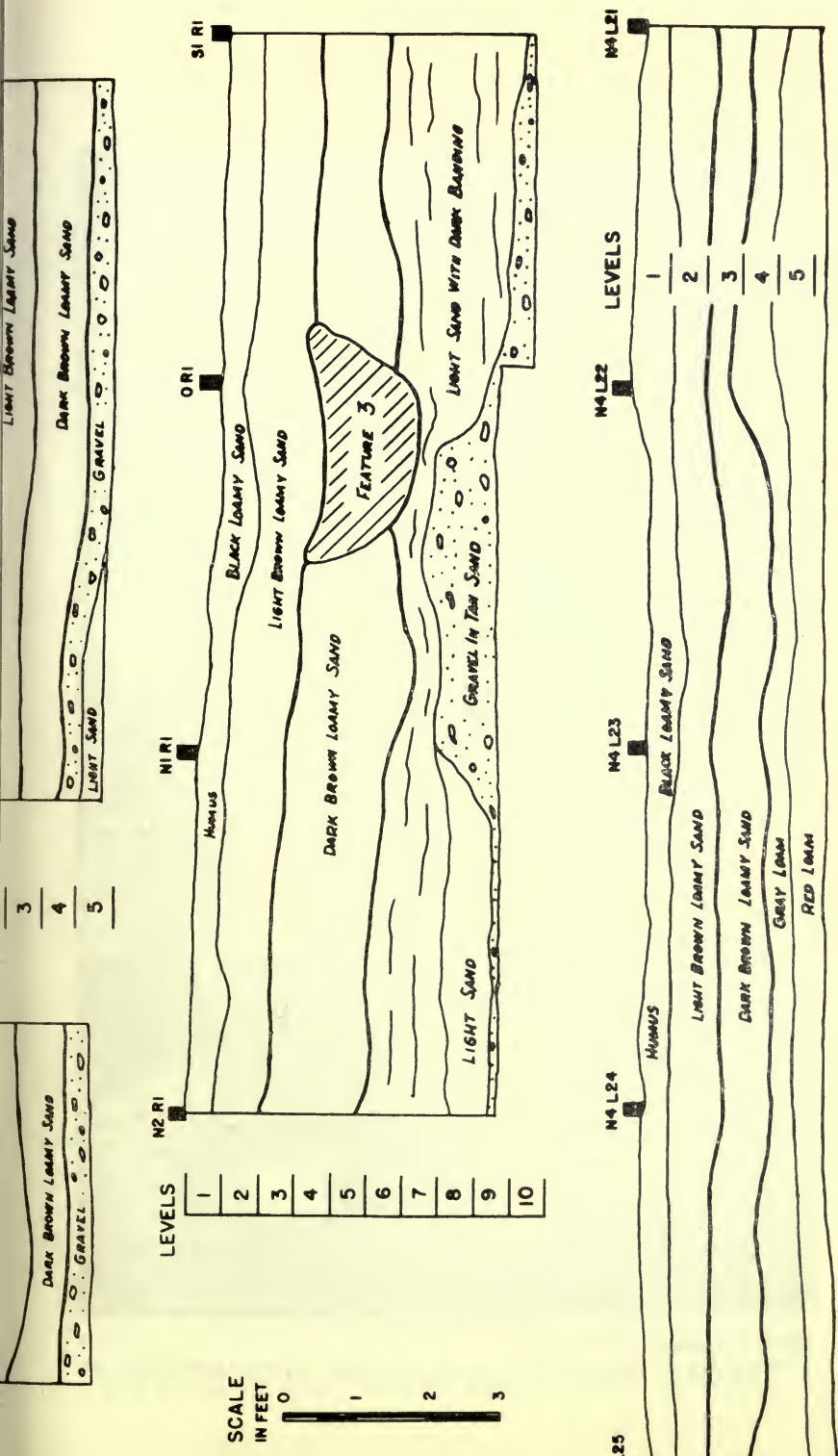
but of a lighter, gray-brown color and was of less uniform thickness, generally measuring from 0.7 feet to 0.9 feet with extremes of 0.5 feet to 1.1 feet.

Along the lower margins of the second zone the soil became darker in color, although its texture did not appear to change. This area of darker loamy sand generally ranged from 0.8 feet to 1.0 feet in thickness with extremes of 0.3 feet to 1.7 feet, and contained most of the artifacts received from the site.

Below this zone, a yellow-tan loamy sand was encountered. Over most of the site this layer was traversed by numerous irregular, super-imposed bands of dark brown sand of finer particle size than the enclosing soil. These denser bands stood out clearly against the light background. Average thickness



FIGURE 4: View of site lying across the Eau Galle River from Lamb-5.



47 SC 25 LAMB SITE 5  
EAU GALLE RESERVOIR  
SOIL PROFILE

FIGURE 5

was about 1.3 feet with extremes of 0.8 feet and 1.9 feet. In some squares (e. g. S1-R1) this zone was found to overlie a gravel lense contained within a tan soil of almost clay-loam fineness. Gravel and cobble beds were encountered at various points over the site. The upper limits of gravel were 1.2 feet below surface at the shallowest point, dropping off to 4.2 feet (at the deepest). In the eastern portion of the site, where no gravel was present below the zone of banding, a tan loam (of clay- and sand-sized particles) was present. This zone had no distinct boundary between it and the one above; there was only a gradual but discernable change in soil texture. At the western end of the site, the dark brown loamy sand was underlain by distinct layers of gray and red loamy clay (Fig. 5).

### Chipped Stone

#### Projectile Points

##### Side-notched (Fig. 6, a-c):

Three side-notched specimens were recovered from the site, two of which were excavated. The third was found on the surface.

One member of the group (from Sq. 0.0, level 4) is fairly well made, although it is somewhat irregular in outline and notch placement. The base is straight and shows thinning. There is slight grinding along the whole basal edge and along the length of one of the tang "ears." The notches, rather than being of strict "U" form, are so shaped that they produce a rapidly expanding stem. Blade edges are convex and of unequal length. The specimen is retouched over most of both facial surfaces, and the blade edges show fine pressure retouching which has produced shallow and irregular serrations. Its measurements are: length 50.0 mm, width 32.5 mm, stem length 14.0 mm, stem width 24.5 mm, base width 31.5 mm, thickness 10.0 mm (Fig. 6, a).

This point fits well into the side-notched tradition in Wisconsin, and is closely similar to the Raddatz (Wittry, 1959a: 44-45) and Madison (Baerreis, 1953:154) side-notched types which have been attributed to the Archaic and Early Woodland stages of Wisconsin.

The other excavated specimen (from Sq. S1-R2, level 5)



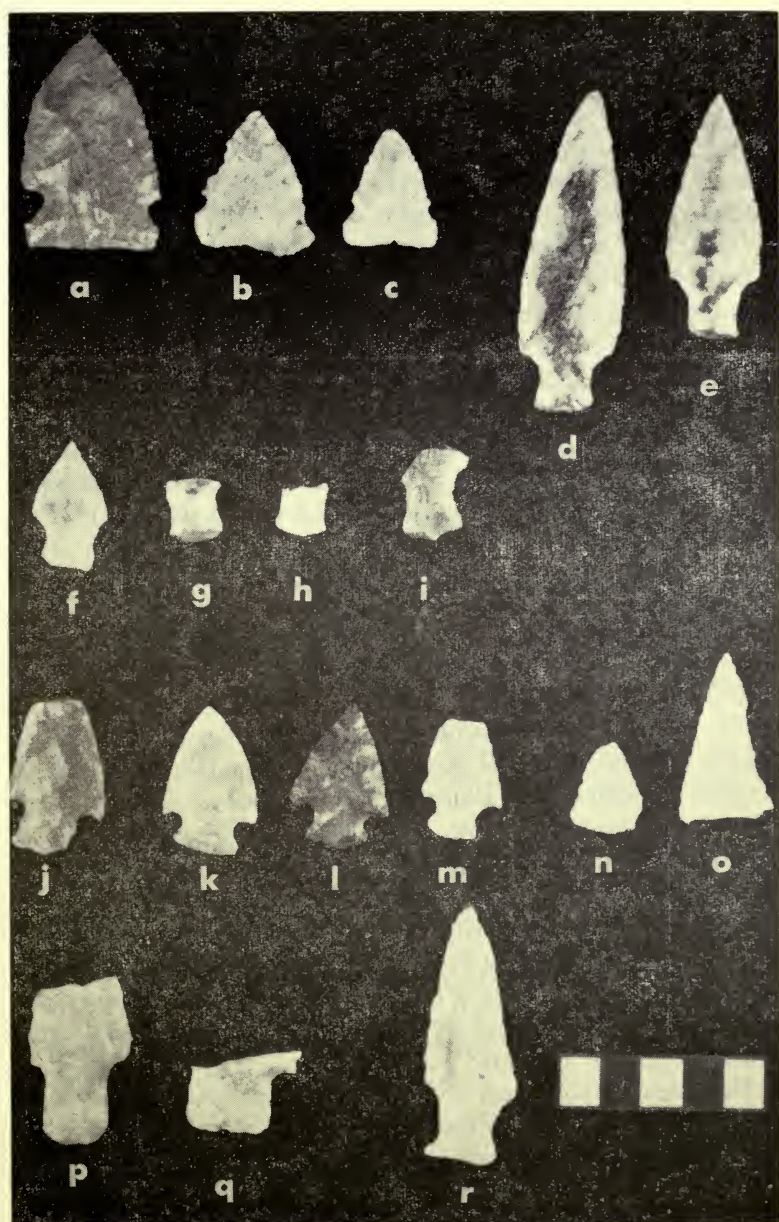


FIGURE 6: Projectile points from Lamb-5. a-c, side notched; d-i, expanding stem; j-m, corner notched; n and o, triangular; p and q, straight stem; r, flared base.

is quite crude. Only on one side is the notch distinct and is of the form mentioned above. The general rudeness of manufacture makes it difficult to classify this point, but it appears to relate to the Raddatz and Madison side-notched types. Its measurements are: length 32 mm, width 29.0 mm, stem length 11.5 mm, stem width 23.5 mm, base width 29.0 mm, thickness 10.0 mm (Fig. 6, b).

The third side-notched point recovered was found on the ground surface. It is carefully made with fine retouching along all edges. The notches are of "U" shape, small and shallow. The base and blade edges are straight, producing a triangular outline for the point. In formal characteristics the specimen also appears to coincide with the Raddatz and Madison types. Its dimensions, however, are below the ranges reported for those types: length 27.5 mm, width 23.0 mm., stem length 10.0 mm, stem width 18.0 mm, base width 23.0 mm, thickness 6.5 mm (Fig. 6, c).

#### **Expanding stem (Fig. 6, d-i):**

All the specimens of this group were excavated in 1965, and were found in a restricted area of the site (ranks Left-23 and Left-24).

These points were produced from slender blanks, from which the corners were removed to form either rounded or angular shoulders and slightly expanded stems. The point of juncture of the stem edges with that of the base is distinct. The bases range from slightly to distinctly convex. The point of greatest width lies across the blade, slightly above the shoulders. Blade edges are convex.

Of the three complete specimens, one appears to be the reworked lower section of a larger point. This is suggested by its relative thickness and the steep flaking of the blade edges which produces alternate beveling.

Workmanship is good and the basal and lateral edges were retouched with pressure flaking, except in one case (from Sq. S1-L23, level 2: Fig. 6, e) where the basal edge is an unmodified striking platform.

The specimens recovered from Lamb-5 bear strong similarities to the Durst Stemmed type which has been described for Wisconsin (Wittry, 1959b:179) in all respects except size

with the former being larger. Personal inspection of the Durst Stemmed collection from the type site (47-Sk2) suggests that incomplete specimens of size comparable to the Lamb-5 specimens have been included in the type collection. These are greatly in the minority and are only represented by basal fragments. It appears safe, however, to assume that both the expanding stem points from Lamb-5 and the Durst Stemmed points found in other sites belong to the same tradition of manufacture, and probably occupy the same time span, i. e. Late Archaic - Early Woodland.

**Corner notched** (Fig. 6, j-m):

Four specimens of this variety were recovered from the excavations. These were produced by striking "U"-shaped notches so placed on ovate-accuminate blanks that distinct barbs have resulted. All the examples are rather thick in proportion to their size but are of fairly good workmanship. All show pressure retouching along blade and basal edges. In the two complete specimens stem length is short in comparison to overall length and base width is less than shoulder width. Base form is convex. It is interesting to note that one of these specimens (1) is made of red chert similar to that described by Cooper (1933:69) as occurring above the catlinite beds in Barron and Rusk Counties. Points of this material were also found at the Durst Rockshelter in Sauk County (Wittry, 1959b: 180).

In some characteristics these corner notched points resemble certain Durst Rockshelter specimens which have been classified as Monona Stemmed (Wittry, 1959b:180). However, neither the formal nor metrical characteristics of the Lamb-5 points correspond sufficiently to either Wittry's (*ibid*), nor Baerreis' (1953:10) descriptions of Monona Stemmed to allow their inclusion in this type.

**Triangular Points** (Fig. 6, n-o):

Two points of this variety were found at the site. One (Fig. 6, l) was a surface find, and the other (Fig. 6, m) was encountered in the upper half of level 1 in square N3-L25 in association with the two rim fragments from a miniature pottery vessel (discussed later). The excavated point measure 40 mm by 23 mm. The other specimen, made of quartz,

measures 22.1 mm in length. It is impossible to ascertain its width since one basal corner is broken away.

**Flared base point** (Fig. 6, r):

One point of crude manufacture which may be described as having a "flared" base was recovered from square S2-R1, level 3. The specimen has straight to slightly convex blade edges and distinct, angular shoulders. The point was produced by removal of long, shallow, notches from the side of the blank, and the resultant stem flares sharply to form the base. In this case the base is the unaltered striking platform of the parent flake. On the face of the base and stem a few flakes were removed in an apparently haphazard attempt at basal thinning. The general rudeness of this item, its thick stem and base, and its assymetry suggest that it may have been rejected during manufacture. Its dimensions are: length 58.5 mm, width 22.5 mm, stem length 15.0 mm, stem width 12.9 mm base width 18.0 mm, maximum thickness, 9.5 mm, thickness of base 6.0 mm.

**Straight stemmed points** (Fig. 6, p-q):

Both specimens are represented by proximal fragments. They are of apparently different types, but are not otherwise classifiable. One of the two, made of Hixton quartzite, was found on the surface (Fig. 6, p) and has a relatively longer

Table 1

Projectile Point Measurements (in mm.)

Catalog Number	Length	Width	Stem Length	Stem Width	Base Width	Thickness
<b>Expanding Stem</b>						
N3L24-3-3	75.2	25.0	13.5	12.2	14.0	9.0
S1L23-2-1	57.5	22.9	14.0	11.5	12.5	7.2
N4L24-3-2	30.0	18.0	12.0	11.0	12.2	7.1
N3L24-3-6	-	-	12.2	11.0	12.7	-
N3L24-3-5	-	-	-	10.7	12.1	-
N1L24-3-1	-	-	16.0	11.5	14.5	-
<b>Corner notched</b>						
N3R4-3-1	-	24.0	11.0	12.5	-	8.1
N4R10-3-1	34.2	22.5	8.5	12.4	16.0	7.2
N2R9-3-1	34.0	24.5	10.0	12.1	14.9	7.5
N4R1-4-1	-	19.9	9.3	10.0	12.0	7.0

stem, a convex base, and distinct basal and lateral stem grinding. The other specimen (Fig. 6, q) was excavated from level 2 of square O-R9. It appears to have been rather massive in proportion to its stem length, and is lightly ground along the basal and lateral stem edges. The surface find measures 16.5 mm in stem length, 15.5 mm in stem-base width, and 24 mm in shoulder width. The excavated fragment measures 14.0 mm in stem length and 19.9 mm in stem and base width.

#### Worked flakes (Fig. 7, a-h):

A total of sixty implements fashioned from flakes were recovered from the site. In all cases there were produced by dressing one or more edges of flakes of various sizes by fine percussion chipping or pressure flaking. Often, the tool edge shows a small area which has been flaked with the remaining length of the edge exhibiting use spalling. It seems likely that in these instances flaking was used to straighten or slightly round the flake edge so that it might more conveniently serve as an implement. There are no instances of bifacial edge preparation. Most specimens show varying degrees of use polish and dulling.

Three distinct implement classes comprise the sixty specimens of worked flakes. The greater number (52) are simple cutting or scraping tools. In the majority of cases the working edge is straight or nearly straight. In others it is rounded or sinuous. Five of the group appear to be specialized tools (Fig. 7, a-e) which might be described as concave scrapers or "spoke-shaves." All of these objects share the common feature of having a small area (6 mm to 8 mm) cut into the edge of the flake by pressure flaking. In each case these concavities show use spalling characteristically produced by scraping action. From their shape it appears reasonable to assume that these implements were used to shave and shape shafts of wood or bone. All the members of this implement class are made from flakes struck, apparently, from the same core of jasper, and all were found in level one of squares N4-L24, N4-L21, and N2-L20.

Numerous waste flakes of the same material were also found in these and adjacent squares suggesting a short-lived,

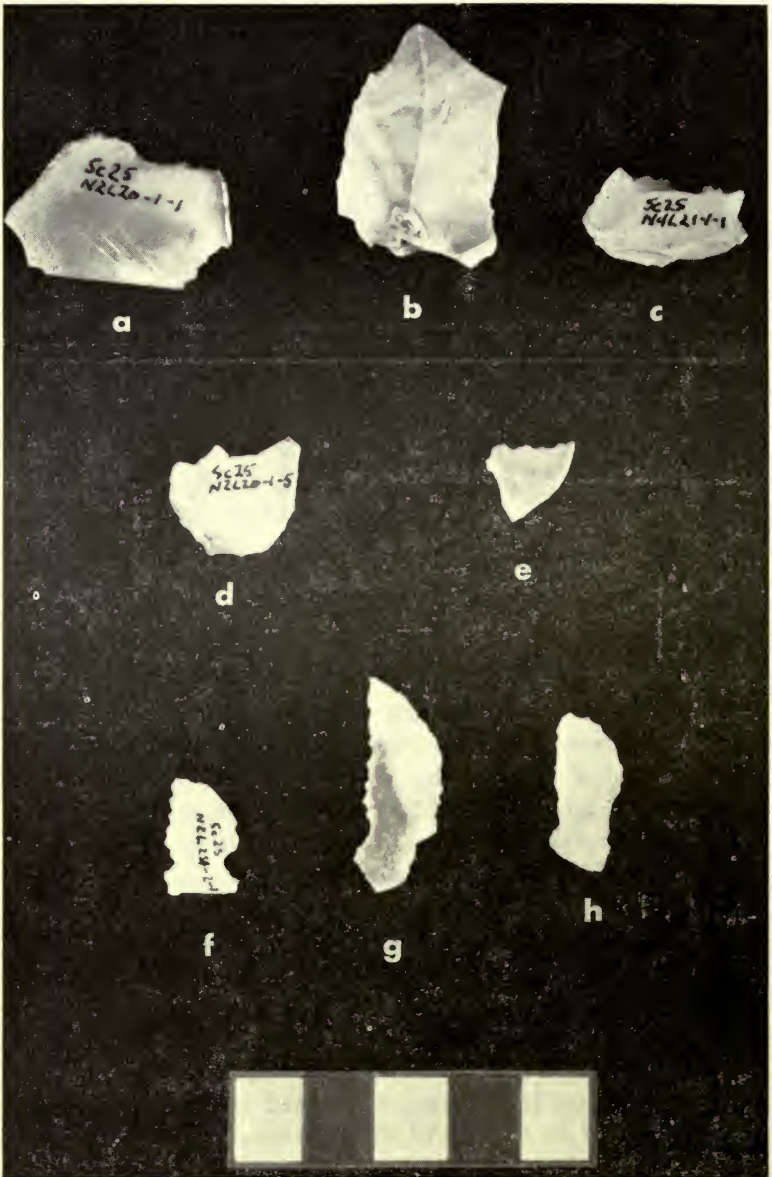


FIGURE 7: Examples of flake implements. a-e, spoke-shaves; f-h, serrated implements.

one-man implement manufactory. The only artifacts recovered which are made of this distinctive stone are the flake tools described above. These items, easily produced from the detritus of tool making, were probably considered expendable and were discarded after the immediate need for them had been fulfilled. One other representative of this tool class was found on the surface. In this specimen the spoke-shave edge has been made on a pointed bifacially flaked knife tip. Here the concavity was produced by percussion chipping (Fig. 8, 1).

The third of the groups comprising the worked flakes from the Lamb-5 site consists of three small, serrated instruments of distinctive "butcherknife" shape. In each specimen one blade edge is straight or nearly straight while the other is convex. Both are serrated except in the case of Fig. 7, f. in which the serrations of the convex edge have been broken off. The three items have lengths and widths of 28.8 mm x 11 mm. (Fig. 7, g), 21 mm x 10 mm (Fig. 7, h) and 16 mm x 10 mm (Fig. 7, f). In each a rude hafting base is present. In two cases (f, h) the stem and base are produced by haphazard, bilateral notch chipping. In one (g), a notch appears to have been produced incidentally while the opposite notch has been produced by chipping. The use of these implements is uncertain, but their characteristics suggest a hafted, lancet-like, cutting and sawing tool, perhaps useful in cutting through tough animal fibers such as nerves, tendons, and heavy connective tissue. All were recovered from squares N2-L24 and N3-L24 in levels 2 and 3.

Good descriptions of a similar assemblage of flake tools is presented by Nero (1948:23).

### Knives

#### Ovate-accuminate (Fig. 8, a-g):

Five complete and two broken specimens have been assigned to this category. All the knives of this group have been produced by bifacial percussion flaking and there is secondary, finer chipping along the edges of each one. In cross-section there is a strong tendency toward plano-convexity. The complete specimens range from 51.0 mm to 70.0 mm in length, with the average being 58.5 mm. All were

measured for width and their range is 24.0 mm to 27.9 mm with an average of 25.4 mm.

Two members of this group (Fig. 8, a) appear to have been somewhat more specialized tools. One, (a), has a well developed, longitudinal, keel ridge on one face while the other face is flat. These operate to produce a triangular cross-section. At the base the keel ridge terminated in a definite, although blunted, graver tip. At its other extremity the keel ridge ends in the knife tip. Both the graver point and the tip of the artifact show use scaring, blunting, and polish that suggest their function as burin-like tools. The lateral edges appear to have served as a knife. The slight concavity to the left of the graver tip (as pictured), appears to have been employed as a spoke-shave. The graver tip was thinned by the unifacial removal of small, narrow spalls, aligned with artifacts' long axis. The knife tip, designated (1) in Fig. 8, has a spoke-shave concavity cut into one edge (s. v. worked flakes).

#### **Ovoid (Fig. 8, j-k):**

Two specimens so classified were recovered, one complete and the other broken. Both were made by coarse, bifacial, percussion chipping which has produced sinuous edges. The complete knife measures 106.5 mm x 63.0 mm; the broken one, made of Hixton quartzite, has a width of 50.0 mm.

#### **Triangular (Fig. 8, h-i):**

While they are not of strictly triangular shape, these specimens have been so designated as a matter of convenience. Both were produced through bifacial percussion chipping, but they are of more delicate workmanship than the knives previously described. Both bases have been thinned to a small degree with percussion and the edges show small amounts of secondary fine chipping and pressure flaking. The larger of the two measures 45 mm x 36 mm; the smaller, 36 mm x 29 mm.

#### **Irregular knives (Fig. 9, a-e):**

This group of artifacts have been classed with knives because their appearance suggests that they were probably employed as cutting or chopping tools. Four of the five specimens are made of poor quality chert. Only in (a) is there unifacial chipping; the others all show varying degrees of





FIGURE 8: Knives. a-g, ovate acuminate; h-i, triangular; j and k, ovoid; a knife with graver tip; l, knife with spoke-shave.

bifacial chipping. On (a), (b), and (e), a portion of the stone cortex remains on both faces of each. All these specimens were produced from random fragments of stone of convenient size and shape. Only (d) shows much attention toward shaping, and in this case the artifact was rounded, except along one edge which is unaltered and remains almost straight.

Scrapers (Fig. 10, b-d):

Three artifacts of this class were recovered from the site. Of the three, two are triangular in outline while the other is

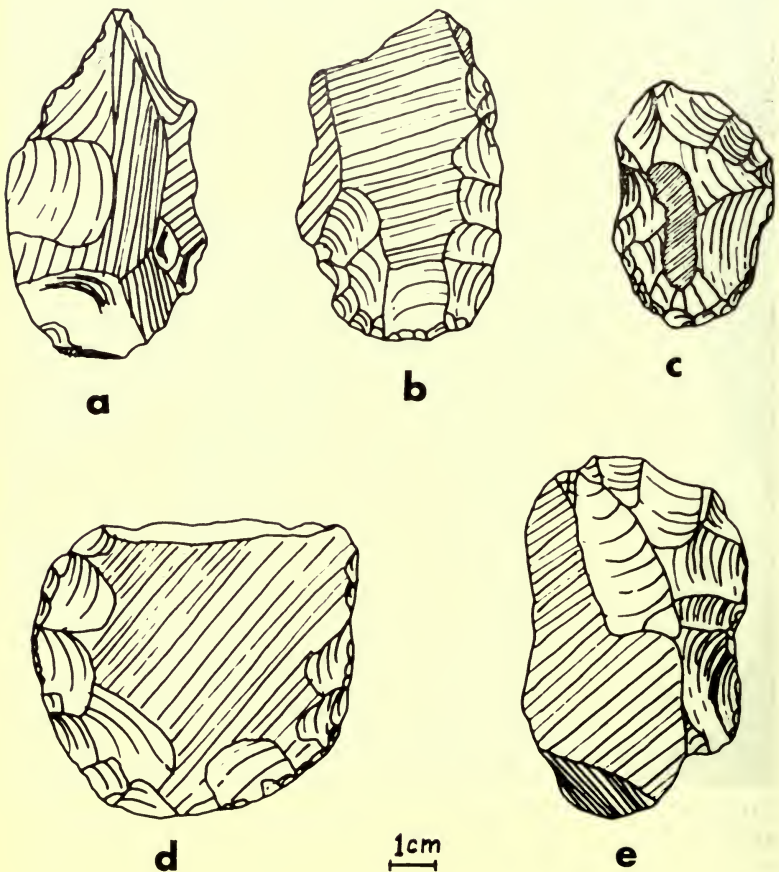


FIGURE 9: Irregular knives.

approximately trapezoidal in shape. Only one of this group (Fig. 10, c) is worked on more than one edge. In this case the specimen was shaped by fine chipping around its periphery and all three edges appear to have been used for scraping.

The other two items were produced from flakes of convenient size and shape. In both cases the thickest edge of the flake is steeply beveled by chipping to produce the working edge. None are modified in their ventral surfaces, but one (Fig. 10, d) shows chipping over its dorsal face. It seems likely that the parent flake for this artifact was derived from a discarded artifact.

#### **Incidental scrapers (Fig. 10, e-j):**

Six of the eleven remaining scraping implements have been pictured. All members of this group are irregular in shape and represent the utilization of spent cores (e and i), large, heavy flakes (f, g, j) and portions of cores (h). In each case the scraping edge has been prepared by chipping along a segment of the periphery of the parent mass.

#### **Drill (Fig. 10, a):**

The only representation of drills at the site is the tip of a drill bit. The specimen is made of Hixton quartzite and is of fine workmanship, having been produced by careful, transverse flaking.

#### **Implement fragments:**

Twenty-three items of this class were recovered from the site, none of which are classifiable. The group is composed of midsections and tips of points and knives and pieces that appear to be facial spalls from heavy, chipped artifacts, probably knives. None are pictured.

## **FEATURES**

In the course of the two seasons that the Lamb-5 site was under excavation, thirteen features were found. The first nine were excavated by Kerr in 1964. Numbers ten through thirteen were found by Brandon and Freeman.

Since the site was never disturbed, the pits remained intact. All are shallow, with the deepest, Feature 2, measuring only 1.7 foot in depth. Each pit (except Feature 7) shows signs of combustion having occurred within it. In the case of Fea-

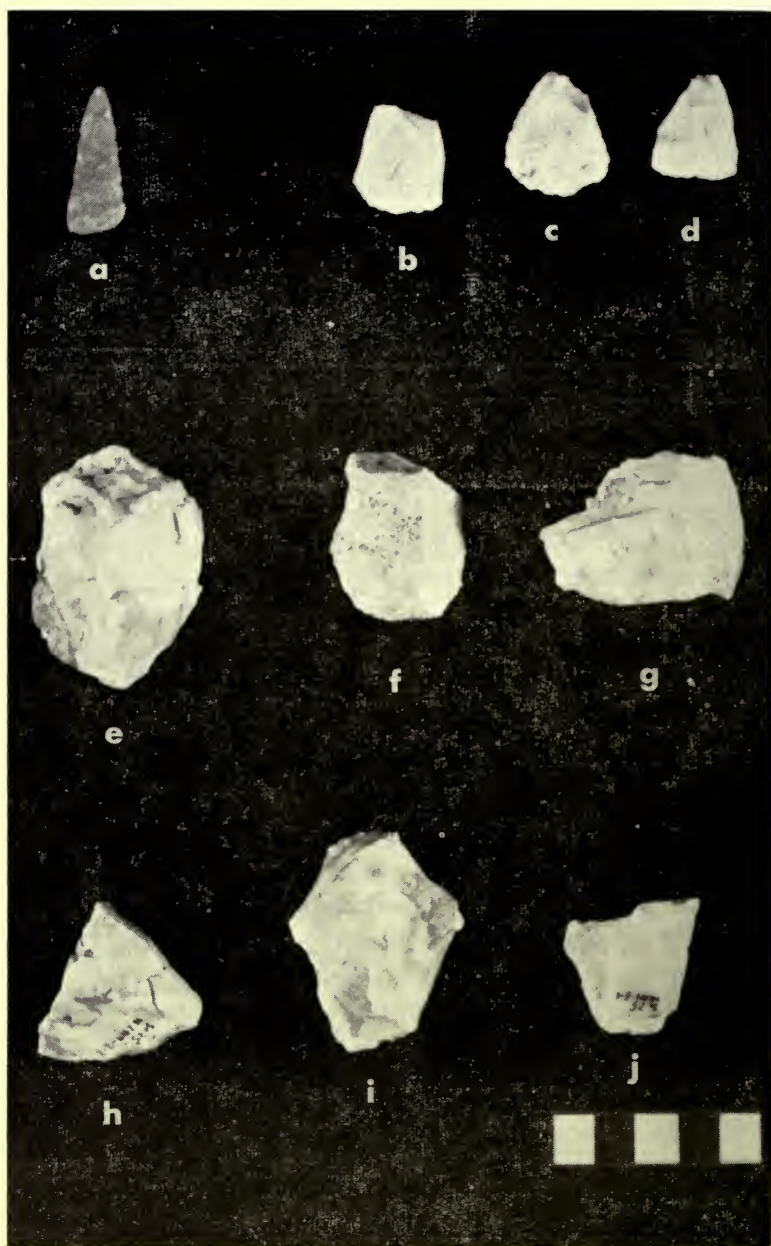


FIGURE 10: Scrapers.

ture 7, numerous flakes and a broken point were found. However, these did not occur in a pit; rather they constitute a concentration of lithic detritus, probably the result of a small manufactory. The other features, all pits, appear to have been used as fireplaces or for roasting.

In addition to Feature 7, three other concentrations of debris were found at the site. These were not assigned feature numbers.

In level three of squares N3-L24 and N4-L24 an area of refuse measuring 6.0 feet by 3.5 feet, roughly oval in outline, were concentrated 1481 chert and quartzite flakes, four points (Fig. 6, d, f, g, h), numerous small, bone fragments, deer teeth, a portion of deer mandible, and charcoal.

The second area of concentration occurred in level 4 of squares N2-R4, N2-R5, N3-R4 and N3-R5. Here the yield

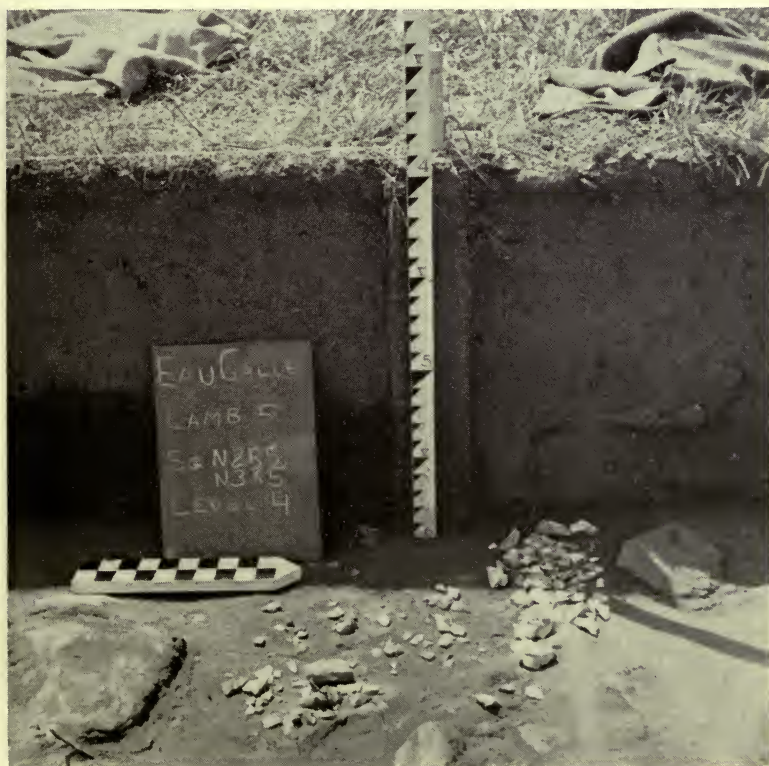


FIGURE 11: Flake concentration in N2-R5, NR-R5.

was 570 flakes and six worked flakes. Its maximum and minimum diameters were 5.0 feet and 2.0 feet respectively (Fig. 11).

The third concentration of lithic debris yielded 3242 flakes, 8 worked flakes and 2 implement fragments. It measured 5.1 feet by 2.5 feet.

All three of these concentrations of detritus appear to have been shops for the manufacture of stone implements. In the case of the first mentioned, kitchen refuse was also mixed with the lithic debris. None appear to have been in use for a long period of time, but the third manufactory site was used more intensively than the other two.

The shallow features containing little refuse and the concentrations of lithic detritus restricted to small areas suggest a transient and transitory character for the site. Summary



FIGURE 12: Feature 13, N2-R10.

feature descriptions are presented below:

**Feature 1:**

Location: O-R1, S1-R1

Level: 1

Depth from surface: 0.3 foot.

Pit Depth: 1.2 feet

Maximum Diameter: 2.0 feet

Fill Color: Dark brown to black

Contents: Chert flakes, burned and unburned bone fragments, traces of charcoal

**Feature 2:**

Location: S1-R1, S2-R1

Level: 5

Depth from surface: 2:1 feet

Pit Depth: 1.7 feet

Maximum Diameter: 1.8 feet

Fill Color: Dark brown to black

Contents: Fire-cracked rock, burned and unburned bone fragments, chert flakes, traces of charcoal.

**Feature 3:**

Location: O-R1

Level: 3

Depth from surface: 1.5 feet

Pit Depth: 1.2 feet

Maximum Diameter: 3.4 feet

Fill Color: Black

Contents: Burned and unburned bone fragments, deer teeth, chert flakes, charcoal traces.

**Feature 4:**

Location: S1-L1

Level: 2

Depth from surface: 0.75 foot

Pit Depth: 1.0 feet

Maximum Diameter: 3.0 feet

Fill Color: Dark brown

Contents: Hundreds of chips and flaking spalls of white chert, four cores of white chert (same as the spalls), long-bone fragments showing green breaks, one piece of sandstone, two lumps of burned clay, charcoal traces.

**Feature 5:**

Location: N1-L1, O-N1

Level: 3

Depth from surface: 1.2 feet

Pit Depth: 1:4 feet

Maximum Diameter: 4.0 feet

Fill Color: Dark brown to black

Contents: Fire-cracked rock, burned clay lumps, deer max-

illa and teeth, burned and unburned bone fragments, chert flakes, one core, charcoal

**Feature 6:**

Location: Square N4-R1

Level: 4

Depth from surface: 2.0 feet

Pit Depth: 0.6 foot

Maximum Diameter: 0.5 foot

Fill Color: Dark brown to black

Contents: Abundant charcoal, several burned lumps of clay found scattered around mouth of pit.

**Feature 7:**

Location: N4-R1

Level: 4

Depth from surface: 2.0 feet

Pit Depth: 0.3 foot

Maximum Diameter: 2.0 feet

Fill Color: Dark brown

Contents: High concentration of small chert flakes, broken, corner-notched point (Fig. 6, m)

**Feature 8:**

Location: N2-R2, N3-R2

Level: 6

Depth from surface: 2.8 feet

Pit Depth: 1.1 feet

Maximum Diameter: 1.9 feet

Fill Color: Dark brown to black

Contents: Chert flakes, fire-blackened stones, burned bone, 1 deer tooth, charcoal, 1 knife (Fig. 8, j)

**Feature 9:**

Location: O-R2

Level: 5

Depth from surface: 2.4 feet

Pit Depth: 0.5 foot

Maximum Diameter: 1.4 feet

Fill Color: Dark brown to black

Contents: Abundant charcoal

**Feature 10:**

Location: N1-L24

Level: 3

Depth from surface: 1.05 feet

Pit Depth: 0.6 foot

Maximum Diameter: 1.6 feet

Fill Color: Dark brown to black

Contents: Burned and unburned bone fragments, fire-cracked stones, chert flakes, abundant charcoal.

**Feature 11:**

Location: N1-L24



Level: 2

Depth from surface: 1.0 feet

Pit Depth: 0.4 foot

Maximum Diameter: 1.7 feet

Fill Color: Dark brown to black

Contents: Burned and unburned bone, fire-cracked stones, chert flakes, charcoal traces

**Feature 12:**

Location: O-L24

Level: 2

Depth from surface: 0.8 foot

Pit Depth: 0.4 foot

Maximum Diameter: 2.4 feet

Fill Color: Dark brown to black

Contents: Bone fragments, deer teeth, fire-cracked stones, chert flakes, charcoal traces.

**Feature 13:**

Location: N2-R10

Level: 3

Depth from surface: 1.2 feet

Pit Depth: 0.4 foot

Maximum Diameter: 3.3 feet

Fill Color: Dark brown to black

Contents: Bone fragments, 1 deer tooth, many chert flakes, 1 implement fragment, charcoal traces, and fire-cracked rock (Fig. 12)

**The Post-Archaic Component:**

The small assemblage of artifacts which has been designated as the post-Archaic component were all recovered from a small area of the extreme western end of the site. All the items are confined to level 1.

The two artifacts upon which the post-Archaic designation is based are a rim fragment of a miniature pottery vessel and its associated triangular projectile point (Fig. 6, o), both recovered from N3-L25.

The only other excavated artifacts associated with this component are the spoke-shaves described under the section on worked flakes (Fig. 7, a-e). In addition to the artifacts, a large amount of lithic detritus, ranging in size and shape from core fragments to tiny flakes, which appear to be the product of pressure flaking, was found. This material was located in the first level of N2-L20 and its adjacent squares.

One other triangular point was found on the ground surface at the site. It is pictured in Fig. 6, n.

Both the interior and exterior surfaces of the miniature pot are smoothed. The only discernible aplastic particles in the paste are well rounded grains of sand, which may have been intentionally included as a tempering agent, or which may be a natural inclusion in the clay. This little pot has a flared rim with a flattened lip. At the point of juncture of the rim with the vessel wall there is an encircling band of slightly oblique fingernail impression. These impressions may be the by-product of modeling the vessel, but their regular spacing and rather uniform angular orientation strongly suggest their decorative function (Fig. 13).

While the specimen of pottery is in itself non-diagnostic, its association with a small triangular projectile point indicates that its earliest possible affiliation is with Effigy Mound Culture. Charcoal obtained from Kolterman Mound in Dodge County yielded a date of 776 A. D. - 250 (Wittry: 1956, 133). The radiocarbon date for the Wakanda Mount

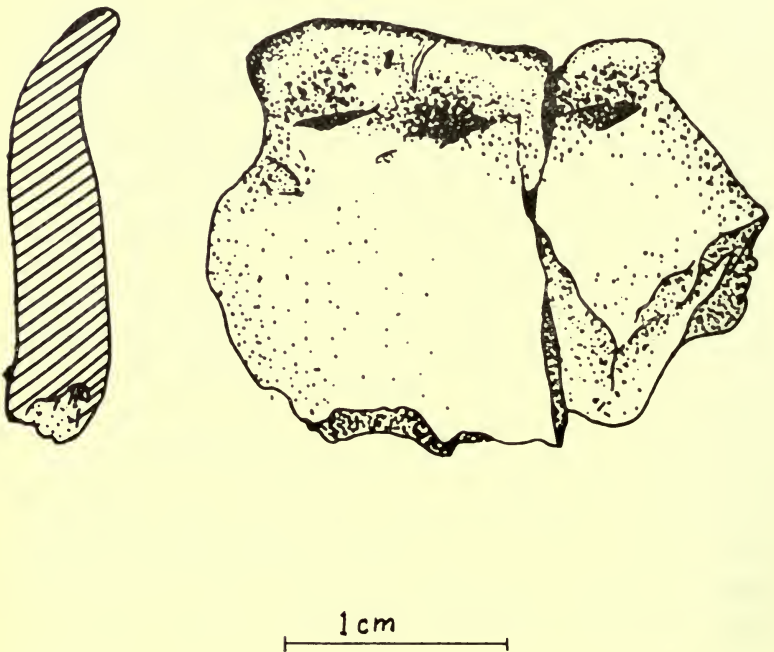


FIGURE 13: Fragment of miniature pottery vessel.

Group, Dunn County, is 1208 A. D. — 200 (Wittry: 1959c, 112). However, since triangular projectile points remained in vogue into historic times, the post-Archaic component may be of considerably less antiquity than that indicated by the bracketing dates for Effigy Mound Culture presented above.

This ephemeral component lies stratigraphically separated from the Archaic assemblage at the site in that it occupied only level 1 (humus; black, loamy sand), while the bulk of the material assigned to the Archaic was recovered from the lower 0.2 foot of level 2, level 3, and the upper 0.3 foot of level 4 (Fig. 5, profile for squares N4-L21 — N4-L25). The intervening light brown loamy sand stratum contained almost no artifacts nor detritus. The few specimens which were found within this layer were recovered from either its upper or lower margins and are almost certainly migratory from one or the other of the occupation zones.

It appears likely that most of the post-Archaic component was washed away since the extreme western end of the site bordered a gully wash approximately 6 feet in depth, upon whose sides lay a considerable number of flakes and pieces of fire-cracked stone.

### Discussion and Conclusions

The vertical range of cultural debris at the site extends from the surface to a maximum depth of 4.0 feet. In most instances, however, excavations below the fifth level were unproductive.

The frequency of artifacts through levels increases in absolute numbers from level 6 upward to a maximum in level 4. Above the fourth level their frequency diminishes through level 3. Level 2 yielded almost no material nor did level 1, excepting the post-Archaic component, which has already been discussed. Indications are, then, that the more intensive occupation of the site occurred when the ground surface lay approximately 1.0 to 3.0 feet below its present level.

The horizontal distribution of artifacts at the site reveals that there are two areas of concentration, one occupying the eastern and central areas of the terrace and the other lying at its western end. Examination of the grid map (Fig. 2) will clarify these remarks. At the central and eastern portion of

the site the main area of concentration is bounded by grid lines N5, R11, S1, L4. Squares south of S1 were largely unproductive. Also, the line of squares extending from L5 to L18, along the N2 line produced almost nothing. The concentration of artifacts and debris at the western end of the site is indicated by the group of contiguous squares bounded by lines N5, L18, S2, L25.

In addition to these general concentrations of material, there occurred clustering of point types at the site. Two of the side notched points (Fig. 6, a and b) were found in the eastern portion of the site (a:0-0, level 4 and b:S1-R2, level 5) and occurred nowhere else. The exact grid location of the surface find (Fig. 6, c) is not known, but it was found in the same area.

All members of the expanding stem group were excavated from the western portion of the site. All occurred in the same stratigraphic zone (lower level 2 and level 3), and three of the six specimens (Fig. 6, d, g, and h) were found in the same square (N3-L24). Another such point (Fig. 6, f) came from the adjacent square (N4-L24). The remaining two were located nearby (e: S1-L-23 and i: N1-24). The four corner notched points all occurred in level 3 at the eastern end of the site with the exception of "m" in Fig. 6 which occurred in the upper portion of level 4.

The clustering of point types at the site is difficult to interpret. Since all occur in the same stratigraphic zone, it does not seem likely that typological differences represent occupations of the site at broadly separated times. The side notched specimens both occurred near the bottom of the cultural deposit, so it might be argued that they are of somewhat greater antiquity than the expanded stem or corner notched points which occurred somewhat higher in the cultural deposit. This, however, seems a weak point of view since it seems probable that a significant hiatus in time between the side notched points and other types at the site would be reflected by greater vertical separation. A more reasonable explanation for type clustering in the same stratigraphic zone would seem to be that the site was occupied for brief periods, at relatively

closely spaced time periods, by small groups utilizing different styles of points.

With the exception of the stratigraphically separate, ceramic-bearing component, the site produced a non-ceramic assemblage. Hence, the site may be assigned to the Archaic stage. The only artifacts which are in anyway diagnostic that are associated with the Archaic occupation of Lamb-5 are the projectile points, so the site's probable position within the Archaic necessarily depends upon their interpretation.

The side notched points, as previously observed, are quite similar to members of both the Madison Side-Notched (Fig. 6, b) and Raddatz Side-Notched types (Fig. 6, a). In the case of the former group, Baerreis suggests that their linkage at the Airport Village site (47-Da-2) is with an early Archaic occupation (Baerreis, 1953:163). The Raddatz type has been classified as belonging to the Middle Archaic by Wittry (1959a:60-61). Points of this general style are also known in Early Archaic contexts for the Mississippi Valley (Bell, 1958:68; 1960:8), and in Early Archaic or Paleo-Indian contexts in Tennessee, Alabama, Illinois, Missouri, and Iowa (Wycoff, 1964:106).

The similarity of the Lamb-5 expanding stem points to the Durst Stemmed points has already been mentioned. Following Wittry (1959b:219), I assign this group to the Late Archaic.

The corner notched points which we encountered at Lamb-5 do not seem to fit as clearly into an Archaic context as do the points mentioned above. Stylistically these corner notched specimens appear to relate to the Monona Stemmed type first defined by Baerreis (1953a:10) and redescribed by Wittry (1959b:180). In form they more closely resemble the complete specimen which Baerreis uses to illustrate the type than they do the majority of the specimens which Wittry has included in the type collection from Durst Rockshelter. However, as stated in their description, the similarities which the corner notched points bear to Monona Stemmed are not sufficient to warrant assigning them to that type. Neither Baerreis nor Wittry place Monona Stemmed within the Archaic. However, at the Durst Rockshelter the type did occur in the zone

interpreted as belonging to the "preceramic" Archaic (Wittry, 1959b:219). Looking at Wittry's figures (Table 10), I find that the Archaic zone (zone 6) yielded 5 Monona Stemmed specimens which constitute 12.2% of the 41 points recovered from that component. Of the remaining zone 6 points, 61% are Raddatz Side-Notched and 7.3% Durst Stemmed. Since he remains tacit on the question of Monona Stemmed's association with the Archaic configuration of zone 6, I assume that Wittry does not question its validity. He has, however, clearly shown that the type's main affiliation is with the Middle Woodland complex at the site (1959b:255). The point I wish to make here is simply that the corner notched points are not grossly out of place in an assemblage that is basically Archaic if we compare them to their closest stylistic relative among the types which to date have been recognized for Wisconsin. The two straight stemmed points and the flared base specimen, like the other artifacts from Lamb-5, are not discordant with the view that the site is Archaic.

Since the majority of the points recovered at the site are related to the Late Archaic types known for Wisconsin, I suggest that the Lamb-5 site represents a series of short-lived Late Archaic, occupations by small groups, which occurred over a relatively short time interval. The site was probably used as a hunting station or transient camp where the manufacture of stone implements was carried on to a small degree.

This site is typical of all the sites that are known for the Eau Galle Reservoir area. In addition to the sherd described in this paper, only one other (non-diagnostic) sherd was found in the valley during the entire course of two summer's intensive reconnaissance. It appears then, that the Eau Galle Valley was never intensively occupied by prehistoric Indian populations. On the basis of the sites investigated and the material recovered from them, all appear to be of the Archaic stage, with no evidence to suggest the presence of Paleo-Indian groups, and little evidence for Woodland occupations, with the exception of the post-Archaic component at Lamb-5.

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## A CALL FOR FOUNDERS OF CENTRAL STATES ANTHROPOLOGICAL SOCIETY

In 1920 Dr. Samuel Barrett became very annoyed with the officers of the American Anthropological Association because they insisted on holding their national meetings on the East Coast with the excuse that it was too hard for people to get to the Middle West. Barrett pointed out quite rightly that although there were more anthropologists on the East Coast, the trip from the Middle West to the east worked an equal hardship on the anthropologists here whose numbers were increasing. In 1920 AAA was to have met with the American Association for the Advancement of Science in Chicago in December. At the last minute, AAA pulled out and again met in the east. When Barrett learned of this development he shot off letters to all the anthropologists in the area; at the University of Chicago and at the Field Museum and elsewhere. He also wrote to Charles E. Brown at Madison with the suggestion that all of the members of the Wisconsin Archeological Society be notified and that it would be good if they could come to the meetings in Chicago as a protest delegation of anthropologists. The idea was that they would form their own anthropological society in the Middle West. The information on these developments has been found in Barrett's correspondence which is on file in the Municipal Archives of the city of Milwaukee. It is a treasure trove of letters to and from the great names of anthropology in the 1920's — Boas, Wissler, Holmes, and many others. Barrett succeeded in getting the Central States branch established and out of this the Central States Anthropological Society developed as a regional branch of AAA. In a very short time AAA itself was beginning to hold meetings in Chicago. The details of how the Central States branch became established between 1920 and its first official meeting in 1922 are not entirely clear. There seems to have been a prominent and wealthy physician, a Dr. Schmidt in Chicago, who footed the bill for a dinner meeting to organize the Central States branch in 1921. The first official meeting of the Society at which papers were presented was held in Milwaukee in 1922.

The Central States Anthropological Society will be meeting in Milwaukee in the spring of 1969, and we felt it would be a



nice time to have an anniversary celebration of the founding of the Society. We would be very interested and pleased if any members of the Wisconsin Archeological Society who attended the organizational meetings and the first meeting would get in touch with me. We also hope that they will attend the meetings in Milwaukee in 1969. If you took part in one or all of the early meetings and even those immediately following the actual founding, I would like to hear from you by letter or phone. If it would be more convenient I could come and visit you with my tape recorder. We are trying to obtain all the information on the founding the the Society that we can. Our plans are not yet firm as to whether such information will be written up in a booklet form or simply kept on file by the Society. However, whatever use is made of the information at this time, we feel that it should be collected and preserved. We would also be interested in making copies of any memorabilia you might have such as old photographs, or copies of early papers which were never published. Your help would be greatly appreciated by the Central States Anthropological Society.

Nancy Oestreich Lurie

President: Central States Anthropological Society

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## ANNOUNCEMENT

A GUIDE TO WISCONSIN PROJECTILE POINTS by Robert Ritzenthaler is now available. Send \$1.25 to Publications Dept., Public Museum, Milwaukee, Wis. 53233.

# THE BACKLUND MOUND GROUP

by

David S. Brose

University of Michigan

The Blacklund Mound Group, 20 ME 2, consists of eight low, conical mounds on the left bank of the Menominee River, Section 6, Lake Township, Menominee County, Michigan. These mounds occupy an irregular area of ground about 65 x 100 feet along the first terrace of the river. Surface collec-

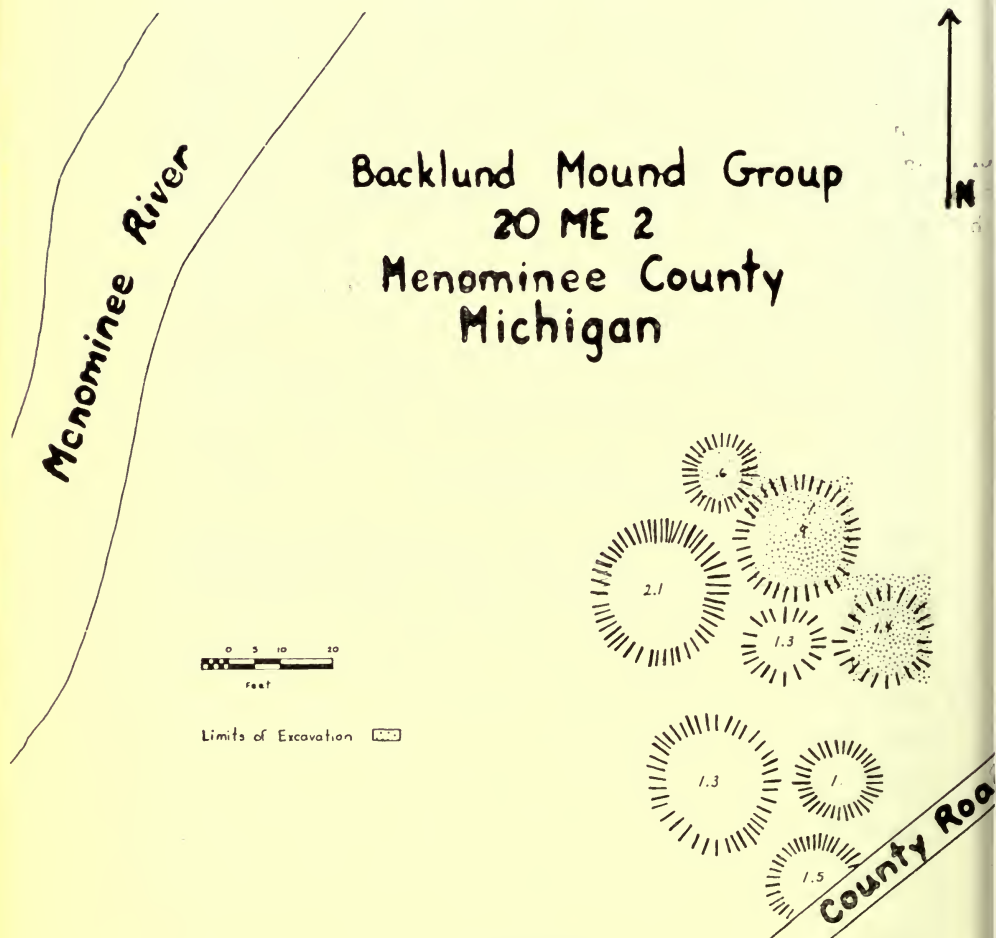


FIGURE 1

tions from the area between the mounds and the river indicate an occupation of somewhat limited size. In July of 1956 a University of Michigan, Museum of Anthropology field crew including Mark Papworth, Dan Morse, under the direction of Dr. Albert Spaulding, and assisted by Robert J. Hruska of



FIGURE 2-A

Oshkosh, Wisconsin, excavated three of the mounds in this group (Figure 1).

Each of the three mounds excavated was cut along its northern edge by a 5' x 20' trench which was taken down to the sterile red sand forming the river terrace. When all features had been investigated, a second trench was opened adjacent to the first along its southern edge. This method was followed for each side of the mound until the final 5' x 20' removed the center of each mound.

The excavated mounds were each constructed on the unprepared red alluvial sands of the river terrace. The mounds

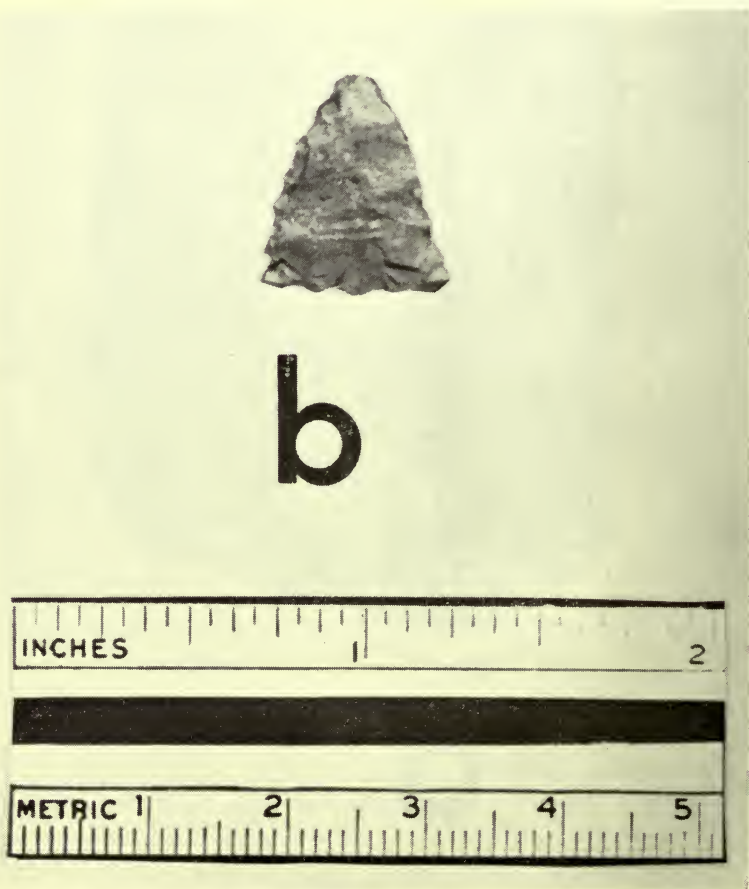


FIGURE 2-B

were built up of basket-loads of brownish-gray to black loamy sands which included sherds, animal bone, and flint chippage, indicating the source for this matrix was originally midden deposit. Above this dark sandy soil a horizon of "plow-zone" had been formed by the soil genesis and mixing of the upper 0.5 feet. The present surface of the mounds is covered with fern and sumac, but no larger trees. The entire group is located on the Backlund family pine plantation.

The three mounds excavated were designated as Md 4 and Md 5; the smaller northwestern mound is referred to as Md 8, although it was unnumbered in the field.

Mound 4 was 17.5 feet in diameter and stood 1.4 feet high. From the basket-loaded mound fill were recovered several sherds, a broken groundstone celt (Fig. 2a); a fragment of a copper awl, square in cross-section; and a subtriangular un-notched projectile point 28 mm long, 21 mm wide at the base, and 7 mm thick at the mid-section, made of a medium gray unbanded chert (Figure 2b). No features were encountered in this mound.

Mound 8 was 11.2 in diameter and 0.6 feet high. Below the center of the dark mound-fill a small pit was noted extending 0.7 feet into the red sands. The fill of this irregular pit was



**FIGURE 3: Profile E30 N35-55.**

indistinguishable from the mound-fill. From the mound-fill several sherds and some broken animal bone were recovered. The pit itself was sterile.

The largest mound at Backlund was Mound 5, located between Mound 4 and 8. Mound 5 was 23 feet in diameter and about .95 feet high. In the center of the mound, several large angular limestone rocks were encountered below the mound fill, in association with charcoal-flecked soil. The soil in which this feature occurred was darker than the normal mound-fill (Figure 3). A similar dark feature was noted 3.1 feet southeast of the center of the mound, also cutting into the red sands. This smaller feature was called Feature 1 and the central, rock capped pit, Feature 2. Both features were troweled out and all materials recovered were given separate provenience designations.

Feature 1 was an oval-shaped pit 6.5' x 3.5' oriented with its long axis N-S. This pit was cut in two levels into the underlying sands: A basal depth of two feet in the northern two-thirds and a ledge at one foot in the south. In the bottom of this pit the skull of a 4-5 year old child with three vertebrae and the mandible in articulation position were recovered. This was associated with additional skeletal material representing a female in her early twenties. Lying along the edge of the "shelf" was a fragment of worked long bone of a mature virginia deer (*Odocoileus virginianus*). About one-third of the circumference of the shaft is represented. The edges of the artifact are 24 mm apart and polished, with longitudinal striations clearly visible. Two holes have been drilled from both surfaces into the center of the fragment. These holes are 26 mm apart at their centers and both are 3.5 mm in diameter, with the "counter-sinking" about 7.5 mm in diameter at the surface. The fragment is broken at both ends to a length of 85 mm (Figure 4, a). Smaller flatter similar artifacts from Wisconsin have been identified as "mat-sewing needles" (McKern 1945: 23; Mason 1965: Pl. XI). At the base of this pit was a copper point (Figure 4, b), 81 mm long, 22.5 mm at its maximum width, and 4 mm thick along a central ridge. This "pseudo" turkey-tailed point type is well represented in Old Copper collections and has been called by Wittry (1957:

214); Group I, type E. Sherds, as well as some small flecks of charcoal, and rather large rocks were mixed with the pit-fall.

Feature 2 in Mound 5 also proved to be an oval pit 4.7' x 6.1' in the center of the mound. After the removal of the large rocks at the surface of this pit, it was troweled out to a depth of 2.1 feet where a multiple secondary burial was encountered

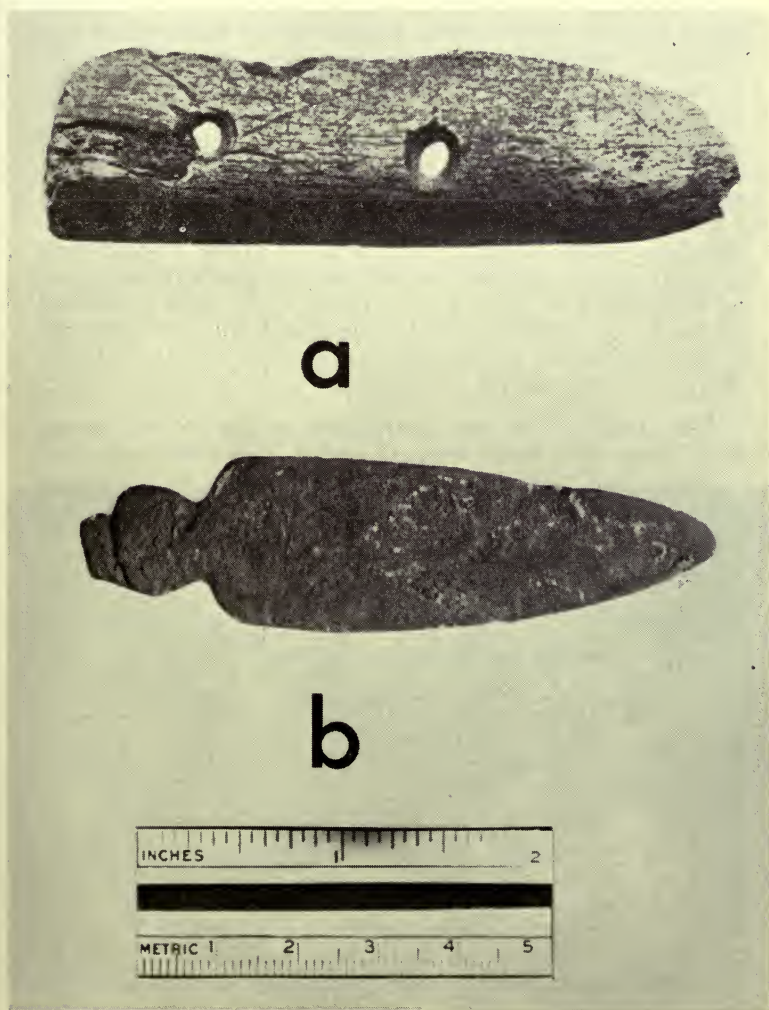


FIGURE 4

(Figure 5). Richard G. Wilkinson of the Museum of Anthropology, University of Michigan, who analyzed the skeletal material, has described it below:

Feature 1 contained a female in her early 20's and a 4 to 5 year old child. Feature 2, the largest burial grouping contained 9 males, 7 of whom were over 40 years of age, the additional two males being 20-25 and 35 years old. There were also 3 females, aged 12, 25 and 35. Presumably associated with the 25 year old female was a foetal ilium, and the pelvis of this female shows evidence of ligamentous stress in the sacro-iliac region, suggesting pregnancy. A six to seven year old child was also among the burials of Feature 2.

Feature 3 (which proved to be a lateral extension of Feature 2 included an adult male and female, and fragments of two other individuals. There was in addition a considerable amount of skeletal material which is designated as "miscellaneous," and consists of the fragmentary remains of two females of at least 45 years of age, two adult males, one 30 to 40, the other 45 or more years old at death, a 30-40 year old female and a 10 to 12 year old child. The bones of the old male and the younger female were subjected to fire.

The total sex and age distribution of the 26 individuals thus shows that there were 11 males, 8 of which were 40



**FIGURE 5: Feaure 2, Mound N60E10.**



or more years of age, two were in the 30 to 40 year range and one was between 20 and 30. The nine females consisted of two over 40, 4 between 30 and 40, two in the 20 to 30 year range and one of about 12. There were in addition 6 burials of indeterminable sex, including one foetus, two children of about 5 years old, another of 10 to 12, and the fragments of two adults in the 20 to 30 range.

The mean stature of the males was estimated at 68.8 inches, while the female was 63 inches. Morphologically, the Backlund population is apparently unique among Michigan aboriginal groups. The males are extremely robust, with large pentagonal crania, heavy brow ridges and a mean cranial index of 83.2, which places them in a highly brachy-cranial, or broad-headed, category.

From biological data alone, the morphological uniqueness of the Backlund population lends itself to at least two interpretations. From the lack of comparable skeletal series in Michigan it would seem that the Backlund group is intrusive into the area, but then we are faced with the fact that skeletal populations morphologically similar to that of the Backlund site are unreported from adjacent areas of the northern Great Lakes as well. As the metrical variation in the cranial measurements is small, there is also the possibility that there was a close biological relationship within the population, and the uniqueness could be due to true biological dissimilarity, and in this case we would search in vain for a population from which to derive ours.

Associated with one of the adult male skulls was a skull of the Red-Tailed Hawk (*Buteo jamaicensis*). Potsherds and small flecks of charcoal and flint chips were also recovered from the mound-fill and pit. No artifacts were recovered from the burial pit. The mound fill above the pit yielded two bi-polar cores of grayish tan banded chert (Figure 6, a), a triangular projectile point 24 mm long, 18 mm wide and 5 mm thick made a similar chert (Figure 6, b), and two small end scrapers made of quartzite (Figure 6, c and d).

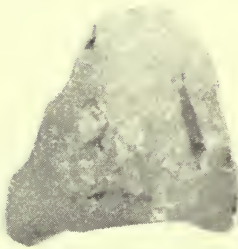
It would seem that with the possible exception of the copper point and the hawk skull, no grave goods were intentionally included with the Backlund burials. The bird skull may represent one of the "fast-flying birds of war" which were included in virtually all Ceremonial War Bundles of the historic Menominee, Sauk, Fox and Winnebago as reported by Skinner (1913:130). It is quite possible, however, that the



**a**



**b**



**c**



**d**



**FIGURE 6**

hawk was accidentally incorporated into the mound fill as part of the midden refuse used in the mound construction.

The Copper point may have been incorporated accidentally also, or it may have been a talisman, picked up in the area which lies in the heart of the Old Copper Culture. In any case, I would regard it as Old Copper, and not an artifact to be associated with the population represented by the Backlund burials.

As seen from their random distribution, the lithic materials seem to have been part of the midden used in mound fill, rather than mortuary gifts. This is certainly the case regarding the ceramics: During my own attempts to reconstruct the vessels represented by the sherds recovered at the Backlund site it became clear that in no feature or mound was a complete vessel represented. Furthermore, sherds from Feature 1 in Mound 5 were found to fit sherds from the fill of Mounds 8 and 4 and the surface collections along the river to represent a single vessel.

The ceramics recovered from the Backlund Mound Group represent eight Upper Mississippian and four Late Woodland vessels. Two vessels of **Grand River Plain** (McKern 1945: 149-50; Hall 1962:68, pl. 25) are represented by 16 sherds (Figure 7, a). Three vessels of **Carcajou Plain** (Hall 1962: 62) are represented by 11 sherds (Figure 7, b). A single vessel of **Carcajou Plain; Grit-tempered variant** (Hall 1962:63) is represented by two sherds (Figure 7, c). A single vessel of **Carcajou Curvilinear** (Hall 1963: pl. 21) with a drilled suspension hole, is represented by a single sherd (Figure 7, d). An **Unclassified Upper Mississippian** vessel is represented by a single sherd of a shell tempered, constricted neck pot with an everted (missing) rim. The body and shoulder are covered with closely spaced, occasionally overlapping cord impressions, the area just above the neck shows the bottom of wide vertical trailing (Figure 7, e). No handles, lugs, or definite Middle Mississippian ceramics were encountered.

As far as determinable, the Woodland ceramics are globular pots with core-wrapped paddle malleated bodies, semi-conoidal bases, and slightly outflaring rims. Two vessels, represented by 16 sherds (Figure 8, a and b) show a rim

which recurves toward vertical above a constricted neck. The lip is nearly flat. Decoration consists of a horizontal row of oblique corded-stamped impressions forming a series of parallel chevrons above a vertical element. Below this is a horizontal band of three cordwrapped-stick or cordwrapped-cord impressions encircling the upper shoulder. The lip is decorated with transverse cordwrapped-stick impressions, and the interior rim shows an irregular series of vertical cordwrapped-stick impressions which fan out slightly toward the base. Both vessels are uncollared, and one shows incipient castellations. Where the horizontal cordwrapped-stick or cordwrapped-cord impressions are interrupted on the neck of

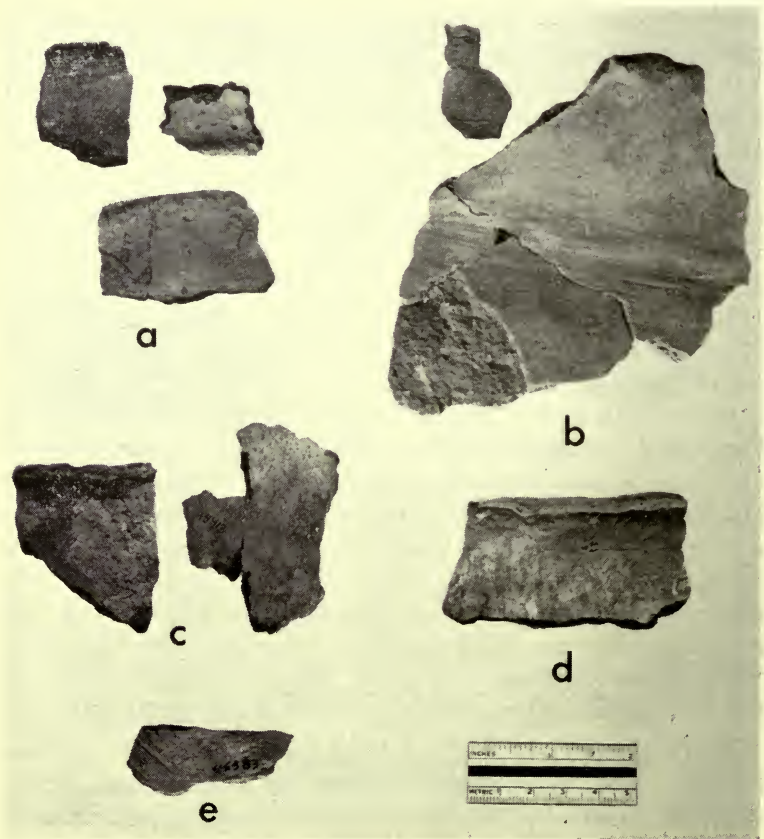


FIGURE 7

one of these vessels there are occasional knotted (as opposed to loop-end) cord impressions. These vessels are related to such types as Mason's Heins Creek Cord-stamped (1966:18, 203) and the decorative motif is reminiscent of MacNeish's Late Manitoba Wares from south-east Manitoba (MacNeish 1958:167, pl XIX). MacPherron (n. d.) has reported similar ceramics from the Juntunen Site (20 MK 1) where they date A. D. 700-1000 and he relates them to Owascoid styles farther east.

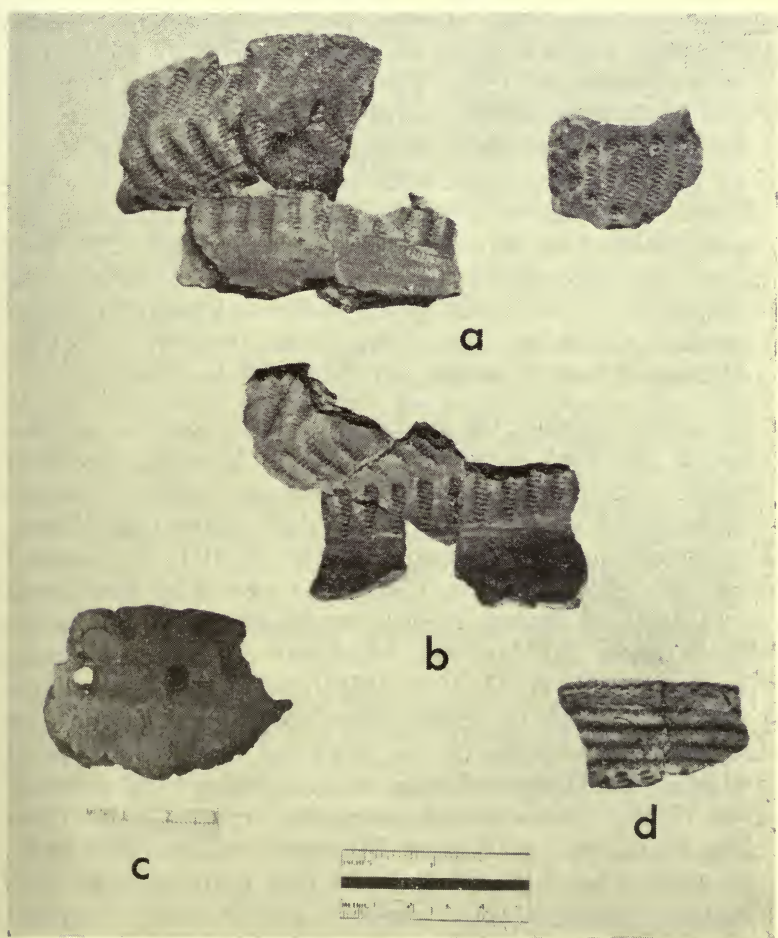


FIGURE 8

A vessel of what appears to be **Blackduck Brushed** is represented by a single sherd (Figure 8, c). The last vessel from Backlund, represented by two rimsherds (Figure 8, d) is a small, thin pot made of a rather sandy paste with medium-fine grit temper. The rim is slightly everted and thickened to 7 mm while the body is less than 6 mm thick. Decoration consists of a horizontal band of knotted-cord impressions on the shoulder, surmounted by four horizontal cordwrapped-cord impressions about 5 mm wide and 3 mm apart. Above this lies a band of smoothed-over vertical cordwrapped-stick impressions, 11 mm wide. Above this, and immediately below the exterior lip, is a single horizontal impression made by a double-twisted cord (Sz). The lip itself is decorated with a series of slightly oblique, transverse cordwrapped-stick impressions. The interior is decorated with a series of 8 mm long vertical cordwrapped-stick impressions. There is a single faint impression of a single Z twisted cord encircling the vessel interior 3 mm below the vertical impressions. This horizontal cord impression is repeated, more clearly, 4 mm below this faint one. This vessel would seem to be related to types such as **Manitoba Horizontal** (MacNeish 1958:157, pl. XVII) and **Heins Creek Cordwrapped Stick** (Mason 1966:204).

In many respects, the Backlund ceramic complex is quite close to the Mero Complex. Backlund, however, produced neither pure twisted-cord decorated, nor collared wares, types which accounted for over one-half of the Late Woodland vessels at Mero (Mason 1966: table III). In Mason's view (p. 148) the Heins Creek Wares should date about A. D. 1000, or slightly earlier; the Madison and Pt. Sauble Wares, later. In Manitoba, MacNeish dates the Manitoba Wares at about A. D. 1000 (MacNeish 1958: 55) and the cordwrapped-stick impressed types about A. D. 1300. The Pic River site, stratum III, has produced **Blackduck Brushed** and **Manitoba Horizontal** dated at A. D. 962 + - 80 (Wright 1966:75-9). Cord-stamped wares are reported from Clam Lake Focus sites in Eastern Minnesota (Caine 1966:84ff), and at the Clam Lake Mound they date prior to A. D. 1100 (Ritzenthaler 1966:219).

The Oneota ceramics from Backlund are similar to those

from Mero, and the closely related Koshkonong Focus ceramics at Carcajou Point (Hall 1962). Similar ceramics were excavated from the McClaughry Mound Group (McKern 1928; Hall 1962:113-14), the Grand River Mounds (Jeske 1927) and villages of the Keshena Area (Barrett and Skinner 1943). At Carcajou Point this complex is dated to about A. D. 1000 (Hall 1962:109) and is considered to represent an emergent Oneota Horizon. The McClaughry Group is considered "Effigy Mounds" although showing an abnormally high frequency of simple conical mounds (McKern 1928:325). At McClaughry, Mound 57, Oneota ceramics were associated with sherds of Aztalan Collared and Madison Cord-impressed in the fill (Hall 1962:114). Barreis (1966:101-130) has shown that simple conical "Effigy Mounds" may be as late as A. D. 1100. At Wakanda Park, Wittry reports a date of A. D. 1208 + - 200 for low conical mounds where Madison Wares were associated with Mississippian ceramics (1959:105). Thus, in terms of **both** ceramic traditions represented at Backlund, the Backlund Group should date about A. D. 1000-1300.

As the Backlund ceramics were not deliberately included with the burials, it is possible the midden deposit they represent is significantly earlier than the mound construction. The fact that no later materials were found anywhere at the site is some argument against this hypothesis. The situation at Backlund is not isolated. The presence of simple conical mounds with Oneota and Woodland ceramics in the fill is characteristic of neither Effigy Mound, nor Oneota: It occurs, however, in both. Hall (1962:134-41) has reviewed the association of Burial Mounds and Oneota and has concluded that,

The only defined Upper Mississippian Cultural Division in Wisconsin with which mound construction can be definitely associated is the Grand River Focus. Mound Burial may have been practiced in the Koshkonong Focus, but the evidence is circumstantial . . . (1962:137).

Hall also noted that secondary burials are confined to these two Oneota foci (pg. 135). At both Carcajou Pt. and Walker-Hooper, "Lake Michigan Wares" also occurred. A somewhat similar burial pattern occurs at the McClaughry and Wakanda Mound Groups. It seems that from central Wis-

consin northward, there is an overlap of Early Oneota and Late Effigy Mound ceramics, and that this ceramic complex is frequently associated with more simple circular mounds and secondary burial than is characteristic of either "pure" traditions.

The Backlund site (it will be remembered) did not yield any 'pure' Effigy Mound ceramics. Woodland pottery showed closer relationships to the north, although the Oneota complex is clearly related to foci to the south. If Hall is correct in assigning an early (ca. A. D. 1000) horizon status to the Koshkonong-Grand River plain Oneota ceramics then the differences between McClaughry and Backlund may be more geographical than temporal. In this light, it is interesting to look at the areally intermediate "Keshena Culture."

The "Keshena Culture" of northeast Wisconsin is a Late Woodland culture attributed to the proto-historic Menomini, according to Willey (1966:281) who cites Bennett (1952: 121) who quotes McKern (1945:118) who cites Barrett and Skinner (1932). In discussing the archaeology of the Keshena Reservation, Barrett and Skinner state:

Since this whole territory . . . was occupied by the Menomini prior to the white man's coming, there is good reason to believe that these were Menomini sites. This belief is, in fact, rather fully substantiated by the evidence found at these points (p. 416).

This explicitly refers to mounds and village sites in the vicinity of the Keshena Agency: the Paul Brunet Place, the Mission School Mound, the Keshena Agency Mound, and the Wapus Ridge Mound Group (p. 419). Of the thirteen low conical mounds indicated, five were said to contain secondary burials (Barrett and Skinner 1932:416-20). "Keshena Culture" is also represented by implication, at the Keshena Lake Mound Group, the Watasa Lake Mound, and the Makinitas and Watasa Lake Swamp Village sites. At these sites 15 mounds were reported: 8 conical, the rest Effigy Mounds (Barrett and Skinner 1932:421-37). Four of the nine burials recovered were secondary. From the Keshena village sites ceramics identifiable as Aztalan Collared (pl. LXXIX, 9-13); Heins Creek cordwrapped-stick (pl. LXXIX) 3-5, 7, 9); Point Sauble Collared (pl. LXXVII, 5) and Madison Cord



Impressed (pl. LXXVII), were associated with Oneota sherds of Grand River Plain, Carcajou Plain, and trailed sherds of either Carcajou Curvilinear or Grand River Trailed. From the mounds themselves "conoidal Algonkian" only (Barrett and Skinner 1932:415) was recovered. It would appear that the mounds were constructed prior to the accumulation of the village middens with their Oneota ceramics.

The "Keshena Culture", on this view, is seen to represent two occupations: An earlier period of Effigy Mound construction, and a later occupation in the village sites . . . an occupation with a ceramic complex similar to the Carcajou Point site. The interaction of Upper Mississippian and Late Woodland seen at Backlund or McClaghry, Mound 57, does not exist in Keshena Mounds, which are not very different than most Effigy Mound groups. It is the village sites of the Keshena Culture which seem to show some sort of culture-contact situation, as do Backlund, and Mero, and McClaghry: Sites whose areal distribution precludes this being a local occurrence, this giving the Late Woodland-Emergent Oneota contact greater chronological significance.

The conclusions to be drawn from this paper are rather limited. The Backlund Mound Group represents an archaeological complex previously unreported in Michigan. It is clearly understood only by reference to similar sites in north-central and eastern Wisconsin. At Backlund we can see the contact of emergent Oneota with the northern Lake Woodland Cultures which were spread from Lake Winnipeg to Mackinac across the Upper Great Lakes. Similarly, "Keshena Village Culture" is representative of Emergent Oneota contact with what seems to be late Effigy Mound. Both situations probably occur early in the second millenium A. D. While these contacts are thus redocumented, they are still not understood. Perhaps one might conclude that a burial mound is not the ideal place for the study of cultural dynamics.

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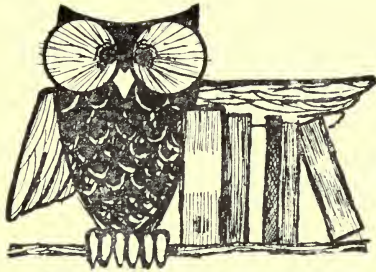
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## THE BOOKSHELF

By

David A. Baerreis

and

Guest Reviewers

The Illinois State Museum has recently issued three additional publications in its REPORTS OF INVESTIGATIONS series, all in an attractive new format with colorful paper covers and a high quality stock that yields sharp, clear illustrations. Of particular interest to Wisconsin readers is "The Gentleman Farm Site," by James A. Brown, Roger W. Willis, Mary A. Barth and Georg K. Neumann (Report of Investigations, No. 12, 48 pp., 1967). The site, located on the property of Mr. Frank Gentleman, was on the Illinois River about two miles upstream from Ottawa in northeastern Illinois. When the site was threatened by destruction, excavations were initiated in 1940 with WPA labor under the supervision of Roger W. Willis. The materials from the site were subsequently utilized in an M. A. thesis by Mrs. Mary A. Barth. The present form of the report, however, is the work of James A. Brown with an appendix on the age and sex of the skeletons contributed by Georg K. Neumann. The site is a late one, about the same age as Aztalan, and representative of what Brown has called the Langford Tradition. The Langford Tradition is a regional expression of Upper Mississippian culture, concentrated in northeastern Illinois and includes the Fischer B and C complexes.

The major feature at the site was a burial mound that had been constructed on a slight natural rise that had previously been used as a burial area. To enhance the height of this natural rise a layer of yellow sandy clay about 8-9 inches thick and then a dark brown loam 18-24 inches thick were added. Those burials which did not predate mound construction, were incorporated in the loam or intruded into it shortly after construction. Concentrations of ash and charcoal sug-

gested the building of fires in conjunction with the burial ritual while other evidence seemed to imply the construction of small grave houses. Forty-eight burials were found in the portion of the mound excavated. A wide variety of burial positions (extended, fully and partially flexed as well as disarticulated remains). The orientation of the head was to the south (34%), north (23%), or west (20%) and in small numbers to the southeast, southwest and northwest. None were aligned to the east and northeast. Nineteen burials had associated grave goods. Thirteen of these had pottery vessels and ten, in addition, had shell spoons. Additional grave goods included a pair of copper ear-disk facings, shell beads and other shell ornaments, deer jaw sickles, a nut-cracking stone, a sheepshead stone, a mass of red rock and flint chips, the latter perhaps accidentally included in the grave fill. In a neat statistical analysis, Brown demonstrates that if you compare burials with the head oriented to the north and northwest (and he includes east and north east in a north division) with the other compass directions, it is only with the latter group that the distinctive pottery vessels and spoons are found. On the other hand, burial associations crosscut burial position, age group and sex except in that there is also an association of extended adult burials with the south division and flexed adult burials with the north division. It is suggested that these traits may reflect a moiety division in the culture.

Artifacts were found both in the mound fill through incorporated refuse as well as in quite limited tests in village areas. The bulk of the ceramics are of various Langford types, representing the local Upper Mississippian complex, but with the presence of collared ceramic like Aztalan Collared reflecting contact with late Woodland peoples. Among the bone implements a polished raccoon penis bone is suggested as being used as a probing or hooking tool such as would be used in weaving. Bone weaving tools of quite different form are known in an ethnographic context so that it may well be that an account I have seen of its use as a simple fork to impale a hot piece of meat in a stew is more appropriate. Another bone tool comprises the distal end of a large cervid radius which had been sliced in half and pierced with a hole

near the distal end. It is identified as a combination hide grainer and hide smoother with the hole specifically being described as used to soften hides by drawing the hide through it. Since the illustration indicates that the hole has a diameter of less than a half inch, we must indeed be dealing with a lost art of magnificent skin dressing that would permit a hide to be drawn through an opening of such size! Similar implements from sites on the Plains have very large perforations and commonly only a bison scapula is sufficiently large and strong to accommodate it. Particular attention is drawn to these lapses in implement identification since Dr. Brown has been so successful in the past in drawing attention to appropriate tool functions, as in the case of the deer jaw sickle. Brown interprets the economy as one based upon horticulture plus hunting, fishing and collecting, the dependence being mainly upon deer, small vertebrates, and mollusks. Yet in Table 13 he reports an analysis of bone by F. Barth in 1949 listing 80 bones of deer as opposed to 22 bones of bison. Since a single bison may provide as much as five times the quantity of meat as a single deer, this may well imply that bison were more important in the economy than deer. In addition, it may be that it was less likely that an entire bison would be brought back to the village since it would be far more difficult than to carry the carcass of a deer. Thus the smaller number of bison bones might imply a larger number of animals. It is unfortunate that the total collection of animal bones is evidently no longer available for a detailed analysis.

Sectors of the report which can be criticized in such a fashion are difficult to find. It represents an outstanding example of the important conclusions that may be drawn from early salvage excavations, in this instance dating back to the WPA period. Both the Illinois State Museum and Dr. Brown are to be commended for a report of high standards and quality in appearance, format and content.

A second Reports of Investigations by Holm W. Neumann has the title, "The Paleopathology of the Archaic Modoc Rock Shelter Inhabitants" (No. 11, 68 pp., 1967). The Modoc Rock Shelter, one of our most important Archaic sites in the Mississippi valley region, has previously been described in

this same series by Professor Melvin L. Fowler (No. 8, 1959). The 28 burials dealt with in the study range in antiquity, according to radiocarbon dates, from around 6200 B. C. to 2750 B. C. Of the 28 burials, only 3 showed no evidence of bone pathology and of these one consisted of only the skull while the other two were of sub-adult age. Such a high incidence of bone pathology does not speak well of the comfort of life in prehistoric times. It is suggested that it may reflect the fact that their hunting and gathering mode of life was physically demanding. At the same time, since the skeletal age of six individuals in the series is estimated at 65 or older at the time of death with the average age at death in the series of 27 at 41.9 years, it is indicated that we are dealing with a highly selected population having an excellent span of longevity. The high influence of disease may simply reflect the fact that if you live long enough disease will finally catch up with you. Osteoarthritis was the most frequent type of bone pathology present. Eight burials in the series showed traumatic fractures of one or more bones in the skeleton. Two of the males showed depressed fractures in the skull while seven different individuals showed fractures in bones of the upper extremity. A variety of other changes in the bones, found in more limited numbers, are also described. Clearly, studies such as these can do much to provide a richer picture of man's interaction with his prehistoric setting and through the analysis of fractures, an insight into behavioral activities as well.

The third new number in the Reports of Investigations series is "An Archaeological Survey of the Wabash Valley in Illinois" by Howard D. Winters (No. 10, 95 pp., 1967). Minor modifications have been made, primarily in the account of the Allison Culture, in an earlier version of this report which was available in mimeographed form in 1963. The report in essence is an account of an archaeological survey made in the Wabash Valley by Winters in 1962, a region concerning which relatively little archaeological information has been available. Indicating that Winter's account is of an archaeological survey may discourage readers from pursuing the report further since they do tend to be technical and primarily intended as a guide to further excavation. Such limitations do not apply to this account. It is a useful guide to the content

and sequence of prehistoric cultures in the region, presents new pottery and projectile point types, and explores methodological innovations in analytic procedures. In short, it can be recommended as an example of what a survey report should be. The brief space devoted to a discussion of the report simply reflects the greater spatial distance of the cultures involved, lessening the relevance of the cultures to Wisconsin prehistory.

University of Wisconsin, Madison  
David A. Baerreis,

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### *Interesting Wisconsin Specimens*



**SCOTTSBLUFF POINT**  
Length 4". Quartzite. James  
Bindrich Coll. Found near  
Kiel, Calumet County.



#### **DOUBLE-POINTED PROBLEMICAL.**

Found on surface with a few arrowheads by a tobacco farmer (Mr. Rumsey) in Hamburg Tnshp., Vernon County. Willard Noble Collection, Burlington.



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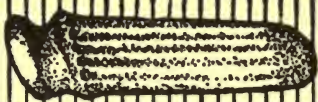
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## FOX VALLEY ARCHAEOLOGY 1: JAMES ISLAND SITE

By Ronald J. Mason

Lawrence University

Archaeological sites in the Fox River valley of northeast Wisconsin have been investigated over a period of several years by the writer and his students as part of the summer program in archaeology at Lawrence University. Sites have been located and tested or excavated in Winnebago, Outagamie, and Brown counties from Lake Winnebago to Green Bay. The program has combined training in standard field methods with original field research in an important and inadequately known archaeological region.

Because many of the sites are small or have been subject in varying degrees to the destructive inroads of twentieth century rural and urban activities, a proper assessment of the region's prehistory can only be pieced together as affinities are discovered and traced among the local sites and between them and the archaeology of other areas. Moreover, most of the known localities bear evidence of multiple occupations and have yielded little or no stratification. Soil types and sedimentation rates and agencies have not as conspicuously provided this section of Wisconsin with the clear and recurrent stratigraphy of the nearby Door Peninsula (cf., Mason 1966, 1967). Proximity and typological cross-ties with that area permit some extrapolation and this has been an important research tool. A detailed self-supporting chronology with sharply consistent demarcation of discrete cultural components is as yet and will remain for some time in a developing state. Advances in this direction are prerequisites to more elegant stylistic, ecological, functional, etc. studies. The information from any single site is of course limited – more so from some sites than others. Information derived from numbers of sites is correspondingly richer and allows a wider and more testable set of inferences. The writer is currently engaged in collating data from the sites in the Fox Valley and

its hinterlands. The interpretive framework is the cultural and environmental history of the Upper Great Lakes. It is therefore useful that basic information for representative and key sites should be published and readily available as a public check on the credibility or appropriateness of such interpretations. The present account is intended as one such record for a single site and will be followed, as opportunity permits, by similar descriptive narratives of what has been recovered from other sites in the Fox Valley region. The relevant field work was supported by Lawrence University. The laboratory analysis of the finds and its incorporation in a larger, on-going interpretive study, have been supported by Lawrence University and by the National Science Foundation (Grant No. GS-1662).

The James Island site was brought to the writer's notice by Richard P. Mason of Neenah. Excavations were undertaken in July, 1965, by the Lawrence University archaeological field school directed by the author. Richard Mason made his surface collection from the site available for study, the results of which are incorporated in the following report. I am also indebted to Mr. Mason's father, Paul Mason, for providing the boats necessary to work on the island. Manfred Jaehnig, then a student at Lawrence, helped in the laboratory.

Situated in the NW  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Sec. 22, and in the SW  $\frac{1}{4}$  of the SW  $\frac{1}{4}$  of Sec. 15, T. 20 N., R. 17 E., Menasha, Winnebago County, Wisconsin, the site is on the two and a half acre islet in the mouth of the north channel draining Lake Winnebago around Doty Island into Little Lake Butte des Morts. The main concentrations of archaeological materials are along the west and north shores and an unknown distance lakeward under the modern controlled average lake level of 738 feet above sea level. James Island is a very low islet protruding on an average of one to two feet above the average modern lake level; its maximum elevation is only about two and a half feet. Indeed during seasonal high water episodes the island is completely inundated. Supporting a secondary forest, its surface is littered with every variety of flotsam and jetsam. The shoreline is still subject to the erosion which has already removed an interminate portion of the island.

Soil profiles were both simple and shallow. In most areas there was a black silty loam 6 to 12 inches deep. Beneath this was a 4 to 12 inch zone grading to clayey alluvium 4 to 8 inches deep resting on limestone. Most artifacts occurred in the upper few inches of the black loam in occasional association with nails and pieces of modern china, glass, coal, etc. Somewhat deeper artifact bearing deposits occurred along the north shore, but with increasing depth the artifact yield was sufficiently inverse to vitiate attempts at discerning quantitatively meaningful typological stratigraphy. These data, nevertheless, are tabulated and on file in the Department of Anthropology, Lawrence University.

The site was chosen for a part of the summer's field work because of the high artifact yield relative to most remaining sites in this sector of the Fox Valley; because the major part of the Mason collection suggested a restricted span of time and thus offered promise of reliable component sampling; because the site is critically situated at a strategic juncture of the waterway connecting the Fox and Wolf drainages, via lakes Poygan, Winneconne, Butte des Morts, and Winnebago, with the lower Fox draining to Green Bay; and because the locality is one of the few remaining oases in a heavily urbanized part of the valley still available for excavation where there is known to have been a concentration of aboriginal settlements. Opportunities for archaeological research in this immediate area are now severely restricted and are rapidly disappearing altogether.

Three archaeological components have been identified on James Island. Two were distinguished typologically, but with some confirmation from distributional evidence; the third rests on typology exclusively. The principal component is a Late Woodland one best represented by certain stone artifacts and by sherds from collared and collarless cord impressed pots. A small collection of shell tempered Oneota pottery may be contemporary with the Late Woodland assemblage or attest to a somewhat later occupation by a single family or two. The third and earliest component is Middle Woodland, was best represented in contradistinction to the main component near the north shore, and has cultural relations with a subsequently excavated predominantly Middle Woodland site

across the lake (the Kimberly-Clark site). Although Thwaites (1906: 89-90) believed the island to have been that referred to by archives of the French regime in Wisconsin (based on a 1730 letter from Marin to Beauharnois) as the location of an historic Winnebago "fort," no confirmatory evidence was produced by the excavations. The limited numbers of Oneota sherds are simple and they exhibit so few stylistic attributes that they could at least as likely be prehistoric as not, particularly insofar as they are virtually duplicated in known prehistoric contexts at other sites. Fragments of large white kaolin pipes from the site stamped "GERMANY" are much too late to have been associated with the aboriginal pottery.

Excluding small test pits, activity was concentrated on the western and northern sides of the island; the former is here designated Area 1, the latter Area 2. Area 1 comprised eighteen 5 by 5 foot squares excavated to a depth of less than 6 to about 18 inches depending on the productivity of the square, depth to lake clay or bedrock, etc. Area 2 included five small excavation units totaling about 160 square feet and dug to depths of 12 to 30 inches. The hardness and cohesiveness of the soil made for slow digging regardless of relative moisture content. Screening tables were used where feasible.

The most numerous and diagnostically useful artifacts were of course potsherds. As previously indicated, these appear to pertain to three periods of habitation.

#### **Late Woodland Pottery**

With few exceptions the Late Woodland pottery from James Island is classifiable in the types and varieties affiliated under the writer's suggested expansion of the "Madison Ware" concept (Mason 1966: 150-158). This was an attempt to enlarge upon previous taxonomic studies by Baerreis (1953), Baerreis and Freeman (1958), Keslin (1958), and Wittry (1959) in order to embrace a greater number of cord impressed pottery types which are without doubt historically related even though their precise spatial and temporal limits remain to be fixed. The closest correspondences are with what has been called **Point Sauble Collared**, **Aztalan Collared**, **Madison Cord Impressed**, and **Madison Cordmarked**, *née Plain*. These categories have proved to be useful working tools, though there is now some evidence to show that they



are classificatory oversimplifications in some regions if not in all. Some sites on the Door Peninsula, for example, demonstrate continuous one-by-one attribute shifts between the types **Aztalan Collared** and **Point Sauble Collared**, and between the latter and **Madison Cord Impressed**.

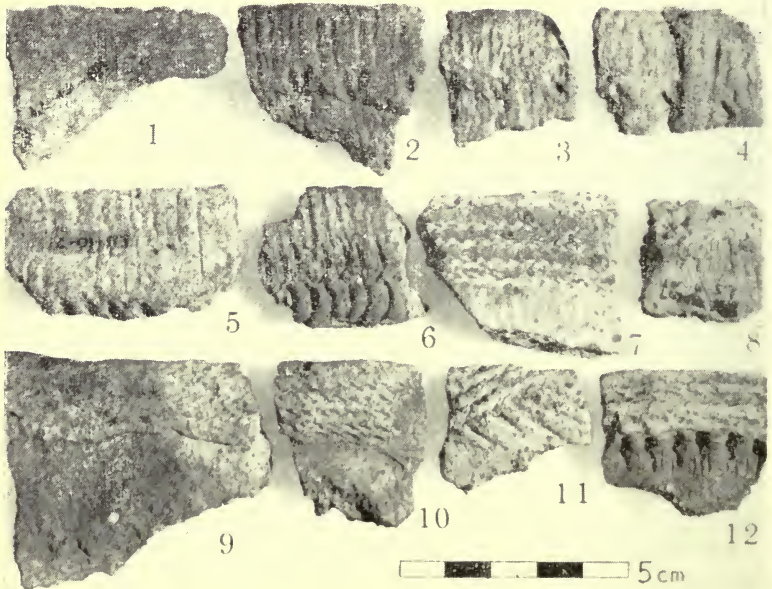
The James Island Late Woodland rimsherds have been carefully segregated into groups, each believed to represent a single vessel. Each vessel has been assigned an identification number and, in symbolic or shorthand form suitable to conversion into numeric code, the attributes judged most commonly available and useful for comparative work have been recorded together with their associations and certain metrical and provenience data. These data will be used with that derived from other sites in computerized experiments designed to quantify clinal shifts, test typological boundaries, and seriate sites with multiple varieties of cord impressed sherds.

Categories	Rimsherds		Vessels	
	No.	%	No.	%
Madison Ware, collared series	65	38.4	40	65.5
Madison Ware, collarless series	31	18.3	20	32.7
Heins Creek Cordwrapped-stick	5	2.9	1	1.6
Small rimsherds from above (?) vessels:				
Madison Ware, collared	8	4.7	-	-
Madison Ware, Collarless	6	3.5	-	-
Madison Ware, rim form unknown	20	11.8	-	-
Cord-wrapped-stick	1	.5	-	-
Inadequately preserved scrap	33	19.5	-	-
Totals:	169		61	

**TABLE 1. Late Woodland Rimsherds.** The last five categories comprise small or badly sloughed, minimally informative bits of rim probably already accounted for in the 61 vessels from adduced from the larger, much more diagnostic rimsherds of the first three categories.

In addition to the "reconstructed" vessels the James Island collection includes less diagnostic rimsherds probably representing scraps of the aforementioned vessels, undecorated body sherds, decorated body sherds, and a large number of exfoliated and minimally informative sherds—all of which may or may not be from the vessels already present in the numbered series. These data are tabulated in Table 2.

While only partly summarized here, the following kinds of



**PLATE 1.** Representative Late Woodland Rims in the Numbered Series of Collared Vessels with **Aztalan Collared Affinities.**



**PLATE 2.** Representative Late Woodland Rims in the Numbered Series of Collared Vessels with **Point Sauble Collared Affinities.**



**PLATE 3.** Representative Late Woodland Rims in the Numbered Series of Collarless Vessels, Madison Ware.

information have been recorded for each "reconstructed" vessel: site provenience; vessel identification number; number of sherds and of both to rimsherds, embellishment tended to be rim or collar surface finish; type and technique of rim or collar decoration if present; presence or absence of sub-collar or lower rim punctates — and specification of technique; surface finish of surviving body areas beneath the collar or rim; presence or absence of body decoration; type and technique of inner rim decoration, if any; conformation of vessel mouth; presence or absence of rim peaks; presence or absence of castellations; lip width; collar or rim thickness; thickness beneath rim or collar; and rim or collar height.

The collared vessels were all undoubtedly cordmarked, although smoothing of the collar itself was generally the rule; 31 of 40 collared vessels exhibit smoothed collars, 8 are cordmarked, and on one the surface finish cannot be determined. To judge by proportions of decorated to undecorated body sherds and of both to rimsherds, embellishment tended to be confined to the rim/collar sector and/or neck regions exclusively. Decoration beneath the collar is definitely absent on 9

vessels and present on 7; its presence or absence cannot be ascertained for 24 vessels due to insufficient retention of sub-collar surfaces. Where such decoration is present, it is by parallel twisted or braided cord impressed lines arranged horizontally or, less frequently, on the right or left diagonal.

A single row (usually) of sub-collar punctates occurs on 20 vessels, is absent on 10, and cannot be ruled in or out on the remaining 10. But for two each examples of fingernail and cordwrapped stick, all sub-collar punctates were effected by means of a knotted or looped cord.

Only six vessels have plain collars. Decorated collared vessels are cord impressed exclusively. The most common collar motif is simply parallel horizontal lines (16 vessels). Represented by frequencies of five vessels or less are parallel right oblique lines, parallel left oblique lines, criss-crossed lines, parallel left oblique lines crossed at intervals by right obliques and groups of vertical lines alternating with right obliques. Three vessels provide incomplete information in this regard.

Thirteen collared vessels have undecorated lips, 12 are notched or punctated at the inner rim-lip juncture, 6 show transverse lines, 3 are notched at the outer rim-lip juncture, 3 are alternately notched at the inner rim-lip and outer rim-lip junctures, and one has left oblique lines crossing the lip. Two vessels have inadequate lip preservation for study. Lip decoration is by cord impressing except for four examples of cordwrapped-stick and one of fingernail.

Inner rim ornamentation is absent on 9 pots, consists of vertical lines in another 9, horizontal lines in 8, left obliques in 5, right obliques in 3, and verticals separated from the upper rim by a plain zone in one other. Five pots are interiorly sloughed. But for a solitary instance of cordwrapped-stick, interior decoration is by cord impressing.

The collarless Late Woodland vessels from James Island are completely cordmarked in 19 cases and have plain or heavily smoothed-over cordmarking on the rims in two. Ten lack decoration on the outer rim, 4 have horizontal lines on the rim, 3 vertical (columns or corded punctates), 2 horizontal above left obliques, and one has left obliques only. The one example of **Heins Creek Cordwrapped-stick** has left ob-

lique cordwrapped-stick lines above horizontal lines effected by means of the same instrument.

Lip decoration on the collarless vessels ranges from absent (11 examples); transverse (3 examples); left oblique (2), outer rim-lip juncture notching (2), to longitudinal lip punctating. Twisted cord and cordwrapped-stick, in that order, are the techniques of execution.

Twelve of these vessels have inner rims which are plain, 5 have vertical lines, 2 show left oblique lines, and 2 are unknown due to extensive sloughing. Decoration was achieved

Categories	Cordmarked Plain		Totals	
	No.	Surface	No.	% <sup>1</sup>
Undecorated	1792	156	1948	92.9
Cord-impressed <sup>2</sup>	62	9	71	3.3
Cord-punctated <sup>3</sup>	41	-	41	1.9
Cordwrapped-stick <sup>4</sup>	14	3	17	.8
Miscellaneous punctated	4	6	10	.4
Linear punctated or stamped	4	1	5	.2
Undecorated, net-impressed	-	-	2	trace
Undecorated toy (?) vessel	-	1	1	trace
Sloughed (counted & discarded)	-	-	1217	
Totals:	1917	175	3312	

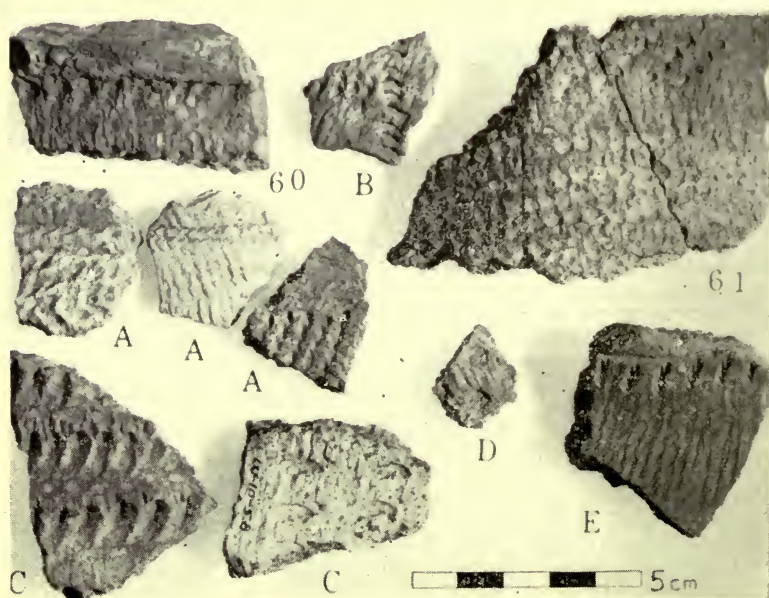
TABLE 2. Late Woodland Body Sherds

- Percentages calculated on grand total minus sloughed sherds.
  - Thirteen of the cordmarked specimens are neck margins decorated with parallel horizontal imprints with (11 sherds) or without (2 sherds) pendant corded punctates; one of the plain surface sherds has interior fabric impressions.
  - Eleven clearly represent vessels which had columns of corded punctates descending the body wall.
  - Ten of the cordmarked specimens belong to the **Heins Creek cordwrapped-stick** vessel.
- by cord-impressed or cordwrapped-stick or, in one instance, by punctating with a stick-like object.

Distinguishable categories of Late Woodland body sherds are indicated, together with frequency tabulations, in Table 2. A limited number of the undecorated body sherds included in that table almost certainly relate to the Middle Woodland component to be described below. Because these sherds lack diagnostic surface treatment or decoration and do not show strong enough polarity in paste features to make discrimina-

tions on consistent reliability, attempts at such separation and identification were given up as not worth the effort. As a sampling of the Late Woodland ceramic industry it is accordingly important to bear in mind that the James Island site body sherd counts incorporate some Middle Woodland material. The effect of this admixture, as judged by known proportions of diagnostic Late and Middle Woodland sherds, is probably miniscule.

The undecorated cordmarked body sherds, which account for the overwhelming majority of the sherds in Table 2, show an overall range in thickness of 2.0 to 14.0 mm. The mean thickness is 5.0 mm. with an estimated standard deviation of plus or minus 1.0 mm. The much smaller sample of undecorated plain body sherds ranges between 3.0 and 13.0 mm., but has a mean of 6.3 mm. About three-quarters of the sample falls within a millimeter of the mean. Known trends in surface treatments at other sites in northeastern Wisconsin strongly suggest that Middle Woodland sherds have a much



**PLATE 4.** Miscellaneous Late Woodland Rim and Body Sherds. Number 61: Heins Creek Cordwrapped-stick. Others, with possible exceptions of 60 and sherd C, left, Madison Ware.

higher representation in the plain category than in the cord-marked. The means are conformable with such an exception.

### Middle Woodland Pottery

The James Island Middle Woodland component was segregated by typology. After identification it became apparent that paste differences tended to parallel the typological, the Middle Woodland material tending to be slightly to much less gritty to the touch than the Late Woodland and also having a generally harder and more lustrous surface and

Categories	Body Sherds		No. of Vessels	
	No.	Rims No.	No.	%
Dentate stamped	3	2	3	21.4
Incised-over-cordmarked	11	1	3	21.4
Incised-over-plain surface	2	3	2	14.2
Undecorated, cordmarked <sup>1</sup>	-	2	2	14.2
Undecorated, plain <sup>1</sup>	-	2	2	14.2
Simple stab-and-drag	7	2	1	7.1
Rocked dentate	1	-	1	7.1
Totals:	24	12	14	

**TABLE 3. Indentifiable Middle Woodland Pottery. The absence of undecorated Middle Woodland body sherds is explained in the text.**

<sup>1</sup> Conceivably, these rims may be from vessels decorated below surviving rim areas. Numbers of decorated body sherds, however, are discordant with such a hypothesis.

denser paste. The four undecorated rimsherds were placed in the Middle Woodland category on these technological grounds. There is sufficient intergradation between these pastes, however, to make discrimination uncertain without supporting stylistic or other criteria. For this reason — as previously indicated — no final attempt was made to separate possible Middle from Late Woodland undecorated body sherds. There is slight distributional evidence which, so far as it goes, is compatible in suggesting two Woodland components: collared Late Woodland rimsherds were twice as numerous in Area 1 as in Area 2; exactly the reverse is true of the identifiable Middle Woodland sherds. Finally, the subsequent excavation of a Middle Woodland site just across the lake (the Kimberly-Clark site) has lent corroboration.

Three vessels are dentate stamped. One of these has parallel left oblique stamps on a smooth surface on the rim and parallel vertical stamps over cordmarking on the body; the rim is slightly everted and the lip is flat. The second vessel has partly superimposed, tending to parallel, horizontal stamps beneath a wide (22-25 mm.) undecorated upper rim with a smoothed surface; the rim is slightly excurvate and is tapered to a flat lip embellished with small oblong punctates. The last vessel in this category is survived by a single body sherd with a smooth surface finish and a band of parallel lines in the making of which the dentate stamp was applied at a marked angle so that, in cross-section, one edge is deep and the other trails out to the surface.

An estimated three vessels exhibit multiple parallel incised lines or trailed lines imposed on a cordmarked surface. The solitary rim is moderately everted and tapers to a rounded lip. A sloughed near-rimsherd is underscored by a row of shallow angular punctates over horizontal trailing.

Two vessels bear incising on a plain surface. One of these may be smoothed-over-cordmarking and is decorated with left oblique incisions. The other vessel has a zone of parallel oblique incisions about 22-25 mm. long with an undecorated zone above and below. One rim is slightly incurvate, the other moderately excurvate. Lips are flat and exteriorly extruded.

The undecorated cordmarked rims have vertical cordmarking with (1 vessel) or without (1) partial smoothing. The former has obliquely cordwrapped-stick impressions on the lip. Rims are slightly excurvate; the lips are flat with some extrusion over the exterior upper rim surface.

Two rimsherds are believed to represent as many undecorated vessels with a plain surface finish and with slightly everted rims. One has a flat lip with cordwrapped-stick notching at the outer rim-lip juncture. The other has a plain round lip with some exterior extrusion.

One vessel has parallel contiguous rows of a rectilinear punctate or bar stamp which was alternately pushed and then dragged around the circumference of the vessel commencing at the exterior rim-lip juncture; it was then subjected to partial secondary smoothing. Part way down the vessel undecorated bands were retained between the decorated bands of



stab-and-drag. The vessel has a vertical or faintly everted rim with a flat unembellished lip.

The last of the Middle Woodland vessels is represented by a small, lonely body sherd with deep parallel sets of a rockered dentate stamp applied to its smooth surface.



**PLATE 5.** Middle Woodland Rims and Body Sherds. A: Incised, smooth surface; B and C: Dentate stamped; D: Stab-and-drag; E: Incised-over-cordmarked; F: Rockered dentate; G: unusual variety of dentate stamped.

### Oneota Pottery

A very small representation of Oneota sherds (117—all shell tempered, leached) was recovered from the site. Usually small and minimally informative, both with respect to intrinsic attributes and associations, they occurred as a thin scatter. Nothing describable as a concentration appeared.

Only one rim was found; other than a crenelated lip it lacked decoration. Body sherds are plain and undecorated in 109 cases; 7 bear parallel trailed lines on fragments too small to allow design reconstruction. As a guess, it would appear that at least two, and possibly no more than three, vessels are present in the sample. The suggestion that the sherds

pertain to a small prehistoric Oneota component has already been discussed *vis-à-vis* an historic Winnebago site alleged possibly to have been situated on the island.

### Chipped Stone Artifacts

As with the far more numerous sherds we are again handicapped in analyzing the stone artifacts by the dearth of stratigraphy and the clear and recurrent admixture of objects of disparate ages. Again, the material must be handled essentially like a surface collection. The only artifacts sufficiently numerous and possessing enough diagnostic traits of known culture-historic significance to make feasible assignment to particular ceramic components are projectile points. The usefulness of these data and their possible associations will be greatly enhanced, as previously pointed out, when the records of additional sites are made available for comparative studies.

Other than chipping debitage, 34 chipped stone artifacts are available from the James Island in the combined Lawrence University-Richard Mason collection. With the exception of a quartzite knife these are all made of chert, all of which is believed to have been derived from the local Niagaran chert sources or from glacial gravels. Nothing recognizably foreign or exotic was noted. In the Lawrence collection itself are 337 flakes having a total weight of 577 grams. Three hundred and twenty of these flakes are chert, 11 are quartz, 5 are quartzite, and there is one piece of red siltstone. The Mason collection contains a small assortment of chips (perhaps 60-100) in no particular different from the Lawrence sample. Table 4 lists the chipped stone artifacts from the site minus chippage. Only certain of the categories warrant additional description or extended comment.

The 19 projectile points comprise a majority (14) of triangular specimens and a minority (5) of stemmed and notched forms. There is no comparative basis for doubting that the former relate to the same components as indicated by the Late Woodland and Oneota sherds and the latter, mainly if not exclusively, to the Middle Woodland. Ratios are not identical but they unquestionably point to the same conclusion: 3:1 is the ratio of triangular to stemmed and notched points; 4.5:1 is the ratio of Late Woodland and Oneota vessels to Middle Woodland ones.

Variable in outline from sub-lanceolate through isosceles to equilateral, half of the triangular points have shallowly concave basal edges while the remainder are straight. In length they express an even gradient from 17 to 29 mm and they weigh 1.0-2.8 grams. One is made of a fine white chert not common in this region.

Categories	Number
Triangular projectile points -----	14
Stemmed and notched projectile points -----	5
Projectile point tip, proximal end unknown -----	1
End-scraper -----	1
Utilized flake side-scrappers -----	3
Utilized flake with peripheral scraper use -----	1
Scraper edge fragment, form unknown -----	1
Utilized flake knives -----	2
Ovate uniface knife, quartzite -----	1
Biface fragments, large ovates -----	2
Biface fragments, function unknown -----	3
Total: -----	34

**TABLE 4. Chipped Stone (minus flakes)**

The stemmed and notched points are generally broad-bladed and are side-notched to corner-notched; three may be described as corner-removed or as stemmed with moderately everted tangs. Basal edges are straight in two instances, irregular in three with big striking platforms intact. Workmanship appears to have been quite relaxed. The points are 30-44 mm. long and weigh between 4.7 and 9.9 grams.

All of the scrapers and flake knives are small (e. g., the end-scraper measures 17 by 18 mm.) One of the utilized flake side-scrappers may additionally have been used as a draw-shave.

The largest of the ovate biface fragments is a proximal section 56 mm. long and 51 mm. wide. Like all of the other chipped stone artifacts except the projectile points it cannot be ascribed to a particular component with any degree of certainty.



**PLATE 6.** A: triangular points; B: Middle Woodland points; C: proximal half, ovate biface.

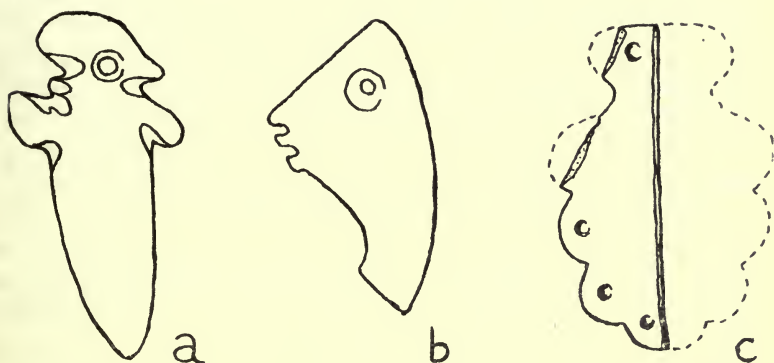
### Ground Stone Artifacts

Ground slate is present in the form of one indubitable fragment. It is unfortunately too shattered to attest to anything more than the one-time presence of a slate artifact with at one rubbed edge. A couple of other pieces of slate do not show signs of alteration and may or may not relate to this artifact. The surviving edge is straight and beveled and has "score" marks perpendicular to and coextensive with the edge. It is 4 mm. thick.

Two celts are known from the site. An excavated specimen is of diorite, is 147 mm. long, 75 mm. at greatest breadth tapering to 15 mm. at the poll, and is 48 mm. thick. In the Mason collection is a smaller celt with corresponding measurements of 79, 55, 28, and 22 mm., respectively. The material is gabbro.

The most unusual items are two small catlinite pendants. Neither of these were found during excavation but are present in the Mason collection. They were collected about 30 years ago by Richard Mason's father who also collected ex-

tensively in the whole region around Little Lake Butte des Morts. While it is believed by Richard Mason that these intriguing pieces may have been found on James Island there is a possibility that they were found elsewhere. They are probably protohistoric or even historic but cannot be linked to a component on the island. Nevertheless, they are described here and are illustrated in Figure 1.



**FIGURE 1.** Catlinite Pendants from Little Butte des Morts, Winnebago County. "a" and "b" may have been found on James Island, "c" on or near the Kimberly-Clark site. The length, width, and thickness of each pendant is: "a"—39.0, 20.0, and 4.0 mm.; "b"—32.5, 16.5, and 3.5 mm.; "c"—36.0, 23.0 (as projected), and 5.5 mm. This last pendant is medially grooved on both faces and is broken (intentionally?) on the same line. Collection of Richard Mason, Neenah.

Both pendants have a smooth finish and reflect a dull polish. One is made of maroon, the other of light orange-red catlinite. Flat in cross-section, these locally unusual "ornaments" have been cut in profile by working from both surfaces. The suspension holes are drilled from both faces and taper to a perforation 2 mm. in diameter; they are not truly round but are a trifle wider in one direction than another. In one case the suspension hole is 5.5 mm. wide at the surface on one face and tapers to a 2 mm. opening. Between these planes, however, is a concentric ridge 4 mm. in diameter, suggesting that something like a hollow reed drill was employed preparatory to the making of the final perforation. As seen from either face of each artifact, the hole is slightly to markedly off-

center at the bottom of a depression twice to three times as wide.

A third catlinite "ornament," comparable in size, style, and craftsmanship, is believed to have been found across the lake in the vicinity of the Kimberly-Clark site.

#### Miscellaneous

Five small fragments of human parietal or occiput were picked up by Richard Mason on the island and just offshore under shallow water. They could all be from the same individual. Their historical or cultural significance is unknown.

Twenty fragments of big white kaolin pipes are stamped "GERMANY." As indicated earlier, these are much too recent to have bearing on the Indian archaeology of the site.

#### Summary

The James Island site is one of a number of shallow, relatively restricted, and partly destroyed archaeological sites in the lower Fox valley of northeastern Wisconsin. Large portions of the valley are witness to intensive urban development and industrialization which has incidentally but massively removed records of the prehistory of the region. While the known surviving sites are generally unimposing and lacking in depth, they occupy a particularly strategic position on the major and most direct waterway connecting Green Bay with the Wolf River and thus, with limited portaging, with the Mississippi drainage. This also happens to be a connecting link between the northern forest and lake country and the Upper Great Lakes and the southern forest and prairie openings extending northward out of Illinois and eastward from Iowa. These two quite different ecological provinces have likewise witnessed in many ways contrasting cultural adaptations and histories. This report is intended as the first of a short series describing the remains from sites in this critical area. Together they will provide part of the data for integrative interpretations of the archaeology of this sector of the state and its connection north and south.

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## THE GODDARD-RAMEY CAHOKIA FLIGHT: A PIONEERING AERIAL PHOTOGRAPHIC SURVEY

By Robert L. Hall

Marquette University

A Cahokia Site is an archaeological location in Illinois very much in the headlines. Cahokia is best known as a group of eighty-five prehistoric Indian mounds and associated village remains between East St. Louis and Collinsville, Illinois. The site was occupied from A. D. 800 or 900 until about A. D. 1500 and was long abandoned when Joliet, LaSalle, and other French explorers entered the area. The central feature of the site is the Great Cahokia Mound, now better known as Monks Mound, the largest mound of Indian construction north of Mexico. Monks Mound and a number of nearby mounds are today preserved in a state park whose purchase was provided for by the Fifty-seventh General Assembly of Illinois after about ten years of organized effort by many in Illinois and across the country.

Cahokia has the distinction of being the largest temple mound group in the United States. It has another distinction much less known even by professional archaeologists. Cahokia is the first archaeological site in America to be investigated by the method of aerial photography. Aerial photography is so common today that the use of aerial photos is

almost a routine matter in a site investigation. Half a century ago it was otherwise.

Cahokia was actually photographed from the air not once but on two separate occasions during the early period of investigation. During the winter of 1921-22 a set of photos was taken by Licut. Harold R. Wells and Lieut. Ashley C. McKinley. These men belonged to what was then known as the U. S. Army Air Service and were stationed at Scott Field at Belleville, Illinois, only a few airline miles from Cahokia. The photos were taken at the request of David I. Bushnell, Jr., a collaborator of the Smithsonian institution, who was conducting a survey of the greater Cahokia area. Some of the better photos were reproduced in his contribution to "Explorations and Field-Work of the Smithsonian Institution in 1921." Snow covered the ground at the time, and a thick smokey haze blanketed the ground for several hundred feet. For these and possibly other reasons the photos were of poor quality.

At the same time that Bushnell was conducting his survey of Cahokia, or within several days of that time, Warren K. Moorehead was engaged in his own investigation of the site. The State was stalled in its efforts to establish the park at Cahokia because the prices asked by the landowners were higher than those the State was prepared to pay. Both men were trying in their own way to call attention to the importance of the site. Moorehead conducted excavations within the Cahokia Group proper, and Bushnell made a survey of the greater Cahokia area, which included outlying mound centers in St. Louis and East St. Louis, at Mitchell, and near Dupo.

Moorehead began his work at Cahokia with an excavation during September and October of 1921. During part of this time Dr. A. R. Crook, Chief of the Illinois State Museum, was attending a meeting of State Geologists at Chattanooga, Tennessee. Here he saw aerial photographs which had been taken of the Tennessee River Valley. Crook was one of Moorehead's contacts in Illinois, and the Museum was one of the financial backers of Moorehead's 1921 excavation, although Crook himself believed that the Cahokia Mounds were natural-erosional remnants of alluvial deposits.

Crook returned from Chattanooga with the idea that aerial photos might be useful in interpreting the origin of the Ca-



hokia Mounds. Museum correspondence files show that he corresponded for four months with various people in the Army Air Service trying unsuccessfully to generate interest in his project. Then in February Crook learned that Lieuts. Wells and McKinley had already taken a series of photos for the Smithsonian but they were of discouraging quality and of little use.

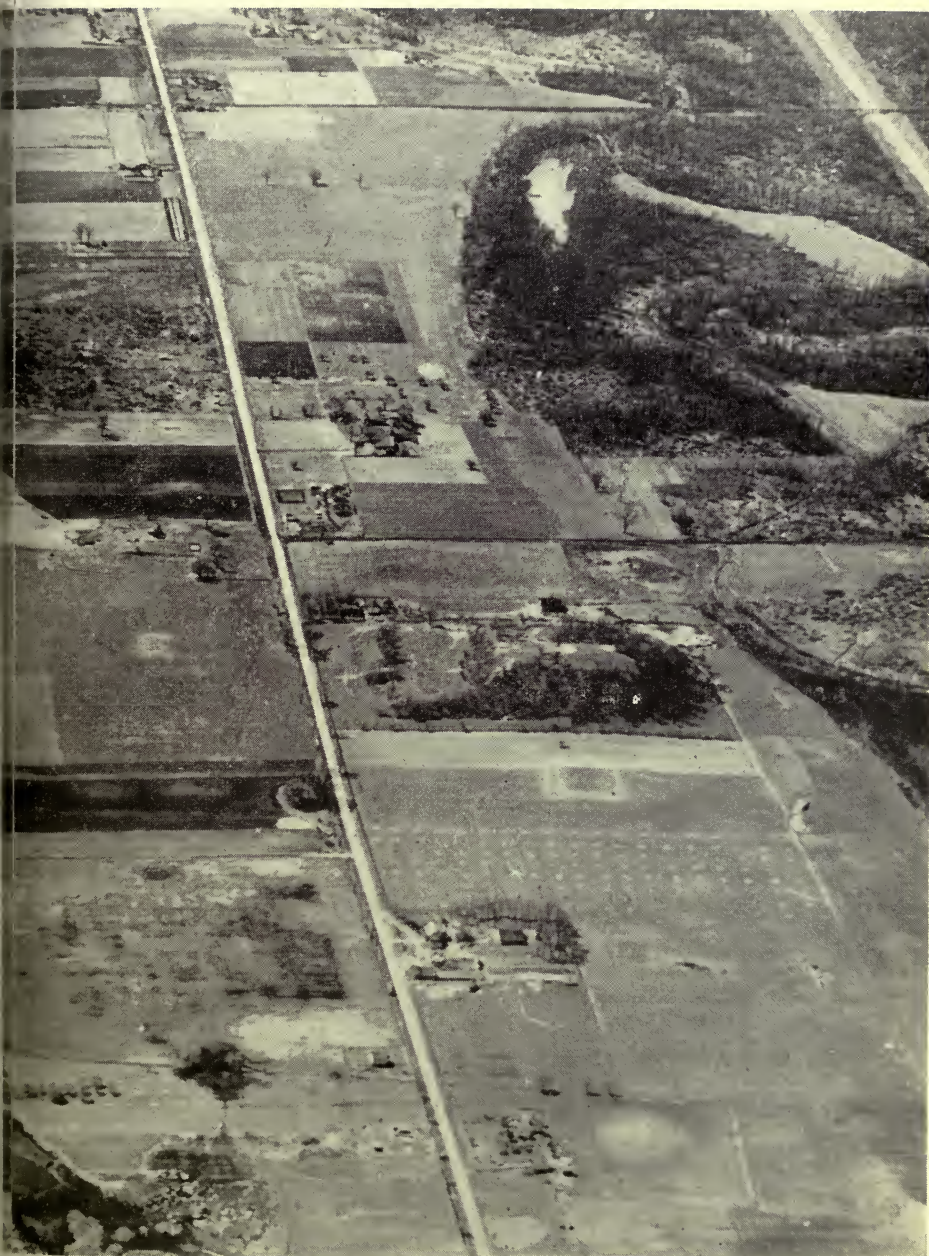
Crook was a geologist and not an archaeologist, and although he was firm in his belief that the mounds were not artificial, he later quite willingly revised his opinions when the evidence was of a variety which had meaning to a geologist. He possibly sought the photos to illustrate observations he had made about the shape of the mounds in relation to the direction of water-flow in the Mississippi Valley, but he also made test borings of Monks Mound and submitted material samples to the U. S. Bureau of Mines. One of the arguments for the artificial nature of the mounds was the presence of pottery, charcoal, and other occupational debris at great depths in the mound fill. Crook, however, was told by the Bureau of Mines that charcoal was coalified wood and lignite, that the ashes were merely silifications and had few of the characteristics of wood ashes, and that the pottery was not really pottery at all. When Crook later visited Moorehead's excavations he took soil samples at various depths in a test trench through a mound and submitted these to the Agriculture School of the University of Illinois. The results of these tests indicated that the mound fill was of a nature that could not have occurred in natural alluvial deposits, and Crook used this as one of the arguments in a paper he published the same year entitled "The Origin of Cahokia Mounds." In this paper he announces his new belief that there were artificial, that is man-made, mounds at Cahokia.

At approximately the time that Crook learned of the Wells-McKinley photographic flight an unforeseen opportunity arose which Crook took advantage of. Newspaper files in Springfield indicate that General John J. Pershing appeared in Springfield on the occasion of Abraham Lincoln's 113th birthday anniversary. They also reveal that Dr. A. R. Crook, Chief of the Illinois State Museum, was on the reception committee for General Pershing and his party. This event is fol-

lowed in order by correspondence with Pershing's aide-de-camp and a telegram announcing that Lieut. G. W. Goddard, Army Aerial Photographer, was flying to Springfield to provide Crook with the photos he needed. The telegram, incidentally, arrived on April Fool's Day of 1922 and put Crook into a state of mixed emotions. Goddard arrived in a bomber accompanied by Lieut. H. K. Ramey. Dr. Thorne Deuel, retired director of the Illinois State Museum, who was himself an officer in the Army Air Service during this period, tells me that Goddard was one of the pioneers of aerial photography.

Goddard's photos at Cahokia were all low oblique shots and were of a quality which easily stand comparison with low oblique shots taken at Cahokia during the recent investigations. Furthermore they were taken in early April when the snow had just left the ground, the new growth of vegetation had just begun, and the shadows were still long. The photos show patterns of vegetation growth and soil coloration which reveal possible archaeological features of which there is no other record and of which no one was aware until photos were restudied following recent work at Cahokia by the Illinois Archaeological Survey. One of the features may be a ceremonial compound in a plaza area. Another, possible stockade line or enclosure surrounding Monks Mound, was verified by excavations in 1966 and 1967 by James P. Anderson and Melvin L. Fowler, University of Wisconsin—Milwaukee.

Both Bushnell's Cahokia photos and Crook's photos were published during 1922. Crook used his to illustrate his mentioned paper on the "Origin of the Cahokia Mounds." Together these photos are important documents in the history of archaeology and led to the use of aerial photography at other sites. The first public view of the Goddard-Ramey photos was at the Annual Meeting of the Illinois State Academy of Science in Rockford in April of 1922.



**Aerial photograph of the Cahokia site taken in April of 1922 by Lieut. G. W. Goddard, U. S. Army Air Service. Monks Mound at center. Camera orientation west-northwest.**



## HISTORY OF THE WISCONSIN STOCKBRIDGE INDIANS

By Marion J. Mochon

The history of the Stockbridge-Munsee Indians is distinctive from that of other Wisconsin Indians. As far as we know, they are the only Eastern Algonquian farming Indians who have continually maintained a community since the Colonial Period. A band of Mahicans, Indians made famous as the Mohicans by James Fenimore Cooper, was organized as a Mission community at Stockbridge, Massachusetts, in 1734. These Mahicans assumed the name Stockbridge Indians before they removed to Oneida reservation lands in New York after the American Revolution. The Munsees joined them during their residence at New Stockbridge, New York, and under the pressures of an expanding White population, removed to Wisconsin with the Stockbridge and the Iroquoian Oneidas. There were additional land cessions and removals in Wisconsin after 1820, and it was not until 1856 that the Stockbridge-Munsees received the lands upon which they live today. Their reservation, a Menominee cession, consisted of the townships of Bartelme and Red Springs in Shawano County. Stockbridge success in maintaining a community is noteworthy because most Algonquian-speaking Indians of the New York - New England area were decimated before the opening of the nineteenth century.

The Stockbridge - Munsees are distinctive, and perhaps unique, in the role which they played in the history of Indian-White relations in eastern North America. Stockbridge men who occupied positions of leadership have consistently acted as intermediaries between Indian and White cultures. Particularly during the conflict with Tecumseh, Captain Hendrick Aupamut, Stockbridge sachem or chief, attempted to mediate between Indian and White to prevent war and to encourage the education and "civilization" of the Western Indians. His role was a unique one in a period of violence. Historically the Stockbridge were labelled "Christian Indians" by other Indians and the label was a reflection of their roles as intermediaries between two cultures.

Currently, Stockbridge leadership is concerned with Indian inter-tribal organizations and programs of action, and Indian-White programs to encourage inter-cultural understanding

and Indian leadership.

In line with this ideological aspect of the community, the Stockbridgers themselves are highly acculturated and few obvious manifestations of their Indian heritage are to be seen. They define their community as an Indian community, however, and they maintain an unusual interest in their history.

#### Stockbridge Origins and Traditions

The Mahican Indians were Algonquian speakers, closely related in language and culture to the Delaware and the Munsees. Their legends were similar to the Delaware migration legend, the Walam Olum, and described a migration of hunters and their people from Asia eventually finding a home on the east coast of North America. At the time of Hendrick Hudson's contact with them in 1609 the Mahicans lived in some forty villages scattered over an area extending from Lake Champlain on the north into the Housatonic Valley of Massachusetts on the east and southward along the Hudson River as far as the territory of the Munsees below Albany. To the east of the Mahicans were the Algonquian speakers of New England and to the west were the Iroquoian speakers of central and western New York.

These northeastern Indians shared a similar social tradition. They lived in settled villages, usually located along the rivers and streams for convenience in transportation and communication. Village life was structured by matrilineal clans, that is, organized groups of kin who traced descent through the female line. The members of a clan believed themselves to be related by descent from a common, and usually mythical, ancestor and they traced this relationship in the line of the mother. Because of their relationship, members of a clan were forbidden to marry, and a man sought his bride in another clan. Marriage ties created obligations between clans which bound them more closely into a tribe. The Mahicans were organized by three clans, the Turtle, the Wolf and the Bear. These clan names were common throughout the northeast although some of the Iroquois had many more clans.

Clans were important in village government as well as in the organization of the family. We do not know the details of aboriginal village government, but we do know that it was representative and the clans were important in Indian policy-

making which required unanimity. Clan members probably found effective means for expressing opinions through those of their members taking part in decision-making activities.

Northeastern Indians shared also traditions of residence. The extended family, related through women primarily, occupied a domed long house. Wood and bark were used extensively in furnishing and utensils, as were skins in furnishings and clothing.

The Indians of this area derived a living from a rich forest environment in combination with gardening activities. The women were the farmers, raising corn, squash and beans. These plants were introduced to the northeast from Mexico originally, and while they became important in the diet, their use never eliminated the forest as a source of Indian subsistence. Fishing, hunting and gathering remained important to the Indian. The men were the fishers and hunters while the women collected plant food, and everyone participated in the gathering of maple syrup and the production of sugar. These patterns of labor were changed by Indian participation in the Fur Trade, which ultimately caused many changes in social traditions.

Despite language differences, then, the Indians of the northeast shared a common social tradition, one which developed in a naturally rich environment. The arrival of Europeans began a period of drastic change in Indian culture.

### **Europeans and the Fur Trade**

European purposes in the New World varied. The French and the Dutch were primarily interested in trade, while the British sought colonial settlement to relieve population pressures at home.

Britain needed land for the development of agriculture to supply her migrants to America, and British land policies caused dissatisfaction and unrest among the New England Indians. To the British, payment for land meant a final sale, but to the Indian, unfamiliar with private ownership of land, the payment gave the colonist the right to live upon and till the land but did not alienate the land from the tribe. From this misunderstanding stemmed countless Indian demands for further payment, as well as attacks upon British settlements.

Ultimately British expansion in New England led to King Philip's War in 1675 in which New England tribal power was destroyed.

The Dutch and French, on the other hand, traded important new items, such as guns, axes, cloth and metal objects to the Indians in exchange for furs. While their relations with Indians were, on the whole, more peaceful, the Fur Trade nonetheless fostered the break-up of the traditional Indian way of life. Indian men spent increasing amounts of time in trapping beaver and their efforts resulted in individual acquisition of European goods on which the Indians had begun to depend. Men were able to supply the needs of their families without the aid of kinsmen, and the extended family was no longer a necessity for survival.

Intense competition developed between the Iroquois and other Indians for control of the furs of the Interior tribes as eastern territories were depleted. This competition led to inter-tribal wars which, along with European-introduced diseases to which the Indian had no resistance, caused severe population losses.

The Mahicans, as they acquired guns from the Dutch, competed with the Mohawks for control of the trade. The Mohawks won out. The Mahicans retreated into the Housatonic Valley of Massachusetts because of the pressures of war and because of the British demands for land after British acquisition of New York in 1664. The Mahicans were defeated by the Mohawks in a final battle at Hoffman's Ferry on the Mohawk River in 1669.

Within sixty years of European arrival in the New World, the Mahicans had been reduced in power and forced into a situation which required drastic social changes for survival.

#### **The Stockbridge Mission: 1734.**

The Indians of the Housatonic Valley sold off their lands as British farmers settled in the valley in the early years of the eighteenth century. By 1722, they retained only two reservations, one near Stockbridge, and one near Scaticoke. In 1734, the Mahican band at Stockbridge, under the leadership of the sachem, Konapot, agreed to accept a mission sponsored by the Society in Scotland for Propagating Christian Knowledge. John Sergeant, Sr., then a tutor at Yale College



was employed as the first missionary to the Stockbridge Indians and he preached his first sermon on October 13, 1734.

In a letter to a Dr. Colman of the Society of Scotland, Sergeant described the goals of his mission as

. . . a method in the Education of our Indian Children as shall in the most effectual manner change their whole habit of thinking and acting; and raise them as far as possible into the condition of a civil, industrious and polish'd people; while at the same time the principles of virtue and piety shall be carefully instilled into their minds in a way that will make the most lasting impression; . . .<sup>1</sup>. Sergeant saw the need to make the Indians economically self-sufficient by means of European farming techniques and he proposed to educate certain gifted Indians to instruct other Indians, ". . . as a means of engaging them more firmly in the British interest; . . ." at a time when the British were in need of Indian allies.

By 1739, Sergeant had repurchased the township of Stockbridge for his Indian community and had instituted town government following the European model. In addition to certain White officers, the Indians were represented by two selectmen, a Captain Pohpnehonneswok and a Lieutenant Souhenaukhkeek. Sergeant also arranged for four English families to live in the village "to civilize and Anglicize the Indians, and to help them in the secular affairs," and he employed a schoolmaster, Timothy Woodbridge, to take charge of both the Sabbath and the day schools. By 1738, Sergeant had built a schoolhouse-meeting house and he had secured ploughs, axes and hoes for the teaching of European farming practices.

At the time of Sergeant's death in Stockbridge on August 7, 1749, there were 218 Indians living in the community, 125 of whom were baptized Christians and 42 of whom were regular church-goers. Some 20 of the 53 Indian families in the community lived in "English houses," the remainder preferring the "Indian House". Twenty Indian families cultivated farms for self-support while the remainder depended more heavily on hunting and gathering for subsistence. Fifty-five children attended the five-room school and they as well as many adults were able to speak English.

Sergeant's efforts, then, resulted not only in the acculturation of the Indian Community but also in the development

of techniques for making the community viable and self-sufficient. Some Stockbridge Indians were successful farmers, European style, and they continued to be successful farmers. Patterns of centralized leadership were encouraged within the community and political responsibility continued to mark Stockbridge relations with White culture.

The Reverend Jonathan Edwards and the Reverend Stephen West succeeded Sergeant in 1751 and 1758 respectively. In 1775, John Sergeant, Jr., became missionary to the Stockbridge Indians, and following the example of his father, he died among them. The Stockbridge Indians, led by Captain Daniel Ninham and Captain Hendrick Aupamut, sometimes called Captain Hendricks, were cited by General Washington for their participation, on the side of the colonists, in the American Revolution. It was at this time that the Stockbridge Indians removed from Massachusetts to an Oneida land cession in Oneida and Madison Counties, New York.

#### **New Stockbridge, New York: 1785-1822**

Although the Stockbridge state today that they moved from Massachusetts because of the influx of White families into the community at Stockbridge, Massachusetts, there is reason to believe that unrest among the farmers of western Massachusetts at that time may have been an important pressure making for removal. Discontent with high land taxes culminated in the rebellion of these farmers in 1786, Shay's Rebellion. Any number of factors may have been involved in the effect of this movement upon the Indian community, but I have been unable to find adequate sources dealing with the subject.

In addition, there had been wide-spread disorganization among the Eastern tribes as a result of White expansion and the Wars of the Iroquois. The Oneidas had also accepted Delawares, Tuscaroras, Munsees and other tribal remnants and had provided for them on their reservation.

The Stockbridge reservation, called New Stockbridge, was a tract six miles square adjacent to the Oneida reservation. The Brothertown Indians, remnants of such New England tribes as the Narragansetts, the Pequots and the Wampanoags, occupied the northeastern corner of the reservation. Both communities were accompanied to New York by the

Reverend Samson Occum, a Mohegan minister, trained for the ministry at Wheelock School, now known as Dartmouth College. John Sergeant, Jr., followed some years later.

By 1796, the Stockbridge Indians had progressed remarkably in their "civilization". Three hundred of them lived at New Stockbridge and supported themselves by "Agriculture and the breeding of cattle and swine"<sup>2</sup>. They sold parts of their produce to the Oneidas who clung to aboriginal patterns of securing subsistence. The women were being taught to weave at this time, and later were able to furnish clothing from their hand-loomed products.

The Stockbridgers spent the funds received in land settlements in Massachusetts in building a saw mill and a school on their reservation. Their school master was a Stockbridge Indian, one John Quinney, a later migrant to Wisconsin.

### Intermediaries Between Cultures

The years following the American Revolution were ones of difficulty and unrest among the eastern Indians. The White population expanded rapidly, pushing the remaining Indians westward into the Ohio Valley. The British in Canada sought Indian Alliances in their final attempt to control all of North America. The Indian population stood between two powers. The role of the Stockbridge Indians, previously unknown as far as I am able to determine, became that of intermediary between White and Indian cultures. As far as is currently known, their activities were unique in the annals of Indian affairs.

The earliest incidence of Stockbridge intermediary activities which I have been able to discover occurred in 1792, at a council of all the "northeastern" tribes, somewhere in the Ohio Valley.<sup>3</sup> The purpose of the council was to reply to American peace overtures.

These overtures were brought by Captain Hendrick Aupaumut, an Indian from the reservation at Stockbridge, Massachusetts, who had been working to assemble the northwestern Indians all summer. But in spite of anything Captain Hendrick could do or say, the confederacy insisted upon complete expulsion of the Americans from north of the Ohio.<sup>4</sup>

Aupaumut's subsequent intermediary activities were distinctive ideologically from such men as Tecumseh, the Shaw-

nee warrior. John Sergeant, Jr., recorded Stockbridge goals,  
 . . . we have taken pains to acquaint them [the western  
 Indians] with the knowledge we have of the ways of  
 white people, and recommend to them Civilization, and  
 Christian religion. <sup>5</sup>

Aupaumut also proposed that the Stockbridge Indians move to Indian Territory to serve as teachers for the uncivilized western tribes.

There is evidence that Aupaumut actively attempted to dissuade various tribes from participating in Tecumseh's war-like plans to create an Indian State. His efforts failed, as did Tecumseh's.

Aupaumut's conception of the Stockbridge as teachers of the western Indians was championed by the Reverend Jediah Morse who reported to the Department of War on the state of Indian affairs in 1822. Morse conceived a plan, which was also championed by New York land companies, for removal of eastern Indians. Morse proposed that Wisconsin be designated an Indian State "to collect the remnants of tribes now scattered, and languishing and wasting away among our white population, and to colonize them for the purpose of preserving them from utter extinction, and of educating them to the best advantage."<sup>6</sup> Morse quotes a letter from Solomon U. Hendricks, Aupaumut's son, to the Secretary of War, in which Hendricks says of the western Indians, "they manifest great desire that we should come and reside among them, in order to learn the arts of civilized life."<sup>7</sup> Morse's humanitarian plan was useful to New York land companies, anxious to remove all eastern Indians in order to secure valuable Indian lands. The War Department agreed that eastern Indians might independently negotiate with the western Indians of Wisconsin for land cessions. Thus began the migration of the Stockbridge and Munsees as well as the Oneidas to Wisconsin, a removal which was not finally accommodated until 1856.

This period of Stockbridge history is the least known and, to my mind, the most important and fascinating. These Indians defined and attempted to carry out a course of Indian action totally unlike the activities of other Indian leaders. During this period there were three types of Indian leader-

ship. The first, typified by Tecumseh, was that of great, even pan-Indian, warrior leader. The second, exemplified by the Seneca, Handsome Lake, was that of religious prophet. The third, typified by Aupaumut, was that of intermediary between cultures. The first two types of leadership, had that been successful, would have meant greater Indian separatism while Aupaumut's, had it been successful, might have meant an easier accommodation of Indians to Euro-American society. Most importantly, Aupaumut's conceptualization seems to be unique in the history of American Indian affairs.

### Removal to Wisconsin: 1822

With government consent, though not with government aid, the New York Indians began negotiations with the Menominees and the Winnebagoes in 1820. In the summer of 1820, the Reverend Eleazer Williams, Episcopal missionary to the Oneida Indians, and a delegation of 20 New York Indians, representing the Six Nations as well as the Stockbridge and Munsees, went to Green Bay, but failed to negotiate with the Menominees. A similar delegation traveled to Wisconsin in August of 1821. The Oneidas, Onondagas, Senecas, Stockbridge and Munsees were represented. On August 18, a treaty was made with the Menominees and Winnebagoes in which a strip five miles wide with Little Chute as its center was ceded to the New York Indians. The New York Indians paid the Menominees \$500 at the time of negotiation and promised to provide \$1500 worth of goods the following summer.

In 1822, the New York delegation returned to Wisconsin to deliver the goods owed under treaty terms and to attempt to further negotiate with the Menominees and Winnebagoes. The second negotiation was probably conducted under the influence of Eleazer Williams, who dreamed of creating an ecclesiastical state of which he would be the chief. Williams' belief that he was the lost Dauphin of France was congruent with the remainder of his plans for Indian development.

The substance of the continued negotiations of 1822 was an effort to secure more land. The Winnebagoes refused to negotiate further, but the Menominees ceded a right-in-common to the whole of their territory to the New York Indians. The Menominee Tribe later repudiated the negotiations of

1822 on the grounds that several important chiefs were absent from the meeting of the tribes, and that the treaty was consequently invalid. In 1825 and in 1827, the United State government made efforts by treaty to define Menominee and Winnebago territories, and to make undisputed provision for the New York Indians.

**Stockbridge and Munsees** began migrating into Wisconsin in 1822 and they settled in the area originally defined by the treaty of 1821. By 1831, the government had negotiated yet another treaty with the Menominees, the Stambaugh treaty, in which ". . . two townships of land on the E. side of Winnebago lake, equal to 46,080 acres, shall be laid aside (to commence at some point to be agreed on) for the use of the Stockbridge and Munsee tribes, in lieu of the land occupied by them on the E. side of Fox River."<sup>8</sup>

Between 1831 and 1838, the Stockbridge and Munsees removed to the new location in Calumet County. Mission records from this period indicate, however, that the Indians were hesitant to improve their community and its facilities because of the continuing pressures for Indian removal west of the Mississippi River. The treaty of January 15, 1838, drawn at Buffalo Creek, New York, provided for a permanent home for the New York Indians in the state of Missouri. The cession consisted of 1,824,000 acres of land, 320 acres per Indian. The Stockbridge and Munsees, as well as most of the other New York Indians refused to remove.

On February 11, 1856, the Menominees ceded "two townships in the SW corner of their reserve for the location of the Stockbridge and Munsee." These are essentially the same lands occupied by the Stockbridge-Munsee Indians today. The Stockbridgers reacquired most of the two townships in 1938, under the provisions of the Indian Reorganization Act of 1934, after losing all tribally held land through allotment and lumbering by White interests.

### **The Citizens' and Indians Parties: The Allotment Issue**

Tribal dissension began in 1838 with cessions made by tribal leaders to the United States, as the government attempted Indian removal west of the Mississippi. The rift between factions was intensified by the Act of Congress of March 3, 1843, which provided citizenship to the Stockbridge and Mun-

sees, and to the Brothertowns. The act also provided for the "subdivision and allotment in severalty" of the remaining Indian lands.<sup>9</sup> The Brothertowns accepted citizenship and have had no federal trust relationships since 1843. Those Stockbridge and Munsees who accepted citizenship and relinquished their tribal rights became known as the "Citizen's Party". The remaining Stockbridgers, under the leadership of John W. Quinney and John Metoxen, refused to give up their tribal status, particularly regarding the allotment of tribal lands. This group was known as the Indian Party and it managed to have the Act of 1843 repealed by the Act of Congress of August 6, 1846. At this time, those Stockbridge-Munsees who had signed off the tribal rolls were to be given their fair share of tribal lands. But, continuing bitterness prevented a final settlement. In 1848, the Stockbridge-Munsees ceded their remaining Wisconsin lands in preparation for removal to Minnesota, as part of government efforts to remove all Indians west of the Mississippi. The Stockbridgers refused to remove as a group, and with the exception of one or two families who removed to the west, they settled in the two townships which they now occupy under the terms of treaty of February 1, 1856 in which the Menominees ceded two townships of their reservation in Shawano County.

The division between the Citizen's and the Indian Party continued to cause problems. Certain Citizens claimed not to have been reimbursed properly, while the Indian Party claimed that certain Citizen's were receiving annuities which were not rightfully theirs.

In 1856, the Indian Party drafted a Constitution, and a Bill of Rights, modelled on the Constitution of the United States. The Constitution provided that all Stockbridge and Munsees have equal rights in community land and other benefits and that the franchise be extended to all adult males. The political structure of the community included a sachem, five counselors, a treasurer, a sheriff, two "Peace Makers", two "Path Masters" and, more importantly, a three man Court. For the first time, coercive power was publicly vested in a community official. The drafting of a tribal constitution strengthened the political as well as the social structure of the Stockbridge community.

Although the Stockbridge ceded all but 18 sections of their reservation in 1871 to satisfy claims of the Citizen's Party, the dispute was not finally settled until well after the Act of Congress of June 21, 1906, which provided for allotment of all reservation lands.

The Indian Party struggled vigorously from 1846 until 1906 to preserve a pattern of integrated community life, a pattern which included an ideology of "Christian Indian" and "educated Indian". The loss of reservation lands meant a period of prosperity during the lumbering era. But, it also meant that Indian allotments were rapidly sold to White lumbering interests, and that ultimately, the Stockbridge were left without land and without timber resources.

### **The Contemporary Community: Indian Reorganization**

The Stockbridge-Munsee community persisted, in a sense at least, after reservation allotment in the first decade of the twentieth century. The Stockbridge had continued to occupy offices in township government throughout the lumbering period. But, the depression of the 1930's precipitated a period of real poverty following the relative security of the lumbering period. Those who continued to hold their allotments frequently lost them through inability to pay the taxes on them. Lumbering operations ceased at this time, and unemployment plagued the community. The timber was so badly cut over that self-employment was not possible.

When the Indian Reorganization Act was made law in 1934, the Stockbridge Indians began efforts to reorganize as a reservation community. On May 21, 1938, the Constitution and By-Laws of the Stockbridge and Munsee Community were approved by the Office of Indian Affairs. Land was purchased in the townships of Red Springs and Bartelme. The land was essentially that granted the Stockbridgers under the Treaty of 1856, now drastically cut over as a result of logging operations. Due to inadequate funds available to the Office of Indian Affairs, 2,250 acres of land in the township of Bartelme were purchased with Indian Reorganization Act (IRA) funds; the remaining 13,077 acres of land was purchased with funds from the Farm Security Administration (FSA). Title to the FSA lands has not been turned over to the community and this constitutes an economic problem in



that stumpage fees from logging operations on FSA lands, under the community Forest Management Plan, accrue to the United States Treasury rather than to the tribe. Further, there are enrolled Stockbridge Indians who live off-reservation rather than build a home on land to which they have no real title.

The Stockbridge Community has made significant efforts to counter general unemployment in Shawano County by two on-reservation programs of action. The first, the Forest Management Plan mentioned above, is intended to develop the reforested reservation as an economic asset to the community. On a family level, the Indians are free to cut for family use and for fuel but not for sale. At the community level, however, the limited Indian logging operations which are currently underway do not provide community income because of the difficulties of land title. Individual loggers may derive an income from the forest, but the community may not.

The second community development program was the organization of the Stockbridge-Munsee Craft Shop in coordination with the University of Wisconsin Extension Division, the Bureau of Indian Affairs, and the Governor's Commission on Human Rights. The craft project provides supplemental income for workers at the present time, although there is evidence that expanding sales may increase the pay level.

As with other Indian communities, the Stockbridge are frequently obliged to seek urban employment. While some technical training is available to Indians through programs of the Bureau of Indian Affairs, it is obvious that greater technical skills are required in order for Indians to attain real job security.

There are economic needs on the reservation among those families having an income under \$3000, and over half of them fall into this category. The second need is adequate housing, and a start has been made toward the solution of this problem with the development of a federally-sponsored Housing Authority for the elderly. Additionally, there is need for larger houses for some families, and a wide-spread need for indoor plumbing facilities.

It is interesting that, because of the interest in ceremonials of the western Indians, tourists expect all Indians to behave

"Indian", that is, live in "Indian houses" and speak "Indian". All Stockbridgers speak English only; their native Algonquian language has not been spoken in two generations. They are all Christian, and have no "Indian" religion. They have all been educated, and their children have an excellent school record today, including the lowest drop-out rate in Wisconsin among Indian children. They preserve their heritage in their interest in their own history and in their active participation in inter-tribal programs of action, participated in by all American Indians. They do not look for a return to the past and aboriginal conditions; I doubt that many of them would enjoy the comforts of a wigwam. They do look forward to participating in American life as **Indians**, and to this end they join other Indians in development programs.

#### Inter-Tribal Programs of Action

In recent years, there has been growing Indian participation in inter-tribal programs of planning and action. The National Congress of American Indians is, perhaps, the best known. In the mid-west, the Great Lakes Inter-tribal Council is important as a vehicle of action to the Indians of Wisconsin. The Stockbridge community participates actively in programs of this sort. I believe that their patterns of community leadership have been brought to bear on the Indian action program. The current President of the community, Mr. Arvid E. Miller, is President of the Great Lakes Inter-tribal Council and a Vice-president of the National Congress of American Indians. He is active in other Indian organizations as well and is a member of the Governor's Commission on Human Rights. Other Stockbridgers are active in these organizations too, and it is obvious that their leadership derives from historical patterns of leadership which have persisted over two hundred years.

Inter-tribal organizations and their programs of action offer the Indian opportunities to take action on his own behalf which are otherwise lacking to him. Because of federal status relationships which most Indian communities hold, political and economic programs of action are government initiated. It is in the inter-tribal organizations that contemporary Indians are able to initiate political and economic programs for self-betterment and, of course, such initiated programs are based

on recognized Indian needs.

The Stockbridge-Munsee Community today is one of neat frame homes. There are perhaps a dozen "ranch" type homes on the reservation, and these are larger and better furnished than most. The reservation itself is crossed by the Red River, and the Stockbridgers have made a nice community park along its banks. Each day the men of the community commute to work, and the highlight of the week's activities is Sunday church service, either in the on-reservation Lutheran church or the Presbyterian church in Red Springs. Stockbridge hopes for the future center about the possibilities of improved technical training which will make possible higher income and more job security. They work actively to secure this goal.

#### FOOTNOTES

- 1 Hopkins, Rev. Samuel, *Historical Memoirs Relating to the Housatonic Indians*. Boston, S. Kneeland, 1753. Reprinted New York, William Abbatt, 1911, p. 107.
- 2 Belknap, Jeremy and Jedidiah Morse, *Report on the Oneida, Stockbridge and Brotherton Indians*, *Indian Notes and Monographs*, Vol. 54, Heye Foundation. Museum of the American Indian, 1796, pp. 21-22.
- 3 Downes, Randolph C., *Council Fires on the Upper Ohio*, The University of Pittsburgh Press, 1940, p. 321.
- 4 Ibid.
- 5 *Journal of John Sergeant, Missionary to the New Stockbridge Indians from the society in Scotland for propagating Christian Knowledge from the 1st of January to the 1st of July, 1803*, p. 17. Manuscript from Yale University Library, New Haven, Connecticut.
- 6 Belknap and Morse, Appendix 15.
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- 8 Bureau of American Ethnology, Vol. 18, Part 2, 1896-97, pp. 712-730.
- 9 Ibid. p. 779.

## HISTORIC INDIAN BURIALS IN ONEIDA COUNTY

By Robert and Kathryn Bernstein

Through local history, research and the recollection of the property owners, seven burials and one hut depression, were located in the South West part of Sugar Camp, Oneida County, Wisconsin.

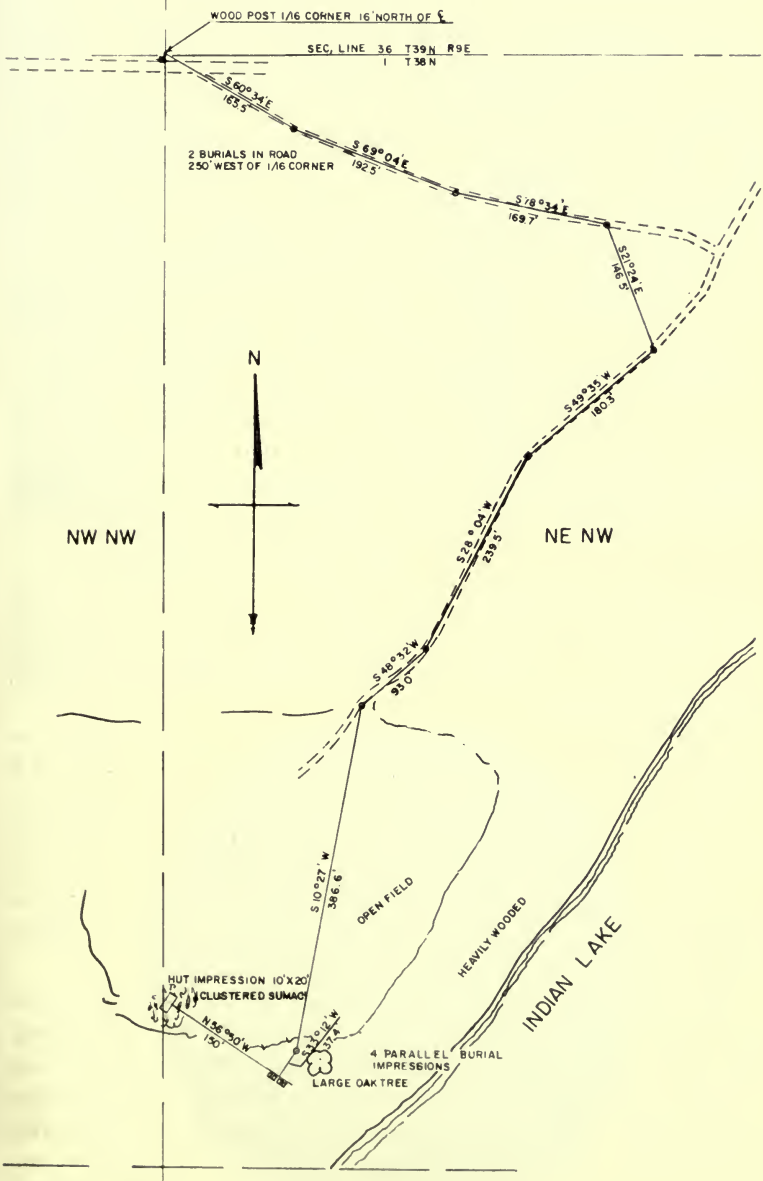
The first was verified as being located in the Southeast corner of the SE  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Sec. 35, T 39 N, R 29 E on the property of Mr. Theodore Sachse. He recalled that while digging a barn foundation he uncovered the burial 3 feet deep and sent the remains to Milwaukee for examination. This area had been cultivated prior to his purchasing the property and all signs of occupation had been obliterated.

Two burials had previously existed in the Northwest corner of the NW  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Sec. 1, T 38 N, R 9 E, on the section line 250' West of the NW  $\frac{1}{16}$  corner according to the recollections of Mr. Melford Krauze, owner of the property. He stated that until 15 years ago the two burials had remained intact but since have been covered by a Town road which was built along the section line to service the homes in that area. He further recalled some burials in the Southwest corner of the NE  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Sec. 1, T 38 6, R 9 E, near the lake shore and after some difficulty led us to where they were. Due to a heavy growth of brush and his not having been in the area for about 10 years, he had some difficulty in finding them.

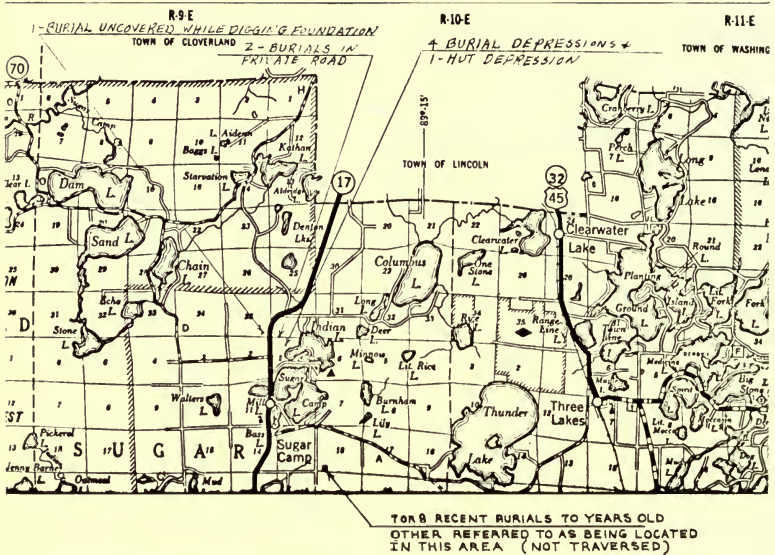
We began our traverse from the Northwest  $\frac{1}{16}$  corner on the section line of Section 1, T 38 N, R 9 E, which is a wood post 16 feet North of the center line of the road and traversed in a southerly direction along the course of an old logging road to a point where it opens onto a field. Thence Southwesterly across the field toward the lake shore to a point where the four burials were located. The field is covered with an extremely dense growth of weeds and hay and we found visual inspection of the ground impossible. The four graves are about 6 feet long and 3 feet wide parallel to each other with a mound of dirt about two feet wide between them. The area is very heavily overgrown and made measurements very difficult.

The four burials are in a bad state of deterioration and have settled some 6 to 8 inches. One has a large hole in the

THE SOUTH WEST PART OF SUGAR CAMP ONEIDA COUNTY WISCONSIN



center, possibly dug by some animal and now inhabited by a swarm of hornets.



From the four burials we traversed Northwesterly to a large depression 20 feet long and 10 feet wide. This area was covered by a dense growth of sumac and made visual inspection difficult.

According to an elderly, long-time resident of this area, the Chippewa Indians came to this lake to pick rice in 1895 and a large number were living in the area in 1895 all the way from Section 35, T 39 N, R 9 E to Section 18, T 38 6, R 10 E and as far as Camp 6 Lake. From her recollections she said an Indian grave yard existed from the SE corner of the NE NW Sec. 1, T 38 6, R 9 E Northwest to the SE corner of the SE SE of Sec. 35, H 39 N, R 9 E.

Another grave yard exists in the SW  $\frac{1}{4}$  of the SW  $\frac{1}{4}$  of Sec. 18, T 38 N, R 10 E. These graves are scattered along an area 30 feet North of the section line and extending from 800 feet East of the section corner marked by an iron pipe to 1200 feet. Most of these graves are recent or within the last 70 years and have been placed with little effort as was recalled by one resident who at one time had to call the health officials because dogs were carrying away some of the bones.

She recalled the names of the latest ones: John Pine, John White, John St. Germain and Big John, all of them Chippewas. There was some evidence that a few of these burials were enclosed by the usual burial hut but the evidence is highly deteriorated due to its being in a rather damp area.

The only area that would possibly be of future interest might be the one nearest the lake in the SE corner of the NE SW Sec. 1, T 38 N, R 9 E. Being a rice lake could have induced a much earlier settlement. Other burials were referred to as being in the NE  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  of Sec. 2, T 38 6, R 9 E, but according to the owner's information, evidence of such has been obliterated.

## HISTORY OF THE LAPHAM RESEARCH MEDAL

By Wayne J. Hazlett

On March 15, 1926, at the Silver Anniversary of the Wisconsin Archeological Society, the Lapham Research Medal was awarded for the first time. George A. West was the first recipient, followed by thirty-four others, in a period covering over forty-two years. Plates 1 and 2 show the obverse and the reverse of the first medal presented. For the complete list of recipients, see Hazlett (1966).

The Lapham Research Medal is awarded by the Society



PLATE I. Obverse

to those members who have made significant contributions to the field of Wisconsin Archeology. A Committee consisting of both professional and amateur archeologists nominate the worthy recipients. Professional and amateur archeologists are eligible for this award, and both have received it in the past.

The medal was designed by Mr. Raymond L. Maas, a Milwaukee artist, and an active member of the Society at that time. The first medal was executed by Mr. L. W. Bundle, who was also an active member. At present the Erffmeyer and Son Company of Milwaukee strike the medal for the Society.

Dr. S. A. Barrett described so well the symbolism of the Lapham Research Medal in April, 1926, I have included his description verbatim. The only point I would like to add, is the size of the medal, which is 37 mm. in diameter.

"The obverse of this medal bears a relief profile of Dr. Increase Allen Lapham, Wisconsin's first noted archeologist, whose interest in Wisconsin's antiquities covered the period from 1836 to 1875, the year of his death. Around the relief is the inscription, 'Lapham Medal, Wisconsin Archeological Society,' surrounded by a representation of a string of wampum.



PLATE 2. Reverse



"The reverse of the medal bears two symbolic figures. Above is a representation of the thunder bird, so characteristic of the Indian lore of the Great Lakes region and so frequently found in Wisconsin as a huge effigy mound. This figure typifies the upper world spirits, the effigy mounds, in which the state is so rich, and is a most fitting symbol of the archeological activities of the Society. At the bottom is a double panther motif, characteristic of the woven buffalo hair bag of the region. This typifies the under world deities, and fittingly symbolizes the State's ethnology. Between these two symbolic figures and within another encircling string of wampum is the inscription, 'Awarded to \_\_\_\_\_ for distinguished service in anthropological research.'

"Perhaps the most symbolic of all, is the metal, copper, in which the medal is struck. In aboriginal times the continent's great source of copper was the primitive, open pit mines of northern Wisconsin, the Michigan peninsula and Isle Royale. Further, the State of Wisconsin is noted for the great number of copper implements and ornaments found in its archeological remains. What could be more fitting, therefore, than that this medal should be struck in copper."

There could be no greater reward, for a professional or amateur, than to be selected to receive the Lapham Research Medal, the highest honor the Wisconsin Archeological Society has to bestow. An honor for all of us to strive for in the future.

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## THREE LAPHAM RESEARCH MEDALS AWARDED

By Wayne J. Hazlett

At the Society meeting in Milwaukee on May 20, 1968 three worthy archeologists received honors. They were awarded the Lapham Research Medal by the Wisconsin Archeological Society. This brought the number of recipients to thirty-five, since inauguration in 1926.

Dr. David A. Baerreis presented medals, in the name of the Society, to Ronald J. Mason, Dr. Joan E. Freeman, and Robert J. Hruska. Their work in Wisconsin archeology is well known to us all. I know the congratulations of each and every member go out to them.

Dr. Ronald J. Mason, Department of Anthropology, Lawrence University, Appleton, was the thirty-third recipient of the Lapham Research Medal. He follows in the footsteps of some of the greatest archeologists in Wisconsin history.

When you think of the Door Peninsula, you naturally think of Ronald Mason. He has done extensive work on sites in this area. A major discovery, was his Eden-Scotts Bluff Burial on the Door Peninsula. A report of which can be found in **American Antiquity**, Volume 26, Number 1, pages 43-57.

Ronald Mason has authored many papers during his career. He has published in **The Wisconsin Archeologist**, **The Michigan Archaeologist**, **The Museum of Anthrology** of the University of Michigan, and **American Antiquity**, to name a few. Reports by Ronald Mason in the **Wisconsin Archeologist**, can be found in Vol. 42, No. 4, Vol. 44, No. 4, Vol. 48, No. 2, and Vol. 48, No. 4.

Dr. Joan E. Freeman, Curator of Anthropology, of the Wisconsin State Historical Society, and State Archeologist, since the passing of the Wisconsin Field Archeology Act in 1965, became the thirty-fourth recipient of the Lapham Research Medal.

Joan Freeman, Wisconsin's first "State Archeologist," is best known to us for her continuant work at Aztalan. The ultimate aim of the work at Aztalan is a restoration of the third platform mound and construction of examples of the different types of dwellings found there. Much valuable information has been obtained through this work.

Freeman has also directed salvage archeology throughout

the State. She has worked in other states, as well. The knowledge gained through this young lady is beneficial to all. We always look forward with anticipation to her reports.

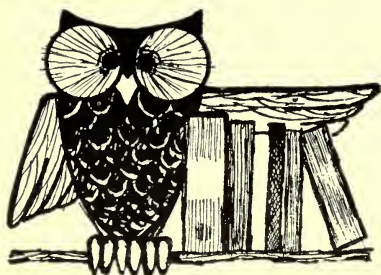
Papers published in the *Wisconsin Archeologist* by Freeman, can be found in Vol. 39, No. 1 and Vol. 47, No. 2. The first pertains to Aztalan, and the latter to the Price Site III in Richland County, plus a report on the passage of the Wisconsin Field Archeology Act of 1965, in the same issue.

Robert J. Hruska, Curator of Anthropology, of the Oshkosh Public Museum, a director of the Oshkosh Public Museum, and past President of the Wisconsin Archeological Society, was the thirty-fifth recipient of the Lapham Research Medal.

Hruska is well known to all for his work in Wisconsin archeology. One of his more recent and most important undertakings was his work at the Riverside Site. (See the September, 1967 issue of the *Wisconsin Archeologist* for this report). He has also conducted important excavations at Peshtigo and other sites both in Wisconsin and Michigan. Hruska's archeological pursuits have carried him over much of the country since his early work in Michigan. He has contributed much in the field of archeology. To talk with Robert J. Hruska is to gain knowledge.

Reports by Hruska in the *Wisconsin Archeologist* may be found in Vol. 37, No. 2, Vol. 47, No. 1, both on Old Copper Culture, and on the Riverside Site report in Vol. 48, No. 3.

These three recipients of the Lapham Research Medal, are assured a place in the history of Wisconsin archeology. As the saying goes, our State is richer because they are here.



By

David A. Baerreis

and

Guest Reviewers

## THE BOOKSHELF

*Peru Before the Incas* by Edward P. Lanning. Engelwood Cliffs, New Jersey: Prentice-Hall, Inc., 1967. 216 pp., bibliography, 5 figures, glossary, index, 14 maps, 15 plates, 3 tables. \$5.95 (cloth), \$2.95 (paper).

*Peruvian Archaeology: Selected Readings* edited by John Howland Rowe and Dorothy Menzel. Peek Publications: Palo Alto, California, 1967. Introduction, 1 table, 23 articles. \$4.00 (paper).

1967 saw the publication of two new books on Andean archaeology which may well be of interest to the general reader in addition to the student and specialist.

*Peru Before the Incas* is very different from the other general books on the market; indeed, if one wants a balanced view of Peruvian archaeology, one must supplement it with one of the older books such as Bushnell's *Peru* or Mason's *The Ancient Civilization of Peru*, both also in paperback. The latter book, however, is now out of print, a fact which makes the appearance of Lanning's work that much more important.

One of Lanning's main fields of research has been the very early time periods of the Peruvian coast, an interest which is reflected in his recent general articles published in *American Antiquity* and *Scientific American*. This interest is also readily apparent in his book, for, although one must make allowances for a long introduction to the area and its problems, one is still half way through the book's 200 pages before reaching the "Chavín cult," which started about 900 B. C. Lanning treats us to a fascinating description of these early inhabitants of the Peruvian coast and offers some startling data on the incredible architectural activity of the early farmers of Peru in the late Preceramic and Initial [Pottery] Periods.

The remaining half of the book discusses the later and more familiar time periods, embracing such well known archaeological cultures as Chavín, Paracas, Moche, Nazca, Chimu, Inca, etc. The treatment of these later periods is spotty and terse, however, and it is for these periods that one would do well to consult the earlier books mentioned above for additional descriptive data. On the other hand, one of Lanning's most interesting contributions to these later time periods is his discussion of the Middle Horizon, for which he draws on the recent research of Menzel to elucidate the processes involved in the spread of this interesting and complex phenomenon.

Lanning's book, then, is decidedly unbalanced in the weight given to the early periods but, on the other hand, this is the very time to which the least attention is paid in the older books. Lanning also organizes his book within the time periods proposed by Prof. John H. Rowe of the University of California, Berkeley, rather than within the cultural developmental schemes which have been the framework for the other books. Finally, it should be pointed out that most books on Andean archaeology now on the market view the area and its history from the point of view of the North Coast, specifically, the Viru Valley, which was intensively studied in the mid-1940's. Lanning, by contrast, stresses data gathered after the Viru Valley Project; his book is the product of what might be called the Berkeley School, and this new slant on Andean archaeology is most welcome.

Also from Berkeley are the readings selected by Rowe and Menzel. Although intended primarily as a series of readings for students taking courses in Andean archaeology, the selection is such as to be of more general interest. The 23 selections stress method as well as content and could really be considered a series of essays on specific problems in Andean prehistory. Many of the articles are from obscure and/or old journals and are not readily available except in the best libraries. Of special interest to the general reader would be such articles as: "Pre-ceramic Art from Huaca Prieta, Chicama Valley" by Junius Bird; "Form and Meaning in Chavín Art" by John H. Rowe; "Mochica Murals at Panamarca" by Richard P. Schaedel; "Iconographic Studies as an Aid in the

Reconstruction of Early Chimu Civilization" by Gerdt Kutschner; "Tiahuanaco Tapestry Design" by Alan R. Sawyer; and "A Plain Man's Tomb in Peru" by Ephraim G. Squier. These articles plus 17 others provide some interesting reading for almost any archaeological taste.

In summary, any person wishing to acquire the beginnings of a library in Andean archaeology would want to include these two books as well as Bushnell's *Peru* and/or Mason's *The Ancient Civilization of Peru*. Mason's book, if one could find a copy, has the advantage of fuller treatment of the Inca Period than either Bushnell or Lanning provides, plus a very extensive bibliography of additional sources.

Donald E. Thompson.

University of Wisconsin - Madison

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**The Mysterious Grain.** By Mary Elting and Michael Folsom. New York: M. Evans and Company, Inc., 1967. 118 pages. \$4.50.

**Science and the Secret of Man's Past.** By Franklin Folsom. Irvington-On-Hudson: Harvey House, Inc., 1966. 192 pages. \$5.00.

Much of the current archaeological literature is either highly technical, written by specialists for other specialists, or is "object-oriented", designed to inspire wonder in the reader over the more spectacular treasures of the past. In neither case does the interested youngster of junior and senior high school age nor the interested adult, non-professional archaeologist get a proper perspective on the field of archaeology. The two volumes under review lack these limitations. Instead, they possess the admirable qualities of being factual without being jargon-laden and of placing emphasis upon information rather than upon objects. The books are aimed at a pre-adult audience (I would guess a seventh-grader could easily read both), but most adults interested in archaeology will find them enjoyable and informative reading.

The books are similar in a number of respects. Neither is written by professional archaeologists, but both are technically sound and accurate. Neither attempts to cover the broad discipline of archaeology. Rather, each deals with a select topic that has engaged the research energies of archae-

ologists and of other kinds of scientists as well. **The Mysterious Grain** is concerned with the fascinating research of those scientists who have sought to retrace the developmental steps of domesticated maize back to its wild, ancestral form. Likewise, **Science and the Secret of Man's Past** retraces the steps of research scientists, in this case men from a variety of fields who have discovered and perfected the multitude of techniques employed by the archaeologist to determine the age of his discoveries.

The two books are similarly organized. The treatment is historical in both cases, with the scientists as well as their discoveries discussed in chronological order. Because the authors discuss the lives as well as the discoveries of the various scientists, the books have a human quality seldom found in the scientific literature. The charm of both books is further enhanced by numerous artistic drawings designed to supplement the text. These do not contain the kind of detail one gets from scaled maps and photographs, but such detail, expected in scholarly reports, is not required in popular accounts like these.

Although the books are remarkably similar in their organization, style, and manner of illustration, their subject matter is, of course, different. Elting and Folsom, in tracing the research of scholars into the ancestry of domestic corn, began their story with Charles Darwin's efforts to deduce the ancestor of corn. The work of a number of late nineteenth and early twentieth century botanists is then reviewed (e. g., Luther Burbank) leading up to the important research of Paul Weatherwax and then Paul Mangelsdorf. The culmination of the latter's work comes when he joins forces with the archaeologist Richard MacNeish in 1959. Together they conceived of a project designed to discover positive evidence of the wild ancestors of living maize. (Since no wild maizes have survived, all botanical reconstructions of the ancestry of domestic maize were necessarily speculative.) Their exciting excavations in prehistoric sites of the Tehuacan Valley, Mexico, uncovered exactly what they sought, actual cobs of wild maize left behind as food refuse by early food gatherers in the valley.

Franklin Folsom (who, I suspect, is husband and father

to the mother-son team of authors of **The Mysterious Grain**) also begins his narrative well before the present, in this case, the seventeenth century. He traces the fascinating story of the mounting flood of biological, geological, and archeological evidence that in the mid-nineteenth century swept away the dam of conservative thinking which, based upon the Biblical research of Bishop James Ussher, held that the world was barely 6000 years old. With verification of the earth's great antiquity came the realization that men too were ancient. Preshistory was discovered. The recognition of a prehistoric period preceding the historic represents the first archaeological sequence, and it constituted the temporal framework within which early nineteenth century scholars viewed human history (in the broadest sense) until Christian Thomsen, in 1836, introduced the famous "Three Ages" (Stone, Bronze, Iron) to archaeology. From this time onward, problems of chronology became of vital concern to archaeologists.

An enormous variety of chronological techniques are employed today by archaeologists. These have come to us slowly and from many directions. They have come from archaeology itself (e. g., the typological studies of Oscar Montelius and Flinders Petrie), from geology (varve studies), botany (palynology), Astronomy (dendrochronology), and physics (radio-carbon) to mention but a few. All of these and more are discussed, along with their discoverers, in **Science and the Secret of Man's Past**.

If you have youngsters at home who are interested in archaeology, I can unreservedly commend both of these books to you. They, of course, only deal with limited aspects of the field, but what is covered is discussed simply, accurately, and in an enjoyable fashion.

James B. Stoltman,  
University of Wisconsin — Madison



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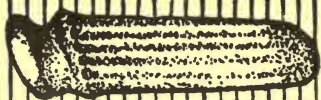
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# THE WISCONSIN ARCHEOLOGIST

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Milwaukee, Wisconsin

Incorporated, 1903

For the purpose of advancing the study and preservation of  
Wisconsin Indian Antiquities

Meets Third Monday of Month, 8 P. M., Milwaukee Public  
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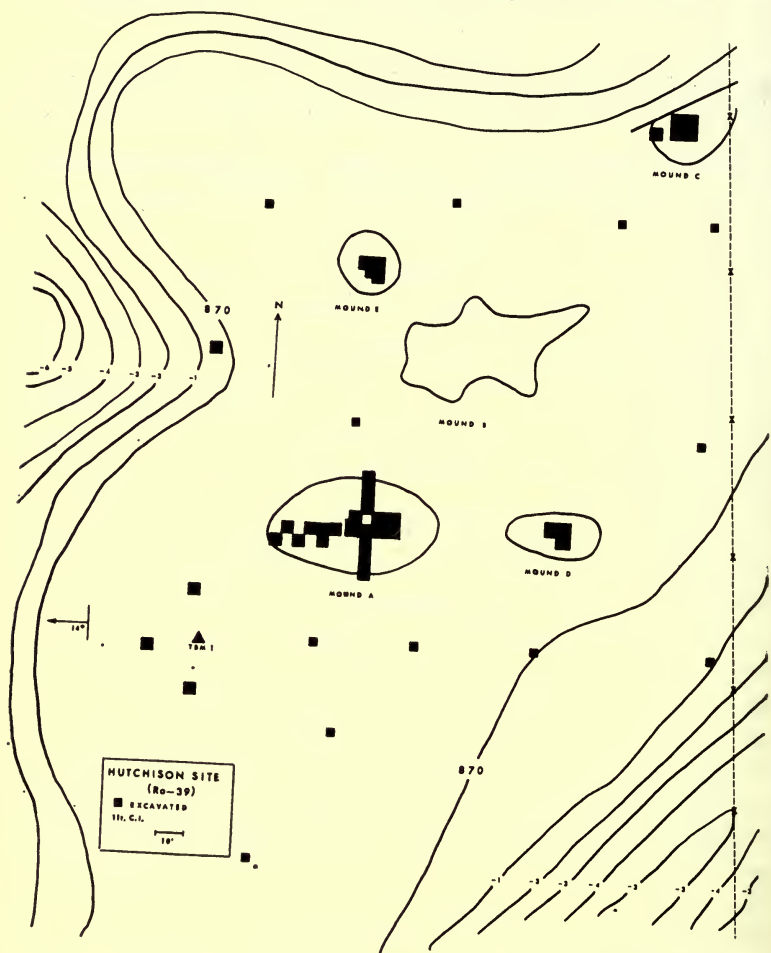
## THE EXCAVATION OF THE STATE-LINE MOUND GROUP (Ro-39), BELOIT, WISCONSIN

Frederick W. Lange

University of Wisconsin, Madison

The State Line Mound Group was so-named because the northernmost member of the original group was in Wisconsin, a second member straddled the Wisconsin-Illinois state line, and the six remaining mounds were in Illinois. Seven of the eight mounds were illustrated by Stephen D. Peet in *Prehistoric America* (Peet, 1898:40); Buell recorded all eight in a 1918 survey of the Beloit area (Buell, 1918: 119). (Figure 2.) The Wisconsin side mound was linear in form, partially eroded by Turtle Creek but still 75' in length when Buell made his survey. Subsequent seasonal undercutting by the creek completely destroyed this mound, as well as the northern portion of an effigy mound which spanned the state line. The reason for this quite rapid rate of erosion seems to be due to the bank being located exactly at the bend where the creek swings its course from north-south to east-west. Damming or artificial change in the water table of the clay-bottomed, shallow creek does not seem to have played any apparent part. The southern half of this figure (of the so-called "turtle" type) was destroyed in the construction of State Line Road. A third mound, an oval just on the Illinois side, was removed since Buell's survey. Mr. Dearborn Hutchison, the present property owner, related that his father had told him bones were found in the mound when it was levelled.

The existence of the five remaining mounds was learned of through conversations with Professors Andrew H. Whiteford and William S. Godfrey, Jr., Logan Museum, Beloit College. Permission was obtained from the Hutchisons to walk over and survey the field behind their home and adjoining cultivated fields. No artifacts were recovered from surface collecting in the cultivated fields, which had just been plowed for



**Figure 1: Map of Hutchison Site and Excavations, Summer of 1967**

planting. Two conical mounds, two oval mounds, and a "turtle" mound were located behind the house. According to the Hutchisons, this field has been in the family's possession since 1859 and has never been plowed. It was cleared for pasture and an orchard in the past, and at present is covered with grasses. The Hutchisons agreed to excavation in all but the "turtle" mound, which they did not wish to have disturbed. An enthusiastic response by Beloit College students

to a call for volunteer labor made it possible to conduct the excavations on week-ends and free afternoons during the summer of 1967. Field work began on June 4th and was completed on August 12th.

The State Line Mound Group is located on the second terrace of the Rock River in the SE  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 36, Township 1 North, Range 13 East, Beloit Township, Rock County, Wisconsin; and in Township 46 North, Range 13 East, NE  $\frac{1}{4}$  of NE  $\frac{1}{4}$  of Section 4, South Beloit Township,

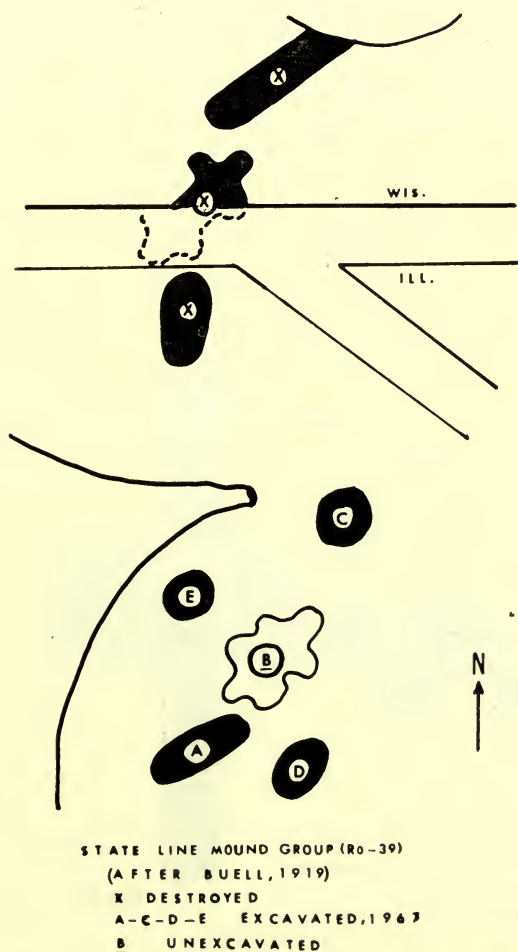


Figure 2: Hutchison Site as illustrated by Buell, 1919

Winnebago County, Illinois. Turtle Creek passes 300 yards to the north of the site, flowing westward to its confluence with the Rock River. At this point the creek is 50 feet below the level of the second terrace. The mound group is located in the previously described uncultivated field, with a present growth of grasses, Chinese elm saplings, and sumac. The area on which the mounds are located is virtually level. The western edge of the terrace slopes  $14^\circ$  to the first terrace and is cut in numerous places by erosional gullies.

The soil type on the terrace was identified as a Lorenzo silt loam (Typic Argiudoll), a well-drained zonal soil. It is described as having a loamy soil 12-20" thick over a calcareous sand and gravel, with a sandy clay loam-clay loam Bt. (Lee, 1967:10).

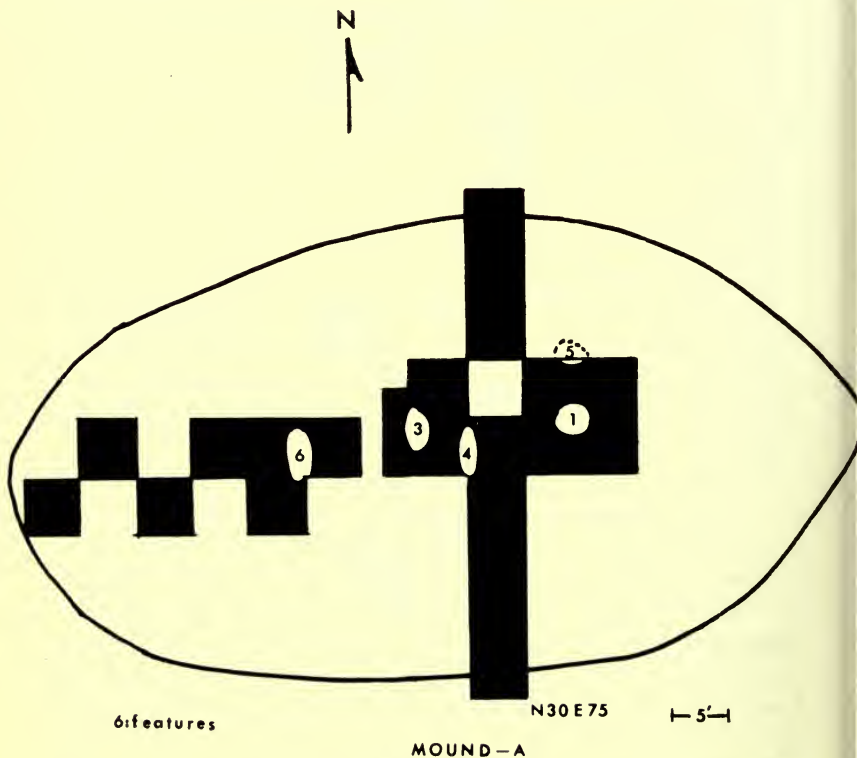


Figure 3: Mound A, showing excavated area and location of Features.



A temporary bench-mark was established between the edge of the terrace and Mound A. Excavation squares on the mounds and in surface areas were set out and numbered in relation to this central reference point.

Since there appeared to be no sub-surface cultural or pedological levels that would determine natural stratigraphy, for the first two weeks mounds and surface areas were excavated in arbitrary half-foot levels and screened through  $\frac{1}{4}$ " mesh screen. Negligible amounts of material in mound fill and surface squared subsequently suggested a lack of habitation refuse at the site; for the remainder of the summer squares selected for excavation were taken down to approximately .3' below glacial till by skimming off shallow layers with shovels.

#### **The Mounds in the State Line Mound Group:**

**MOUND A:** Mound A is an oval mound, oriented longitudinally east-west, 80' long, 35' wide, and 3.5' high. A total of twenty 5' x 5' squares were excavated in this mound, forming a north-south transecting trench along the F70 line and a corresponding east-west trench along the N50 line for two-thirds of the length of the mound. Features 1, 3, 4, 5, and 6 were located in Mound A, all with orifices at the level of initial contact with the clay-till lens overlying the actual till deposit. (Figure 3.)

**Feature 1** was located 12 feet east of the center of the mound and had an orifice 5.0' in diameter. Our choice in setting out our squares caused this pit to lie almost perfectly in a corner common to four different squares. All of these squares were levelled to the till prior to the excavation of the feature. The feature was 2.3' deep and had clearly defined edges and straight sides. Feature 1 contained one ceramic pipe bowl fragment, one piece of ground basalt, and one piece of ground stone. No burial remains of any type were observed.

**Feature 3** was located slightly west of dead-center of the mound and spread into three adjacent squares. The pit had an orifice diameter of 2.5' at the clay-till level and was 1.2' deep, with clearly defined edges and straight sides. No cultural materials or possible remains of burial were detected in this feature.

**Feature 4** was situated in the exact center of the mound,

with orifice measurements 4.5' x 1.5'. Upon excavation this feature was redesignated as a rodent burrow. The "pit" went no lower than the clay-till level and was connected to numerous tunnels, some of which were encountered in removing the bulk of the square from above the feature. No cultural materials were recovered from this area.

**Feature 5** was visible in the wall profile north of Feature 1. In profile this feature was 2' wide across the top of the orifice and 1.5' deep. Approximately 1.0' of this feature was removed in the excavation of square N55 E75. No bones or artifacts were in evidence protruding from the wall, and it was decided not to undercut to excavate the feature.

**Feature 6** was located along the N50 line in the western end of the mound. The orifice of the pit was encountered at the level of the clay-till and was 4.8' x 2.0' in diameter. The pit had clearly defined edges, sloping sides and was 1.5' deep. No artifacts or remains of interment were discovered.

**MOUND B:** Mound B is a turtle-type mound, 90' long from the head to the tip of the tail, oriented 62° east of north. The tail alone comprises 35' of this total distance. The mound is 3' high and 55' wide at its widest point (the rear appendages). At the wish of the Hutchisons this mound was not excavated.

**MOUND C:** Mound C is a conical mound 30' in diameter and 1½' high. There was evidence of minor pot-hunting activity in the top of the mound, but no intrusion pit showed in the profile. Four 5' x 5' squares were excavated over the center of the mound to a depth of .5' below the contact with the till, this being 5.0' below the present surface. A fifth 5' x 5' square was excavated on the western edge of the mound. No buried humus line was observed. Three grit-tempered, cord-marked sherd fragments were recovered from the upper level of the mound fill. No features, burials, or other cultural materials were found in the remainder of the mound.

**MOUND D:** Mound D is an oval mound, oriented longitudinally east-west, 42' in length, 25' wide, and ½' high. Three 5' x 5' squares were excavated in the center of the mound to a depth of .5' below the till layer, 3.9' below surface. No artifacts or sub-surface features were found during the excavation. A buried humus line was not observed.

**MOUND E:** Mound E is a conical mound, 30' in diameter and  $\frac{1}{2}$ ' high. There was some evidence of recent disturbance on the top of the mound and three light bulb fragments were found in the first  $\frac{1}{2}$ ' of excavation. No lower evidence of disturbance was observed. Three 5' x 5' squares were excavated in the center of the mound. At 2.9' below the surface, the orifice of a pit with a 3.0' north-south diameter was defined at the clay-till horizon. After all the edges had been cleared, the pit, designated Feature 2, was excavated. Numerous bone fragments were exposed and the Feature was re-designated Burial 1. This interment consisted of the fragmented remains of possibly three individuals: one female, one infant, and one other unidentifiable as to sex. The bones had suffered considerably from the combined effects of poor soil conditions and intensive rodent activity. It was impossible to determine whether primary or secondary burials were represented. The pit was 1.0' deep. No buried humus line was observed. One chert scraper and a piece of ground stone were recovered from the mound fill.

**SURFACE TESTING:** Three 5' x 5' surface test squares were excavated, as well as thirteen 3' x 3' test squares. These test areas were excavated to a depth of contact with glacial till, at an average depth of 1.7 (+ - 2') below surface. No features were found and artifact recovery was limited to four pieces of modern ceramics, one graver and one utilized flake. An attempt was made to test for habitation or refuse materials throughout the area of the mound group. From the negligible results, as well as from the lack of materials in the mound fill, it seems safe to state that habitation activities were not carried on in the immediate vicinity of these mounds.

It was suspected that poor soil drainage and other adverse natural conditions were responsible for the absence of evidence of interment or other remains in the sub-mound pits in Mound A. Soil samples were submitted to the Soil and Plant Analysis Laboratory of the University of Wisconsin, and tested, especially to attempt to establish the presence of bone phosphorus in the fill of the pits. Results of this test were negative, and the purpose of the pits beneath the mound becomes conjectural. The soils tests did indicate an extremely high organic matter content in the soil, ranging from 18 tons per

acre just above the clay-till layer (3.2' - 3.5' below surface) to 24 tons per acre in the center of mound fill (2.0' below surface) to 36 tons per acre in the surface horizon (.2' - .4' below surface). The pit fill of Feature 1 contained an organic matter content equal to 27 tons per acre. This is the highest level represented except for the surface level and would seem to indicate a higher level of organic content in the pit. Some of this increase is most probably due to post-aboriginal rodent storage activity. Coupled with the lack of any borrow area on the second terrace surface, the soil tests tend to support the hypothesis that the Indians were obtaining their construction earth from the easily gathered, rich alluvium on the first terrace, and transporting it up to the slope to form the mounds.

**ARTIFACTS:** A total of 22 artifacts were recovered during the excavation. They were distributed as follows:

- 1 decorated pipe bowl - Mound A, Feature 1
- 1 piece ground slate - Mound A, Feature 1
- wood fragments - Mound A, Feature 1
- 1 piece ground stone - Mound A, Feature 1
- 1 piece polished bone - Mound A, Level 1
- 1 historic brass button - Mound A, Level 1
- 1 piece ground stone - Mound A, Level 2
- 1 side-notched projectile point - Mound A, Level 3
- 1 grit-tempered sherd fragment - Mound A, Level 4
- 1 chert knife-like implement - Mound A, Level 4
- 2 pieces of ground stone - Mound A, Level 4
- 3 grit-tempered sherd fragments - Mound C, Level 3
- 1 piece of ground stone - Mound E, Level 1
- 1 scraper (chert) - Mound E, Level 1
- 1 utilized flake - Surface, S5W25, Level 1
- 1 graver - Surface, S5W25, Level 1
- 4 historic sherds - Surface, N0E95, Level 1

#### Artifact Descriptions

##### Ro-39 - N55 E75-1-1

This brass button was found in the first level (0-5' below surface) in Mound A. No mark of identification is visible. The head of the button is 17 mm in diameter. The head was made by wrapping a thin sheet of brass around the end of a stud, the small end of which is 11 mm in diameter. The shank separating the large and small heads of the stud is 4

mm long.

**Ro-39 – N0 E95-1-1**

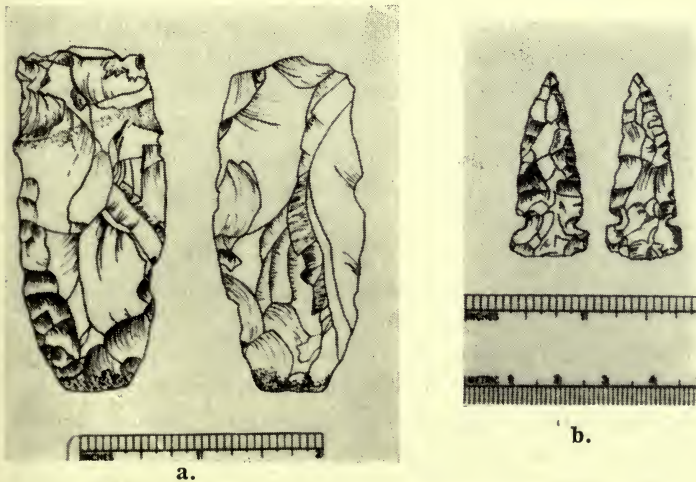
These four historic ceramic fragments were excavated from the surface level (0-.5' below surface) in a surface square. They are 8 mm thick and have no designs or marks of manufacture on them. The exterior glaze is yellow (2.5Y 7/8. This and subsequent color notations are from Munsell color charts).

**Ro-39 – N50 E70-1-1**

This artifact is a polished bone fragment that was found in the first level (0-.5' below surface) of Mound A. It is 8 mm long, 7 mm wide, is from an unidentifiable non-human animal, and since both ends are broken, no exact functional interpretation can be made.

**Ro-39 – N55 E80-2-1**

This light gray (10 YR 7/1) chert knife was excavated from the fill of Mound A. The blade is slightly convex and the striking platform is still present, showing an angle of about 20° from the core. The bulb of percussion was removed with a large flake from the back of the blade. The knife is 70 mm long, 35 mm wide, and 15 mm thick. Removal of flakes from the convex side shows an attempt to thin and straighten the blade, but the lateral sides show no evidence



**Figure 4: Lithic artifacts from Hutchison site.**  
**a: chert knife from Mound A**  
**b: chert projectile point from Mound A**

of secondary retouch. It is quite probable that the artifact does not represent a finished product. (Figure 4a.)

**Ro-39 - N60 E70-2-1**

This light gray (10 YR 7/1) chert side-notched projectile point was excavated from the fill of Mound A. Its total length is 38 mm, the stem being 9 mm long and 14 mm wide, and the body of the point being 29 mm long and 10 mm wide at its mid-point. The body of the point is slightly convex in shape and cross-section and has a convex base. The artifact is 4 mm thick at its mid-point, 2 mm thick at the tip of the point, and thinned to 1 mm in thickness at the base by removal of small flakes from both sides. The notches are 3 mm in width, 2 mm long, and the minimum distance between the two is 9 mm. The width of the point at the shoulder is 13 mm. The base is 15 mm wide and 6 mm long. The depth of convexness (deviation below a straight line across the bottom of the point) is 2 mm. The flaked lateral edges and the base show no signs of grinding or retouch. (Figure 4b.)

**Ro-39 - N50 E50-2-1**

The ground artifact of granodiorite is roughly semi-lunate in shape. The frontal edge is 95 mm. long and the piece is 16 mm thick. The back edge curves to a maximum distance of 45 mm from the front edge. The front edge is bevelled to a 45° angle and is smoothed across the face of the bevel, which is slightly concave. There are no wear marks at any point on the artifact. The bevelled face seems to satisfactorily coincide with the exterior body form of most medium and large sized vessels and one possible use that might be inferred is for the smoothing of ceramic vessels prior to their drying in preparation for firing.

**Ro-39 - N55 E65-2-1**

This ground piece of andesite was excavated from the fill of Mound A. It is 38 mm long, 35 mm wide, 17 mm thick, and 95 mm in circumference. It is similar in size and shape to small cobbles that, in Southwestern pueblo cultures, are used to smooth the exteriors and interiors of ceramic vessels during the manufacturing process, although its lack of the pronounced sheen that the Southwestern implements have cast doubt of its use in this manner.

**Ro-39 - N55 E75-4-1**

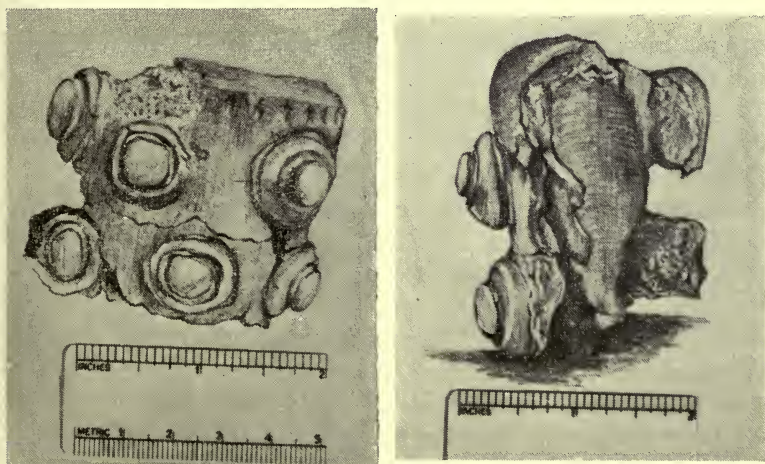
This piece of ground andesite was excavated from the fill of Mound A. It is 62 mm long and 115 mm in circumference. It has two smoothed faces which meet at just slightly more than a 90° angle. Both of these faces have exactly the same surface area, being 55 mm long and 31 mm wide. A narrow edge, not as highly smoothed as the two faces, is 10 mm wide and runs back from one of the faces at a 90° angle. The back side is smooth and rounded. There are no wear marks visible at 10x magnification. Use, if any were intended, cannot be inferred from the artifact.

#### Ro-39 – N55 E75-4-2

This grit-tempered sherd fragment was found in the fill of Mound A. It is too small for significant analysis or description (4 mm in diameter).

#### Ro-39 – Mound A, Feature 1-1

This artifact is a grit-tempered pipe fragment with six applique nodes. Two other nodes were recovered but are not attached to the main fragment. The nodes are arranged in two rows around the bowl, the center of the top row being 18 mm below the rim and the center of the lower row being 40 mm below the rim. Members of the rows are approximately 10 mm apart. Although the base of the pipe is missing,



a: exterior view

b: interior view

Figure 5: "Coffee-Bean" style ceramic pipe from Mound A, Feature 1.

it is estimated that the height of the original specimen would have been about 60 mm. The bowl of the pipe has an overall diameter of 48 mm and an orifice diameter of 26 mm. The nodes protrude an average of 11.5 mm from the exterior of the pipe and have an average diameter of 20 mm. Each node is ringed with two incisions, one setting off the node from the bowl, the second around the node itself, 5 mm out from the bowl and defining a node tip 13 mm in diameter. The exterior of the rim is decorated with punctations 5 mm long (measured from the outer edge of the rim) and 2 mm wide that are spaced approximately 4 mm apart. The exterior surface is yellowish brown (10 YR 5/3) and has a hardness of 2.5 and 3.5. One node which is not covered by the smooth yellowish brown exterior has a yellowish red color (5 YR 5/6) and the paste is reddish brown (5 YR 5/4) in color. The bowl area is blackened, presumably due to burning and the base area is especially blackened. However, no carbon was present. (Figure 5.)

#### **Ro-39 – Mound A, Feature 1-2**

This piece of ground basalt is 115 mm long, 55 mm wide, tapering toward one end, and 20 mm thick. The thinnest edge shows evidence of chipping. Inspection with a 10x hand lens allows some influence to the use of this tool. Wear marks tend to suggest that it was a combination flaking tool and platform for working with lithic materials. Battering nicks and flaking on the thick edge indicate the use of this part of the tool for striking off flakes. The position of the nicks shows that that main force would have been applied across the natural structure of the basalt, giving greater strength and resistance to chipping and shattering. Striations across the surface of the tool are positioned in relation to the battered edges and probably resulted from scraping against the core material in the follow through of the striking motion. The top surface of the artifact has been smoothed and has a ridge. Wear marks on the surface show pin-point holes resulting from short, quick applications of indirect pressure.

#### **Ro-39 – Mound A, Feature 1-4**

The ground andesite cobble is 75 mm long, 38 mm in diameter, and 115 mm in circumference. It is supposed that it was used in some type of grinding activity. A slight indenta-



tion allows a firm grip, while shine on the convex side indicates some degree of use. There are no striations visible at 10x magnification and since the stone is too small for effective production for culinary purposes, it may have been used in preparing some sort of soft mineral. The underlying out wash tills contained both red and yellow ochre and there may have been preparation of these or similar materials.

#### **Ro-39 - N172 E70-1-1**

This piece of ground andesite was excavated from the surface level (0-5" below surface) of Mound E. It is 46 mm long, 42 mm wide, 25 mm thick, and 115 mm in circumference. No use marks or striations are visible at 10x magnification. Like artifact Number N55 E65-2-1 it is similar to cobbles used in the manufacture procedures of ceramic vessels, but also lacks sheen.

#### **Ro-39 - N172 E70-2-1**

This white (2.5 & 8/0) chert scraper was excavated from the fill of Mound E. It is 7 mm thick, 27 mm long, and 20 mm wide. It shows secondary flaking and utilization along one lateral edge and is the type of implement sometimes referred to as a "spokeshave."

#### **Ro-39 - N242 E205-3-1**

This grit-tempered sherd fragment was excavated from the fill of Mound C. It had no decoration. It has a yellow (7.5 YR 7/6) interior surface, a dark brown 10 YR 3/3 exterior surface, and a reddish yellow (7.5 YR 6/6) paste.

#### **RO-39 - S5 W25-1-1**

This gray chert flake shows signs of utilization along one lateral side and one corner. It is 16mm long, 11 mm wide, and 3 mm thick. It was excavated from the first level (0-.5' below surface) in a surface square.

#### **Ro-39 - S5 W25-1-3**

A pinkish white chert flake was recovered from the same level as the preceding artifact. It is utilized along one lateral edge and probably served as a graver, although the spur is now broken off.

### **Summary and Discussion**

The State Line Mound Group is located within the southern geographical boundary area of the recognized limits of the Effigy Mound culture. Beloit was described in historic times

as the location of numerous Indian camps and an important intersection of many trails (Buell, 1918: 119). The same circumstances of interaction can be hypothesized for the prehistoric period and the Rockford-Beloit area was probably subject to many influences from the Illinois, Mississippi, and Rock River valleys. The possibility of contacts with both ideas and actual movements of people makes it difficult to accept any mound group in this "fringe" area as the products of a single culture. As Baerreis has pointed out, "It is evident that the archaeological analysis of this material must proceed mound by mound, not by lumping the traits of mound groups" (Baerreis, 1954:43). The temporal and cultural association of the mounds in the State Line Group cannot be directly proven on the basis of excavated artifacts that are common to all mounds, or by unique, distinctive structural features. However, on a working basis, the compactness of the State Line Group in geographical isolation from other mound groups in the Beloit area suggests that it may be accepted as a cultural entity.

On the purely observational level, the mounds in this group show some similarities. Both oval mounds are oriented along the east-west axis, both conical mounds are approximately 30' in diameter, and the destroyed "turtle" mound seems to have shared a sixty-two degree inclination to the northeast with the remaining one; the linear mound also seems to have shared this northeastern orientation. The destroyed third oval did not, according to Buell's map, share the positioning of the other two. None of the mound profiles indicated a buried humus line. When pits did occur in the mounds, they were all below the clay-till level, a common effigy mound trait.

The lack of diagnostic artifacts or burials also makes it difficult to compare the State Line Group with other mound groups in the area, such as the mounds in the Beloit College group, one and one-half miles to the northwest (Bastian, 1958: 155). Burials in three excavated conical mounds in the two groups show broad similarities in that they all occur in oval, sub-surface pits, and apparently contained female interments of a primary or secondary nature. Although buried humus lines were also not present in the excavated College mounds, this is an apparently common Effigy Mound trait; there are

no distinctive bases for comparison in these two groups.

A search for pipes similar to the fragment found in Mound A, Feature 1, resulted in a sample of ten ceramic and one steatite pipe; they are all of the type commonly referred to as "coffee-bean" style by George A. West, who wrote, "The pipe is almost invariably made of pottery and is found principally in Georgia. It is considered a mound type" (West, 1934: 298). Six of the pipes illustrated by West come from Georgia, two from Wisconsin (excluding the Beloit pipe), and one each from Illinois, Tennessee, and Alabama. All of these specimens show large nodding over the bowl of the pipe; however, only one has the incising characteristic of the Beloit fragment. This occurs on a pipe from Pepin County, Wisconsin; the nodes on this example are nowhere near as prominent as on other pipes of this type. A twelfth example of a "coffee bean" pipe, excavated from the Hollywood Mound in Georgia (Lamar Focus) but not reported by West, is illustrated in the 12th Annual Report of the Bureau of American Ethnology (Thomas, 1890: 328). The pipe shows flat but prominent nodes and incising almost identical to the Beloit one. The Lamar Focus dates about 1300 A. D., which would be temporarily comparable to very late Effigy Mound or Blackduck (Willey, 1966: 250). Although it is certainly risky to look as far afield as Georgia on the basis of one artifact, the position of the State Line Group in a geographically favorable location for cultural contacts and the presence of stylistic similarities in geographical intermediate locations should not prevent us from looking.

The only other effigy mound group in this fringe area that has been excavated is the Lake Lawn Group on Lake Delavan (Brown, 1955). He places the two mounds that were excavated there in Late Woodland times, but on the basis of a chert hoe, rather than a possible exotic artifact. The semi-circular concentration of sub-floor pits which he excavated in a turtle mound is very similar to the pits found in the floor of Mound A. For comparative purposes, it is very unfortunate that we were unable to excavate the turtle mound at the State Line Group.

Further excavations in mounds in the Beloit area, and more importantly, the location and excavation of habitation

sites, are needed to establish a picture of this fringe area. Excavations in habitation areas will allow comparisons with sites at Stevens Point and Fremont excavated by a University of Wisconsin field party, under the field supervision of William Hurley in 1966, which occupied a riverine environment similar to that of the Rock.

In addition to further defining possible external contacts, such excavations would show the intensity of relationship between the fringe areas and the center of the Effigy Mound region. As can be said for most other contemporary archaeological problems, more work and more data are needed.

### Acknowledgements:

A volunteer archaeological excavation is dependent on the contributions of numerous people. Special thanks are due to Mr. and Mrs. Dearborn A. Hutchison for permission to excavate on their property; to Professors Andrew H. Whiteford and William S. Godfrey, Jr. and Mrs. Drucilla Freeman of the Logan Museum on Anthropology, Beloit College for their encouragement and assistance in making the project possible; to the Beloit Physical Plant for providing field equipment and for back-filling the excavation; to Mr. Chad Phinney, who served as my field assistant; to Mr. Mike Loftus who supervised the excavation of Mound C; especially to the Beloit College students, and my wife, who gave very generously of their time. The drawings of the artifacts were done by Miss Gretchen Laundry, a student at Beloit College. Professor James A. Brown of Michigan State University very kindly allowed me the use of his material on the Lake Lawn Site. Suggestions and criticisms by Professor David A. Baerreis during the preparation of this report were helpful and appreciated.

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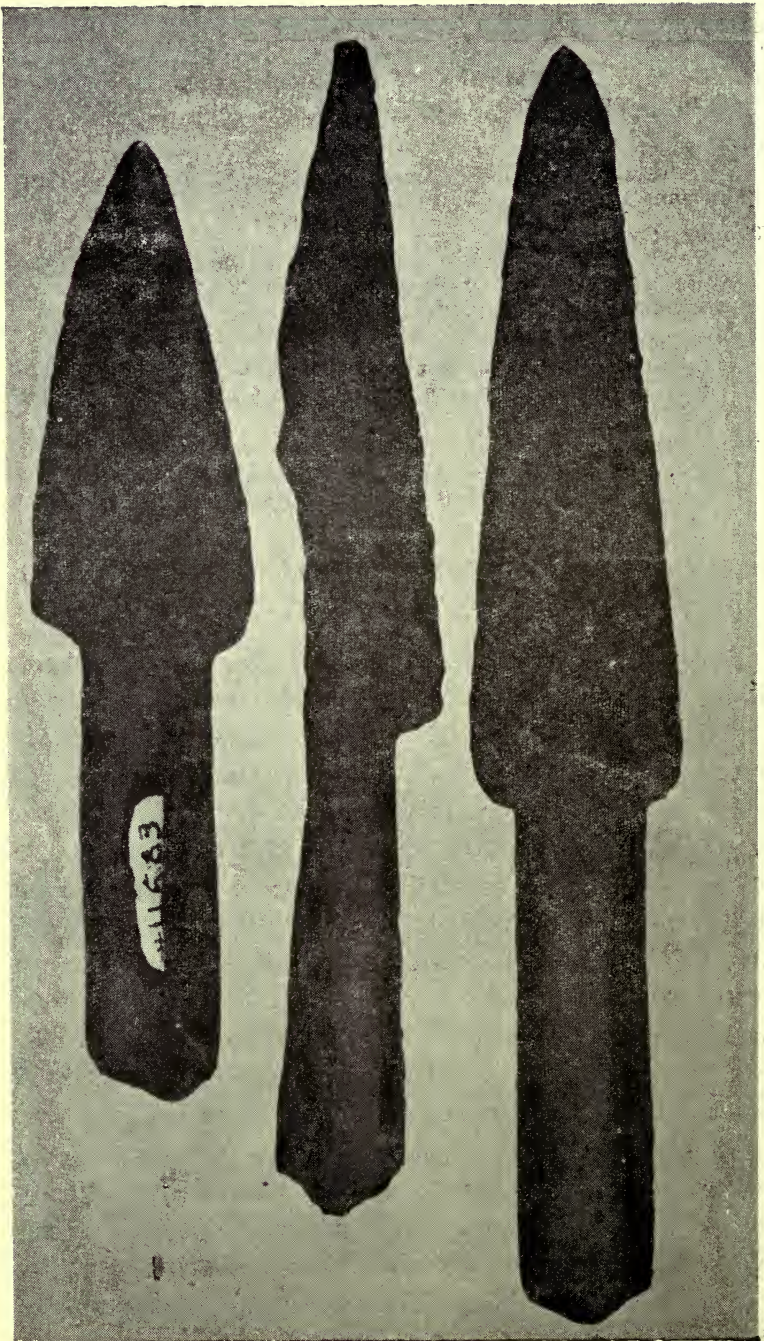
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## OLD COPPER ARTIFACTS FROM NORTH DAKOTA

Pluma B. Spiss

This native copper projectile point, No. 1 in the photograph, was found on the Frank Ringleh farm one mile south of Lakota, North Dakota. It was presented to the State Historical Society in 1951 but was only recently sent in to the U. S. National Museum for identification. The information received from them is that they examined it with considerable interest and found it checked very closely with specimens in their collections from Michigan and Wisconsin which are attributed to the Old Copper Culture of Archaic Age, Ca 3000-2500 B. C. These objects were cold hammered from nuggets of native copper. There is no data available on the No. 2 point. No. 3 was found near McHenry, North Dakota, which is in the general area where No. 1 was found.

My family and I have found nine native copper rolled beads, and have one stone projectile point which greatly resembles photos of chipped stone points of the Old Copper Assemblage which are in the Milwaukee Museum. I realize it may be only a similarity. The artifacts were found west of the Missouri River in North Dakota.



Old Copper Points, N. Dakota

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**THE FREDERICK S. PERKINS COLLECTION**

Reprinted from the  
State Historical Society of Wisconsin  
TWENTY-SECOND ANNUAL REPORT  
1876

**Pre-Historic Antiquities of Wisconsin**

Our Society has been singularly fortunate in having placed in its custody, and, on certain conditions, securing the ultimate ownership, of one of the largest and most valuable collections of pre-historic antiquities ever made in this country, or perhaps any other. It is worthy of record, as well as of interest, to note the facts which led to its collection, and to indicate its character and importance.

Frederick S. Perkins, of Burlington, Racine County, Wisconsin, the indefatigable collector of this remarkable collection, was born at Trenton Falls, Oneida county, N. Y., Dec. 6, 1832. His father, Origen Perkins, removed first to Joliet, Illinois, in Nov., 1835, and in August, 1836, made his advent to what is now Burlington, where he found only two small log buildings — one occupied as a tavern, the other as a store. He made a claim; and, in November ensuing, erected the first private dwelling in the town, and removed his family there in March, 1837. Here his son Frederick grew up, enjoying only common school advantages, and working on the farm, till Nov., 1852, when he went to New York city with no definite purpose. Possessing a taste for drawing, and visiting the Dusseldorf Gallery, he became enthused with the desire to be an artist, and with the advice of A. B. Durand, President of the National Academy of Design, he entered the studio of Jasper F. Cropsey with whom he studied assiduously two years, when he entered upon his profession in that city with good prospects of success—sometimes taking jaunts into the neighboring States.

While in the region of Wilkesbarre, Pennsylvania, in 1857, Mr. Perkins became interested in the stone antiquities found in that section, and made quite a collection. In 1862, he opened his studio in Milwaukee; but returned to Burlington in 1864, and becoming connected in marriage with Miss Emily Wainwright, he abandoned his profession for the time being, and settled down on the farm which his father had

located in 1836; and then it was, he fairly commenced his collection of the pre-historic antiquities of Wisconsin—confined exclusively, till 1871, to implements of the stone age. A single large copper spear head, found three miles north of Burlington, in October of that year, so excited his interest, that he thenceforth made a specialty of seeking specimens of the **copper** age, not, however, neglecting to secure all good articles of the stone period.

He now began to systematize his mode of collection. He would spend many weeks at a time on a tour of thorough canvassing—taking a county, and going carefully through it by townships and sections, missing scarcely a house. He would make his inquiries, responding kindly to questions of curiosity, obtaining what specimens he could, paying for them when pay was demanded; and, not unfrequently, hearing of some fine specimen of the copper age that had been sold to some peddler for old copper, or cut up or melted for some trifling purpose. He would leave his card, so should other articles of interest be found, his name and address might be known; and being a ready and apt draughtsman, he would generally mark on his card the shape of a spear or arrow head, or some other antiquarian device, the better to keep his wishes in remembrance; and this he would particularly observe when at the residence of Germans and Norwegians. Thus, in all weather, with the thermometer sometimes as low as fifteen or twenty degrees below zero, or during the extreme heats of summer, would he push his journeyings with varied success.

In this manner were the counties of Racine, Kenosha, Walworth, Waukesha, Milwaukee, Jefferson, Dodge, Washington, Ozaukee, Fond du Lac and Sheboygan, and portions of Rock, Dane and LaFayette, explored; not unfrequently sojourning for the night in a barn, hut or hovel, and sometimes suffering from a run-away of his horse, and encountering other perils and adventures.

Some days he would scarcely find one single stone arrow-head to reward his toils and efforts, and get discouraged; when the next day, perhaps, in some unpromising neighborhood, he would find the most interesting specimens both of stone and copper. These repeated journeys and explora-



tions cost Mr. Perkins much time and expense; at a time, too, when he was necessitated to effect loans for improving his farm. But so fixed was his determination to make a unique and valuable collection, with the ultimate design of its becoming the property of the State in which he had spent most of his life, that he practised every self-denial in order to continue these collections; in which Mrs. Perkins, sympathising heartily with his tastes and purposes, would freely encourage her husband, even at the expense of personal and family comforts. All honor to such unselfish devotees for the benefit of science, and the extension of human knowledge!

The collection thus made consists of 600 stone rollers, pestles, knives, scrapers, awls, pikes, and anomalous forms; 365 stone axes of various forms and sizes; about 50 stone pipes and perforated ornaments; nearly 8,000 spear, lance and arrow-heads: and of **copper** articles, 68 spear or dirk-heads with sockets for shafts; 5 notched for shafts, like flint arrow-heads; 9 with round shanks to be inserted into shafts; 15 with flat shanks; 10 knives; 15 chisels or axes; 3 socket-axes, knives or adzes; 5 augers; 2 gads, 1 drill, and 9 of anomalous forms — numbering altogether over 9,000 articles of the pre-historic age. Nearly all are in the finest condition, and all were found in Wisconsin. All of the rarer articles are labelled with the names of their finders; and a record is preserved of the localities and circumstances of their discovery. The majority of them were turned up by the plow; but some were found as deep as ten or twelve feet below the surface — sometimes embedded in clay below the gravel.

The **stone** collection is simply wonderful, while the **copper** one is confessedly unequalled in the country. The copper districts of Lake Superior, which disclose so many evidences of ancient mining, doubtless furnished most of the material for the manufacture of these interesting implements of a former age; and it is not strange that our own State should furnish the richest field for this rarest class of pre-historic remains. Prof. Charles Rau, in his valuable paper, in the Smithsonian Report for 1872, on the Ancient Aboriginal Trade of North America, justly remarks that "the copper articles left by the former inhabitants are by no means abundant;" adding, as an example, that during his thirteen years

sojourn in the neighborhood of St. Louis, a region particularly rich in tumular structures, he did not succeed in obtaining a single specimen belonging to this class.

The American Antiquarian Society, during its sixty-three years' existence, has only obtained some half a dozen specimens of ancient copper implements, and less than 300 of stone; the Smithsonian Institution, it is understood, has accumulated 15 copper specimens, and has made casts of several of the Perkins' collection; the late Dr. Lapham, as a result of nearly forty years' efforts, secured only 11 copper articles, for some of which he was indebted to Mr. Perkins, and 165 stone implements; the German Natural History Society of Milwaukee has collected 10 copper specimens, and 91 of stone; Dr. Day, of Wauwatosa, 1 of copper, and 163 of stone; Beloit College, 1 of copper, and 53 of stone; and Col. C. C. Jones, formerly of Georgia, has six copper implements, described in his work on the antiquities of that State. And our own Society, after nearly a quarter of a century's efforts, had secured only 13 copper specimens, 39 stone axes, and a variety of spear and arrow-heads, and other stone implements.

When the late J. W. Foster, LL. D., of Chicago, published in 1874, his work on the Pre-Historic Races of America, in which he acknowledged his frequent indebtedness to Mr. Perkins' archaeological collections, and especially his collection of copper implements, it very naturally led several learned institutions to make inquiries whether he would be willing to dispose of them. Our late lamented associate, Dr. Lapham, the able antiquary and scientist, spent three days in a careful examination of Mr. Perkins' collection, expressing his astonishment at its extent and character — so infinitely in advance of his own, which he had been nearly four times as long in gathering.

Under such circumstances, it is a matter of no small felicitation that our Society has secured a collection so important for the illustration of the pre-historic period of Wisconsin, and which probably stands unrivalled by any similar collection in the country. Future generations will commend the foresight and persistence of Mr. Perkins in making it, and the wisdom of this Society in securing this priceless treasure.

Let this richest acquisition of our Society serve to stimulate its officers and members, and the people of Wisconsin, to renewed efforts for the augmentation of this department of our collections, that it shall worthily attract the attention of the antiquaries of the civilized world.

## THE DRUM SOCIETIES IN A SOUTHWESTERN CHIPPEWA COMMUNITY

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The Medicine Dance or *Midewiwin* is a well-known Chippewa, or Ojibwa, ceremony (see Barnouw 1960, Hoffman 1891). Less known is the Drum Dance. In the Fall and Winter of 1963-64, I did field work at Mille Lacs Lake, Minnesota, where I attended two such dances.<sup>1</sup>

The Drum Dances began in about 1865 at Mille Lacs, with the presentation of a Drum by the Dakota Indians to the Ojibwa, to commemorate a lasting peace between the two tribes. In 1964, each of the six Drums at Mille Lacs had an attendant association, the Drum Society, and each such group gave at least four dances annually. The following pages comprise a description of the Drum Societies and of a Drum Dance held in November 1963.

Within each Drum Society, there is a set number of members, and membership is for life. Membership tends to be constituted largely of bilineal relatives. All members vote in each new one. Members of each Drum are selected by its entire Drum Society. The members, and in particular the owners, must possess certain characteristics that ensure perpetuation of the Drum: A person must be of good character and not too poor; in particular, he must not be stingy.

Each Drum has an owner, *We te we iganit*, and a co-owner, *Watabima't we te we iganini chin*. Ownership is hereditary, from father to son or, if there is no son, to a close relative who is usually a brother or a parallel nephew. If there is a choice between brothers, the one who is wise in

<sup>1</sup> This project was made possible by National Institute of Mental Health Funds via the Department of Anthropology at the University of Minnesota, and by a grant from the San Diego State College Foundation.

the ways of the people is preferred.

The membership of every Drum Society includes four Drum Warmers.<sup>2, 3</sup> Before each dance, they warm the skin top of the Drum over the fire until it has the correct tone when beaten. After the afternoon Dance, the Drum Warmers remove the Drum from the four sticks that support it and let it stand on the ground for the secular dance in the evening. Four singers<sup>2</sup> and four co-singers belong to the Drum; at all dances, they beat the Drum and chant. There are also four **osh-ka-be-wis**,<sup>2, 4</sup> or official inviters, who do not only invite the people but also prepare the dance lodge, fetch water, and distribute the ceremonial repast. At the appropriate point in the ceremonial dance, the head **osh-ka-be-wis** passes the pipe around to the men. During the autumn War Drum Dance, to be described below, the **osh-ka-be-wis** of the War Drum offers green wild rice to the four cardinal points and upward.

In each society there are 6 to 12 women, depending on the Drum. The women usually prepare the food and the blankets that are used in the ceremony.

The ladies' Drum Society is run in the same way as the other Drums. If an owner dies, her daughter usually takes over or, if there is no daughter, a close parallel niece. The members of the Ladies' Drum Society specialize in the sewing of quilts. This society holds, in the evening, a secular dance, as do the other Drums.

Most Drum Dances last a week-end, that is, Saturday afternoon, Saturday evening, and Sunday afternoon. Thus, the members who work in the city may participate.

**The Drum Dance.**—The pattern of the Drum Dances is more or less constant, with variations from Drum to Drum. The people are seated around the sides of the dance hall; the Drum rests in the center of the room, and the drummers and singers are seated around it.

The afternoon ceremony consists of dancing interspersed

<sup>2</sup> Each of the groups of four—drum warmers, singers, and **oshkabewis**,—have one member designated as head.

<sup>3</sup> Sometimes, people phrase Drum membership as "members of the Drum" or as "belonging to the Drum".

<sup>4</sup> One of the **oshkabewis** explained that his function also included the maintenance of order at the Dances, in the same policing manner as the Plains Indian military societies.

with rituals and with exhortative speeches. For this dance, the drum warmers prepare the Drum so that it sounds the proper tone; then, they set it up on four props in the center of the dance hall. The singers chant a wordless chant continuously until the people are assembled and the dancers present.

The man who leads off the dancing, usually the owner of the Drum, is in costume.<sup>5</sup> He dances around the Drum once, and then others, a few of whom are in costume, follow. Each man in the Drum Society has a turn in dancing. Before he dances, he takes one of several feathered sticks that rest at foot of the Drum. He holds the stick while he dances, and after he completes his dance, he replaces the stick at the foot of the Drum. Each man has his own part of the Drum — i. e., feathered stick — which he holds while he dances; Each man has his own song, and when it is sung, he must dance.

After this first group, the singers dance in turn. As each singer finishes his dance, he gives a gift, usually one dollar, to a representative of a Drum who has come to visit from another village.

The people do not hesitate to quip and to joke with one another from the time that they enter the dance hall through the initial song period. From then on, a solemn silence is observed.

After the singers have each danced, a woman places a plate with green wild rice in it on the ground. The **osh-ka-be-wis** dances around the plate. It is at this point that, with a cupping motion, he reaches toward the rice and, with a throwing motion, symbolically spreads it to the four directions and up.

Between the dances of individuals, there is always an "intermission," during which people dance in groups. The men dancers are first in line; they are followed by boys, and next are the women and the girls.

Usually, the women who dance are members of the Drum. At first, they may stand up near their seats and silently

<sup>5</sup> This includes a headdress of porcupine feathers and porcupine down, beaded trousers with apron and, around each ankle, a string of bells.

stamp their feet to the beat of the Drum; later, they may dance around the Drum. The women dance in a quieter fashion than the men, and usually a group of sisters dances together. The dance of the women is characterized by a single two-step, rather than the leaping, crouching, and whirling, usually done by the men.

The **osh-ka-be-wis** then collects quilts and blankets from the members of his Drum; these are placed on a quilt that the **osh-ka-be-wis** has already spread on the floor. Then, he solicits tobacco from members and visitors who wish to give it. At the War Dance, which I attended, the **osh-ka-be-wis** collected the first tobacco from his own wife. After this collection, those who wish to may still go to the blanket and place their offering of tobacco on it. The children present are encouraged by their parents to participate in the dancing and to present a tobacco offering.

Tobacco in all forms is sacrificed. Most of it is in the form of Velvet pipe tobacco, Copenhagen snuff, or Pall Mall cigarettes, all of which have red wrappings. The **osh-ka-be-wis** places the packages of tobacco into a bowl. Some of the tobacco is then burned in a cooking stove, which has been brought to the dance hall. On this stove, a ceremonial meal is cooked by the women of the Drum; the women distribute the meal to visitors.

People believe that the blankets are given as a gift to the **Manido**, for the well-being of the group. After all the blankets are piled up, the Drum Owner distributes them. Each group of blankets must be given to others than to those who gave them. A packet of tobacco is frequently given with the blankets; the blankets are given to representatives of other Drums, who subsequently redistribute each blanket to the members of their own Drum.

Then the **osh-ka-be-wis** offers a long, pipestone pipe to the head singer, to the rest of the singers, and to the rest of the men. Each man takes a puff. Young boys do not receive the pipe, though it is occasionally offered in jest. If it is offered to a boy, this causes merriment and laughter.

Then, each member of the Drum dances and gives a speech. Each man, before his speech, gives the history of

his owner power.<sup>6</sup> The Drum Owner speaks first; he thanks the Great Spirit and exhorts his people to stick to the right ways. One or more of the drummers punctuates the speech with, "hau!" At the end the speaker praises the **Gitche Manido** and tells the story of the origin of the tribe in the East.<sup>7</sup> At the end of the speech, the head drummer may punctuate the speech with "hau!" and two enthusiastic beats on the Drum. When the men speak, each holds tobacco in his hand. Usually, after speaking, they give this tobacco to a visitor.

Soon afterwards, the dancers disperse, and the people go home to share food with visitors. At sundown, the Drum warmers remove the Drum from the four feathered staffs and rest it on the ground. In the evening, dancers and visitors enter the hall, and a more formal dance takes place. At the evening dance of the Ladies' Drum, a person who wishes to dance with another gives him a gift, usually a blanket. The dancer, at a later time during the same evening, reciprocates with an invitation to dance and with a gift, usually of a dollar bill.<sup>8</sup>

An excerpt from a letter of an informant elucidates the meaning of the ritual action during the afternoon and evening phases of the Drum Dance.

"Drum dances are usually given by the Drum Owner's committee members, with the change of seasons, like the . . . Fall dance, for the harvest gods like wild rice. . . . this is the biggest dance . . . And of course, the Drum Owner and his group can call a dance at any time any one of his members get sick and die; so they can replace the vacancy of the one gone. On the Drum where a man is the head they have men **osh ka be wis** give out the blankets . . . to their members. And the Lady Drum is done likewise by women **osh ka be wis**. . . people can belong to more than one Drum . . . at their dances, in the evenings is when they have their give a way dance . . . exchange gifts to anyone . . . it doesn't matter who, visitors or people who belong to Drum. Usually when a

6. People tell of the aid of supernatural Spirits, acquired, by means of visions.
7. Such myths are found in Hoffman 1891 and Warren 1885.
8. Sometimes the gift is more; in this case, the gift is always in the form of a few, usually two, one dollar bills. This occurs if the recipient feels the blanket was exceptional in material or workmanship.

person gets tobacco at a Dance, if the Drum owner of where that person belongs to is not present, he or she can take the tobacco and give it to their committee men and women to tell them the reason for the tobacco; it usually is an invitation from this person who offered the tobacco to his next (dance) which is usually for about 2 to 3 days. And of course these people furnish your lodging and eats at their expense, that's if you don't want to travel back and forth to the designated place where such dance is to be held." 9

Frequently, at the evening dances, people who are drunk and rowdy try to enter and cause a disturbance. It is at such times that men who designate themselves as the "police society" + come into action. They try to subdue the rowdy members of the group and, failing this, bodily throw them out. At one such dance, a rowdy man was thrown out by his own brother and hurt him, much to the concern of the other members of the group. A sober person could never behave in this manner toward his own brother.

The first Drum of the Chippewa was the War Drum or *washigiwaigan*. The second was the Ladies' Drum and the third Thunderbird Drum. From a piece of the original War Drum, another War Drum has been constructed; from pieces of the Thunderbird Drum, a second Thunderbird Drum and a Rainbow Drum have been constructed.

In recent years, the Drum Societies are increasing in number and activity. The Drum Societies serve many functions, including group ceremonies of thanksgiving, distribution of property to cement ties between groups, distribution of clothing of the dead, recreation, communication between Chippewa in the cities and on the reservation, and retention of Chippewa traditions.

The War Drum, called *washi-diwaigan*, leads off the series of Drum Dances each fall. The owner and co-owner of this, the most important Drum, are professed members of the Grand Medicine Religion and have no Christian affiliations.

Occasionally, people in different areas of the reservation wish to have a Drum. Such people petition the people at the Mille Lacs Lake Indian Village for a piece of an original Drum. It takes a long time before the people will give such

9. The punctuation has been corrected occasionally for clarity.



a piece to start a new Drum. The prospective Drum Owner must have appropriate dreams, and then a council of older men talk it over. Once the people have authorized such a Drum, they visit the dances connected with the new Drum in order to make sure that the Drum is being cared for properly. A group of people in Hayward, Wisconsin, has been asking the people at the Mille Lacs Lake Indian Village for the start of a Drum for many years; the people of Mille Lacs Lake have not yet given them one. It is said that if the Wisconsin people do get the Drum, it will be an occasion for festivity.

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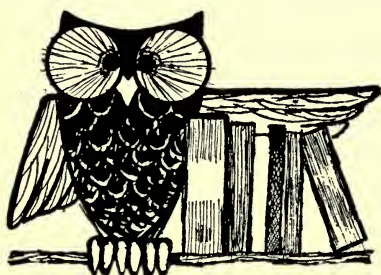
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## THE BOOKSHELF

By

David A. Baerreis

and

Guest Reviewers

Hopewell and Woodland Site Archaeology in Illinois

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The sixth publication of the Illinois Archaeological Survey has been issued under a new editorship, that of James A. Brown, who replaces Elaine Bluhm Herold. Like the previous numbers it is attractively produced and well illustrated. The present publication contains five articles, though two of these occupy over 80 percent of the space. Both of these longer articles, the description of the Pete Klunk mound group in Calhoun County, Illinois by Gregory H. Perino and a comparative style analysis of the ceramics from two Havana sites in Illinois by James D. Loy, are major contributions to our knowledge of Illinois prehistory. Each of these contributions will be considered in some detail and the remaining papers briefly mentioned.

Gregory H. Perino of the staff of the Thomas Gilcrease Foundation of Tulsa, Oklahoma, conducted excavations in the Pete Klunk mound group near Kampsville, Illinois, during the summer months of 1960 and 1961. A series of 13 mounds situated on the crest of the bluffs overlooking the Illinois River produced about 360 skeletons, a rich assemblage of grave goods and evidence concerning a sequence of three cultures. The Hopewellian culture, the most important of the three, was remarkably similar in many of its characteristics to the Trempealeau Focus in Wisconsin. The conical burial mounds characteristically had one or two rectangular subfloor pits as the primary focus of ritual activity within the funerary area. The pits were in some instances surrounded by logs at the original ground level with earthen ramps but-

ting against the exterior of the logs or in other examples the earthen ramp alone added to the height of the pit. Roofs of logs or other materials covered these chambers. While extended or secondary burials were found in the tombs, they occurred in even greater abundance on the ramps or elsewhere in the mound fill. Copper axes and adzes, pottery vessels and ear spoons, marine conch shells, platform pipes, copper pan pipes, flake knives, pearl beads, bone implements and a cut human maxilla are among the objects placed with the dead.

Perino's careful excavations and shrewd observations add considerable light to the interpretation of Hopewellian mortuary ceremonialism. The fully extended burials within the central log tombs as opposed to the less spectacular burials around its periphery have been viewed as clear evidence of status differences within the society. Perino, to the contrary, stresses the evidence suggesting that in large part the central tomb functioned as a charnel house in which burials were placed and then periodically removed to make room for new occupants. Thus the tomb would appear to be the central point for a group's funerary ritual rather than specifically constructed at the time of death of a high status individual. The richness of the data from the Klunk mound group provides the opportunity for a thorough restudy of Hopewellian burial ceremonies.

Additional Hopewellian burials, recognized by the accompanying grave goods, were inserted in most of the mounds after the central log tombs had been covered with an earthen mantle. Other intrusive burials are assigned to the Late Woodland Bluff culture, occasionally on the basis of associated artifacts though more commonly no grave goods are present. Their flexed burial position, however, differentiates them from those of the Hopewellian complex. The presence of another culture which stratigraphically is positioned beneath the Hopewellian occupation is a more striking contribution to the expanding knowledge of Illinois prehistory. In the excavation of Klunk Mound 7 it was discovered that prior to mound construction shallow graves and crematory areas had been excavated at many points on the knoll. Later a mound was constructed to cover much of the early burial

area and to make that Hopewellian occupation thus providing data on the sequence of cultures. The early complex, which Perino designates the Kampsville Focus, is characterized by the presence of flexed burials in shallow stone-covered pits as well as cremations and such traits as copper and stone beads, plummets of a great diversity of materials in a tear-drop form bearing a groove at the top, shell and copper fish-hooks, and a distinctive broad projectile point with pronounced barbs (Kampsville Barbed).

Although this early Kampsville Focus is designated a Late Archaic culture, presumably on the basis of evident continuity of traits from still earlier cultures of Archaic affiliation, it might more appropriately be called a culture of the Early Woodland Period. The one radiocarbon date of 920 B. C. (M-1160) tends to support this interpretation. A single date for the subsequent Hopewellian occupation from charcoal recovered in Klunk Mound 1 was 175 A. D. (M-1161).

In the introductory section of the report Mr. Perino thanks Dr. Georg K. Neumann and King Hunter of Indiana University for aid in the analysis and identification of skeletal material. In reading the text in which burials are described as to position, sex, age and accompanying burial furniture, I was impressed by the ability to differentiate between adult males 35, 36, 37, 38, 39, 40, 42, 43, 45, 46, 47, 48, 49, 50, and 51 years of age at time of death. The gaps at 41 and 44 bothered me (though perhaps it was careless reading) as did the fact that it was only at younger ages (13.5, 14.5, 17.5 and 20.5) that more precise discrimination as to age at time of death was given. On a more serious note, while I do not **know whether to credit Mr. Perino or the Indiana University staff** with this attempt at precision, such spurious accuracy tends to discredit the precision of other descriptions. The biological changes upon which aging of human skeletal material is based, such as the extent of coronal suture closure, tooth eruption, epiphyseal union, etc. can not be placed within such narrow parameters. A very brief statement on the skeletons by King B. Hunter which follows Perino's paper provides no further detail but does state that the Kampsville Focus skeletons, the Hopewellian, and the Late Woodland populations are recognizably different, the earliest being

Walcolid, the Hopewellian being Lenid (and essentially, it is said, identical to the type associated with Ohio Hopewell), while the bluff burials are Ilinid (using G. K. Neumann's terms in all instances). A detailed presentation of the biological data, especially that of a demographic character, will be a most welcome addition to the excellent presentation by Gregory Perino.

The other major paper in the volume is the analysis of Havana ceramics by James D. Loy. Loy has followed the lead of Stuart Struever of Northwestern University who suggested that within the Havana tradition there are at least four microstyle zones. Those microstyle zones are localized regions whose ceramics differ from other zones within the same tradition, presumably reflecting differences between regional sociopolitical units. Since no detailed style analysis of Havana pottery of the character thought necessary to define the microstyle zones has been published, it was Loy's objective to undertake such an analysis and to compare it with similar data from a second site in a different style zone. Two sites excavated under the supervision of Stuart Struever were selected, the Kuhne site located in the upper Illinois River Valley in the Steuben style zone and the Apple Creek site in the Snyders style zone in the lower Illinois River Valley. The two sites are about 142 miles apart and both were excavated under Struever's direction.

Loy's analysis of the Havana ceramics from the two sites is essentially a detailed study of the decoration carried out at three levels: (1) that of the design element, the individual decorative element; (2) as a design unit, the "multiple application of one type of design element, within a restricted area of the vessel's surface" (p. 135); and, (3) design sequences, the "sequence of design units enumerated in order from the vessel mouth to the base" (p. 136). The detailed analysis of these decorative attributes was carried out within the framework of the previously recognized pottery types defined by James B. Griffin, that is, pottery types were first segregated and then a detailed tabulation of the decorative variation was made in each of the pottery types (though these are designated "style types"). In addition, the frequency of some decorative elements as they cut across pottery types was also

tabulated. The bulk of the report is a detailed tabular enumeration of this decorative analysis and the application of appropriate statistical tests to establish whether or not the differences revealed are significant.

The conclusions reached are: (1) there are differences between the pottery types present at the two sites in that there are some types of limited frequency present at one site but not the other; (2) there are differences in the frequency of types present at the two sites; (3) in major design elements Apple Creek was found to have a higher frequency of four decorative elements tested (nodes, incised lines, cord-wrapped-stick impressions on the lip, and plain dowel impressions on the lip) when pottery types are lumped and the total frequency of attributes considered; and, (4) within each major pottery type, at least two attribute classes differed significantly between the two sites. In considering the meaning of these differences between the two sites, Loy offers three possible "explanatory theories": (1) the two samples may not have been left by contemporaneous Havana groups, in which case the differences are due to style change through time; (2) the stylistic differences may represent differences in sociopolitical units; and, (3) the observed differences may represent varying ecological adaptations. He points out we cannot establish the validity of these "explanations" (perhaps more appropriately "hypotheses") since we lack other comparable studies. Before we could accept ecological differences as an explanatory factor it perhaps requires demonstration in a tightly controlled situation that such a trait as ceramic decoration might indeed be related to ecological adaptation which seems a rather implausible linkage. The other two would indeed, it would seem, require additional data to establish their appropriateness.

The significance of this study to a certain extent transcends the importance of the specific site comparisons involved. The reviewer recently attended the Third Havana Conference held at Springfield, Illinois, July 19-21 of this year. It represented a gathering of archaeologists concerned with the working out of the detailed characteristics and interpretations of the Havana tradition of the Hopewell culture whose ceramic attributes in one developmental phase are discussed

in Mr. Loy's paper. A most striking feature of the conference was the very strongly expressed conviction that typological procedures presently in use were inadequate or even inappropriate for the elucidation of the problems that were the present concern of archaeology. Attribute analysis, of which the report by James D. Loy is an example, were vigorously proposed as the new and appropriate analytical procedures and advanced with a fervor strikingly like that exhibited by the radical student left on our university campuses. Thus it is in the context of this new wave of archaeological interpretation that the appraisal of Loy's study takes on added importance.

One difficulty in evaluating the utility of the approach is, of course, that expressed by Loy himself. We have only this single example of a meticulous attribute comparison of two sites within the Havana tradition. It does indeed demonstrate differences between the two sites, and with considerable precision, but then a conventional pottery typology would also differentiate the two sites as Loy's study itself demonstrates. Whether the very considerable additional effort involved in this kind of an attribute analysis is worth while remains as a matter of faith at the present moment. What is particularly needed is not just additional comparisons of distant sites but also a demonstration of similarity within one of the proposed microstyle zones in the Havana tradition. The Microstyle zones proposed by Stuart Struever would appear to be a reasonable model of the manner in which archaeological materials might reflect such facets as socio-political boundaries of past cultures. But it is only one of several possible models and we have not yet been provided with adequate empirical proof that the decorative aspects of ceramics does indeed have such linkages in the cultural system.

As an example of another model which might well fit the Illinois situation, we might well recall the studies carried out in California involving breaking down and tabulating the specific cultural traits of individual tribes so that the cultural element content of one group could be compared with other tribal groups. A. L. Kroeber has summarized some of the results of this work as follows, indicating that ". . . where sessile primitive populations live in small groups, it has been found that their local cultures vary almost exactly in propor-

tion to distance. Thus the Pomo Indians of California lived in independent groups or tribelets of perhaps two hundred, each owning a tract of land and a main settlement. These settlements averaged possibly ten miles apart. A careful estimate, based on count of culture traits found present and absent, has shown that adjacent communities shared about 95 percent of their culture, and that each was likely to have evolved perhaps 1 per cent of innovations or specific originalities. The other 4 per cent of their cultures consisted of a border zone of traits known to both communities but used by one only, or practiced by one for the other. In this cultural transition there might fall a ritual performed only by tribelet A but attended by B; a fishing harpoon known to all communities in the area and used by B but not used by A because the streams in A's territory were too small for fish of harpoonable size; and so on. Tribelet C — say twenty miles from A, beyond B — would differ from A more than B differed from A, but by the same ratio: D still more; and so on; the process continuing in all directions until perhaps a mountain range or an uninhabited tract, a radical change of speech, or some not too ancient movement of people or other accident of history, produced a slightly greater jump in the continuity. Where the situation of the tribelets or communities was linear, as along the coast from California to Alaska, the gradualness of the change is particularly striking, and renders it quite difficult to decide, except on the basis of speech, where one culture type ended and another began. Surprisingly, it seems to have made little difference whether adjacent communities were prevailingly friendly or hostile. All this seems very much like the locally variant forms of culture in Europe, especially rural Europe, of only a century or two ago." (A. L. Kroeber, *ANTHROPOLOGY*, p. 263. 1948.) From these data we might conclude that it is probable that the differences in ceramic decoration might also largely be a function of distance and not necessarily reflective of sociopolitical boundaries. This would seem to be the situation involved, for example, in the frank discussion of problems in typology in connection with the Lower Mississippi Alluvial Valley Survey by Phillips, Ford and Griffin (Peabody Mus. Papers, Vol. XXV, 1951, esp. p. 67) where they describe the



"creep" of types and the arbitrariness of the boundaries that must frequently be made between two types. Where do we see the evidence for boundaries? Similarly in another study which does focus upon attributes (James A. Ford: MEASUREMENT OF SOME PREHISTORIC DESIGN DEVELOPMENTS IN THE SOUTHEASTERN STATES. Amer. Mus. Nat. Hist., Anthro. Papers, Vol. 44, Pt. 2, 1952) one also has the overwhelming impression of a grand continuity of stylistic attributes as a consequence of spatial diffusion and temporal continuity. But our perceptions may be quite biased by our conceptions of what did happen in the past; new hypotheses as well as old require rigorous verification.

To return to the question of type or attribute analysis, one merit of the study by James Loy is the indication that it need not be a question of type or attribute approach, but these can readily and profitably be combined. While this is not a new discovery, it is deserving of emphasis. Typology is a powerful and indeed an essential research tool of sound archaeological and anthropological investigation in general. While it is evident that many types now in use could readily be improved, archaeologists are caught in a dilemma in that in order to attain comparability with published data, older but inadequate types are often retained. Perhaps we should be more willing to restudy earlier collections to update inadequate descriptions though this is a difficult decision when so much recent work is entirely undescribed. Perhaps my comments on this approach have seemed negative in character, but this has not been my intent. Analytical techniques must constantly be improved and the objective here is the laudable one of gaining greater detail and precision. At the same time, the typological approach offers the possibility of operating at other levels of generalization and should not be discarded.

Brief mention should also be made of the two papers which conclude the volume under review. Jane Canby MacRae describes limited excavations and surface collections that have been made at the Cooke Site in Cook County, Illinois. Typological resemblances in the absence of demonstrated stratigraphy have been used to suggest a range of cultures from late Paleo-Indian to Mississippian. In the second paper, H. Dean Campbell reports on a cache of Hopewell discs

found on the Burnham Woods Golf course located in the Cook County Forest Preserve. Approximately 32 gray hornstone discs were uncovered by workmen in excavating for the number ten green of the course.

University of Wisconsin – Madison  
David A. Baerreis,

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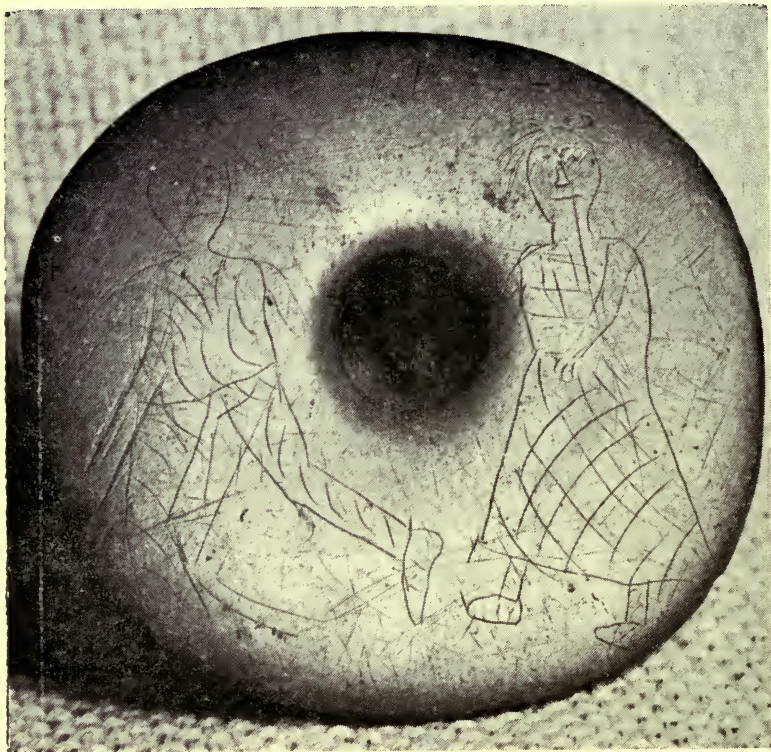
**ANCIENT GREEK LITERATURE IN ITS LIVING CONTEXT** by H. C. Baldry. Library of the Early Civilizations, McGraw-Hill Book Company, New York, 1968. Price: \$5.50.

**EARLY HIGHLAND PEOPLES OF ANATOLIA** by Seton Lloyd. Library of the Early Civilizations, McGraw-Hill Book Company, New York, 1968. Price: \$5.50.

**BEFORE THE DELUGE** by Herbert Wendt. Doubleday and Company, Inc., New York, 1968. Price: \$6.95.

**THE MYSTERIOUS GRAIN.** Science in Search of the Origin of Corn. Mary Elting and Michael Folsom. M. Evans and Co., Inc., New York, 1967. Price: \$4.50.

## *Interesting Wisconsin Specimens*



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With incised male and female figures. Crawford Co., Wis.  
Milwaukee Public Museum collection.



### **COPPER GORGET**

Width  $2\frac{3}{8}$  inches, height at  
center 1 inch. Scallops at  
either end. Portage County.  
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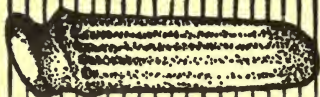
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Milwaukee, Wisconsin

Incorporated, 1903

For the purpose of advancing the study and preservation of  
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# THE WISCONSIN ARCHEOLOGIST

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## FOX VALLEY ARCHAEOLOGY 2: KIMBERLY-CLARK SITE

Ronald J. Mason

Lawrence University

Across the south end of little Lake Butte des Morts from the previously reported James Island site (Mason n. d. 1) is a small point of now almost submerged land on the property of the Kimberly-Clark Corporation. Immediately south of Neff's Bay and an adjoining cattail swamp, the point of land is in the NW  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  of section 21, T. 20 N., R. 17 E., Town of Menasha, Winnebago County, Wisconsin. Richard P. Mason, of Neenah, brought the site to the writer's attention and made his surface collection available for study. Excavations were undertaken in part of July and August, 1965 by the writer and students in the Lawrence University archaeological field school. I am indebted to the officers of the Kimberly-Clark Corporation for permitting excavation on their property. As part of a larger program the material resulting from that field work was studied and written up for publication with support from Lawrence University and the National Science Foundation (Grant No. GS-1662).

The excavated area covered 862 square feet dug to depths of from four inches to two-and-a-half feet. Most of the site had previously been destroyed by land filling operations and the incursion of the now artificially maintained lake level. The simple soil profile duplicated that observed on James Island, and the reasons for conducting excavations were basically the same and need not be repeated again (see Mason n. d. 1.). Hopes for a stratified sequence were utterly frustrated, as on James Island, by consistently shallow artifact-bearing deposits. Nevertheless, what was recovered is sufficiently interesting in the larger context of northeastern Wisconsin prehistory to warrant at least a descriptive account. As at James Island, this material will assume greater relevance, lack of site depth notwithstanding, when it is corre-

lated with the finds made at other archaeological stations elsewhere in the region.

As at James Island—though with a completely different frequency ranking—it was possible to distinguish three broad ceramic groupings. The distinctions among the three are typological with respect to the site, but have stratigraphic or other independent support elsewhere.

The sparsest occupation is represented by collared Madison Ware which accounts for 3.8 percent of the estimated number of vessels in the site sample. This variety of Late Woodland pottery is easily sorted and indicates coevality with the major occupation across the lake. Oneota pottery is somewhat more common and makes up 8.8 percent of the estimated vessel sample. The major occupation at the Kimberly-Clark site, comprising 87.3 percent of all vessels, is here identified as Middle Woodland. This is due to the fact that the constituent varieties of sherds and certain other artifacts, where they have been recovered in a stratigraphic sequence or in consistent and exclusive association with other diagnostic material at other sites, have been shown to pre-date typical Late Woodland remains. These divisions are independently confirmed at the site itself by parallel ratios between two broad classes of projectile points with generally known ceramic ascriptions. Triangular projectile points comprise 17.6 percent and Late Woodland pottery comprise 12.6% of all vessels). An 82.3 percentage of stemmed and notched points conforms well with the figure of 87.3 percent for Middle Woodland vessels. These two sets of figures, and the comparative archaeology of the region, justify the assumption that the greater part of the other stone implements relate to the major component.

The Middle Woodland "component" is envisaged as the remains of a single occupation or of several successive pre-Late Woodland occupations all of which would qualify as Middle Woodland. A separate Early Woodland ceramic period has yet to be demonstrated in most of Wisconsin. Certain modes which are called Early Woodland elsewhere (notably in Illinois) have only been found in Middle Woodland contexts in Wisconsin. There is stratigraphic as well as

distributional evidence that some artifact forms which are early in the Illinois ceramic sequence made their initial appearance later in the north and survived sometime after their replacement in their apparent area of origin (Mason 1966, 1967; Wittry 1959). It is also increasingly apparent that parts of northeastern Wisconsin were subject during the Middle Woodland Period to cultural influences from south, east, and north as attested by diffused stylistic concepts and techniques, as well as actual trade vessels, from Havana, Hopewell, Point Peninsula, and Laurel sources (Mason n. d. 2). Furthermore, it appears probable that different cultural adaptations to varying ecological niches within the region may have helped structure the pattern of interaction among local communities and thus fostered divergences in some attributes of the surviving material culture. Middle Woodland thus covers a considerable time span during which changes of some magnitude transpired. Just how much of this span is represented at the Kimberly-Clark site cannot at present be determined, and the term component must accordingly be kept purposefully ambiguous within the limits suggested.

### Middle Woodland Pottery

All of the pottery from the Kimberly-Clark site is tabulated by sherd and estimated vessel counts in Table 1. Descriptions of the various categories are given below.

#### Incised-over-Cordmarked

This category included 32 rimsherds, 204 incised body sherds, and 19 body sherds combining incising and punctating. The minimum number of vessels estimated is 18.

The rimsherds show that incising commenced at or a short distance beneath the lip. It is diagonal on 13 vessels, horizontal on 4, and indeterminate on one. The diagonal incising is uniformly from upper left to lower right. Probably most of the vessels with oblique rim incisions had horizontal lines below this zone. Although most of the sherds are small it appears that most of the original vessels were equipped with slightly to moderately out-curving rims. One specimen has a short, rudimentary collar.

Lip form varies from flat through rounded to, rarely, tapered and pointed. Seven vessels had undecorated lips in-

less the deliberate retention of cordmarking on lips (3 examples) is counted as decoration. The most popular lip mode is transverse notching with plain (1) or cordwrapped

Description	Rimsherds		Body Sherds		No. of Vessels	
	No.	%	No.	%	No.	%
Incised-over-Cordmarked -----	32	53.3	223	6.2	18	26.0
Punctated -----	4	6.6	110	3.0	16	23.1
Undecorated Cordmarked -----	15	25.0	2895	81.2	11	15.9
Pseudo-scallop Shell -----	2	3.3	51	1.4	5	7.2
Incised-over-Smoothed -----	2	3.3	29	.8	4	5.7
Dentate Stamped -----	1	1.6	15	.4	4	5.7
Cordwrapped-stick -----	2	3.3	19	.5	4	5.7
Stab-and-Drag -----	.	.	8	.2	3	4.3
Undecorated Smoothed -----	2	3.3	181	5.0	2	2.8
Corded Stamped -----	.	.	7	.1	1	1.4
Cordwrapped-stick or Corded Stamped -----	.	.	8	.2	.	.
Finger Trailed -----	.	.	17	.4	1	1.4
Sub-totals -----	60		3563		69	
Cord Impressed, Collared -----	4		8		3	
Oneota -----	14		377		7	
Undecorated Cordmarked rim scrap <sup>1</sup> -----	108		.		.	
Undiagnostic sherd scrap <sup>2</sup> -----	50		3680		.	
Grand Totals: -----	236		7628		79	

**TABLE 1. Sherd and Vessel Counts for the Middle Woodland (upper group of figures) and the Late Woodland and Oneota components at the Kimberly-Clark site.**

- <sup>1</sup> Most, if not all, are probably from vessels represented by the larger, classifiable Middle Woodland rimsherds.  
<sup>2</sup> Sloughed, frequently tiny grit tempered sherds relating to the major occupation.

tool edge (6). Less popular are notched inner rim-lip juncture (3) and oblique indentations (1).

Inner rims are plain (13 vessels) or are embellished with vertical imprints of cord-wrapped stick or other unidentifiable stamp. Sloughing has obliterated interior surface treatment on one vessel. Lip width, but for an anomalous example of 2 mm., ranges from 4 to 9 mm. with an average of about 7 mm. Rim thickness shows about the same behavior.

Of the body sherds 214 show single or parallel lines, 6 show crosshatching, and 3 exhibit parallel lines either intersecting or complimented by other parallel lines at other than right an-

gles. When punctations occur they appear to border incised area (as superior or, more probably, inferior bordering punctates) or, occasionally, they appear between incisions. Half of the punctates tend to be rectilinear, the rest approach circular form. Incising ranges from shallow to very deep, most examples being intermediate. The width of incised lines is from 1.0 to 3.5 mm. with most between 1.5 and 2.0 mm. To judge by sherd curvatures and the orientation of cordmarking, most of the body sherds indicate horizontal incising with diagonal lines largely, though not exclusively, confined to rim areas. It was largely done with great precision.

### Punctated

A probable minimum of 16 vessels appear to have had punctations as the sole technique of decoration. Only four of these are represented by both rim and body sherds. One has a smooth surface finish and bears parallel columns of ovoid to almost rectilinear punctates from just under the lip down an unknown distance on the body wall; this same vessel has a vertical rim 11 mm. thick and a 10 mm. wide flat lip. Another vessel has a smoothed-over-cordmarked surface embellished with columns of rectilinear punctates; the rim is moderately everted and is 7 mm. thick; the lip is flat, extruded exteriorly, and is 8 mm. wide. A third vessel has ovoid punctations describing a chevron motif on a smooth surface; the rim is slightly excurvate and 6 mm. thick; The lip is round and only 3 mm. across. A fourth example has rectilinear punctates, a design too fragmentary for reconstruction, and a cordmarked surface; the rim is slightly excurvate and interiorly sloughed; the 7 mm. wide lip is flat and exhibits exterior rim--lip juncture notching with a plain edged tool.

The other vessels are estimated from body fragments only. These are tabulated in Table 2.

Punctate Form	Cordmarked	Smooth	Indistinct	Totals
Rectilinear -----	27	19	6	52
Non-rectilinear -----	17	8	5	30
Indistinct -----	17	3	8	28

110

**TABLE 2. Punctated Body Sherds. Two of the rectilinear examples on a smooth surface may be finger-nail punctations.**

The body sherds retain a single or up to three parallel rows

(or columns) of punctates. These appear to have been effected by the end of a blunt instrument or a splinter of bone or wood. Some could be badly eroded instances of a corded stamp; none are corded punctates (a looped twisted cord) such as occur so commonly on local Late Woodland pottery. For purpose of description, rectilinear punctates are those which are at least twice as long as wide. Non-rectilinear punctates are those tending to be square, triangular, ovoid, or round.

### Undecorated Cordmarked

This category possibly embraces Late Woodland as well as Middle Woodland vessels. Such attributes as do survive, in addition to the proportions of decorated Middle to Late Woodland vessels, suggest that the great majority probably relate to the Middle Woodland Period. The greatest uncertainty pertains to the body sherds of course. A random sample of 434 drawn from a total of 2895 unsloughed specimens yielded a thickness range of 1.5 to 15.5 mm. and a normal curve; the mean and standard deviation are 6.6 and 1.8 mm. respectively.

Undecorated vessels (except for sometime lip and/or inner rim ornamentation) seem to be represented by 15 rimsherds which preserve sufficient area, vis-a-vis all other rimsherds, to suggest that the lack of decoration is a reflection of vessel characteristics and not accidents of breakage. Nevertheless, the sherds are sufficiently small to further suggest that the estimated figure of eleven undecorated vessels is an artifact of less confidence than the figures derived from the various classes of decorated rims. But it should be noted in defense of the estimate that if the rimsherds under consideration are actually from vessels decorated below the surviving areas, then the placement of such decoration was atypical. All other vessels were decorated commencing high on the rim.

Four vessels lack lip and interior surface decoration; two have plain lips, but vertical stamps on the inner rim; three have notched lips and plain inner rims; one has notching at the inner rim-lip juncture only; and one vessel has a deeply notched lip. Decorative techniques include plain tool edge, cordwrapped-stick, dentate or pseudo-scallop shell stamp, and

a blunt punctating implement. Rims are slightly to moderately everted and lips are flat or rounded. Two vessels show walls tapering to a narrow, almost pointed lip. Lips range between 4 and 10 mm. wide, averaging 7 mm.

In addition to the above rims on which undecorated vessel estimates were based, there are 108 undecorated cord-marked rimsherds which are insufficiently large to be sure if they are from decorated or plain vessels. In terms of lip and interior rim features they divide as follows: plain lip, plain interior (23); plain lip, decorated interior (11); decorated lip, plain interior (16); notched at exterior rim-lip, plain interior (2); notched at interior rim-lip, plain interior (5); sloughed lip and/or interior surface (51). Interior embellishment, when it occurs, consists of vertical or diagonal imprints of cord-wrapped-stick, pseudo-scallop shell, rectilinear punctates and, possibly, dentate stamp. Lip decoration is transverse or oblique tool edge stamping, frequently half obscured by partial smoothing. One lip is longitudinally incised down the middle.

### **Pseudo-scallop Shell Stamped**

A cordmarked rim and another smooth one, 28 cordmarked body sherds, 15 smooth ones, and 8 more with indistinct surface finish are probably from 5 vessels. One of the three most reconstructable of these shows a broad band of carelessly placed but roughly parallel horizontal lines on the rim with underscoring obliques. The flat lip shows secondary smoothing over transverse-oblique pseudo-scallop shell stamps; there are similar close set imprints on the interior rim. That in some cases the instrument used in dentate stamping was also employed to produce pseudo-scallop shell stamping — depending on how the tool was notched and the angle of application — is clearly illustrated by the rim of this vessel.

The other two best represented vessels lack rims and are inferred from 18 and 16 body sherds, respectively. They both demonstrate the presence of cordmarked and smooth areas on the same vessels. Much of the surface of one vessel was covered with non-contiguous parallel lines probably oriented horizontally, perhaps vertically. The other vessel shows embellishment with a broader and more deeply impressed pseudo-scallop shell stamp. These stamps are arranged in alternate

angled sets of parallel lines whose overall design cannot be ascertained.

### **Incised-over-Smoothed**

Four vessels are believed to be represented by 2 rims and 29 body sherds. Except for surface finish and a much higher relative frequency of crosshatching, these specimens are very similar to the incised-over-cordmarked sherds. Paste-wise they are indistinguishable. They clearly indicate different vessels, nevertheless, not simply smoothed areas of otherwise incised-over-cordmarked pots.

The two rimsherds are from one vessel. Parallel lines tending to left oblique begin at the rim-lip juncture and extend an unknown distance down the body. The rim is slightly everted and possesses a 6 mm. wide round lip with nothing at the inner rim-lip juncture.

The other body sherds are small and simply show parallel incisions, parallel incisions at an angle to a single incised line, or crosshatching defining rectangles or diamonds. Two sherds have punctates bordering incisions. One of these actually has trailed lines rather than incised ones and may in fact be an Oneota sherd with a highly aberrant paste.

### **Dentate Stamped**

At least four vessels survive in the form of a cordmarked rimsherd 10 cordmarked body sherds, 4 smooth body sherds, and one additional body sherd whose service finish is indistinct. The solitary rim is slightly excurvate and has a rounded lip transversely notched with what appears to be the imprints of a cordwrapped-stick. The rim exhibits parallel left oblique lines of round-toothed dentate impressions.

The dentate stamps vary from rectangular imprints to rounded, less distinct ones. A few of the dentate stamps may actually be cordwrapped-stick or evenly spaced punctates. Similarly, a few of the "punctated" body sherds — but none of the cord-wrapped-stick — may actually be indistinct dentate. Nevertheless, most of the sherds so classified are clearly dentate stamped and represent a definite, but minority, trait of the complex.

### **Cordwrapped-stick and Corded Stamped**

Of 19 cordwrapped-stick impressed body sherds 9 have a



cordmarked surface finish, 8 a smooth finish, and 2 are indistinct. Three corded stamped body sherds have cordmarked surfaces, 3 smooth, and one indistinct. A residual group of 8 body sherds is embellished with either one or the other decorative technique; the specimens are too small for positive identification. Six have cordmarked surfaces and two are indistinct.

Two rimsherds are decorated with cordwrapped-stick imprints. One had parallel rows on the rim, transverse impressions on the lip, and vertical imprints on the inner rim; the rim is vertical or faintly everted and has a flat lip. The surface is cordmarked. The second rim has a smooth finish and is slightly excurvate; the lip is rounded and is transversely marked with the cordwrapped-stick. The rim has a field of imprints zoned by an incised line.

Including rims and body sherds, but excluding the uncertain category "cordwrapped-stick or cord stamped," there is one corded stamped vessel in the sample and at least 4 cordwrapped-stick impressed vessels, two each cordmarked and smoothed. Decoration seems to have consisted mainly of parallel rows. The vessels do not appear to have been large.

### **Stab-and-drag**

Three vessels probably account for 8 sherds which show alternate stabbing and then dragging in parallel rows. Three different instruments were employed in each case: wedge shaped, blunted, and rectilinear impressions of a wooden or bone splinter. The vessel count is predicated on the assumption that just one type of instrument was used on a single vessel. No evidence was found of the combination of decorative techniques on the same sherd.

### **Undecorated Smoothed**

Possibly 2 vessels only are represented by 2 rimsherds and a number of undecorated smoothed body sherds. Except for surface treatment, the rims are very similar to the undecorated cordmarked rims described earlier. These smoothed specimens also lack decoration interiorly as well as on the lip. The 181 body sherds in this category range in thickness from 3.0 to 15.0 mm., and have a mean and standard deviation of 6.3 and 1.6 mm., respectively. Some of the body sherds, of

course, may well be from undecorated portions of decorated vessels.

In addition to the foregoing, there are 10 undecorated smoothed rimsherds which are simply insufficiently large to determine if they are or are not undecorated vessels. Six of these have plain lips and interiors, one has a plain lip and a cordwrapped-stick impressed inner rim, and 3 have plain interiors but transverse cordwrapped-stick impressions on the lip.

### **Finger Trailed**

Seventeen body sherds, but no rims, are from one or two vessels. Not much can be said about them except that they may belong with one or more of the small undecorated rimsherds and that their decorative technique suggests Robert J. Salzer's suggested type **Lake Nokomis Trailed**. Paste and temper indicate a strong probability of local manufacture.

### **Late Woodland Pottery**

Typologically Late Woodland pottery is represented by 3 vessels of Madison Ware affiliation decorated with twisted cord impressions. Similar ceramics dominated the James Island site across the lake. Combining the 4 rimsherds and 8 body sherds (one of the latter may actually be a collar fillet), it seems to be the case that at least 2 of the 3 vessels were collared. Parallel horizontal cord impressions decorate the collars and, on one vessel anyway, these were underscored by corded punctates. One vessel shows thick braided cord; the others exhibit a simple twisted cord.

### **Oneota Pottery**

An estimated 7 shell-tempered vessels appear to be present in a sample of 14 rimsherds, 328 undecorated plain body sherds, 46 traileed body sherds, 1 punctated body sherd, and 2 traileed and punctated body sherds. Generally exceedingly small, the body sherds tend to the lower end of the thickness range of 3 to 9 mm.

Two vessels have short rims (18 to 20 mm. high, respectively) which flare outward at a sharp angle from the neck (90 degrees in one case, perhaps 45 degrees in the other). Both have transverse notches on a rounded lip which cut into the interior rim-lip juncture. Vertical or diagonal trailing

extends from the neck outward toward the shoulder. The other vessels are survived by rimsherds insufficiently large to ascertain anything of their shape or decoration save that they had everted mouths. One has a plain, slightly extruded lip; one has a shallowly finger crenellated lip; one shows transverse incisions on the lip; one has circular punctates running along the center of a flat, exteriorly extruded lip; and the other has oblique lip notches.

### Stone Artifacts

A recurring problem with the archaeology of shallow sites in the Fox Valley or anywhere is that of associating one kind of artifact with another in a cultural "complex". It can only be dealt with through comparative typology and through such distributional studies as will produce both coexistence and disjunct artifact or attribute combinations so that locally fortuitous associations may be factored out. At the Kimberly-Clark site the presence of small triangular points as a minority of the artifacts classified as projectile points is readily accounted for by the minority presence of both Madison ware and Oneota pottery. The stemmed and notched points, as well as a preponderance of the other lithic remains, undoubtedly relate to the earlier pottery. Indications of a blade industry and such implements as the quadrangular wedges are similarly assignable from their known associations elsewhere. Although we may be sure that the majority of scrapers belong with the Middle Woodland component there is as yet no creditable way to determine which individual scrapers do not.

All if the stone artifacts (plus the two of copper and one of bone) are listed together in Table 3. When pertinent, comments of a descriptive nature appear below.

---

Stemmed and notched projectile points .....	42
Triangular projectile points .....	9
Scrapers .....	35
Knives (flake knives) .....	7
Drills or perforators .....	2
Ovate bifaces .....	2
Tips of broken, finished biface implements .....	10
Rough bifaces (crude tools and/or preforms) .....	10
Quadrangular wedges .....	5
Unidentifiable tool fragments .....	23

Flake "doodle" .....	1
Unretouched blades .....	104
Exhausted blade cores .....	8
Flakes—not counted (weight: 10,728 grams) .....	—
Celt .....	1
Hammerstone .....	1
Pieces of hammered sheet copper .....	2
Tip of pointed bone tool .....	1
Total: .....	263
Total (excluding blades): .....	159

**TABLE 3. Artifacts Other Than Pottery from All Components at the Kimberly - Clark Site.**

### Stemmed and notched projectile points

Excluding tip fragments, some of which could be from such artifacts as ovate knives, 51 projectile points are represented by whole specimens or usable pieces. Nine are triangular; the rest are stemmed or notched.

Not including the triangular points, minimally informative fragments of stemmed or notched points, and two small and atypical stemmed points which are simply edge-trimmed flakes, the Kimberly-Clark stemmed and notched points are readily divisible among the descriptive formal categories used in the analysis of the North Bay points at the Porte des Morts site on the Door Peninsula. Relative frequencies within these categories are not duplicated, however, and show a somewhat different polarity. There are metric disparities as well. Using the system of four formal categories and three intergrades as described in the report on the aforementioned material (Mason 1967: 308-309), the following distribution is obtained:

Category	Half Element	Number
1	side-notched	11
1.5	intergrade	2
2	corner-notched	2
2.5	intergrade	1
3	corner-removed	5
3.5	intergrade	2
4	stemmed	9
	Total:	32

Unlike the Porte des Morts North Bay specimens where the highest frequencies were in the stemmed and corner-notched categories, the Kimberly-Clark sample differs in a very low frequency of corner-notched points and a high frequency of

side-notched specimens. The relative frequency of stemmed points is almost identical. As a group the Kimberly-Clark points are appreciably smaller than the Porte des Morts or Mero points. While the large specimens are compatible, the lower end of the range drops below that known for North Bay points. The differences between any category and adjacent intergrades are slight and assignment to one or another grouping reflect discriminations of nuances which are difficult to specify since attribute shifts are continuous rather than discrete. There is no difficulty in distinguishing between categories 1 and 4. Furthermore, the high representation in these two groups (almost two-thirds of the classifiable points) argues that they reflect differences which presumably would be meaningful to the point makers themselves.

Unprepossessing workmanship resulting in bilateral asymmetrical products is evident in a minority of points clustered in category 4 and intergrade 3.5. In fact, this intergrade is probably a simple function of this feature. Only a few points in the sample could really be called well made in the sense of a well controlled symmetrical artifact unencumbered by skewed edges and knobby eminences. None of the asymmetrical artifacts show any sign of knife use and it is believed they were hafted as projectile points.

Metrically, the only consistent difference among these categories appears between the two best represented groups (1 and 4). While the largest points are comparable in size in both groups, category 1 (side-notched) contains a number of points (just over 50%) which are appreciably smaller than any of the points in category 4 (stemmed). Expressed in length, category 1 points range between 20.7 and 51.0 mm., with five points 26.2 mm. or shorter. Category 4 points range between 38.0 and 57.5 mm., even the broken specimens appearing to belong in this range. In terms of weight, category 1 points vary from 1.3 to 9.0 grams with seven points weighing 3.4 grams on down. Category 4 specimens, on the other hand, weigh between 5.2 and 10.4 grams.

Category 3, though represented by only five specimens, varies in length from 20.3 to 56.6 mm., and in weight, from 1.0 to 12.1 grams.

Most of the points could be characterized as relatively broad-bladed; unlike the Porte des Morts North Bay points there is a strong tendency for blades to have a triangular outline. Basal edges tend to be straight though there are both convex and concave examples. On specimens with straight or convex bases unmodified striking platforms are frequently retained (9 examples). One (possibly two) points have basal grinding. These are in category 1. Two of the small points in this same category have been reworked from broken points.

A little less than half the points are of local Niagaran chert. The other materials are not contained in the regional bedrock but could probably have been obtained, according to geologists at Lawrence University, from glacial gravel which is exposed at numerous localities. The only non-cherty materials are two specimens of quartzite and one each of black rhyolite and a fine-grained carbonate rock with conchoidal fracture.

#### **Triangular projectile points**

All nine triangular points, with possibly one exception, are of local Niagaran chert. They have a general isocetes form. Bases are straight in five cases, convex in 3, and concave in one. Four points are bifaces, one is a uniface, and the remainder are simply edge-trimmed flakes. The bulb is prominently retained on one of the latter and is located at one corner of the base. The points range in length from 15.5 to 29.0 mm. (a broken specimen may have been a trifle longer) with most between 17.0 and 22.0 mm. The range in breadth and thickness is 9.6 - 21.5 and 2.5 - 5.0 mm., respectively. With one measurable exception at 2.2, weight is less than 1 gram; the smallest weighs a mere .3 gram.

#### **Scrapers**

The 35 scrapers fall into three morphological categories. There are 13 end-scrapers, 19 side-scrapers, and 3 multiple edged scrapers.

Of the end-scrapers 6 are trianguloid, 6 are irregular in outline, and 1 is based on a parallel blade or blade-like flake. The latter has not been retouched but exhibits very heavy flake-back on the thick, steep end where the flake or blade

hinged out from the core. Two others — one trianguloid, the other irregularly shaped — show scraper use but no retouch. The trianguloid specimens are 12 - 18 mm. wide and 15 - 38 mm. long. The more amorphous group have scraper edges 9 - 20 mm. wide and maximum dimensions of 18 to 25 mm. The possible blade end-scraper is 12 mm. wide and 20 mm. long.

Four of 19 side-scrappers are based on parallel-sided flakes or blades; the remainder are irregular flakes showing beveling and/or flake-back scraper use along one side. Excluding the blade specimens, the flake side-scrappers are 11-23 mm. wide and 20-40 mm. long. Several are broken. The side-scrappers are 10 - 15 mm. wide and 20 - 35 mm. long. one of the latter has a small retouched (graver?) spur at one end.

Each of the 3 multiple edged scrapers is unique. One is a 26 by 50 mm. combination end- and side-scraper. The second is a 20 by 26 mm. pentagonal shaped implement with scraper retouch on the four longest edges. The last "scraper" is a peculiar flake tool 19 mm. wide at the middle, tapering abruptly to 9 and 8 mm., respectively, at the ends; it is 45 mm. long. From the mid-point the implement appears to be divided into functional halves. Each side of both halves is beveled from the opposite edge drill fashion: this technological suggestion of a drill is not reinforced, however, by any indications of rotary wear.

### Knives

Four knives are amorphous flakes with retouch and use scars suggestive of knife employment along the longest edge; They range in length from 23 to 35 mm.

There are 2 knives with multiple working edges. Again, these are retouched flakes rather than biface implements. Tending to quadrangular, these small tools (the largest is 14 x 22 mm.) are more carefully prepared than the knives just described. One shows flake-back and crushing along all edges, the other on two.

A roughly triangular flake of non-local, glassy grey chert shows knife use along one long edge and has a steep scraper bevel on the other. This latter edge could have been used

for heavy cutting or scraper use, or both.

### Drills or perforators

Two probable drills or perforators have been recognized. One is a long (60 mm.), slender (16 mm. near the base, tapering gradually to the tip) biface with rhomboidal cross-section at the tip. If the artifact functioned as suggested it was not put to heavy or prolonged use. It was probably hafted.

The other is extensively worn and shows clear rotary use. The implement is made from a parallel-sided flake or blade. The bulb and a fraction of the striking platform survive at the proximal end. Extending from this for two-thirds the length of the tool (to where the edges converge to form the drill itself) is short, steep beveling suggestive of alternate employment. The artifact is 38 mm. in length.

### Ovate bifaces

Two are present in the site sample. Only one is complete. Both are of unusual interest, however.

The unbroken specimen is 68 mm. long, 28 mm. wide, and 7.5 mm. thick. A symmetrically shaped leaf-shaped artifact relatively flat in cross-section, one of its lateral edges is twice as thick as the other. The implement may well have been a hafted knife. Together with only 3 flakes, this is the only representation of the distinctive mottled brown to honey colored Knife River chalcedony whose sources are located in the northern plains. A very interesting feature of this specimen is that it is obviously the product of reworking a larger and older artifact. The proximal end exhibits relatively unweathered flake scars which cut into and across older ones; these latter have a velvety sheen reminiscent of "desert polish," coextensive with which is the development of considerable patination. One of the Knife River chalcedony flakes shows the remnant of a patinated surface. It seems most plausible that wherever the original artifact originated it had a long history before it underwent modification at the Kimberly-Clark site.

The other ovate biface is a proximal third or half similar to the above except for material and differential weathering. The material is a variegated cream-white-pink chert. The principal feature of interest is the transverse break. After



breaking, this cleavage was subjected to flaking from one end; three parallel flake facets run along the complete length of the break. A kind of burin technique is further suggested by a negative bulb in one of the scars. There is no sign of use where the flakes were detached.

### **Rough bifaces**

There are 10 pieces which are either very roughly finished tools or are simply unfinished. They are approximately ovoid to triangular in shape; they are thick and have sinuous edges. They range in length from 29 to 64 mm., in width from 21 to 33 mm., and in thickness from 10 to 19 mm.

### **Quadrangular implements (wedges)**

Five of these implements of uncertain function were found. They are like those from the Mero and Porte des Morts sites on the Door Peninsula (Mason 1966:65; 1967:319-20). As is normal for this class of implement, edge fatigue is extreme.

### **Flake "doodle"**

A percussion flake shows apparently aimless chipping along parts of two edges. It suggests much more than any other flake-knapper's analog to the whittler's stub.

### **Flakes and blades**

At the Kimberly-Clark site chippage was recovered in the amount of 10,728 grams. The total weight of blades in this collection is only 104 grams or less than one percent. Of the total 110 blades only 6 show unmistakable evidence of retouch and/or use. One had been made into a combination side-scraper and drill, one into an end-scraper, and four were possibly used as side-scrappers. Five seemingly unused blades are decortication flakes.

Eight tiny, faceted blocks of chert look like exhausted cores from which some of the blades may have been drawn. The so-called bipolar technique seems to have been employed in 6 of these. Other "cores" from which most of the flakes at the site were presumably drawn are erratically shaped blocks, wedges, and splinters from which, usually, one, two, or three usable flakes had been struck. This is very reminiscent of the North Bay pattern.

The blades range in length from 13.5 to 51.0 mm. With

the 3 longest blades excluded as atypical in the frequency range, the blades have a mean of 22.9 mm. and a standard deviation of 5.mm. Because the distribution is somewhat skewed from a normal curve, these figures are only general approximations of the distribution of the attribute. Somewhat over fifty percent of the sample falls below the calculated mean.

### **Cores**

Eight small multi-faceted exhausted cores are present in the sample and document further the production of small blades. Good striking platforms are retained on only two. Six show heavy battering of the end opposite the striking platform and indicate bi-polar technique. At least one of the cores is itself predicated on a heavy flake. All are of chert and range in length from 14 to 27 mm. Two are conical in form. Other, more typical flakes sources, have already been described.

### **Celt**

A small basaltic celt (64 x 46 x 23 mm.) is heavily pecked and minimally ground on poll and edges. Extensive grinding is confined to both faces, particularly near the bit; this latter exhibits the signs of hard use.

### **Catlinite artifact**

As described at length in the James Island site report (Mason n. d. 1), a catlinite artifact in the Richard Mason collection is believed to have been found on or in the vicinity of the Kimberly-Clark site.

### **Hammerstone**

This is a bi-pitted circular specimen of rhyolite with pronounced pecking around the circumference.

### **Residuum**

Two small fragments of hammered scrap were the only pieces of copper found. The sole recognizable bone artifact is the ground tip of a mammal splinter bone awl.

Due to the shallowness and disturbed nature of the deposits it was impossible to ascertain which of the faunal remains were truly prehistoric and which were modern. Most probably relate to the Indian occupations. Mammal, bird, fish, and amphibian (frog) bones were collected. Deer bones

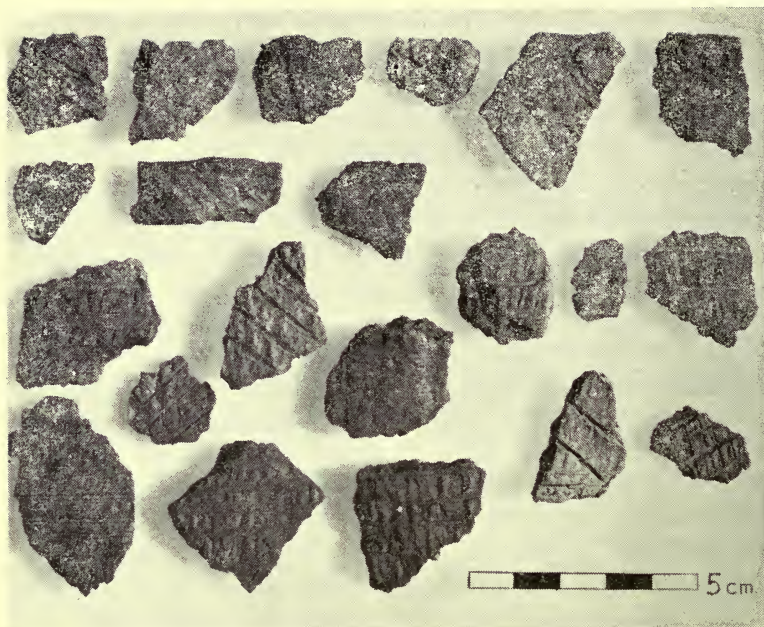
appear to be well represented.

### Summary

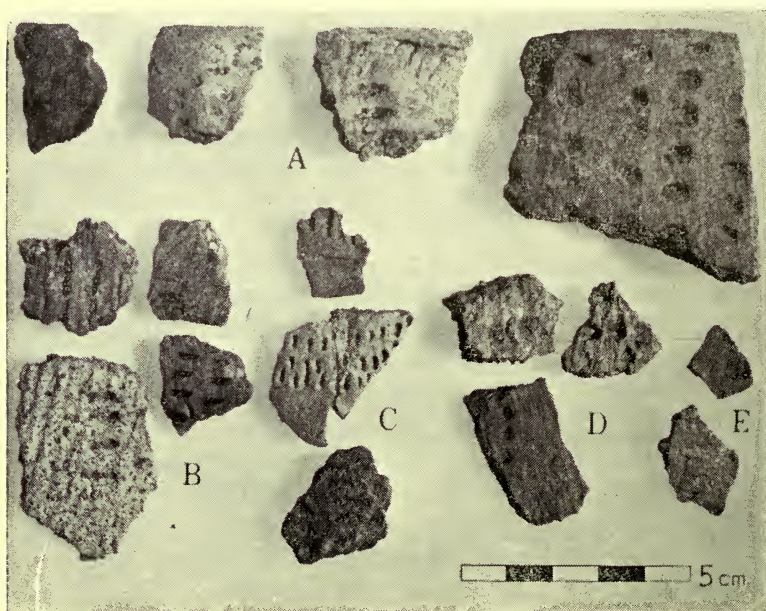
Like the previously reported James Island locality, the Kimberly-Clark site is one of a small number of shallow archaeological stations in a portion of the Fox Valley which has witnessed the destruction of most aboriginal remains because of modern demands on the land. The site had been largely destroyed prior to the field work recorded here. Working with such limited field evidence is frustrating because in situ clues of chronology and artifact associations are either absent or are so meager as to generate low confidence in their reliability. Nevertheless, that these sites occur in what is believed to be a strategic waterway demands that they not be ignored. It is hoped that they will eventually provide useful information when they can be used as partial links between better preserved sites to the north and south. The principal importance of the James Island and Kimberly-Clark site lies in what has been revealed about the typologies and possible associations among artifact classes found there. Such records are potentially important for distributional studies, particularly as additional sites and inventories are appended to the list. This is an undramatic but necessary part of a larger research program aimed at elucidating the prehistory of the northeastern part of the state.

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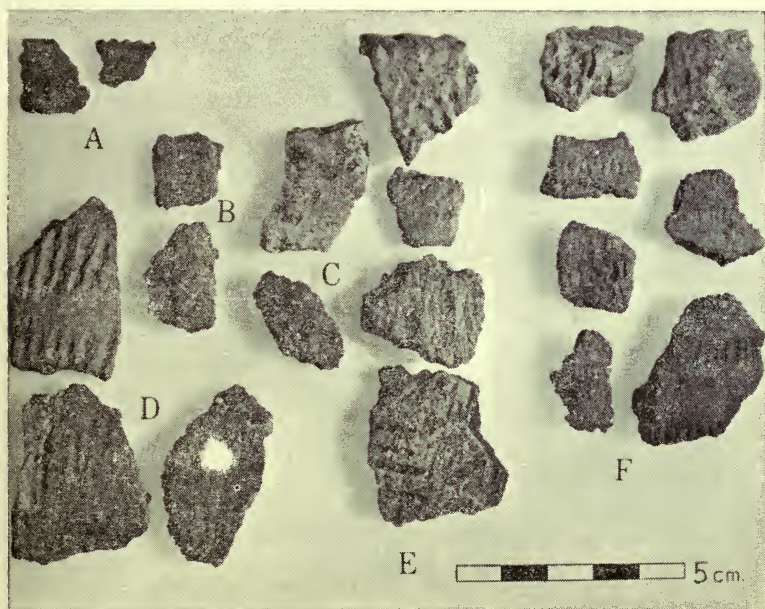
**PLATE 1.** Incised-over-cordmarked (rims: top row, and left three in second row).



**PLATE 2.** Punctated rims (A) and body sherds (B-E).



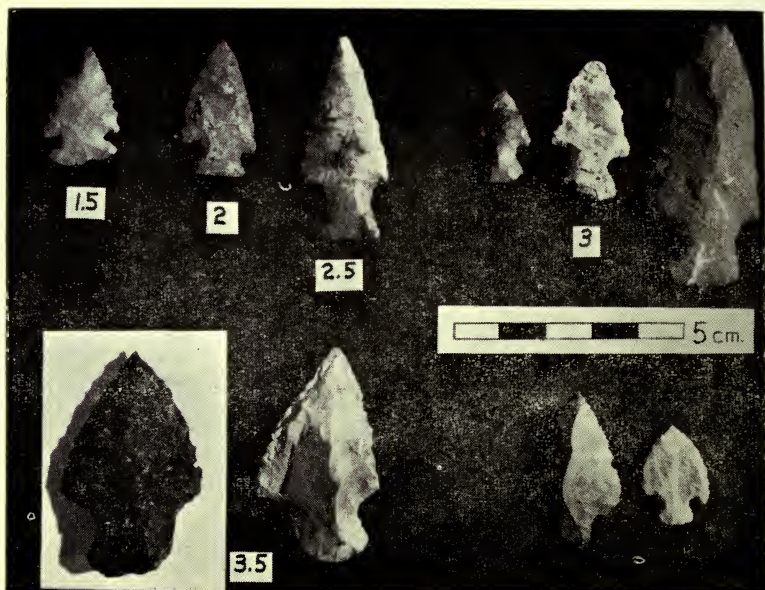
**PLATE 3.** Pseudo-scallop shell stamped (rims: top row, two at right).



**PLATE 4.** Madison Ware (A), corded stamped (B), stab-and-drag (C), finger trailed-over-cordmarked (D), dentate stamped (E), and cordwrapped-stick (F).



**PLATE 5. Major Projectile Point Categories at the Kimberly-Clark site: categories 1 (side-notched) and 4 (stemmed).**



**PLATE 6. Minor Projectile Point Categories at the Kimberly-Clark site: intergrades (1.5, 2.5 and 3.5), category 2 (corner-notched), category 3 (corner-removed), and unique trimmed flake points (lower right).**

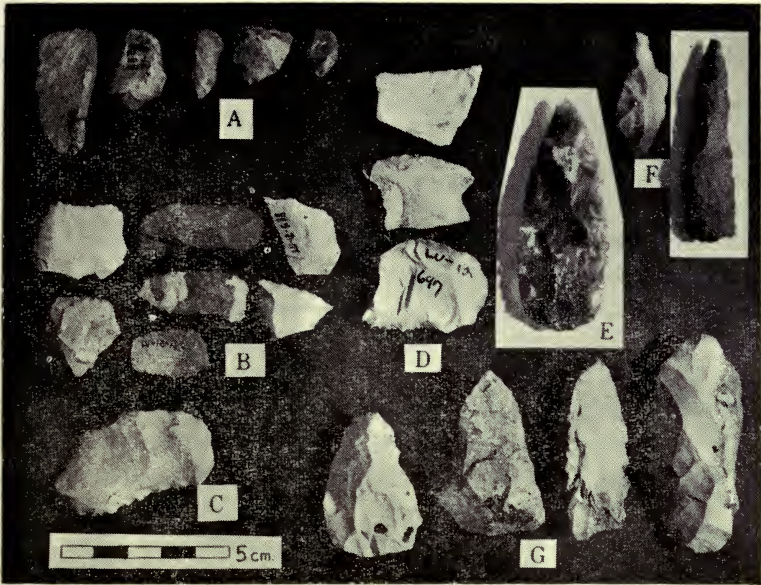


PLATE 7. End-scrapers (A), single edged side-scrapers (B), multiple edged scrapers (C), flake knives (D), Knife River chalcedony biface (E), drills (F), and rough bifaces (G).

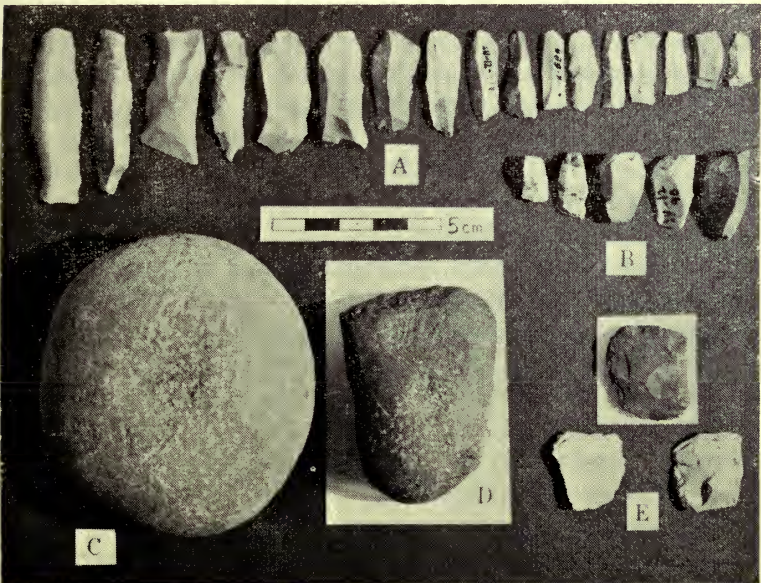


PLATE 8. Unretouched blades (A), exhausted blade cores (B), hammerstone (C), celt (D), and quadrangular implements (E).

## A NORTHWEST COAST ARTIFACT FROM NORTHERN WISCONSIN

George I. Quimby

Burke Museum, University of Washington

In the anthropological collections of Field Museum there is a decorated bone artifact easily recognizable as a Northwest Coast shaman's charm. There is nothing particularly unusual about the specimen except its provenience. It was excavated from a locus in northern Wisconsin.

This artifact (catalog number 205268) is ornamented by carving in low relief on the obverse, is plain on the reverse, and made from a large bone of some large mammal (see figure 1. It is about 13 cm. long, 1 cm. wide, more than 1 cm. thick, and somewhat curved in section. Field Museum received the specimen in 1945.

The provenience of the object is the Winbuddin Lake area near Rhineland in Oneida County, Wisconsin and the circumstances of the find were as follows: In 1945 the donor and/or other fishermen discovered the carving while digging for bait (worms). When found, the specimen was freshly broken from the impact of a shovel and was about 12 inches beneath the surrounding surface of the ground and on top of a layer of gravel at the bottom of the soil zone. Since the carving could have fallen into that position from a higher point, it may have been at any level in the area of the digging. Whatever the actual level, it seems reasonable to assume that the artifact was beneath at least a thin covering of soil when the digging began.

A Northwest Coast artifact found in situ in northern Wisconsin presents an interesting problem, one that has puzzled me for more than 20 years. The locus of the find was in 1945 relatively remote and not the kind of place ordinary collectors lose exotic artifacts. There were no reasons to doubt the circumstances of the find. But what possible cultural connection could exist between northern Wisconsin and the Pacific Northwest some two thousand miles away, and at a time presumably prior to the twentieth century? One possible explanation is that the Iroquois Indians were the agents of this cultural diffusion between the Pacific Northwest and



## Wisconsin.

Iroquois Indians from the St. Lawrence Valley and the Great Lakes region were in the Pacific Northwest by 1811 and perhaps even earlier. On October 5, 1811 an "Iroquois family" arrived by canoe at Astoria near the mouth of the Columbia River (Franchère 1967, p. 58). This Iroquois family, according to fur trader Ross Cox (1832, p. 59) consisted of or included two hunters. On April 16, 1817 Ross Cox departed from the trading establishment at the mouth of the Columbia with a brigade that included Iroquois Indians. Of this event Cox (1832, pp. 236-237) wrote as follows:

"Our party consisted of eighty-six souls, and was perhaps the largest and most mixed that ever ascended the Columbia. In it were five Scotchmen, two English, and one Irish; thirty-six Canadians (voyageurs), twenty Iroquois Indians, two Nipissings, one Cree, and three half-breeds; nine natives of the Sandwich Islands; with one boy, a servant, two women, and two children."

All of these people, including Ross Cox, were in the employ of the North-West Company which had its interior headquarters at Fort William on the northern shore of Lake Superior. The Iroquois and other Great Lakes' Indians employed by the company were used as hunters and canoe men. There were regular canoe brigades between Lake Superior and the Pacific Northwest, a journey of four or five months. The members of these brigades were the traders and clerks, the Canadian voyageurs, and the Iroquois and some Algonkian-speaking Indians. Ross Cox mentions a brigade bound for the Columbia River which he saw at Lac la Pluie (Rainy Lake) a short distance from Fort William on July 31, 1817. Cox (1832, p. 280) wrote, " - - - at fort of Lac la Pluie - - - we found a number of gentlemen, guides, interpreters, and engagés; some outward bound, and others belonging to various departments destined for the interior. Among them was my old esteemed friend, Mr. La Rocque, whose name frequently occurs in the eventful scenes of the Columbia, to which place he was now about (sic) returning with a reinforcement of forty men, principally Iroquois Indians from Canada."

The testimony of Ross Cox and Gabriel Franchère is sufficient to show that Iroquois Indians were travelling between the Pacific Northwest and Lake Superior in the first half of the nineteenth century. There were also some Nipissings (Chippewa) and Cree not to mention the French Canadian voyageurs who with the Iroquois Indians were in the employ of the North West Company in the fur trade in the Pacific Northwest. Probably some of the same Indians and voyageurs employed at times by the North West Company were at other times employed as engagés by the American Fur Company. In any case there seems to have been ample opportunity for Iroquois Indians or voyageurs who had been in the Pacific Northwest to have been also in northern Wisconsin during the first half of the nineteenth century. It is even remotely possible that some of the Iroquois Indians (Oneida) that moved from New York to northern Wisconsin in 1833 had been sometime engagés on the trans-continental canoe route to the Pacific Northwest.

In the context of the history of the fur trade I would guess that the Northwest Coast shaman's charm of bone found in northern Wisconsin had been brought there in the nineteenth century by an Iroquois Indian or a French Canadian voyager who had travelled between the Great Lake and the Pacific Northwest. As an hypothesis I believe this to be an improvement over one I considered in 1946 which was that the bone carving might be a product of the Old Copper Culture and that this culture might have connections with Northwest Coast.

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SHAMAN'S CHARM OF BONE

Picture courtesy Field Museum Neg. No. 91594

## LINE-MARKED CELTS

Ralph Olson

If you asked the average collector what it was he would probably say "celt" and walk away. As to whether or not it was a pick, adze, gouge, chisel, spud, or celt, he generally neither knew nor cared. This was about the position of the lowly celt in the amateur archeologist's thinking. Even a common arrowhead commanded more attention, and yet in man hours of work and skill in manufacturing, there is no comparison.

We are not going to discuss picks or spuds at this time but a newcomer, Mr. "Tally-mark" Celt or Mr. "Crease-mark" Celt, whichever you wish to call him. This intriguing personality showed up only recently when collectors in the Illinois and Missouri areas noticed what appeared to be lines or tally marks, both on the poll end of celts and the heel end of the bit. First comments were that they were caused by the plow or perhaps discs. Further investigation of additional collections not only showed this erroneous but that these so-called marks showed up only on a certain type celt. To date, the celts with these marks have only been made of fine grained granite. There have been variations in the color of the stone from different colorations of green, black, and greys.

The workmanship in each case has been that of a perfectionist. The hard diorite first being pecked and then polished. The hardness of the stone often maintained a luster and very sharp edge.

The shape of the celt is such that once you have seen one, the next one is easy to pick out. The marks are found in two areas on the celts. They are usually found at the heel of the bit where up to three lines have been observed with one being the more prevalent. On the poll they were generally left of the center with one being the rule. The lines on the poll are by far more rare than those on the heel of the bit.

The top or poll to date has almost always been rectangular and mostly flat on the end. The bits have been slightly to pronouncedly flared.

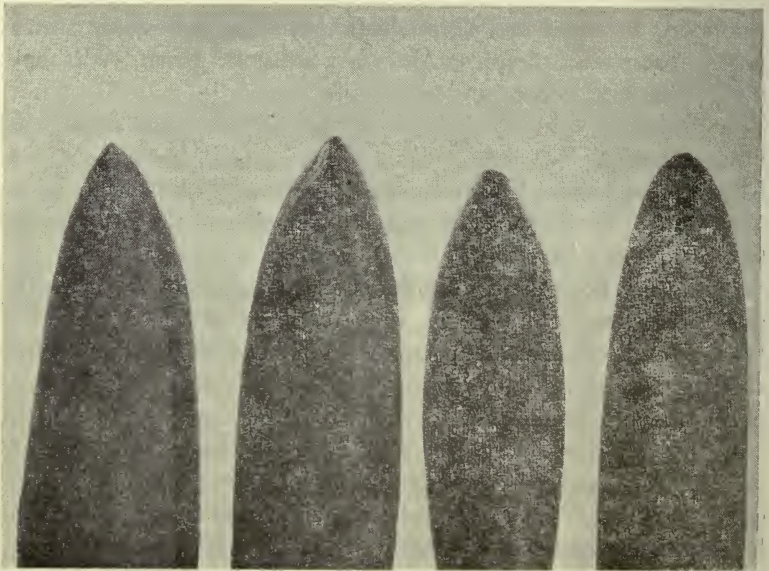
The general locations to date have indicated they are more

prevalent in the Mississippi drainage. The following states have produced examples: Missouri, Illinois, Iowa, Wisconsin, West Tennessee, and Kentucky.

A quick look in the collection of Mr. Phil Wiegand turned up a specimen with one mark on the heel of the bit. In the Milwaukee Public Museum, three celts were observed in a very quick check, two with one tally mark and the other with two (Fig. 9).

Using my home state of Illinois as a basis, they seem to fit into Mississippi culture. At the Academy of Science in St. Louis, Mr. Leonard Blake stated they have two which were classified as the Kimswich Focus of the Middle Mississippi phase (found during W. P. A. 1940-1941 dig).

Many comments have been made as to the reason for the marks. It would be interesting and perhaps helpful if each collector were to go through his collection and write Dr. Ritzenthaler, Milwaukee Public Museum, 800 West Wells Street, Milwaukee, Wisconsin, 53233. Advise location found, type of stone, and where marks are. Any comments you may have as to their reason for being, would be well received.



**FIG. 1. Line Marked Celts. Milwaukee Public Museum, Phil Wiegand Collection (Second from Right).**



**FIG. 2. Top view of Line-Marked Poll. Marion Co., Missouri.**

## NOTES

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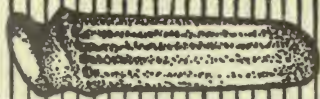
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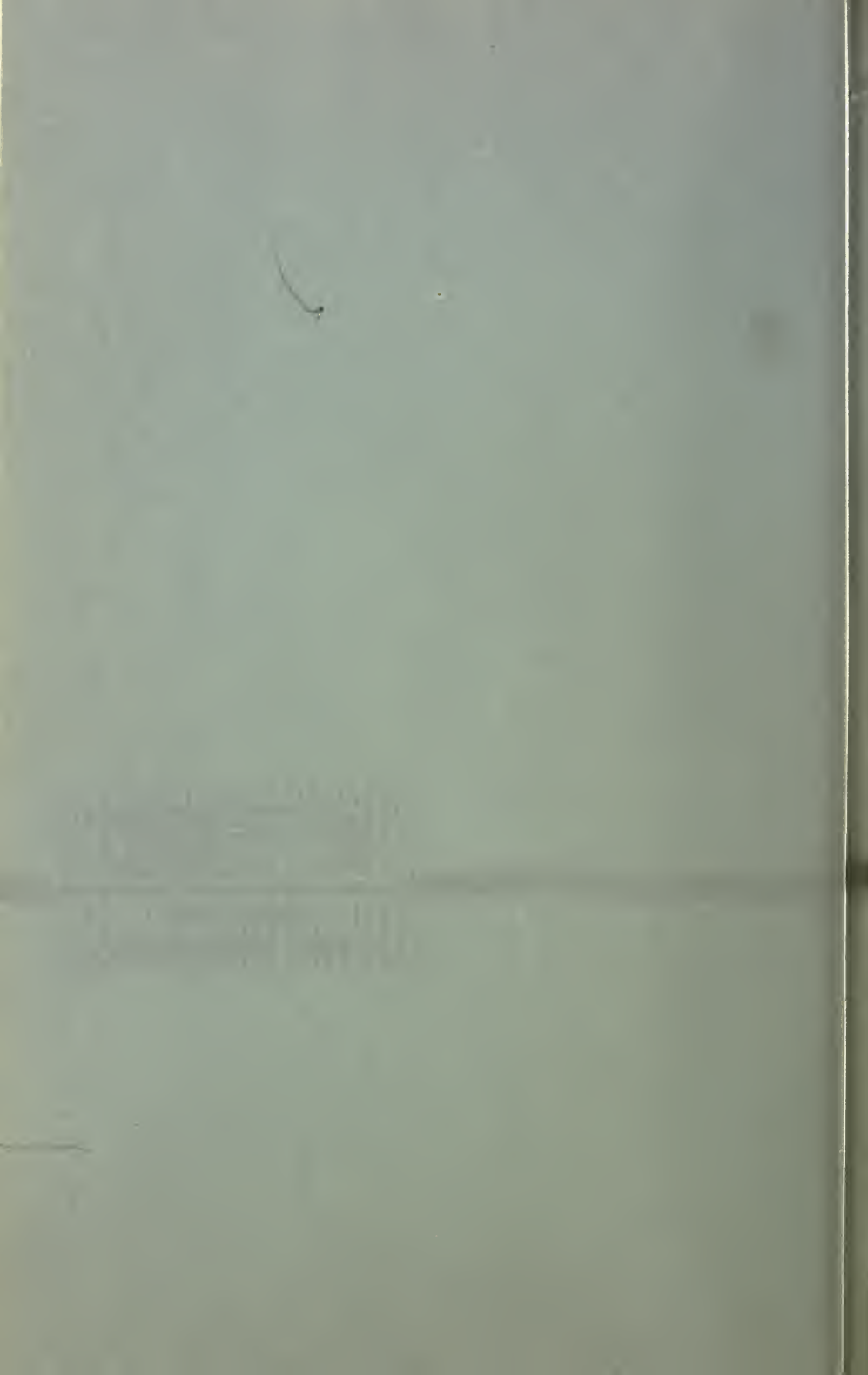
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WISCONSIN  
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# THE WISCONSIN ARCHEOLOGIST

MARCH, 1969

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# WISCONSIN ARCHEOLOGICAL SOCIETY

Milwaukee, Wisconsin

Incorporated, 1903

For the purpose of advancing the study and preservation of  
Wisconsin Indian Antiquities

Meets Third Monday of Month, 8 P. M., Milwaukee Public  
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# THE WISCONSIN ARCHEOLOGIST

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## ADDITIONAL FINDS FROM HEINS CREEK

Edward W. Wells

### INTRODUCTION

Our first contact with this site was in 1951 when we were on our usual track-down of prehistoric man. We waded through wet, swampy terrain, then through a growth of sweet scented cedar to see the emergence of a large sand blow. Blown areas are rather common along the shores of Lake Michigan. A quick glance at this one, and I was certain it held many secrets of Door County's pre-history.

Although I have followed in pursuit of historical endeavors for a period of forty-one years and visited many a picturesque spot, I have never felt closer to the past and farther from the nerve racking developments of our present civilization. The beauty and tranquility of this spot must have been as appealing to the aborigines for a quick surface survey exhibited the gratifying evidence of cultural detritus just about everywhere. where.

The Heins Creek site is located and mentioned by Holand (1917), Schumacher (1918), and excavations were carried on at this site by Mason in 1960-1961 (1966). The Heins Creek site is located in the SE.  $\frac{1}{4}$  of the SW.  $\frac{1}{4}$  and the SW.  $\frac{1}{4}$  of the SE.  $\frac{1}{4}$  of Section 6, T. 29 N., Range 28 E., Town of Baileys Harbor, Door County, Wisconsin.

The blow which is approximately 500 feet by 1,600 feet is bordered on the south by Heins Creek, on the east by Lake Michigan and northwest by rather swampy terrain especially during the inclement weather of early spring.

Since the last visit of the aborigine, the site has succumbed to the ravenous works of the elements and souvenir hunters. The process of wind and water erosion has denuded the cultural levels throughout most of the site, leaving a scattered hodge-podge of cultural detritus to be covered and uncovered yearly by the shifting dunes.

Yearly observations of the site indicated that erosion would soon completely dissipate all of the cultural remains and this site, like many others in Door County, would only be a remembrance. At this time I was granted permission by the property owners to excavate remaining deposits.

### ACKNOWLEDGEMENTS

Thanks are due to Mr. and Mrs. Eugene R. Konior, who granted me permission to excavate on their property, Dr. Ronald J. Mason for technical advice and encouragement, and Roy J. Lukes for the photographic work.

### EXCAVATIONS AND NATURE OF CULTURAL DEPOSITS

The material for this report is compiled from notes and cultural material gathered during eleven years of surface hunting and six years of excavations.

With the assistance of my son John, the area to be explored was plotted with a five foot grid. Placing a datum stake on the south-eastern part of the site, grid lines were run to the cardinal points of the compass rather than conforming the grid to the topography of the blow.

The excavation technique employed was to trowel each five foot square as a unit in levels down to sterile sand. The troweled soil was sifted through a  $\frac{1}{8}$ " mesh screen. Objects recovered were bagged and cataloged by square and level numbers.

Work at the site was approached as a salvage operation. With each visit, my son ran a surface survey and searched for signs of cultural detritus in the blow area which were marked for later investigation. Excavations were started in the stable dune area of the eastern portion of the site. Areas of the dune that were in the process of blowing away were excavated first; for this reason portions of some levels were lacking. The total squares excavated were: 12 in the stable dunes, 6 in the blow, and 5 disseminating deposits. The later were located both in the large blow and the stable dunes.

Since this was a catch-as-catch-can project, work progressed rather slowly. At the end of each day, the square or portion thereof, was backfilled to hold the profile; and also in respect to the property owner.



## STRATIGRAPHY

Excavations soon indicated that this was a multi-component site with a rather unique development in the stable dune area. Trench No. 1, which has since blown away, was parallel to and north west of Mason's excavation (Mason 1966).

This was a one midden level deposit varying from 6" to 18" and consisting of gray to black soil mixed with cultural detritus. This level was topped with a layer of aeolian sand with thin sod. Beneath the midden layer was another aeolian deposit of 10 to 20". Below this aeolian deposit is a lacustrine deposit. This buried beach is described by Mason (1966).

Progressing northward 15 feet, following the topography of the dune, there emerged three components which I have numbered (top to bottom) I, II, and III (see Figure I). Level one consisted of aeolian sand with thin sod. Cultural deposits were lens shaped streaks. Level II was curvilinear following the contour of the old dune, and consisting of black soil with streaks of ash and flecks of charcoal. Cultural debris was distributed throughout the strata.

Below Level II, there lies another aeolian deposit that is 6" to 20" in thickness; beneath this is a third cultural level. This cultural stratum is also curvilinear, varying from 6" to 18", consisting of black soil intermixed with ash, flecks of charcoal and the usual cultural debris. Below level III lies another aeolian deposit under which is Lacustrine buried beach.

There is a continuity of this beach in the form of ridges, a common phenomenon in beach formation. These gravel stone ridges extend the length of the blow. As one moves transversely inland to the northwest periphery, there appears beneath aeolian sand, an apparent fossil shoreline.

In the troughs between these ridges there is a fourth component that is historically different from those in the stable dune area. With a mean level of Lake Michigan of 580' above sea level, the buried beach involving the fourth component is 599' and the ridges adjacent to the deposits of this fourth component are 588', 586', 585.5' above sea level. The deposits are 21, 18 and 12 inches respectively, below the ridge crests.

Figure 2 shows the profile of trench No. 11. This cultural

deposit was found beneath a layer 4" to 6" thick of dense red sand, the red color seemingly from a high concentration of iron. The finding of several hematite fulgurite tubes in this stratum seems to verify the iron content.

A deposit of ash (colored pink possibly from the iron) was associated with several hearth stones, potsherds, two projectile points, and one knife. A few lens shaped deposits of

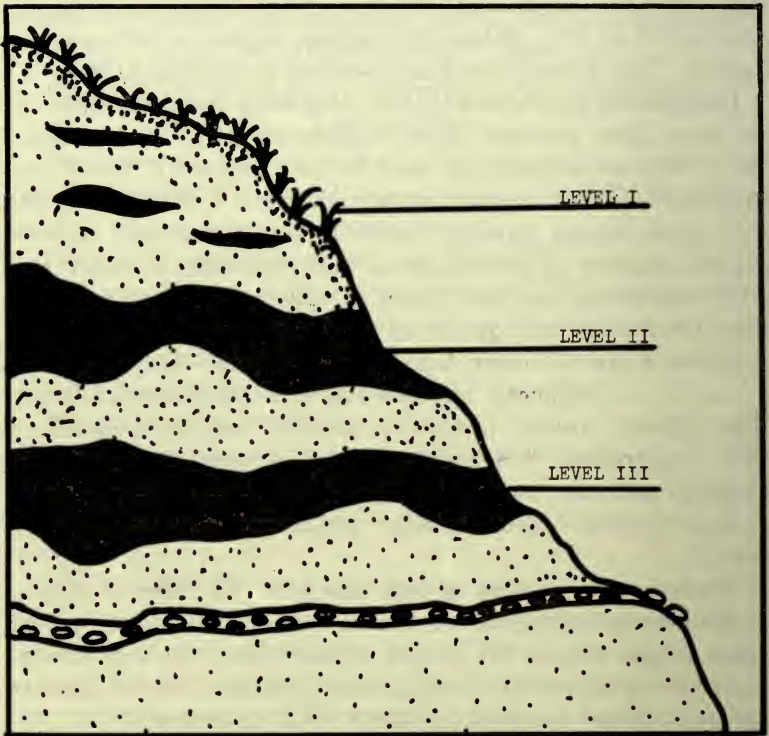
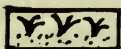


Fig. I

Stratified Profile Common to Most Trenches

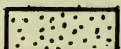
KEY



Thin Sod



Midden



Aeolian Sand



Lacustrine  
Gravel

black humus could be from decomposed animal or vegetable matter.

From the author's sampling, both surface and excavated, there exists a division within the site of this fourth component, as it is not found in the easterly portion which involves the stable dune area. Cultural detritus indicates that it is confined to the westerly inland portion of the beach ridges and fossil shoreline.

There was a generalization of cultural debris common to most of the trenches, such as blocks of flint, flakes, numerous hearth stones, ash, flecks of charcoal, pottery fragments, bone (charred and unburned), water boiling stones and projectile points.

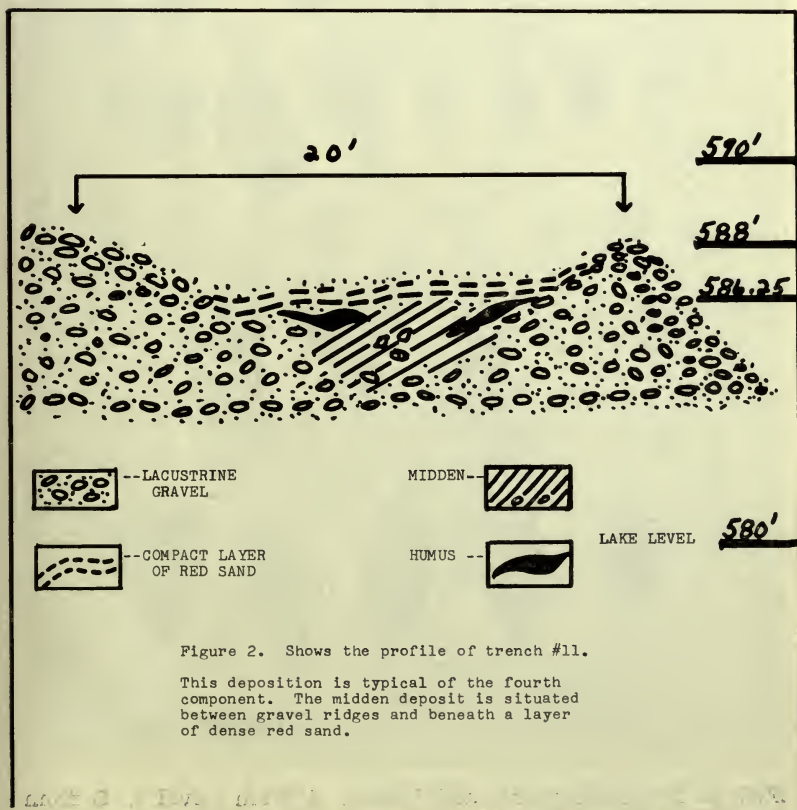


Figure 2. Shows the profile of trench #11.

This deposition is typical of the fourth component. The midden deposit is situated between gravel ridges and beneath a layer of dense red sand.

## CHIPPED STONE INDUSTRY

There was a rather large amount of chippage from trenches. It is natural that some of the waste would reveal signs of slight rework as scrapers and then were discarded. Material of this nature is left unclassified and included only with lithic material.

The quality of artifacts included in the chipped stone industry grades from good to poor. It may be said that work-

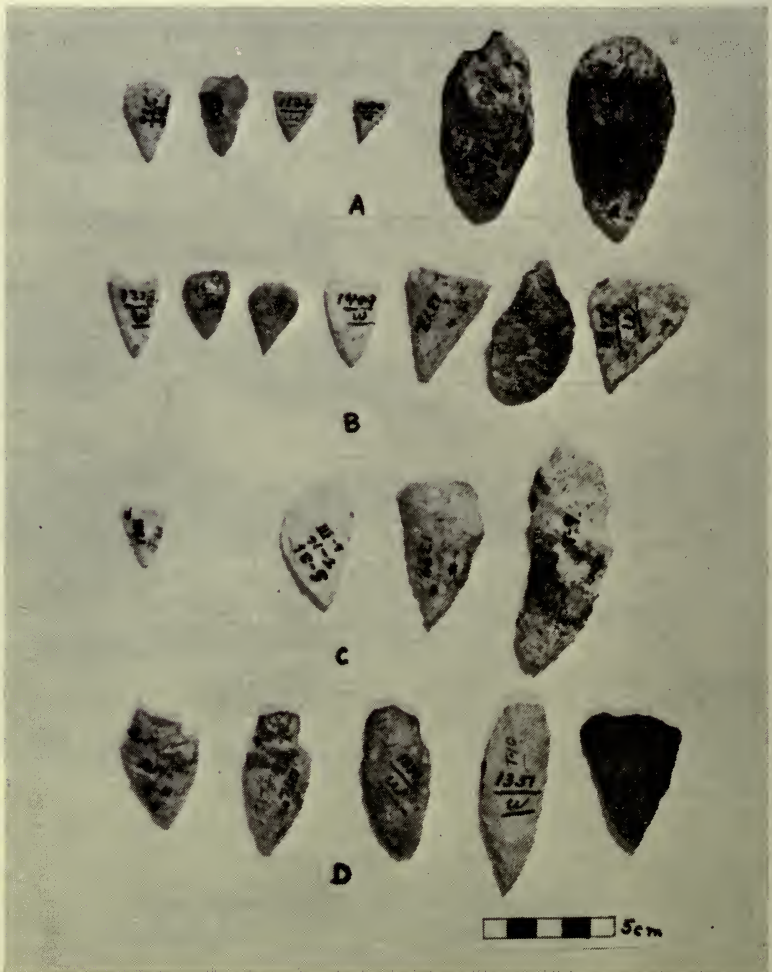


FIG. 3. Projectile points and knives. A from Level I, B from Level II, C from Level III and D from North Bay component.

manship from Heins Creek, like other sites in the county utilizing local lithic, often has a quality grade that relates to stubbornness of the new raw material.

The yield of stone artifacts was 142 specimens. Represented examples were: 22 projectile points from trenches, 27



FIG. 4. Surface finds. (A) notched and stemmed points, (B and (C) projectile points and expanded base drill, (D) knives, (E) pendant, (F) copper awls.

as surface finds; knives from trenches (whole 20, fragmentary 16); knives surface finds (whole 9, fragmentary 8); 1 end scraper from a trench; and 1 drill which was a surface find.

### Projectile Points

A total of 49 projectile points was found — 22 from excavations and 27 as surface finds.

Projectile points are rather abortive to work with (being the end product of the subtractive method of creative art), thereby allowing a chance of possible error or a new innovation by the artist. I have tentatively classified two of the types found as (1) Kolterman, Fig. 3B — No. 1 (Warren L. Wittry 1959). There existed a different distribution of the stemmed and notched points from that of triangular points.

The triangular points were confined to the stable dune area. This was the only point type associated with Heins Creek ware, Madison ware and Collared ware. They are of the basic triangular tradition with the usual variations of such forms as uniface, biface, and modified flakes.

These points have an average length of 31 mm with a range of 11 mm to 30 mm. Examples of these points are shown in Fig. 3; Row A from level I, row B from level II and row C from level III. A Kolterman point is shown in row B No. 1.

Triangular projectile points from surface finds are shown in Fig. 4, rows B and C. The first point in row B is too large to be a projectile on an arrow shaft and was no doubt hafted for thrusting.

The notched and stemmed points prevail in the westerly fossil beach ridge area, being the zone of North Bay finds. Using the Mero site as a type station, the stemmed and notched points from deposits and as surface finds are within range variation to be analogous with those found at North Bay. Examples of these points from trenches are shown in Fig. 3 row D and surface finds in Fig. 4 row A.

One point variation, a surface find, is the basal portion of a Raddatz side notch Fig. 4A, No. 1. This point was found eroding out of a beach ridge near North Bay deposits.

### Knives

A total of 53 artifacts is placed in the category of knives. These have the general form of side cutting, end cutting or

scraping implements and for the most part show signs of wear on the cutting edge. All found are biface percussion flaked with moderate retouching by pressure flaking on the cutting edge in a few examples. See Fig. 3 for representative examples. (A from level I, B from level II, C from level III and D from North Bay component.)

The asymmetrical triangular biface side cutting knife (Fig. 3 D No. 5) was found in a North Bay deposit of ash and hearth stones. It exhibits the result of thermal action in the form of black discoloration and pot-lidding on the face of the blade.

### BONE ARTIFACTS

Fifteen bone and six antler implements were found. Fig. 5 row 1 shows examples of unilateral barbed harpoons found in levels II and III associated with Heins Creek ceramics. Number 1 is 71 mm long.

Numbers 6 and 7, row 1, are possibly weaving implements. Eight examples of bone awls or pins manufactured from both joint and medio sections are shown in Fig. 5, row 2. A fragmentary bone needle not shown was found in level II. This is typical of mat weaving implements with flat 6 mm wide cross section and elongated eye.

A bone antler handle, Fig 5, row 3, No. 1, was found in level II. The base is hollowed out forming an elliptical cavity to a depth of 40 mm. which is nearly half of the entire length.

Three antler flaking tools were also found. (One shown in Fig. 5, row 3, No. 2). The perforated toggle head harpoon of antler (Fig. 5, row 3, No. 3) was previously described (Wells 1964). Number 4, row 3, may be a fragmentary toggle head. The material is antler, the base is split at an angle from use, or possibly broken in the process of being made. A groove circumscribes this artifact near the base. Toggle heads found by Mason (1965) exhibit line grooves but of somewhat different placement.

### PECKED AND GROUND STONE IMPLEMENTS

#### Pendant

One pendant, Fig 4 E, was a surface find from westerly fourth component zone. The material is tan shale, with the perforation drilled from both sides. One end is missing.

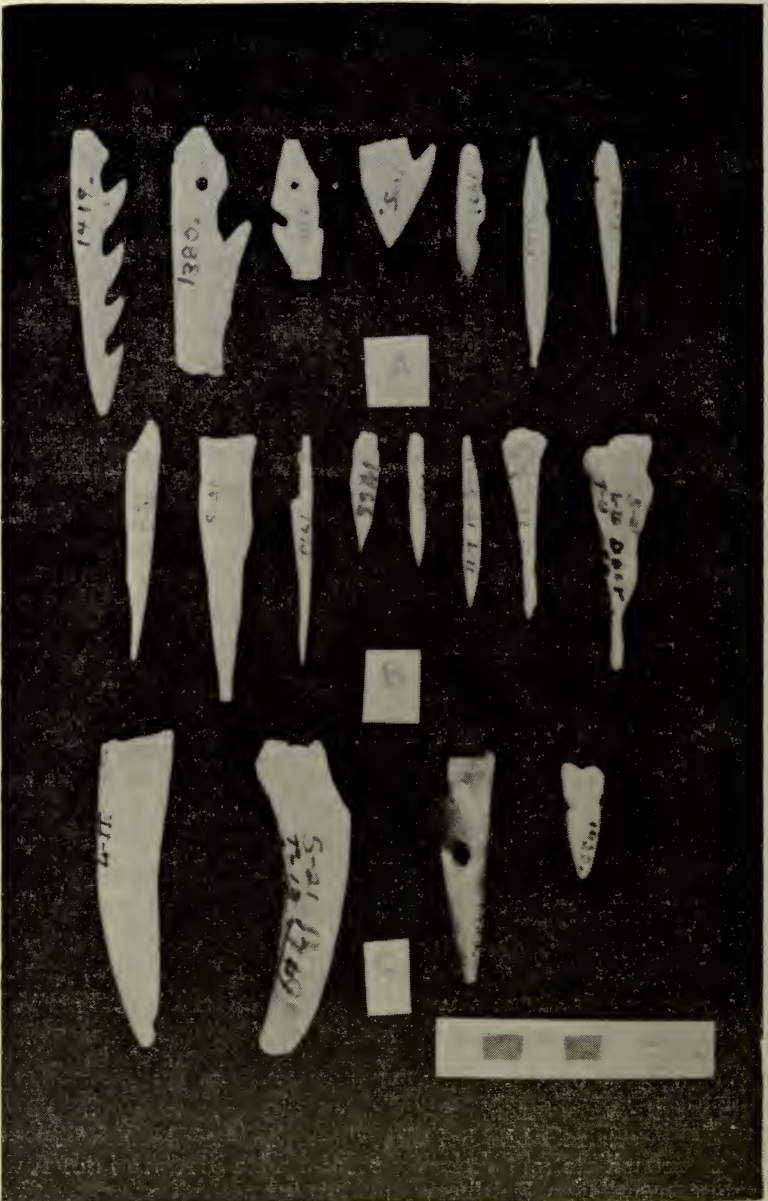


FIG. 5. Bone and antler implements. Row 1: Harpoons and the last two artifacts possibly weaving implements. Row 2: Bone awls and pins. Row 3: Antler handle, flaking implement, toggle head harpoon and fragmentary toggle head (far right questionable).



## Net Sinkers

Objects classified as net sinkers were found in levels I, II, and III. One deposit of 4 was found associated with fish refuse and a broken unilateral barbed bone harpoon. A total of eight specimens was found. They are dolomite beach stones,

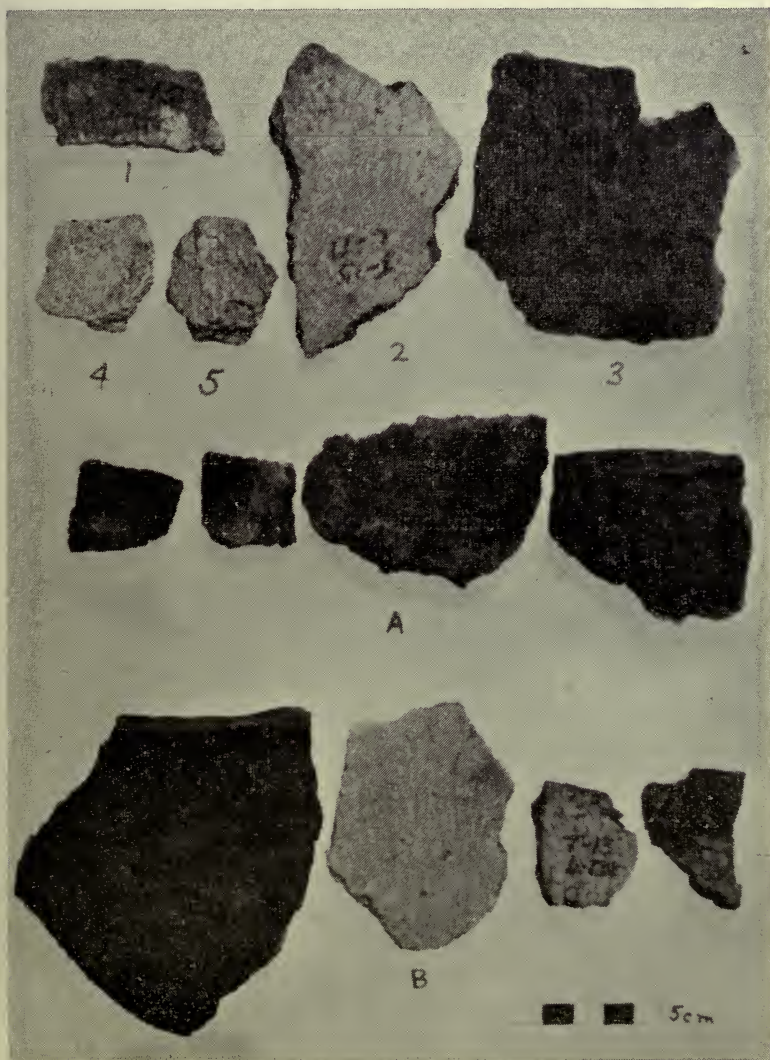


FIG. 6. Heins Creek cord-marked pottery. Rim and body sherds: (a) from level II, (b) from level III.

the only modifications being the opposing notches.

#### Hammer Stones

Twelve hammer stones were found represented in all four components. A beach stone that fit the hand was utilized; the only modification of the hammer was the battered edge from usage.

#### Anvil

A tentative classification of one stone (rather large for use as a hammer) was found with one face battered.

#### COPPER

The only copper found in the trenches was a few copper scales. Three copper awls were found on the surface by my son. One was from the fourth component zone and two were from the stable dune area. (See Fig. 4 F)

#### CLAY PIPES

Three clay pipes were found in three trenches in levels II; two are shown in Fig. 7. The paste is similar to the Heins Creek ware with rather fine granitic tempering. The third fragmentary, not shown, has the only decoration in the form of a series of punctates forming a band on the exterior of the rim top.

#### GROG

Four apparently dumped deposits of grog or tempering agent were found in four trenches of level II. The material has a particle range from pea size to that of a golf ball with a six pound total from the four trenches. This material is of igneous origin with schistose structure and is composed of quartz, orthoclase, feldspar and biotite. The composition of this rock compares to much of the tempering used at Heins Creek.

#### BONE REFUSE

Unmodified bone refuse was rather common to all trenches. It was obvious a great deal of the perishable material in level III had already disintegrated. Much of the material found was too deteriorated to be removed.

The total of bone fragments by count is 694. Allowing for the fragility of the bones of the fish and small game that have no doubt decomposed, the count of bone refuse that did once exist would be much greater.

Representing species are deer, bear, beaver, turtle, miscel-

laneous small game and fish.

In level II, trench No. 16 and No. 17 ran a veneer-like layer of bone refuse from 4" to 6" in thickness. There was a continuum of the layer exposed on the eastern edge of the dune. Four, six inch cube samples, were removed and allowed to dry for sorting and were found to be 80% fish refuse. This latter deposit is not inclusive in the total count.



FIG. 7. Heins Creek corded stamped rim and body sherds: (A) from level II, (B) from level III. (C) two clay pipes from level II.

### COOKING STONES

Stone boiling must have been in vogue for those dolomite beach stones were common to all four components. They all exhibited delamination and cracking from the heat. Deposits of fifteen or more were common; a total of 125 were recovered.

### CLAM SHELLS

A total of 19 valves of the fresh water clam was recovered, unmodified, and apparently represent a source of food.

### HEARTH STONES

Fire cracked and split hearth stones were found in all four levels with a total of 63 recovered. They were often found as a dumped deposit and were affiliated with ash, potsherds and charred bone.

### LITHIC MATERIAL

Materials utilized in the chipped stone industry are indigenous to Door County. Chert that is common to the site is found many places as strata in the Niagara escarpment. Other varieties are common as glacial drift. Several blocks found in trenches still have a portion of the outer rind. This indicates the sources was drift rock or beach stone. A total of 2,901 flakes and 32 blocks were found in the excavated trenches. Three specimens of the fossil Brachiopod (*Pentamerus Oblongus*), common to Door County area, were also found. These fossils found in level II had been split by percussion. No doubt the aborigine had intentions of utilizing the inner quartz replacement.

### POTTERY

The most prevalent form of cultural detritus other than chippage was potsherds. The sherd count would have been much greater had there not been so much deterioration in level III of several trenches. A considerable amount of pottery was found as a discoloration streak in the black midden. Many of the existing sherds from these trenches could not be removed and were analyzed if possible, in situ, but were not included in the total count.

A total of 1,416 sherds were found in the trenches and 435 as surface finds.

The most common pottery type found was Heins Creek ware, a newly proposed type. A description of this ware as well as its' affinities are presented by Mason (1966).

### Heins Creek Cord Marked

A total of 809 sherds of this category were found in the stable dune area, 556 from level II and 253 from level III. Fig. 6 shows examples of rim and body sherds of this category (A from level II and B from Level III). Numbers 1, 6 and 7 have a cord paddled surface with fine diagonal transverse corded stamping on top of the lip. Numbers 4 and 5 are rim sherds made of brick red paste. A row of punctates circumscribe the top of the lip. This was formed by the hollow reed or bone technique as the core is visible in one sherd.

Many sherds of this ware were laminated black with a lighter colored center. Surfaces often show brushing diagonally toward and through the neck of the vessel. This seems to have been done with coarse grass or soft bark when the paste was still soft. Fig. 6B, No. 1 is a rim sherd of this type. The exterior paste is dark in addition to a coating of black carbon. This vessel has a diagonally brushed surface.

### Heins Creek Corded Stamped

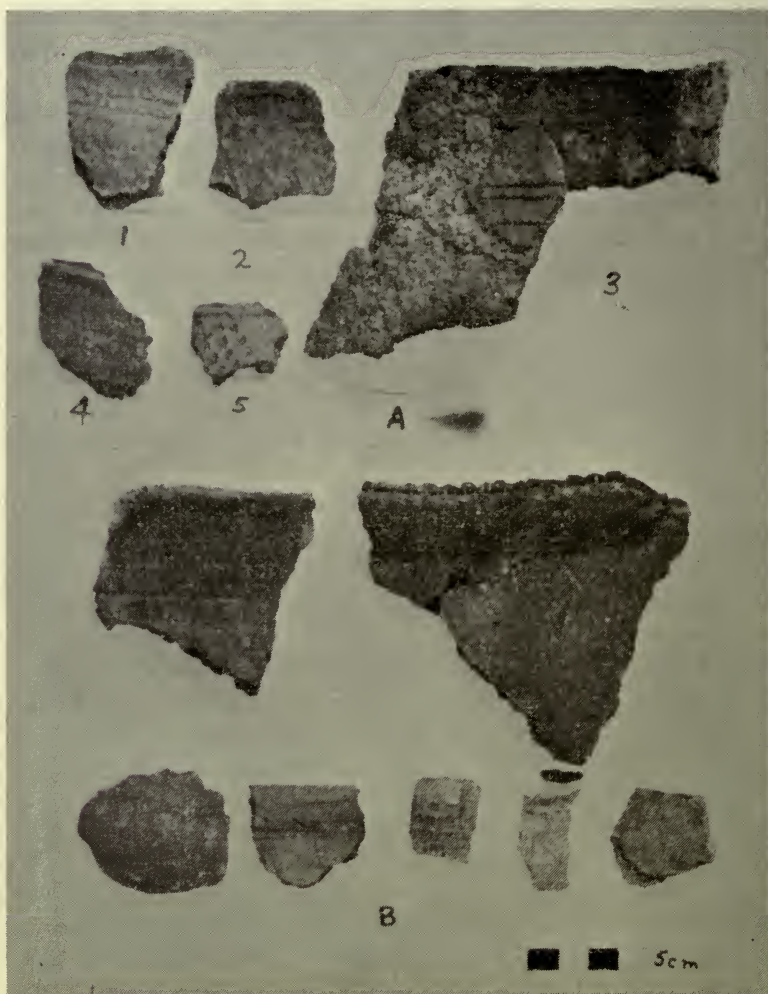
This type is represented by a combined total of 159 rim and body sherds; 111 from level II, 48 from level III. Fig. 7A from level II and B from level III are examples representing this type pottery.

The rims are decorated in a variety of ways with a cord wrapped stick. The most common arrangement is a single row of vertical corded stamped embellishments on either the interior or exterior of the rim or both. This stamping often extends up to the lip (Fig. 7A, row No. 1). Four vessels exhibit a similar decoration except the inside of the rims have a double row of vertical corded stamped impressions. Another variety has a transverse diagonal corded stamp on top of the lip and a horizontal row of punctates formed by the pressing of the end of a cord wrapped stick. This punctate design is on the interior of the neck 25 mm below the lip of the vessel (Fig. 7 A No. 6).

A vessel with a smoothed over surface has a fine diagonal cord stamp on interior and exterior of the rim but not passing over the top of the lip (Fig. 7, A No. 5). The end of a stick or bone was used to form a diagonal punctate decoration on the exterior of the shoulder beginning 5 mm below the lip.

A corded stamped decoration common to many vessels was

formed by pressing the edge of a cord wrapped stick on the top of the rim. The embellishment forms a groove 2 to 4 mm deep that circumscribes the top of the vessel. Number 7, A Fig 7 has this form of decoration combined with rows of vertical corded stamping on the interior and exterior of the lip. The pressure exerted forming this groove has thickened the lip exterior on several vessels. This grooving technique



**FIG. 8.** Heins Creek cord-wrapped stick. Rim and body sherds: (A) from level II, (B) from level III.

is common to both corded stamped ware and cord wrapped stick ware from levels II and III.

### Heins Creek Cord Wrapped Stick

One hundred and one sherds fall in the category of cord wrapped stick ware (51 from level II and 50 from level III,) (Fig 8 A from level II and B from level III.) All of the sherds placed in this category have two to five bands of horizontal cord wrapped stick impressions encircling the neck of the vessel. Fig. 8 A, No. 3 has five such bands though much finer in detail than is common to the site. The first band begins 35 mm below the lip. The top of the lip is embellished transversely with corded stick impressions. Number 5 has diagonal punctates beginning below cord wrapped stick banding. These punctates were made with the end of a stick or broken bone sliver. Fig. 8, No. 1 and No. 2 A are rim sherds of two vessels. The neck portions have four rows of cord wrapped stick impressions placed horizontally.

On the potsherds in Fig. 8, B, No. 1 and No. 2, the edge of a cord wrapped paddle was pressed on the top of the lip forming a groove that circumscribes the rim. The interior and exterior edges of the lip have vertical corded stick stamping above and below this band. The top of the lip has diagonal transverse corded stick stamping.

### Madison Cord Impressed

Madison ware has been defined by Baerreis (1953). Pottery included in this category falls in the minority at Heins Creek. This ware is represented by 15 vessels. Rim sherds of this ware have two ply horizontal cord banding around the neck with vertical cord impressions above or below this banding (Fig. 9, rows A & B).

Number 3A has four rows formed by pressing a two ply cord around the neck of the vessel horizontally. The interior and exterior of the lip have vertical corded stick stamping. The paste in this vessel is dark plus a coating of carbon.

Four rims with this design combination were found and may reflect a mixing of Heins Creek traits with that of Madison ware.

### Point Sauble Collared

Pottery of this type from excavations at Heins Creek is comparable to that described by Baerreis and Freeman

(1958). Rims of 9 vessels were found (examples shown in Fig. 9 C). This ware was confined to the upper portion of the one midden area of trench No. 1.

#### Late Woodland Collared Ware

This ware may be in continuity with Point Sauble collared ware. The thickened lip has a similarity, but the neck and

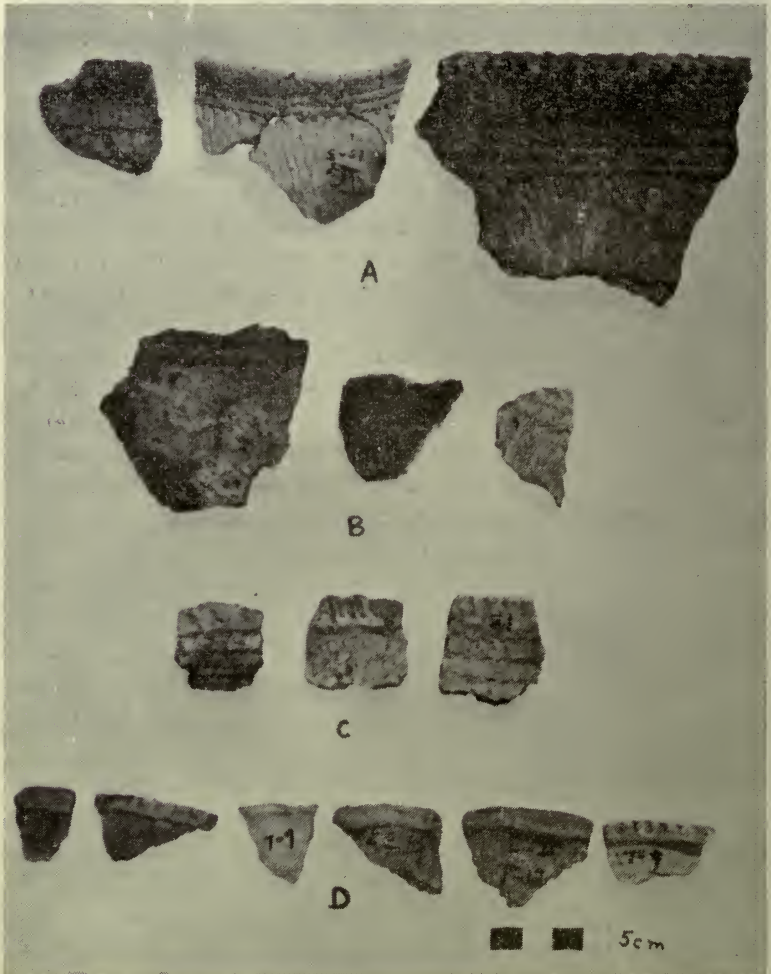


FIG. 9. Madison cord-impressed. (A and B) (3-A) is a rim sherd with combined Madison ware and Heins Creek characteristics, (C) Point Sauble Collared rim sherds, (D) Late Woodland rim sherds from level I.



shoulders of these vessels are lacking any decoration or cord roughening of the surface. In Fig. 9, row D, six rims are shown with 20 vessels represented. Four rims have a transverse stamping on the top of the lip formed by pressing a stick or sliver of bone into the soft paste. This ware was confined to level I of the three level area.



FIG. 10. (A) Vessel with Laurel-ware characteristics (2 rim, 1 body and 1 base sherd). (A, far right) fabric impressed, (B) Dane incised, (C) unclassified, incised and punctate ware.

### Vessel Exhibiting Laurel Ware Characteristics

One vessel of this style was found at Heins Creek (Fig. 10 A). This ware has a light tan paste with medium size grit (1 to 3 mm). The surface is smooth with fine incised trail lines on the body. The rim is straight and lacks any thickening. Two rows of punctates begin below the exterior of the lip and circumscribe the neck of the vessel.

The basal portion also has a smooth surface and comes to a point. Ten fragments, four of which are shown, were found in the fossil shore line zone. This portion of the site also contained North Bay ware.

### Fabric Impressed Ware

One rim and two body sherds of this variety were found in level II (Fig. 10 A far right). The trench adjacent to the one containing the fabric impressed ware contained Heins Creek corded stamped ware. The fabric impressions cover the entire surface up to the rim which has corded stick stamping on the interior and exterior. The paste of this vessel is very dark with a black surface.

### Dane Incised

Forty-four sherds of this ware representing two vessels were found (Fig. 10 B). Dane incised ware from Heins Creek is similar in style to examples found throughout the state of Wisconsin. Number 1 B has a functional cord roughened surface that has been smoothed-over and is decorated by stacking horizontal incised lines. These bands are stacked up to 20 mm of the lip. A vertical punctate band decorates the rim 5 mm below the exterior of the lip. The top of the lip has diagonal corded stamp impressions. The exterior paste is very dark to black. This color penetrates near to the center of a 12 mm thick wall. The grit size has a range of 2 to 4 mm. This vessel was found in level III of a stratified deposit. In the adjacent square, at the same level, examples of Heins Creek corded stamped ware were found.

Another vessel of this style (Fig. 10 B No. 2) was found in a North Bay deposit that included 80 North Bay sherds. This vessel has similar paste but is much thinner walled in the body section. This vessel is 5 mm thick compared to 12 mm of the other vessel from a similar portion of the body.

The rim is lacking but the body sherds exhibit stacked horizontally incised lines.

#### Unclassified Pottery

A pottery style not common to the site (Fig. 10 C No. 1) has a black laminated surface over a brown core. The grit size is 2 to 3 mm. This vessel has an excurvate rim without any thickening. The surface of the body has a rather hap-



FIG. 11. North Bay Ware. (A) three smooth surface body sherds, (B) Rim and three body sherds with rough brushed surface, (C) rim and two body sherds with rough bark-like surface.

hazard incising that gives a checkered appearance. Four vessels of this style were represented in level III.

Two varieties of sherds (14 in all)<sup>1</sup> were found that have the surface decorated with rows of punctates, apparently made with the end of a round stick or bone. Fig. 10 C No. 2 has a black surface that has been cord paddled. Number 3 and No. 4 consist of a tan paste and have a smooth surface. The form of this vessel type is unknown as no neck or rim sherds were found. This ware was confined to the one stratum level of trench No. 1.

### North Bay Ware

This pottery is a newly defined type described by Mason (1966). One hundred and eighty-three sherds of this category were found at Heins Creek (Fig. 11). Cultural deposits containing North Bay ware are located between gravel ridges and along the inland fossil shoreline (Fig. 2).

One variety has a smoothed-over surface with a brick red paste and a grit range of 3 mm to 7 mm. The wall of the vessel is 14 mm thick below the shoulder (Fig. 11 A).

Another vessel is represented by a rim and 3 body sherds shown in Fig. 11 B. This vessel has a rough exterior that has been brushed toward the lip giving the surface a bark-like appearance. The paste is brick red with a black laminated interior. Grit size is smaller than that of vessel A Fig. 11, and is a rather uniform 3mm. The top lip on the interior is decorated with transverse diagonal corded stamping. The pressure of the stamp has pushed the exterior of the lip outward slightly. Another example, Fig. 11 C, has a very rough bark-like exterior; the rim is straight. The only decoration appears to be the result of pinching the inner and outer top of the rim with the fingers giving a weak pie crimping effect and also a wavy top edge to the vessel. The paste is brick red on the exterior with black laminated interior. The division of color penetrates half way to the center core of the vessel wall.

### Dates of Pottery Types From Heins Creek

The Heins Creek ware has a carbon 14 date of 720 A. D. <sup>1</sup>

<sup>1</sup> Mason, Ronald J., *Two Stratified Sites on the Door Peninsula of Wisconsin*, 1966, p. 27-28.

There has been a suggested date of 600 A. D. for level III at this site. North Bay ware has a carbon 14 date of 160 A. D.<sup>2</sup> By correlation it seems reasonable that North Bay ware from Heins Creek would be near this date.

### CONCLUSIONS

The author settled in the Door County area twenty-one years ago. Intensive research out in the field and personal communications indicated that the area was a very important one archaeologically.

Local residents were contacted first and the search then went from regional to university libraries. The lack of scientific data available was rather perplexing.

Each year earth moving equipment destroyed more of the sites as the Door peninsula rapidly mushroomed into a summer resort playground. What was at one time an isolated prehistoric habitation site is now a macadam road lined with summer homes. This is a common, though regretful phenomenon historically of our advancing civilization.

Publications on excavations carried out under the direction of Carol Irwin and Ronald J. Mason in Door County helped fill a historical gap as well as open up new avenues of approach for future work.

My objective at Heins Creek was to salvage cultural material and compile data from dissipating areas until the time some institution would carry on exploratory excavations. Finds of both interest and importance were derived from the work at Heins Creek, such as the isolation of the triangular projectile point type in stratified early Late Woodland deposits. This data correlates with finds from five other sites in the Door County area. At these sites the triangular points are affiliated with Late Woodland ceramics and, as at Heins Creek, there are no Mississippian traits present.

Another trait is the association of the unilateral barbed bone harpoon (found in 4 trenches involving levels II and III) in stratified context with triangular points, net sinkers and Heins Creek ceramics. This situation is similar to Mason's excavations at this site.

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<sup>2</sup> Ibid, p. 125.

The ceramic sequence at Heins Creek is broken as there is a gap to be filled between the North Bay component and the Heins Creek component in level III. Future work may close this opening.

The ceramics in the stable dune area exhibit a sequence (from level III to level I), of Heins Creek ware, Madison ware, then collared ware with a mixing of Madison and collared ware in trench No. 1 of the one stratum midden level. With the emergence of the three levels, there was a gradual disappearance of Madison ware as the excavations advanced northward following the topography of the dune. When Madison ware did appear, it was located in the upper portion of level II.

There also occurred in this upper portion of level II a few examples of ceramics that may indicate a transition or combining of style. This ware exhibits Heins Creek corded stamping on both interior and exterior of rim and lip. A Madison ware trait, in the form of two-ply cord impressions, circumscribes the neck of the vessels. The pottery has the general appearance of Heins Creek ware with Madison ware affiliation. This pottery is shown in Fig. 9 A No. 3.

Another find of interest from the Heins Creek excavations is the placement of Dane incised ware with a North Bay assemblage and in a stratified deposit with Heins Creek corded stamped ware. This is a much later temporal position than was previously assigned to this ware.

A summary of the cultural assemblage from Heins Creek indicates a group of people preferring a lake shore site for spring, summer and fall encampments with an economy based on hunting and fishing, seemingly with emphasis on the latter. They no doubt supplemented their diet by gathering wild fruits and berries from the surrounding forests. Although pottery and agriculture are often thought of as being contemporaneous no indication of cultigens or artifacts affiliated with them were found.

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## THREE UNUSUAL COPPER IMPLEMENTS FROM HOUGHTON COUNTY, MICHIGAN

Charles E. Cleland  
Michigan State University

Edwin N. Wilmsen  
The Smithsonian Institution

During a recent examination of archaeological materials from Michigan, which are held by The Smithsonian Institution, the senior author rediscovered a remarkable collection of three copper artifacts from the Keweenaw Peninsula of Houghton County. These included a spud, knife and socketed projectile point. While none of these artifacts is unique in form, the large size of knife and point as well as engraved design on the spud render these artifacts worthy of record.

The three specimens may be described as follows while their metric attributes are presented in Table 1.

(1) Copper spud (USNM-204155) This specimen exhibits a rectangular form with a deep U-shaped socket and a slightly expanded bit (Figure 1A). In form it is similar to type D of Wittry (1957:216) and type 5B of Fogel (1963:149). The spud is 132 mm long and 76 mm wide at the haft end. Figure 1B illustrates the continuous diamond design which is engraved in a 7 mm wide band across the dorsal face of the spud. Engraving on old copper tools seems to be a rare phenomena but engraved motifs have been reported from at least two sites, the celts from the Hemphill Site in Brown County, Illinois (Griffin 1941) and on a copper crescent from the Reigh Site in Winnebago County, Wisconsin (Ritzenthaler 1957:286).

(2) Copper knife (USNM 204156). This specimen is 384 mm long and 47 mm wide.. The blade edge is slightly beveled and the blade form straight. The back of the blade is slightly concave terminating in a tapered tang (Figure 2A).

(3) Copper point (USNM 204154). Most remarkable of the copper artifacts of this collection is this huge socketed point which is 595 mm long and 75 mm wide. This specimen which is almost 2 feet long, weighs three and one-half pounds. The blade is bifacially beveled, the deep socket is U-shaped and perforated near the butt by two square rivet holes. (Figure 2B).



A letter in the Smithsonian's accession files, written by Isaac Otis of Auburn, New York in 1898, details the circumstances of recovery of the three copper implements.

Dear Sir

I have some ancient Copper wepons that I found in 1872 when Superintending the construction of the Port-

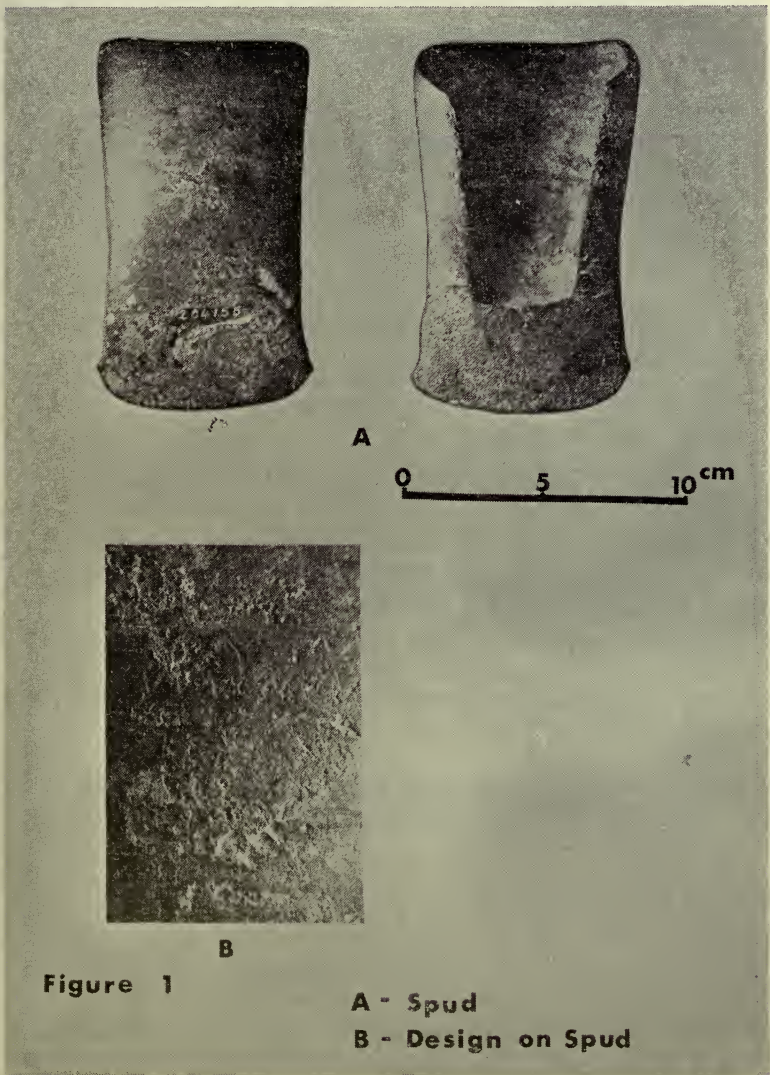


Figure 1

A - Spud  
B - Design on Spud

age Lake and Lake Superior Ship Canal. They were found on a small ridge overlooking Lake Superior, under a grove of Norway Pines. Had evidently been buried with some body, but nothing remained of it save a black streak in the sand and a few small pieces of bone, evidently toe bones.

The wepons consist of a spearhead, knife, and axe and are well made.

Spearhead weighs  $3\frac{1}{2}$  lbs.

Axe weighs 2 lbs.

Knife weighs  $\frac{1}{2}$  lbs.

If I was able would like to present them to the Institution but in old age I am almost stranded pecuniarily.

Do you purchase such antiquities? When I found them Mr. Jay Hubbal the Congressman of that district offered me 400 Dollars but I thought I might as well own them as anyone else. I enclose drawings of the wepons in this.

Would be pleased to hear from you.

Yours Truly

Isaac Otis

P. S. Of course I would not expect to get what I was offered when I found them. Disturnell of Guide Book fame was up there in 72 and 73, took drawings of them which he published in his new edition of his Guide to the Lakes about that town.

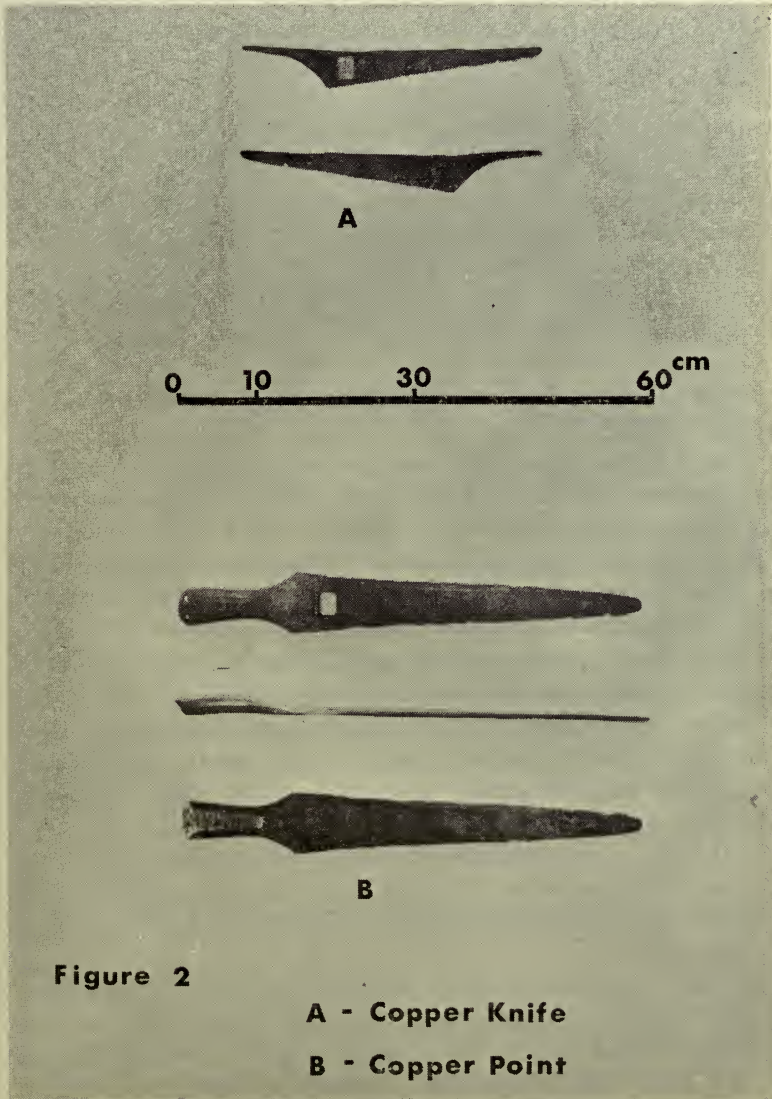
While the Otis letter is rather vague concerning the location of the find, Disturnell (1874:37) apparently interviewed Otis and adds that the three implements "were found in 1871 near the mouth of the Lake Superior Ship Canal, eight miles above Houghton, being taken from an Indian grave." This description would place these finds in the NW  $\frac{1}{4}$  of Sec. 26 or the SE  $\frac{1}{4}$  of Sec. 21 Hancock Township, Houghton County. Disturnell added no other pertinent information but did illustrate the spud and socketed point.

It also seems apparent from Isaac Otis' letter that the copper implements were associated with a burial.

The whole matter could thus be concluded except for an excerpt from another letter which is quoted by Quimby and Griffin (Griffin 1961:114-115) from a footnote in Packard's (1893) paper on Pre-Columbian Copper Mining. This undated letter was written by J. H. Forster who was State Engineer for the Portage Lake and Lake Superior Ship Canal from approximately 1868 until its completion in 1873 (Forster

1892). The following is a portion of Forster's letter.

"In connection with these last remarks by Mr. Houghton, (who notes that no graves have been found in the copper mine country) I beg to state that while I was state engineer on the Portage Lake and Lake Superior Ship Canal, the superintendent in laying water pipes



opened a very old grave. The grave was in yellow sand, in a grove of Norway Pines, near Lake Superior. At the bottom there was an exceedingly thin layer of mold, darker than the sand. Some human teeth were found and a string of copper beads on sinews. The sinews, much decayed, still held the beads in place. The copper bead was a small thin piece of copper about one-fourth of an inch long. It was rudely bent into a cylinder for the string to pass through, but was not welded; the edges were in contact, but not fastened together. The grave was at the Grand Portage or Carring place.

In dredging, the dipper brought up from the bed of the ship canal where the sand drift had originally been at least 25 feet deep, several perfect stone hammers and a copper implement which I pronounced to have been the head and ferule of a pike pole. It was about 18 inches long, tapering, sharp and solid for two-thirds the distance from the small or lower end. At the upper or pole-end the copper had been flattened out and then bent round to form a socket for a pole. There was a slight opening between the two edges of the curved copper; it was not joined or welded. The pike was bright and shining like a clean copper kettle."

There are several interesting statements and inferences in the Forster letter which could imply that the burial described by Forster and Otis are, in fact, the same burial and that Otis, writing twenty-six or twenty-seven years after the find was made, may have become confused about the origin of the copper artifacts. These points are as follows:

(1) Forster says that the burial was discovered by the superintendent and Otis was a superintendent.

(2) Forster and Otis use almost identical phrases in describing the locality of the finds—"In a grove of Norway Pines near Lake Superior" and "On a small ridge overlooking Lake Superior, under a grove of Norway Pines".

(3) The copper implement described by Forster as having been dredged from the canal bed is very close in size and description to the socketed point which Otis said he found in the grave.

Despite these suspicious circumstances there is reason to believe that Otis did, in fact, find the three implements in question with a burial. These reasons are as follows:

(1) Otis does not mention the teeth or copper beads which

Forster claims were recovered in the grave.

(2) Disturnell who interviewed Otis either the same year or a year after Otis made his find, described the three implements in print and illustrated the spud and socketed point. He reports the same story that Otis recalled more than twenty-five years later.

(3) The socketed point illustrated by Disturnell is the same artifact which Otis sold to the Smithsonian Institution.

Given this rather sketchy information it would seem reasonable to conclude that two burials were excavated near the mouth of the Portage Lake and Lake Superior Ship Canal and that both were found in similar circumstances. Although both may have been discovered by Otis, it is also possible that more than one superintendent was employed in the supervision of the hundreds of workers involved in the canal project. It also seems reasonable to conclude that the copper point dredged from the canal is not the one which Otis had in his possession in 1898.

Except for the obscure reference to the Otis copper collection published by Disturnell in 1874, these specimens have not received mention in print. It would seem likely that the copper spud, knife and socketed point which the Smithsonian purchased from Otis represent grave goods associated with an Old Copper burial from Houghton County, Michigan. Aside from a matter of recording their existence in the archaeological literature, each of these specimens is in itself unique. The spud provides a record of one of the rare occurrences of a decorated Old Copper tool and both the knife and socketed point are notable for their large size. Certainly the socketed point is one of the largest if not the largest known copper implement to be reported from the Old Copper context.

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### TABLE 1

#### Metric Attributes of the Three Copper Artifacts from Houghton County, Michigan

- (1) Copper Spud USNM—204155  
Length—132.0 mm  
Maximum Width—76.0 mm  
Minimum Width—72.5 mm  
Socket Maximum Width Exterior—49.0 mm  
Socket Minimum Width Exterior—35.0 mm  
Socket Maximum Width Interior—69.5 mm  
Socket Depth—17.0 - 21.5 mm  
Weight—830 grams
- (2) Copper Knife USNM—204156  
Length—384.0 mm  
Maximum Width—47.0 mm  
Length of Blade Edge—280 mm  
Weight—267 grams
- (3) Copper Point USNM 204154  
Length 595.0 mm  
Maximum Width—75.0 mm  
Maximum Width of Haft—47.5 mm  
Socket Length 108.5 mm  
Maximum Socket Width Exterior—29.0 mm  
Minimum Socket Width Exterior—14.5 mm  
Maximum Socket Width Interior—44.0 mm  
Weight—1431 grams

# AN OLD COPPER POINT FROM SOUTHEASTERN IOWA

Robert Ritzenthaler



Mr. George A. Horton of Columbus Junction, Iowa reports the finding of a rat-tail copper point in Columbus City township, Louisa County, Iowa. It was a surface find. While it is probably a "stray" (there are no other copper specimens known for that area), it is of interest because of its location quite far south of the concentration of the Old Copper culture. Its position on the Iowa River which joins the Mississippi some 15 miles away suggests riverine traffic. The piece measures  $8\frac{1}{2}$  inches in length.

## BOOKS RECEIVED

INTRODUCTION TO ARCHAEOLOGY by Robin Place.  
Philosophical Library Inc., New York, 1968. Price:  
\$6.00.

THE DAY OF THE DINOSAUR by L. S. and C. C. de  
Camp. Doubleday & Co., Garden City, N. Y., 1968. Price  
\$6.95.

THE KENSINGTON RUNE STONE by Theodore C. Blegen.  
The Minnesota Historical Society, St. Paul, 1968.  
Price: \$4.50.



## THE BOOKSHELF

By

David A. Baerreis

and

Guest Reviewers

**THE SACRED BEETLE** by John Ward. Malter-Westernfield Publishing Co., San Diego, Calif., 1968. Price: \$4.50.

**A Guide to Field Methods in Archaeology**, by Robert F. Heizer and John A. Graham with a chapter by Sonia Ragir. (274 pages, 4 appendices, 4 maps, 8 record forms, 30 figures, other line drawings, author and subject indices, and bibliography.) National Press, Palo Alto, California, 1967.

This neatly printed volume is a greatly expanded revision of Heizer's 1949 volume of the same title. As the authors point out in the preface, the text has doubled in length and the bibliography has almost quintupled. After a five-page introductory chapter, **Guide** is divided into fourteen chapters, each devoted to different phases of archaeological field work (e. g. site survey, site mapping and layout, excavation, recording data and collecting artifacts, stratigraphy, excavation of burials, faunal remains, photography), interpretation of data (the study of artifacts), methods of dating, and the classification of archaeological cultures. One short chapter lists the important publications dealing with experiments to replicate prehistoric technology and the last chapter, new to this volume, on sampling techniques was written by Sonia Ragir. Four appendices provide short essays on 1) writing archaeological reports (very inadequate), 2) archaeology as a profession (depressing), 3) state and federal rules governing archaeological field work (a useful starting point), and 4) a table of metric-British equivalents and conversion factors.

Although the basic procedures of archaeological field work



in a broad range of situations are comprehensively related, this guide, as its full title anticipates, stops short of describing the full range of analytical procedures which follow the field excavations. Chapter 2, "Interpretation of Archaeological Data," consists of slightly more than seven pages whose main emphasis seems to be "that analysis of material after the excavation itself is not enough," that the archaeologist, fully conversant with the literature of his special area and aware of problems not seen by his predecessors, "should thereby develop an attitude which will allow him to see, while in the field, the range of interpretative possibilities offered by the materials being uncovered." (p. 6) To this should be added, ". . . and to modify the course of the excavations as the data recovered cause the formulation of new questions (the feedback principle)."

Chapter 2 also gives the authors' ideas on the limitations of and the interpretative possibilities of archaeological data. They say that the latter can only be realized within the framework of human ecology, through "functional interpretation of the data," through ethnographic analogy, and by noting and explaining associations of artifacts with other artifacts and of artifacts with features. The scope of this chapter is certainly immense but, unfortunately, inadequately presented in this volume.

Heizer and Graham's discussion of the rationale for doing archaeological excavations in the first place is buried in the sub-section entitled, "The Selection of a Site for Excavation." (p. 29-30) They say,

Excavations which contribute most to the advancement of archaeological knowledge are 'problem-oriented.' Such excavations initially may be directed toward historical problems of a fundamental nature, e. g. the definition of basic cultural successions in an archaeologically unknown region. As basic archaeological frameworks are established, more specific cultural and social problems will be studied as approaches to major theoretical and historical questions.

This general statement could certainly stand elaboration and clarification. Other reasons given for conducting excavations are 1) conservation of data (salvage archaeology), 2) professional training of prospective archaeologists, and 3)

"public service archaeology" in which sites in national and state parks are excavated and reconstructed for public viewing.

Inherent in the previous criticisms is the failure of the authors to adequately discuss the fundamental relationship between field excavations and the formulation of problems to be attacked through field surveys and excavations. They say,

Before undertaking an archaeological excavation, the investigator must be certain that he is professionally qualified and technically equipped to meet the high scientific standards required in archaeological study. These qualifications include not only a detailed knowledge of archaeological field methods and objectives, but also a firm foundation in general anthropological fact and theory. (p. 29)

However, Heizer and Graham offer no explanation as to why an archaeologist must be firmly grounded in anthropological fact and theory, a surprising deficiency in view of the subtitle of this book, which is "Approaches to the Anthropology of the Dead." Archaeology, of course, is only one of several approaches used in studying man's past.

The above criticisms do not detract greatly from the positive value of this volume. **A Guide to Field Methods in Archaeology** definitely fulfills the intent of the authors who modestly describe it as "merely a guide for reference and consultation and an introduction to basic principles" (p. 2). It will surely serve as such for a decade or more of archaeologists in training who will simply have to look elsewhere for their theoretical home.

Reviewed by William P. McHugh

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GRANT COUNTY, WISCONSIN. Robert J. Meier

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## THE MILLVILLE SITE, A MIDDLE WOODLAND VILLAGE IN GRANT COUNTY, WISCONSIN

Joan E. Freeman

### INTRODUCTION \*

In the spring of 1962, Mr. Frank Holmes of Lancaster, Wisconsin, a survey engineer for the Grant County Highway Department, notified the State Historical Society of Wisconsin that County Trunk "C" was to be relocated through a corn field on the south bank of the Wisconsin River where lithic artifacts and bones had been found on the ground surface. Upon investigation, this field, on the farm of Mr. Earl Jones, proved to be a site well known to artifact collectors, and called the Millville Site (47 Gt 53).

Since Federal Funds had been allocated for the relocation of C. T. H. "C", excavation of the site, which lay within the right-of-way, could be undertaken by the State Historical Society through its Cooperative Agreement with the Wisconsin Division of Highways. The excavations were jointly financed by the Federal Government and Grant County.

Work on the Millville site began on July 2, 1962, and was completed on July 31. Crew members, under the direction of Joan Freeman and William Wilson were James Ellsworth, Mary Fullmer, William Hurley, James Promenschenkel and Jean Wiese. Excavation of a small Middle Woodland campsite at the Jones farm and within the same relocation project, was conducted concurrently.

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\* I wish to thank Mr. Jay Brandon for the data he provided concerning paste and temper characteristics of the pottery from this site and for editing this report. Miss Elizabeth Pillaert provided the description of bone implements from this site, and Mr. Robert Meier provided age and sex of the burials. Radio-carbon dates were made possible through Grant GS 1141 from the National Science Foundation.

### SITE DESCRIPTION

The Millville site (47-GT 53) lies in the SW  $\frac{1}{4}$ , Sec. 34 T7N, R5W, Grant County, Wisconsin, on the south bank of the Wisconsin River. The site is situated on the first terrace above the river, at the foot of Dutch Hollow through which flows a tributary to the Wisconsin. This terrace, roughly triangular in shape, is bordered on the south by old C. T. H. "C" and rocky, wooded bluffs; on the east by the tributary stream and lowlands; and to the west by marshland. The apex of the triangular area points toward a bend in the tributary. The Wisconsin River courses about 500 feet north-west of the site. While the entire terrace would have been habitable, surface finds and test pits indicated that only the apical area of the triangle had been occupied. The village stood in the area nearest to the river and its tributary, rather than adjacent to the bluffs.

The entire site had been plowed for about sixty years, and Mr. Jones reported that spring flooding was often severe with waters of the Wisconsin and the tributary flooding the low lands and covering the county highway. Apparently the higher ground where we dug was never flooded, but evidence of flood erosion was apparent around the periphery of the site for here we discovered that portions of refuse pits and house patterns had been washed away.

Since the greatest number of surface finds had been made in the apical area of the terrace, excavations were begun there. A two coordinate grid system of five foot intervals was established with the 0-0 point lying east of the site. The east-west line was designated "plus" (+) and the north-south line "right" (R). The squares were designated by the stake marking their southwest corner.

Initially the plow zone in an area 10' x 45' was cleared with shovels and trowels, and seventeen features, both refuse and fire pits, as well as numerous post holes were located. A tractor with a front-end loader was then employed to strip the remaining plow zone. At the end of the excavation an area 90' x 110' had been cleared, and 176 features and fourteen house patterns exposed.

#### Features

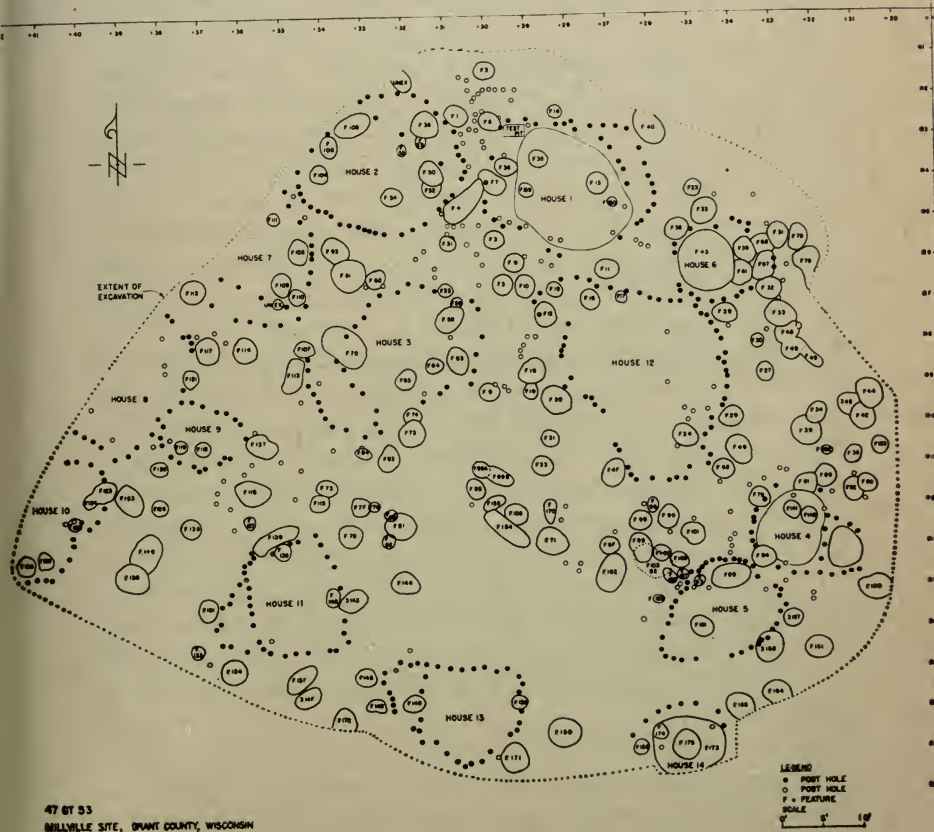
One-hundred-seventy-six features were located and exca-



vated. Of these, two were burial pits, two were found to be house basins, 139 were refuse pits, and 40 were firepits. The burial and house basin features will be described later.

The refuse pits contained animal bone, pottery, and lithic material. The surface outlines of the pits were either oval (68) or circular (55). The remaining pits were cut into by others so that their original outlines were obscured. All were basin-shaped in cross-section with walls sloping gradually to rounded bottoms. The one exception was a circular pit with a bell-shaped cross-section. Refuse pits were located both inside and outside of house patterns.

The oval pits ranged from 1.7' to 6.2' in length; 1.1' to 3.6' in width; and .25' to 1.2' in depth. A typical one would meas-



47 Gt 53  
MILLVILLE SITE, BRANT COUNTY, WISCONSIN

Figure 1. The Millville Site 47Gt53

ure 3.1' x 2.4' in plan and .5' in depth. The diameter of circular refuse pits varied from 1.2' to 3.1' with 2.3' being the average. Their depths ranged from .3' to 2.1', averaging .6'.

Firepits were so named because varying quantities of burned limestone and sandstone were found lying at the bottom of each pit. No ash was found in these pits, but often abundant charcoal lay either above or below the stones. These pits also yielded refuse and broken artifacts. In one feature, part of a pottery vessel lay immediately upon the rocks, suggesting it may have broken during cooking. The firepits were also round (18) or oval (18) in surface plan, and were basin-shaped in cross section. Due to disturbance, the outline of one firepit was not ascertainable. Seven of the nine firepits located within house patterns are circular, the others are oval.

Circular firepits varied from 1.5' to 3.8' in diameter and .25' to 1.1' in depth, with averages of 2.4' and .6' respectively. The greater diameter oval firepits ranged from 2.0' to 4.8', the width from 1.5' to 2.3' and depth from .2' to .8'. An average oval firepit would be 3.3' by 2.3' and .6' deep.

Three firepits, F139, F154, and F69b, undoubtedly had a special function and are the longest and narrowest of the group. Feature 154 is 6.3' by 2.2' and .7' deep, F139 is 6.0' by 1.9' and .6' deep, and F69b is 3.3' by 1.8' and 1.6' deep. All were completely filled with large, firecracked rocks. F139 contained about 600 pieces of limestone as well as charcoal, a few fragments of animal bones, and one chert flake. Feature 154 contained 521 limestone fragments plus charcoal, potsherds, flakes, bone and shell refuse, and at the bottom of this pit was a layer of ash. Feature 69b was also filled with firecracked rock. The walls of the pit were firehardened and on the bottom lay a mantle of ash. All these features were exterior to house patterns. I suggest that these pits were not simple fireplaces providing warmth and cooking fire, but were, rather, pits for specialized cooking such as roasting, barbecuing, or baking.

### Houses

In the excavated area of the site, post molds which outlined fourteen house patterns were uncovered. These houses were found to be arranged roughly in a circle which conforms

approximately to the outer perimeter of the area excavated.

The walls of the houses had been constructed of upright posts, .4' to .7' in diameter. The posts of House 11 form a subrectangular outline while those of the other thirteen houses form oval outlines. The houses at the northwest edge of the site are assumed to be oval; however, the post molds forming the westernmost wall courses had been eroded away by flooding subsequent to the site's occupation.

Inside the ring of post molds representing the outer walls of the houses were oval areas of dark soil which were at first thought to be house floors. Upon investigation, however, these dark areas proved to be the fill of very shallow basins. The houses were constructed by first scooping out shallow basins. Wall posts were then set along the rim of the basins. In time, the basins became filled with dirt and a little cultural debris. That the houses were occupied during the time that the basins were being filled is evident from pits which were discovered at the level of the original (sterile) floor of the basins; in the fill of the basins; and at the modern surface of the filled house basins.

The house basins varied from .4' to .8' in depth. Not all the basins were fully excavated, but all were tested for depth. House 12 was unique in having no basin; its interior floor was only slightly darker than the undisturbed soil at the site. Houses 11 and 13 were also exceptional in that the discolored soil inside their post rings was only .1' deep.

Six of the fourteen houses had an addition or extra "room" attached to the main house structure. In only one house (House 4) did the "addition" have a basin. In the other cases only the main floor areas of the houses had basins.

With the exception of Houses 9 and 11, all were oriented with their long axes approximately chordal to the circumference of the circle that the houses form. The long axes of Houses 9 and 11 were oriented radially within the circle.

There are no discernable, especially constructed, entranceways to the houses. However, the greatest gaps between posts (2.0' to 3.0') are large enough to serve as entrances. The houses were not burned so no post or roof fragments were found which could help indicate the height of the walls, the nature of wall coverings, or roof construction.

Refuse pits and fireplaces were located inside the houses and situated near the walls, apparently to conserve floor space.

In addition to wall posts, there are many post molds scattered at random around the site. None occupy positions which suggest house rebuilding or other shelter construction. The placement of some of these posts, especially along the east and north sides of the site, suggests that connecting walls were built between houses. If these post molds do represent connection walls, then the houses and their connecting walls formed a compound.

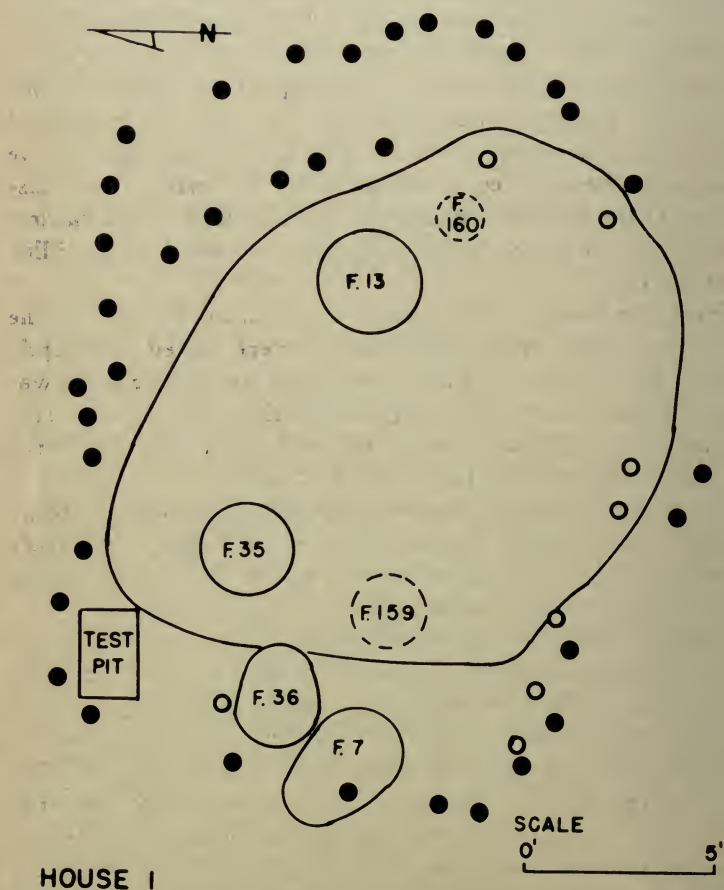


Figure 2. House 1

House 1

Shape: oval

Dimensions: 18.0' E - W, 15.0' N - S

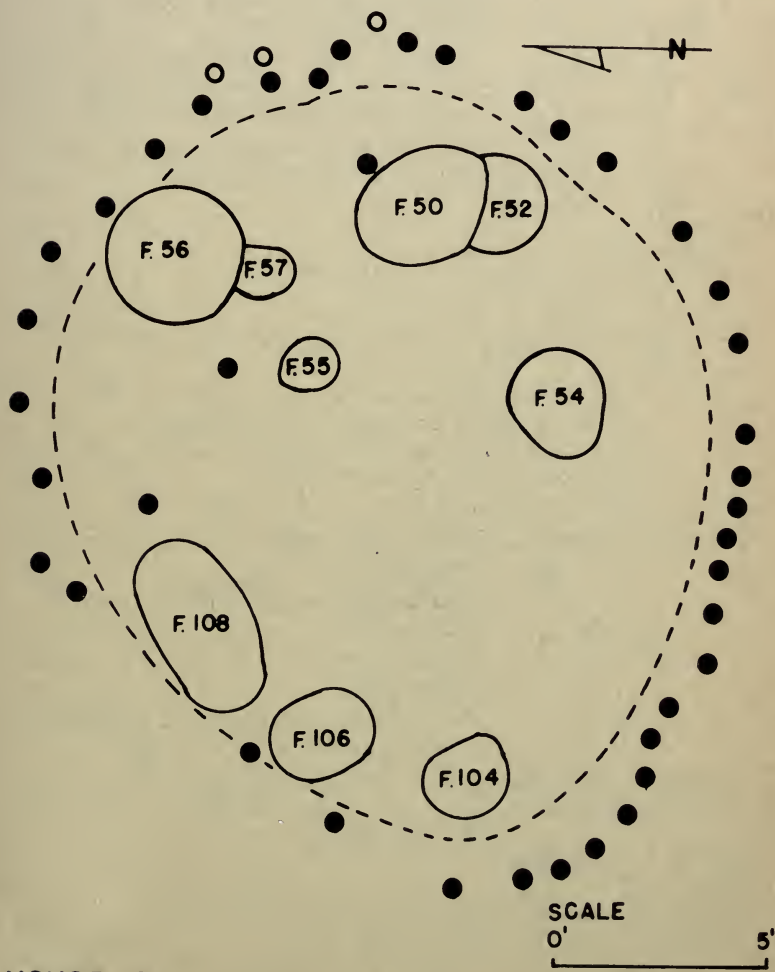
Addition: on east side

Dimensions: 10.5' N - S, 20.5' E - W

Basin: oval

Dimensions: 14.0 E - W, 13.5' N - S. .85' deep

Posts: .5' diameter, .5' to 3.0' apart



HOUSE 2

Figure 3. House 2

posts lacking on south side of house

Firepit: Feature 13, originated at surface of filled basin

Associated features: Feature 7, refuse pit, earlier than house since posts of wall cut into feature

Feature 36, refuse pit, cuts into filled house basin and therefore later than filling of the basin

Feature 35, refuse pit, originates at surface of filled basin

Feature 160, refuse pit, originated within the fill of the house basin and cut into the sterile floor of the basin

Feature 159, refuse pit, originates in the fill of the house basin

### House 2

Shape: oval

Dimensions: 20.5' E - W, 16.5' N - S

Addition: none

Basin: an oval area of discolored soil inside the posts, .4' deep

Posts: .6' diameter, range from .5' to .8' deep  
.4' to 1.0' apart on south side of house  
1.5 to 2.0' apart on north side of house  
some posts lacking on the west

Firepit: Features 50 and 56

Associated features: Feature 57, refuse pit, cut into by Feature 56

Feature 52, refuse pit, cut into by Feature 50

Features, 54, 55, 104, 106, & 108, all refuse pits

All features originate at the surface of the filled basin

Comment: Small posts, .4' in diameter, within the house may represent roof supports

### House 3

Shape: oval

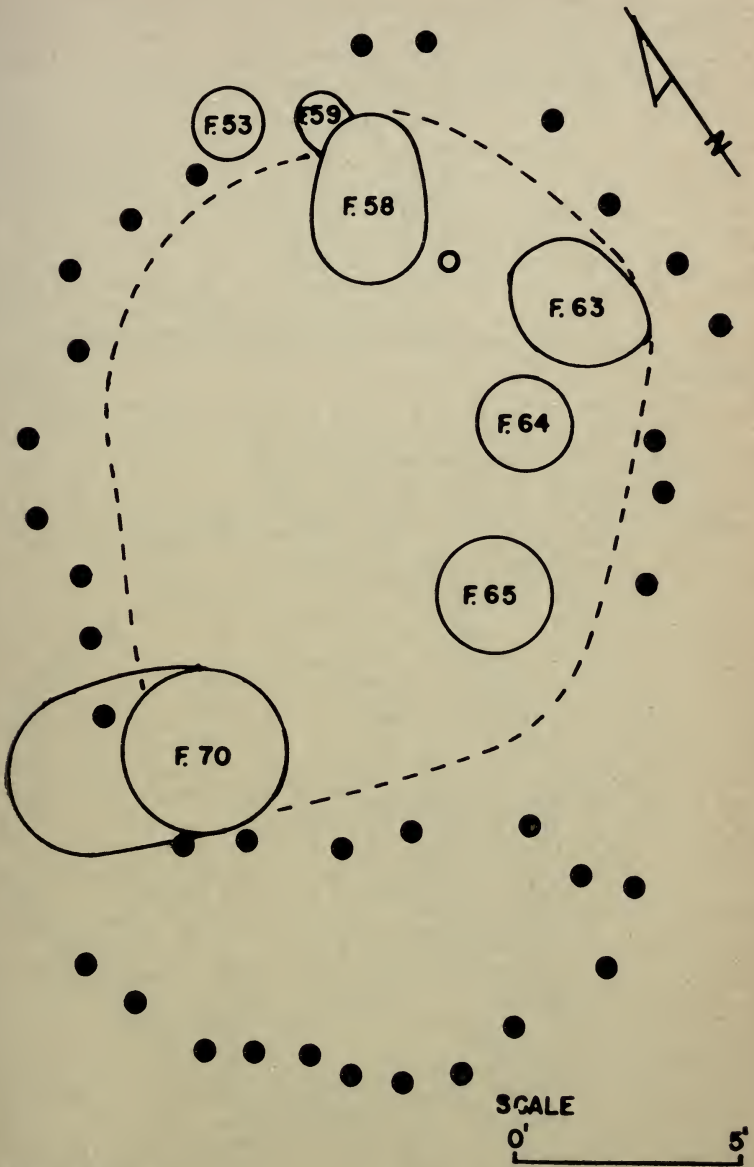
Dimensions: 16.5' SW - NE, 13.5' NW - SE

Addition: oval, on SW side of house

Dimensions: 11.0' NW - SE, 4.5' SW - NE

Basin: oval mottled area inside posts, .4' deep

Posts: .5' to .6' diameter



**HOUSE 3**

Figure 4. House 3

.7' to 1.0' between posts, gaps of 2.5' to 3.0'

Firepit: none

Associated features: Feature 70, firepit, earlier than house since posts cut into feature

Features 58, 63, 64, 65, all refuse pits,

originate at surface of filled basin

Feature 59, refuse pit, cut into by Feature 58. Feature 59 is earlier than the house

Feature 53, refuse pit, located at edge of house, was probably not in use when the house was occupied

#### House 4

Shape: oval

Dimensions: 10.0' N-S, 8.5' E-W

Addition: oval, on east side of house

Dimensions: 4.1' E-W, 5.3' N-S

Basins: house: oval, 7.5' E-W, 8.8' N-S, .3' deep

addition: 4.0' E-W, 5.2' N-S, .4' deep

Posts: .5' to .6' diameter, .7' deep

.7' to 2.0' apart

Firepit: none

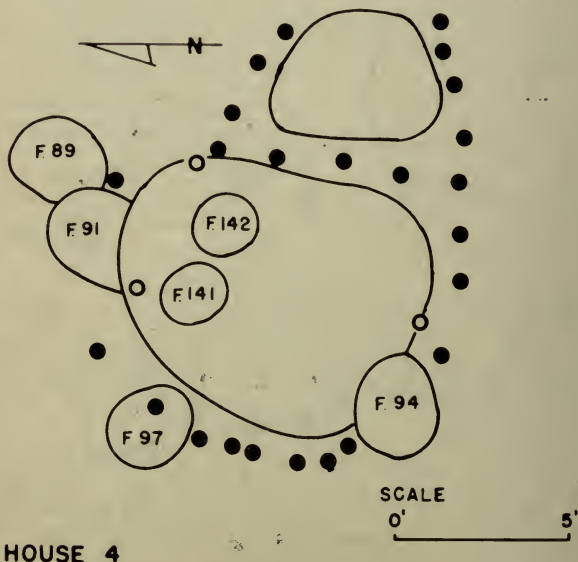


Figure 5. House 4



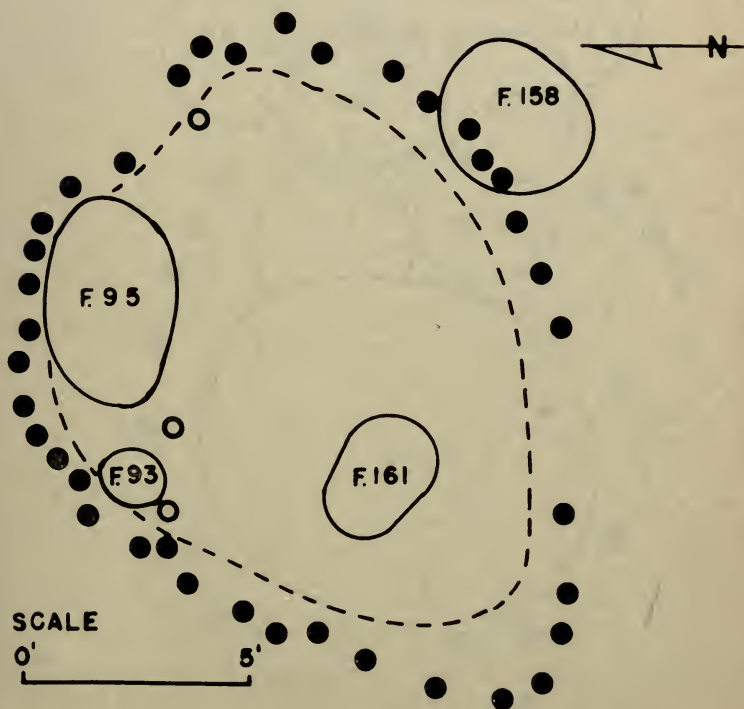
Associated features: Feature 141, refuse pit, originates .15' below surface of filled basin  
 Feature 142, refuse pit, originates at sterile floor of house basin  
 Feature 94, firepit, cuts into basin of house, later than house  
 Feature 97, refuse pit, cut into by a post of the house, earlier than house  
 Feature 91, refuse pit, cuts into Feature 89, and is cut into by basin of house, both features earlier than house

Comments: posts inside house basin may be roof supports

### House 5

Shape: oval

Dimensions: 13.0' E - W, 11.1' N - S



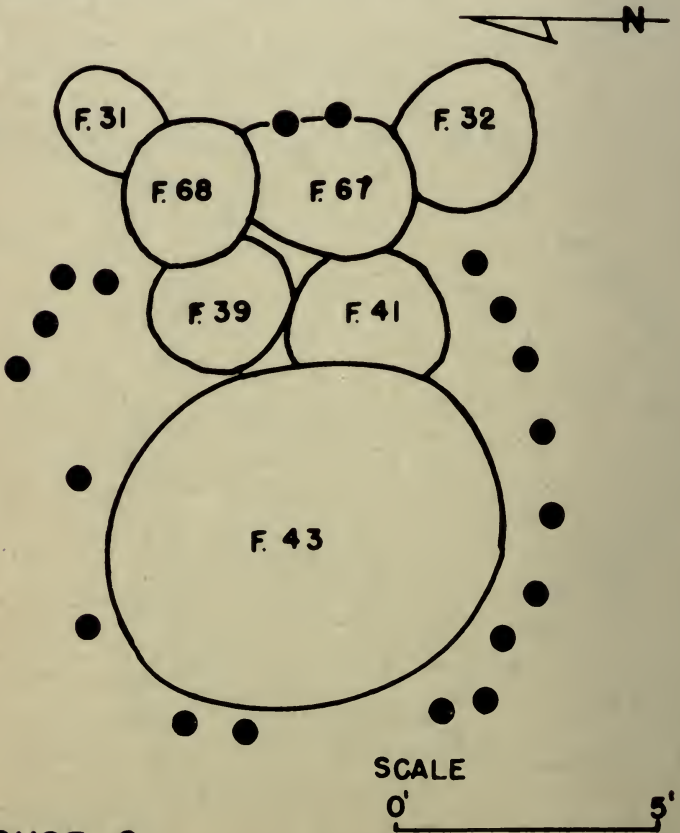
### HOUSE 5

Figure 6. House 5

Addition: none  
 Basin: oval, .4' deep  
 Posts: .5' diameter  
     .2' to 1.0' apart, 3.0' gap on south side may be entrance-way  
 Firepit: none  
 Associated features: Features 161, 93, 95, refuse pits, originate at surface of filled basin  
                         Feature 158, cut into by posts of house, earlier than house.  
 Comments: posts inside house basin may be roof supports

**House 6**

Shape: oval  
 Dimensions: 11.3' E - W, 8.3' N - S



**HOUSE 6**

Figure 7. House 6

Addition: none

Basin: oval, does not encompass entire interior of house  
6.8' E - W, 7.5' N - S, .7 deep (basin recorded as Feature 43)

Posts: .5' to .6' diameter

.5' to 1.0' apart, 3.0' gaps may be entrance

Firepit: none

Associated features: all refuse pits

The house is later than Features 41, 67, and 32 for either the house basin or posts cut into these features.

Feature 68 cuts into Features 39 and 31. Feature 68 possibly later than the house since posts are evidently destroyed by this feature.

### House 7

Shape: probably oval, (not completely excavated since western portion had washed away)

Dimensions: 11.0' SW - NE

Addition: on south side of house

Dimensions: 3.5' SW - NE

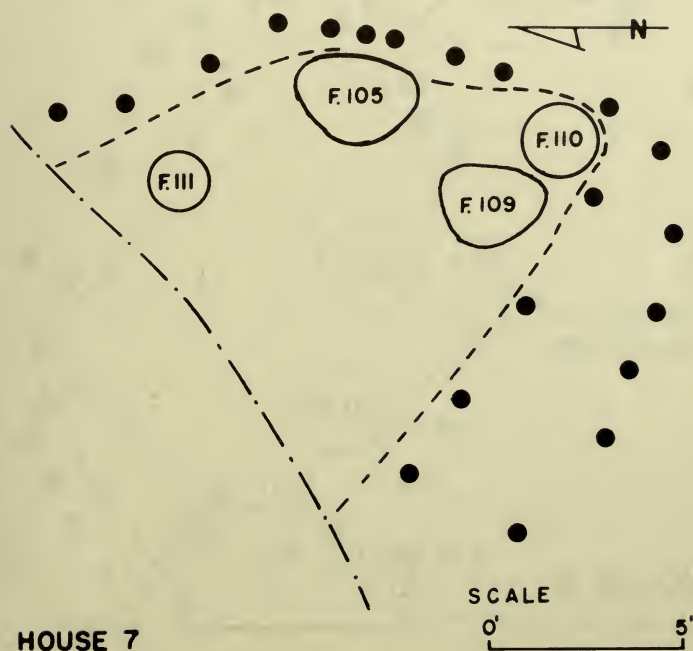


Figure 8. House 7.

Basin: discolored area inside posts, .4' deep

Posts: .5' to .6' in diameter

.3' to 1.6' apart, gaps of 2.5' between posts at south and east sides

Firepits: Features 105 and 109

Associated features: Features 110 and 111, refuse pits, originate at surface of filled basin.

### House 8

Shape: probably oval, (not completely excavated, western portion had washed away)

Dimensions: 16.0' SW - NE

Addition: none

Basin: discolored area inside walls, .4' deep

Posts: .6' diameter

.6' to 1.4' apart

Firepit: none

Associated features: Feature 121, refuse pit, interrupts wall but superposition not known

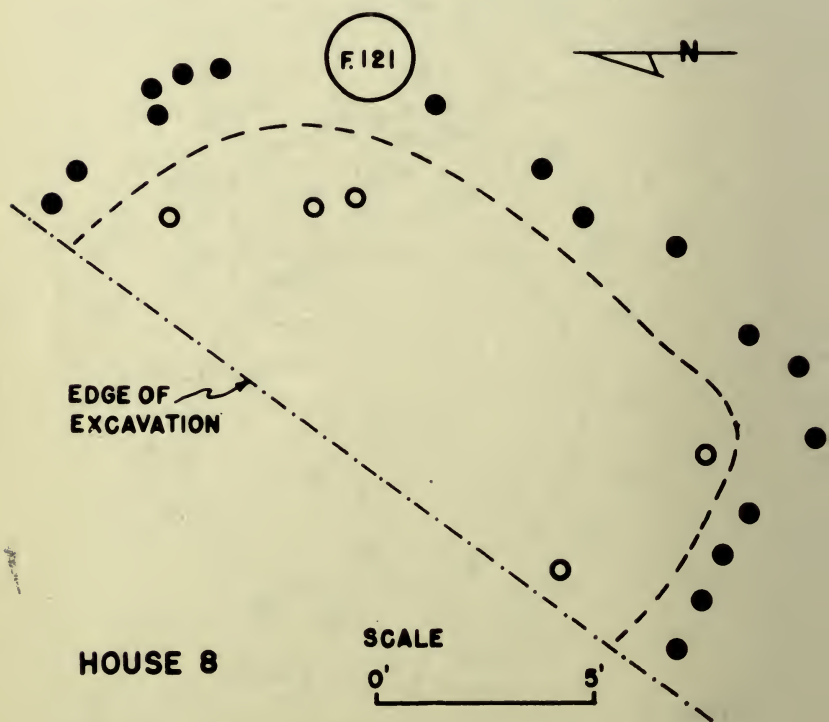


Figure 9. House 8

Comments: posts inside basin may represent roof supports. House 8 shares a wall with House 9.

### House 9

Shape: oval

Dimensions: 9.8' E - W, 7.3' N - S

Addition: none

Basin: mottled area inside posts, .4' deep

Posts: .5' to .6' in diameter, .6' to 1.0' apart

gap of 2.5' between posts to SE may be entranceway

Firepit: Feature 118

Associated features: Feature 119, refuse pit, originates at surface of filled basin

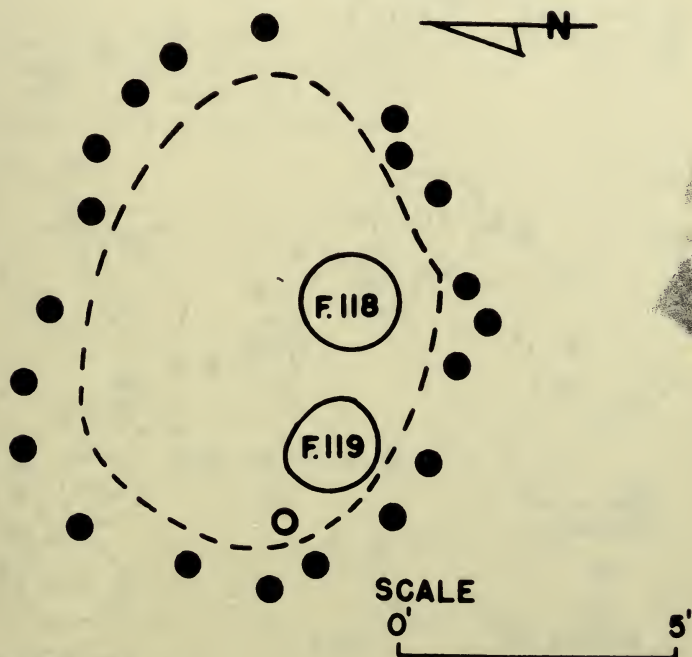
Comments: west wall shares posts with wall of House 8

### House 10

Shape: probably oval, not completely excavated due to erosion

Dimensions: 16.0' SW - NE

Addition: none



### HOUSE 9

Figure 10. House 9

Basin: dark area inside posts, .4' deep

Posts: .5' diameter

.4' to 1.2' apart, gap of 1.9' to the east may be entrance

Firepits: Features 129, 130

Associated features: Feature 125, refuse pit, cut into by posts which may be part of an entranceway

Feature 124, refuse pit, originates at surface of filled basin

Feature 123, firepit, cuts into Feature 124 and house basin, later than house

### House 11

Shape: sub rectangular

Dimensions: 11.0' E - W, 13.0' N - S

Addition: on west side, roughly triangular shape

Dimensions: 7.8' N - S, 3.7' E - W

Basin: slightly mottled area inside posts, not as distinct as in other house, .1' deep

Posts: .5' to 6' diameter

.6' to 1.4' apart

Firepit: none

Associated features: Feature 146, refuse pit, originates at surface of filled basin or floor

Feature 136, refuse pit, earlier than house since post cuts into feature

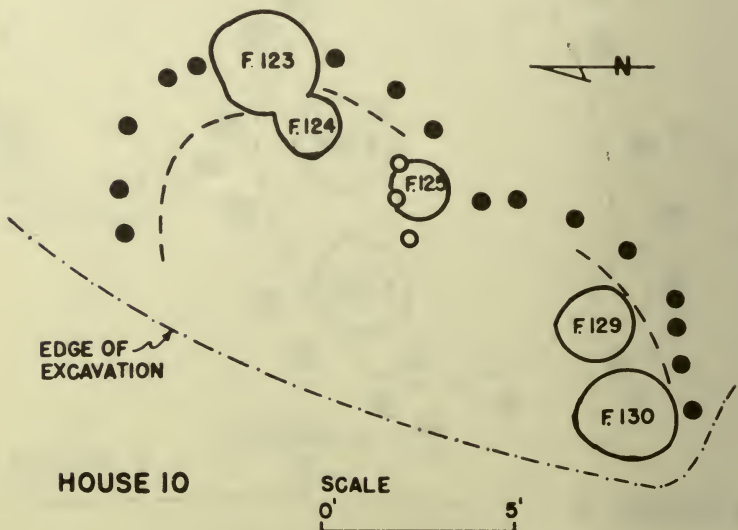


Figure 11. House 10

Feature 143, firepit, fill of feature was so dark that post outlines could not be determined, superposition not known.

Feature 139, bake pit, could not have been in use when house was occupied, probably earlier than house

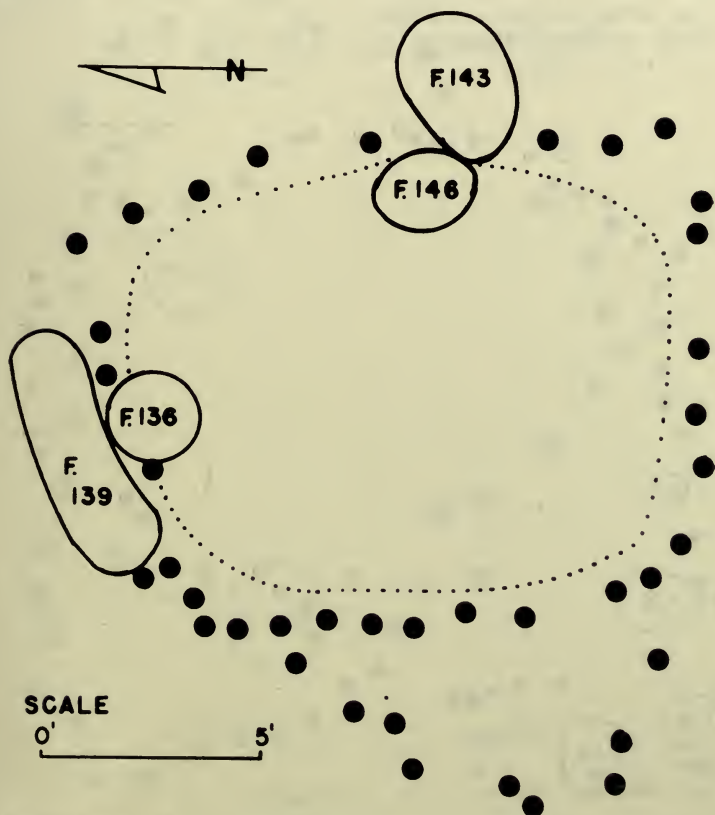
### House 12

Shape: oval

Dimensions: 22.0' NW - SE, 19.0' NE - SW

Addition: none

Basin: none - ground inside posts, only slightly darker than sterile soil at site



HOUSE II

Figure 12. House 11

Posts: .6' to .7' diameter

.3' to 1.5' apart, posts lacking on south side of house.

Fireplace: none

Associated features: Features 24, 15, 16, 17, refuse pits  
Feature 12, refuse pit, cut into by  
posts, earlier than house

Comments: possible screened entranceway on NW side of house

### House 13

Shape: oval

Dimensions: 11.5' N - S, 12.0' E - W

Addition: on west side of house, roughly triangular shape

Dimensions: 8.5' E - W, 5.5' N - S

Basin: slightly mottled ground inside posts, not as distinct as other houses, .1' deep

Posts: .4' to .5' diameter

.4' to 1.8' apart

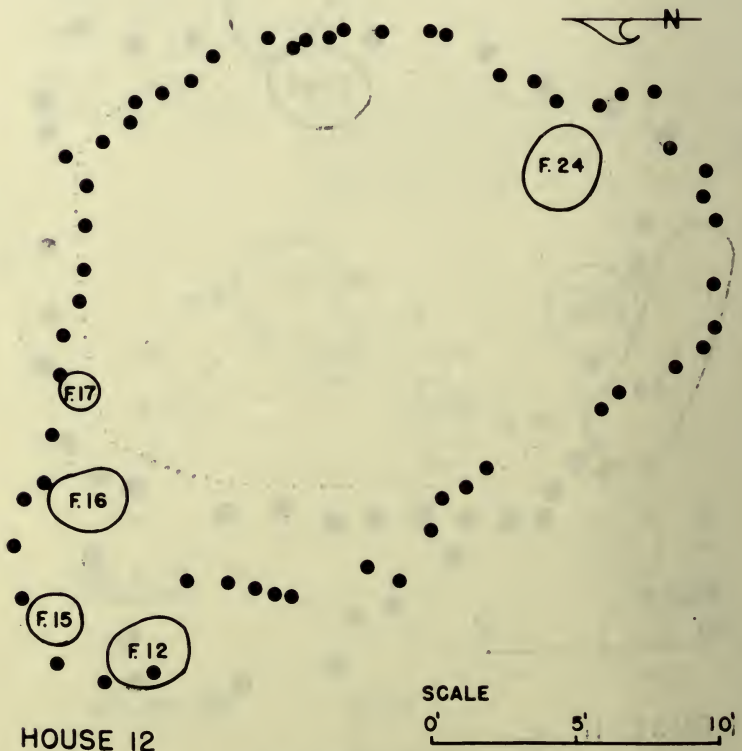


Figure 13. House 12



Firepit: none

Associated features: Feature 149, refuse pit  
 Feature 135, refuse pit, posts of wall  
 not visible in dark fill of feature, su-  
 perposition not known

### House 14

Shape: probably oval

Dimensions: 10.6' E - W

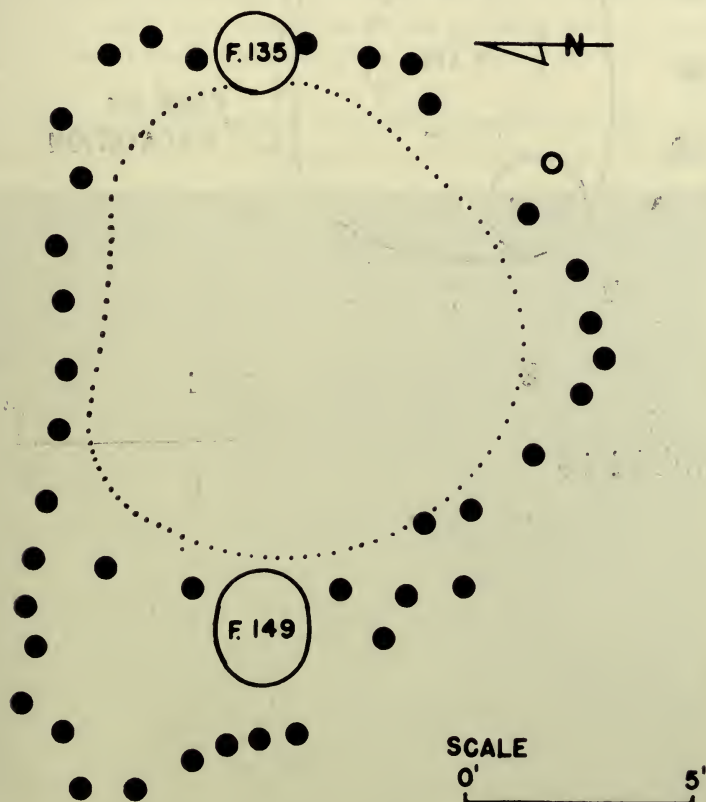
Addition: none

Basin: oval

Dimensions: 8.5' E - W, 6.5' N - S, .8' deep

Posts: .5' diameter

1.0' to 1.5' apart, 2.0' gap to NE may be an entrance



### HOUSE 13

Figure 14. House 13

Firepit: Feature 174, originates at surface of filled basin

Associated features: Feature 175, originates at sterile floor  
of house basin

Comments: interior posts may be roof supports

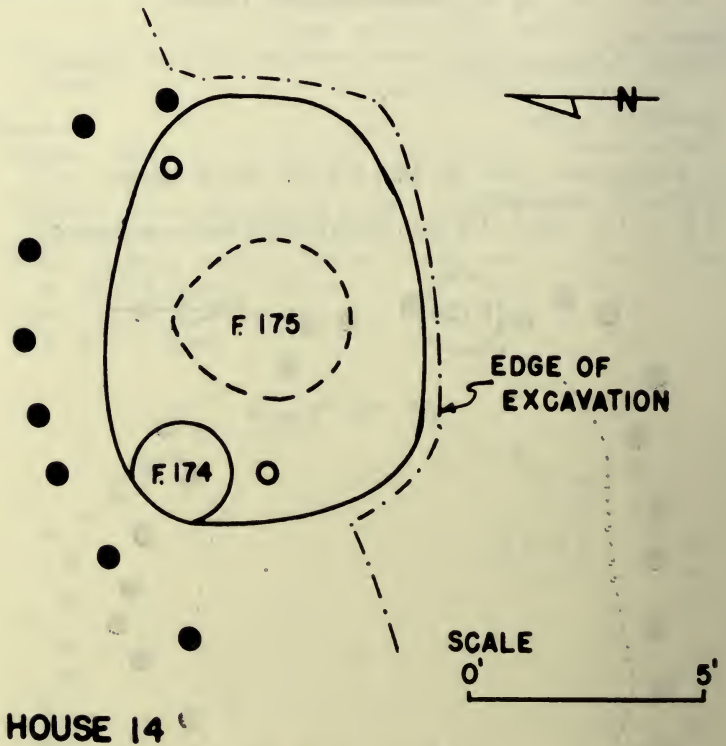


Figure 15. House 14

### Burials

Four burials were recovered from the site, all occurring in pits within the village.

**Burial 1**, a newborn infant, was found in Feature 25. The bones were scattered throughout the fill of this pit along with abundant animal bone refuse, unworked flakes, and sherds. This feature measured 3.3' by 3.2' by .6' deep.

**Burial 2**, a middle-aged female, was located in Feature 103, an oval pit measuring 4.8' by 2.8' by 1.1' deep. The body had been placed on its back, arms extended, with the left hand resting under the pelvis and the right hand over the pelvis. The legs were slightly flexed to the left. The skull lay on its left side. The skull and chest area of the skeleton were covered with pieces of fire-cracked limestone but there was no indication that a fire had been built in the pit.

Feature 103 contained no refuse. Features 99 and 102 intersected Feature 103 and fragments of human bone, undoubt-

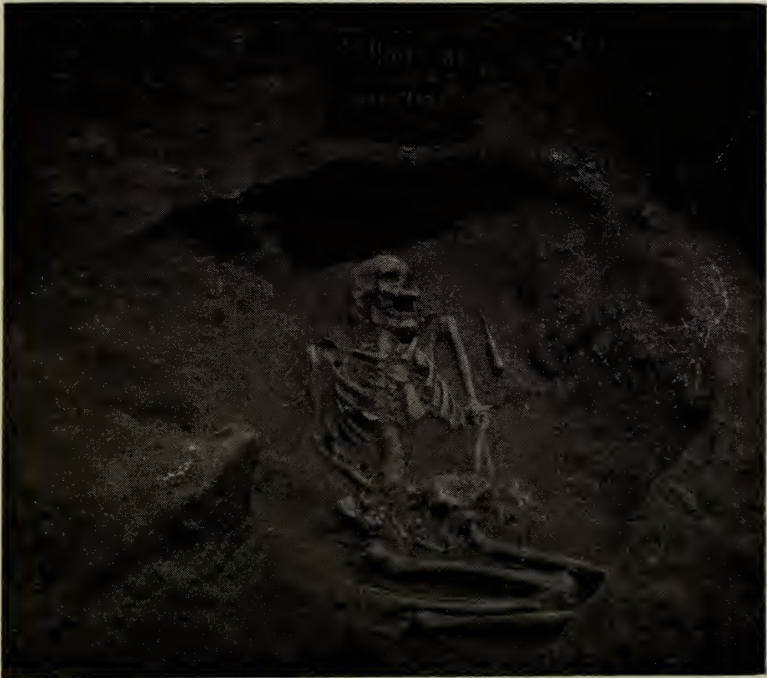


Figure 16. Burial 2

edly belonging to Burial 2 (F103) were found in these features.

**Burials 3a and 3b**, Feature 172 contained two burials, Burial 3a and 3b, both middle aged females. Burial 3b had been placed in the pit first. The body was tightly flexed, the extremities to the right, and buried face down. Burial 3a, lying over 3b, was lightly flexed, the body resting on its back with arms and legs flexed to the left. The pit containing these two burials was 2.58' by 3.5'. No refuse was found within it.

**Burial 4**, a newborn infant, was found within a refuse pit, Feature 24. This oval pit, 3.1' by 2.5' by .5' deep, was within the walls of House 12. The bones of the infant were scattered through the pit fill which also contained bone refuse, flakes and sherds. The scattering of infant bones can probably be attributed to rodent action.



Figure 17. Burials 3a and 3b.

Differential treatment of the dead is apparent. The bones of the infants show no post natal growth indicating stillbirth or early post natal death. The bodies were simply deposited in refuse pits suggesting that the infants were not thought to have attained a status warranting care in burial. The adults were buried in specially prepared graves, but in no instance were they accompanied by grave goods.

### LITHIC ARTIFACTS

#### Projectile Points

Of the sixteen points and point bases excavated from the site, fourteen belong to a single type, (Fig. 18). These points, here called **Expanding Stem**, are long and slender with notches struck at the basal corners of the blanks to produce expanding stems which are usually one-third the length of the

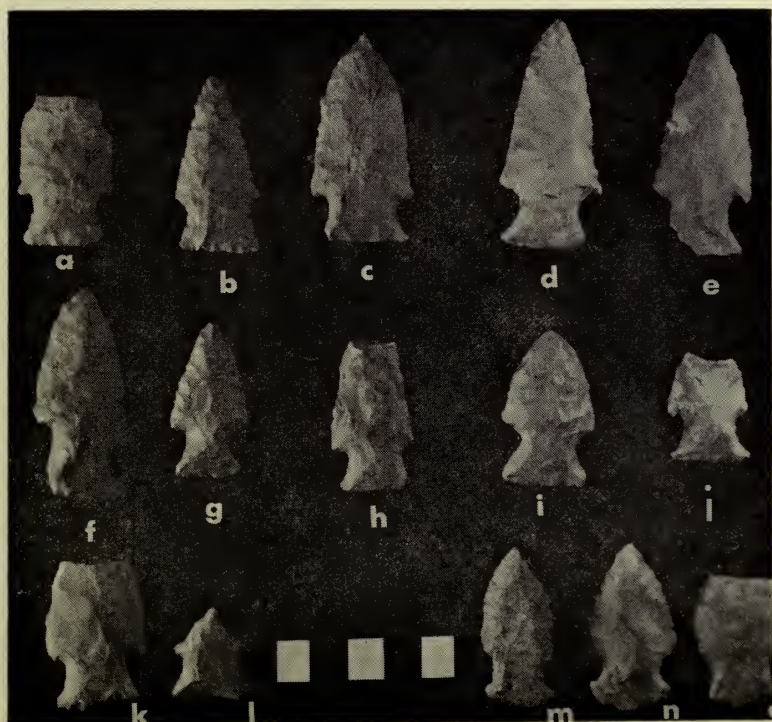


Figure 18. Projectile Points. Expanded Stem a-l, Unclassified m-o. a. Feature 32, b. F112, c. F127, d. F36, e. surface, f. F71, g. F-107, h. surface, i. F41, j. F73, l. F29, m. surface, n. F90, o. F109.

points. Another distinctive characteristic, present on eleven of these specimens, is slightly barbed shoulders. Blade edges are almost straight, tapering gradually to the tip along two-thirds of the length of the blade, then blending more abruptly to the tip. Bases are slightly convex. The base width never exceeds the maximum blade width which occurs in every case at the shoulder. Included in Table 1 are measurements of two points recovered from the plow zone and the excavated blade of a point.

In outline, these projectile points are much like points found in the Illinois River Valley at sites where Havana ware or Havana and Weaver wares are the dominant ceramics.

Expanding stem points are the most common kind in surface collections from the Clear Lake site and "this type is common also in central Illinois Hopewellian sites" (Fowler, 1952:156). The Clear Lake site is considered to be a late Middle and Late period (Hopewell) site (Ibid: 171). Struever states that points of this particular shape are diagnostic of the Pike Tradition of Illinois, (1965:219 and Fig. 2), and he points out that Pike ceramics appear in the Lower Illinois River Valley during the Hopewellian phase of the Havana Tradition.

Also in the late context are those expanding stem points called Stueben Expanded Stem, found in the later levels at the Stueben site (Morse, 1963:57) and the expanding stem points attributed to the Weaver Focus at the Weaver site (Wray and MacNeish, 1961: Fig. 15).

**TABLE 1. Expanding Stem Projectile Points**

	No.	Range	Average
Length -----	7	42 - 62	52.3
Width -----	12	21 - 28	25.3
Stem Length -----	12	12 - 16	13.8
Stem Width -----	14	13 - 19	16.0
Base Width -----	13	18 - 29	22.8
Thickness -----	13	6 - 10	8.2

#### Unclassified points (Fig. 18)

Two projectile points have broad and shallow side notches and decidedly convex bases. The third unclassified point has a slightly expanded stem.

#### Scrapers

A total of seventeen end scrapers and one side scraper were found at the site.

**Ovoid end scrapers.** Fifteen of the end scrapers have roughly oval outlines and are made from various sized chunks of chert. These scrapers are of remarkably crude workmanship. There is fine retouch along the scraping edge on all scrapers, but the dorsal and ventral surfaces display little or no secondary modification. Apparently a convenient sized piece of chert was selected and subjected to minimal working in order to obtain a functional tool.

Five scrapers (Fig. 19, a-b). Primary flaking and cortical areas are found on both dorsal and ventral surfaces.

Three scrapers (Fig. 19, c). Primary flaking and areas of

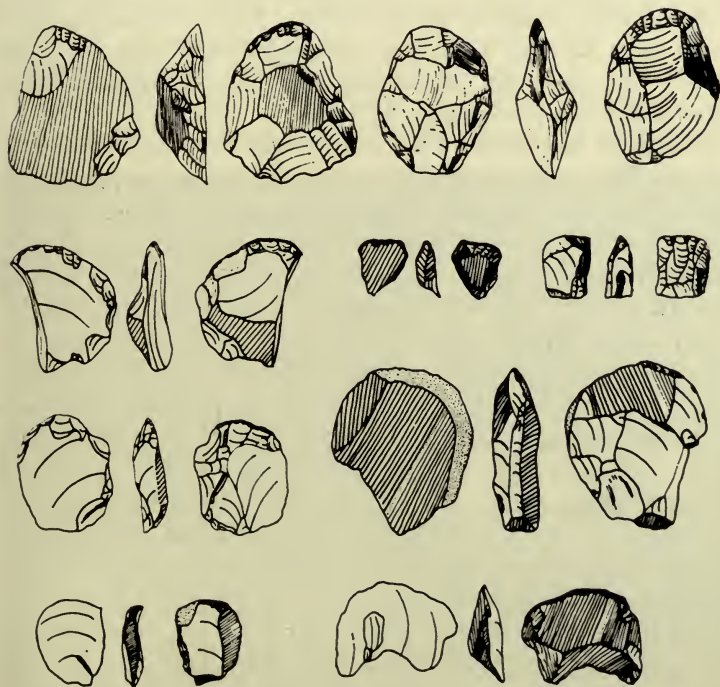


Figure 19. Scrapers

a. F121, b. F153, c. F36, d. F171, e. F43, f. F39, g. F36, h. F36, i. F29.

cortex are found on the dorsal surface and primary flaking on the ventral surfaces.

Two scrapers (Fig. 19, d). The only flaking present is the fine retouch at the scraping edge on both dorsal and ventral surfaces.

Two scrapers (Fig. 19, e). Primary flaking and cortical areas are found on the ventral surface and primary flaking on the dorsal surface.

Two scrapers (Fig. 19, f). Both dorsal and ventral surfaces exhibit primary flaking.

One scraper (Fig. 19, g). The ventral surface is unworked. The dorsal surface displays primary flaking and areas of cortex.

On all fifteen scrapers, the scraping edges are rounded and show varying amounts of use polish. The scrapers range in length from 22 mm. to 65 mm., averaging 45.5 mm., in width from 19 mm. to 56 mm., averaging 36.8 mm., in thickness from 8 mm. to 22 mm., averaging 17.1 mm.

**Triangular Scrapers.** One end scraper was produced from a flake. The ventral surface is the original unmodified flake surface with the bulb of percussion still present at the butt end. The dorsal surface is retouched at the scraping edge and along one side. Again, the scraping edge has been rounded and polished by use. This scraper measures 33 mm. by 26 mm., by 8 mm. (Fig. 19, h).

Both the dorsal and ventral surfaces of the second triangular scraper are carefully retouched, and the scraping edge is rounded and polished. This scraper measures 25 mm. by 15 mm., by 7 mm.

**Side Scrapers.** One side scraper was found. The scraping edge and one end of this flake are retouched. The scraping edge has slight use polish. This scraper measures 33 mm. by 26 mm. by 8 mm. (Fig. 19, i).

### Drills

Four drills (Fig. 20) have narrow shafts which flare to an unmodified flake base. These shafts range from 6 mm. to 20 mm. in length and are either diamond-shaped or plano-convex in cross-section. The total length of these drills varies from 30 mm. to 44 mm., averaging 34 mm.

One drill was produced from an Expanding Stem point.



Most of the point's blade was modified to create the drill shaft which has a diamond-shaped cross-section. The tip of the drill has been broken off.

Three fragments of drill shafts were found. The cross-section of these shafts grades from diamond-shaped to lenticular.

### Knives

The knives are bifacially flaked with secondary flaking along all edges. Three shapes are present: ovate acuminate, ellipsoid, and trianguloid.

The three ovate acuminate knives range in length from 35 mm. to 49 mm., in width from 23 mm. to 28 mm., and in thickness from 8 mm. to 9 mm. The two ellipsoid knives are 42 and 49 mm. long, 19 and 22 mm. wide, and 8 and 11 mm. thick. The sixth knife, which is fragmentary, has a straight base and convex blade edges.

### Large Stone Implements

Eight implements with primary flaking on both faces vary considerably in outline. A few have secondary flaking along

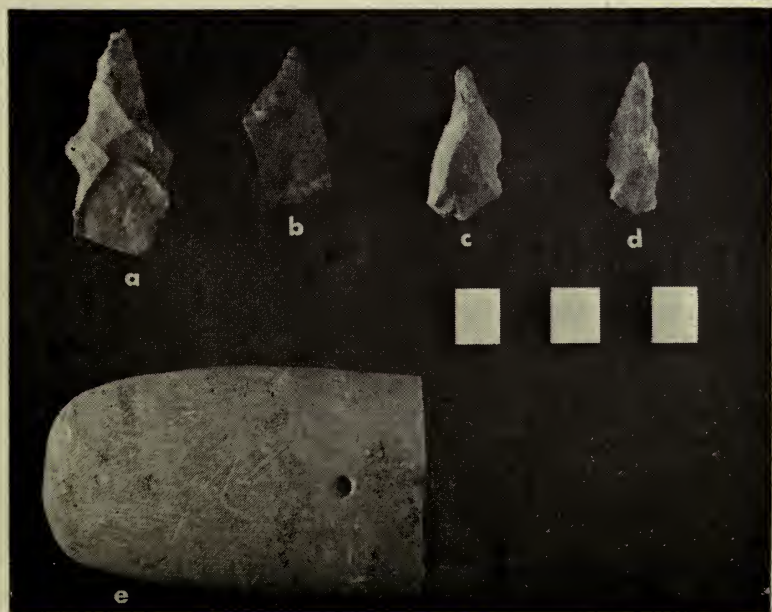


Figure 20. Drills, gorget  
a. F44, b. F106, c. F73, d. F16, e. F9.

one edge while others exhibit chopping marks along an edge. These implements probably were multipurpose and served as chopping and/or cutting tools. They vary from 25 to 67 mm. in length, 25 to 38 mm. in width, and 11 to 18 mm. in thickness.

#### **Chipped Stone Implement Fragments**

Eighteen such fragments were excavated from the site. They are tip and blade sections of knives and projectile points.

#### **Worked or Utilized Flakes**

Forty-four worked or utilized flakes were found in refuse pits and house basins. Of these, the highest number, thirty, are unifacially flaked on one edge. In greater length these flakes range from 21 to 47 mm., averaging 26.2 mm.

Nine flakes are unifacially flaked on two edges. Five of these are flaked on adjacent edges, and four on opposite edges of the flake. They range from 22 to 53 mm. in length, averaging 32.3 mm.

Five flakes are bifacially flaked. Three of these are bifacially flaked on one edge, two are flaked on adjacent edges on both faces. The length of these flakes ranges from 26 mm. to 44 mm., averaging 34.0 mm.

#### **Ground Stone (Fig. 20)**

Few ground stone implements were recovered from this site. An unfinished, broken, bar gorget of limestone was found in Feature 9. Two holes, drilled about one quarter way through the gorget, are present. The transverse line of breakage intersects one hole.

The bit of a ground stone axe or celt was found in Feature 10, and a full-gooved axe was found in the plow zone, but it is impossible to say that the latter is associated with the component present below the plow zone.

### **CERAMICS**

The sherds from the Millville site have been separated into three groups, primarily according to decoration and rim form, and secondarily on the basis of temper. The bulk of the pottery is treated as belonging to the Havana Ceramic Tradition. The decoration techniques include various forms of stamping, and organization of decoration of sherds is similar to that observed for Havana Ware in Illinois. The sherds are grit tempered with the exception of two rims, one of which is tempered with limestone and the other with grit and limestone.

A second group of sherds is also grit tempered and is decorated by the same techniques as the Havana Tradition sherds. However, the rims of this group have interior channels, a distinguishing attribute of Hopewell Ware. The characteristics of the Millville Channelled Rim sherds will be discussed below.

The third group of sherds, also grit tempered, is decorated with notches placed across the lip or pendant from it. These decorated sherds, and a few undecorated ones having similar paste characteristics, are the local equivalent of Weaver Ware.

The total sample of sherds from the Millville site is 925 of which 157 are rim and decorated sherds. Most sherds are very small and a few rim fragments are large enough to allow determination of vessel form and size. Decorated body sherds, actually from the rim area, are often too small to determine design. Although we have a strong concept of vessel form and size and design on vessels, significant comparisons to known Wisconsin and Illinois pottery types can not be made from the small body of data recovered from this site. Until a larger sample of Wisconsin pottery of this kind is assembled and studied, we should only describe attributes. The establishment of new types based on the available data would be premature. It is also not possible to assign the Millville pottery to established types.

### **Havana Tradition Ceramics**

Figures 21 - 24

Sample size: 40 rims and 66 body sherds.

Temper: Small to medium sized fragments of angular quartz are present in sparse to moderate amounts. Particle size varies in a single sherd. Small quartz sand grains are present in sparse to moderate amounts. Some sherds contain a few mica fragments and a few contain grog particles included with the angular quartz and sand. Two sherds contain limestone. In one it is abundant, in another it is sparse.

Texture: Moderately compact. In a few the paste is lamellar.

Surface finish: Rims were smoothed before decoration. Floating, smoothing over cord roughened, smoothing facets and scraping marks are all characteristic. The sub-

shoulder area is cord roughened.

Lip form: Flat (22 sherds), round (12 sherds), pointed (1 sherd), interior bevel (3 sherds), exterior bevel (2 sherds).

Vessel form: Rims are vertical to slightly flaring, to flared. Shoulders are slightly rounded. Base form is known from two sherds, one of which is a flattened base, the other sub-conical.

Dimensions: Lip thickness varies from 4 mm. to 8 mm. with an average of 5.7 mm. for 34 measurable sherds.

Body (lower rim) thickness varies from 4 mm. to 10 mm., averaging 6.9 mm. on 51 sherds.

Four rim sherds are large enough to permit calculation of vessel size. Orifice diameter is calculated to be 130 mm., 132 mm., 324 mm., and 346 mm. for these rims. Vessel height would approximate 196 mm. for the two with narrower orifices and 360 mm. to 380 mm. for the two with larger orifices. Small vessel size is perhaps characteristic for this site.

Decoration: Dentate, cord wrapped stick, plain, and rocker-stamping, and incising are the decorative techniques.

Decoration appears in a horizontal band adjacent to the lip of the vessel. Below this upper rim band, decoration, if present, appears in alternating decorated and smoothed bands which may be oriented horizontally, vertically or diagonally to the plane of the vessel mouth. Exterior rim bosses are uncommon, while deep punctates on the exterior rim of the vessel raise interior bosses; this, too, is uncommon.

Similar to: Havana Ware: Naples Stamped, variant cord wrapped stick and variant dentate; Hummel Stamped, variant plain, Havana Zoned, variant dentate, variant cord wrapped stick.

#### **Straight dentate stamping**

The individual teeth of the dentate stamps used in decorating Millville pottery were either square, rectangular, or round. While the round toothed stamp produces impressions which may sometimes resemble punctates, it is obvious from repetitions of minor eccentricities in impressions that the stamping tool employed was multi-toothed. Dimensions of the

various stamp impressions are recorded in Table 2. In all cases the stamp was pressed into the plastic clay at right angles to the vessel wall, except in one instance, where the stamp was impressed at an oblique angle.

**Square or rectangular tooth impressions.** Horizontally, encircling bands of dentate stamping adorn the upper rims of fourteen rim sherds. The individual stamp impressions in these bands lie immediately adjacent to the outer lip, and in eight cases are perpendicular to the plane of the vessel mouth. On six sherds this orientation is diagonal to the left. Widths of the stamped bands range from 10mm. to 19 mm. and average 15.3 mm. on the six sherds complete enough to allow this measurement.

On four rims round punctates lie immediately below the upper rim band decoration described above. In three instances



Figure 21. Dentate Stamped Sherds

a. F41, b. F38, d. F46, e. F44, g. F95, h. F122, i. F44, j. Basin, House 1, k. F41, l. Basin, House 1.

punctates were impressed deeply enough to raise bosses in the interior wall surface.

Only two sherds are large enough to permit description of the complete decoration sequence from lip to shoulder. On one specimen a smoothed band lies below the dentate stamped upper rim band decoration. Into this smoothed surface were punched deep punctates which raised bosses on the interior wall surface. Below this punctate smoothed band, and continuing to the shoulder of the vessel, is an encircling horizontal band of parallel, horizontal lines of stamp impressions. On the other large rim (Fig. 21 a) the upper rim band is formed by three encircling horizontal bands. The two bands which are formed by short vertical dentate stamp impressions are separated by a smoothed band. Vertical panels of horizontally oriented stamps separated by intervening smoothed panels cover the area from below the upper rim band to the shoulder.

Six of the twenty-two body sherds (from the rims) are large enough to ascertain which area of the rim is decorated. On all six sherds the lower rim area is decorated, the middle rim is smoothed. The lower rim band decoration on five of these sherds consists of an encircling horizontal band of parallel horizontal lines of stamp impressions. The lower rim design on the other sherd is a chevron of alternating right and left diagonal lines.

Other designs, found on the middle or lower rim areas of vessels are horizontal bands of lines of horizontally oriented impressions (7 sherds) and vertical panels of impressions oriented vertically (3 sherds), horizontally (1 sherd), and diagonally to the right (1 sherd). Parallel impressions of unknown orientation are found on one sherd, and a single line of stamp impressions of unknown orientation are found on three.

**Round tooth impressions.** These round impressions are solid on nine sherds and annular on two sherds. The diameter of individual impressions ranges from 1 mm. to 4 mm., averaging 2.4 mm.

The upper rim band decoration on two rim sherds consists of horizontal encircling bands of vertical or left diagonal impressions. Their widths are 11 mm. and 17 mm. On one, large annular punctates are present immediately below the rim band

decoration. Below these punctates lie panels, slanting to the right, which are composed of left diagonal impressions. These stamped panels are separated by intervening smoothed panels. The decoration covers the area from the upper rim band to the shoulder.

Two rims have no upper rim band decoration. On the upper rim of one there is a chevron design of diagonal right and left impressions. On the other sherd there is a widely spaced cross-hatched design. Dome shaped bosses lie in the open areas of the hatchures.

A chevron design is present on seven body sherds, and parallel rows of impressions of unknown orientation are found on six other body sherds.

**Zoned dentate stamped.** There is a decided preference for



**Figure 22. Dentate Stamped (a-c), Cord-wrapped-stick Stamped Sherds (d-j)**

a. F135, b. F6, c. F173, d. F123, e. post of House 1, f. F44, g. F78, h. F39, i. F100, j. F43.

zoning lines to be produced by dentate stamping which is identical to that of the filler design. In only two of the ten zoned sherds are the zone lines incised. In addition, linear zone bands or geometric designs occur more frequently than curvilinear designs.

On the two rim sherds present in this group, horizontal encircling bands of vertical or left diagonal stamping are present on the upper rim adjacent to the lip. These bands are 14 mm. and 33 mm. wide. On one sherd the band is bordered by a stamped line. The vessel surface is smoothed from this band to the shoulder. On the other rim, filled triangles (apex down) occupy the area from the upper rim band to the shoulder.

Filled triangles are also present on four body sherds. On two others horizontal bands of left diagonal impressions bordered by stamping are present.

Incised lines border a horizontal band of vertical impressions on one sherd. A curved band of dentate stamping is bordered by curved incised lines on one other body sherd. The incised zone lines on these sherds are "v" and "u" shaped in cross-section respectively and they measure 2 mm. and 2.5 mm. in width.

**TABLE 2. Measurements of individual tooth impressions.  
Dentate Stamped sherds.**

Square tooth			
mm.	Width (No.)	Distance between teeth (No.)	
.5	—	3	
1.0	1	18	
1.5	1	—	
2.0	26	11	
2.5	4	—	
Rectangular tooth			
mm.	Width (No.)	Length (No.)	Distance between teeth (No.)
.5	—	—	1
1.0	7	—	7
1.5	2	1	—
2.0	3	6	4
2.5	1	2	—
3.0	—	4	—



**Cord-wrapped-stick.** Of twenty-three sherds, twelve are impressed with "z"-twist cord wrapped around a dowel. The cord twist can not be determined on the other cord wrapped stick impressed sherds. The width of the impressions ranges from 2 mm. to 6 mm. on 23 sherds, averaging 3.3 mm. The impressions are spaced at intervals of 2 mm. to 6 mm., and average 3.4 mm.

Designs are similar to those on the dentate stamped sherds but they are more frequently found on the area from the upper rim band to the shoulder.

In four rim sherds the upper rim band is made up of vertical impressions. In one other the same space is occupied by left diagonal impressions. On two sherds the width of this band is 12 mm., on the other 21 mm. The remaining specimens were too small to permit measurement. Just below the rim band on two rims are circular punctates and on one sherd hemiconical punctates. All are deeply impressed and have produced bosses on the interior vessel wall. The only large rim sherd has a smoothed band below the upper rim band, and a horizontal band of vertical cord wrapped stick impressions on the lower rim.

Out of sixteen body sherds, placement of decoration can be determined on five. In one, a smoothed band occupies the middle rim, and an encircling band of left diagonal impressions covers the lower rim above the shoulder. The area extending from the upper rim band to the shoulder is decorated on four sherds. Vertical panels or horizontal bands of horizontal impressions separated by intervening smooth panels or bands are present on two sherds. On the other two sherds, horizontal bands of vertical impressions with intervening smoothed bands cover the rim area present.

Horizontal decorative bands are present on four sherds. These bands are made up of vertical impressions in two instances and of horizontal impressions in the other two. Vertical panels of right diagonal impressions are present on one sherd. The other six body sherds exhibit parallel rows of cord-wrapped-stick impressions whose orientation cannot be determined.

**Zoned cord-wrapped-stick.** Two body sherds, from the same vessel, are decorated with multiple, horizontal, bands of left

diagonal cord-wrapped-stick impressions which are zoned by similar, horizontal, impressions. These bands alternate with smoothed bands and occupy the middle and lower rim area. A "z"-twist cord, wrapped in contiguous turns about the dowel, was used to produce the decorative element.

**Plain rocker stamp.** Plain rocker stamping occurs on the upper rim of six sherds. On two rims, notches are pendant from the outer edge of the lip. Below these lies rocker stamp impressions which are at right angles to the plane of the lip. On the four remaining sherds the rocker impressions are horizontal. The vessel surface below the rocker stamping is

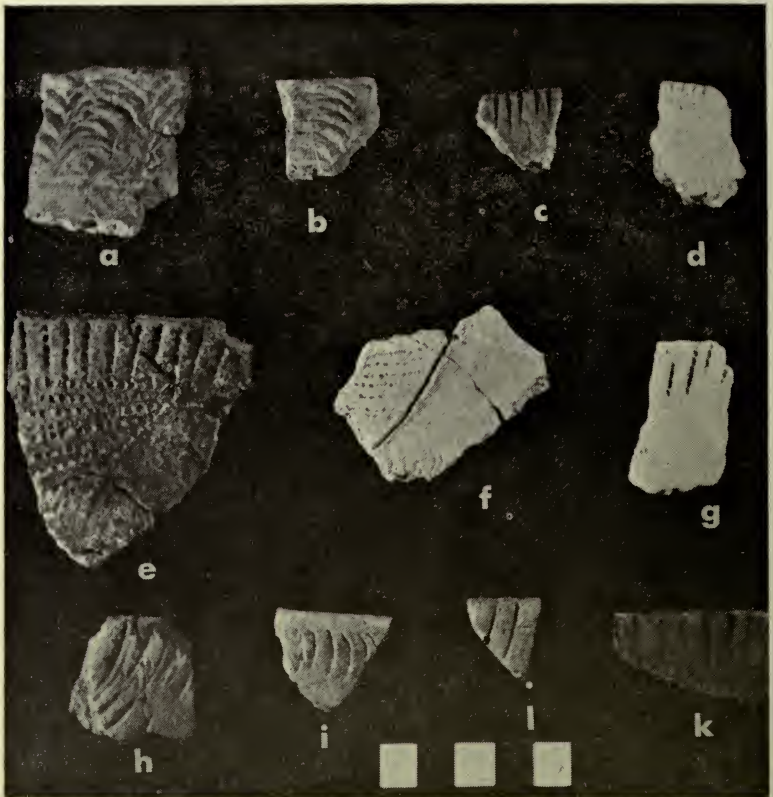


Figure 23. Roulette Stamped (a-d), Zoned Dentate Stamped (e-g), Plain Stamped Sherds (h-k)

a. F162, b. F87, c. F43, d. F43, e. F44, f. F56, g. F63, h. F112, i. F90, j. F109, k. F33.

smoothed. The upper rim band on the only measurable sherd is 30.0 mm. in width. The length of the rocker stamp impressions varies from 17 mm. to 18 mm., and there are 4 impressions per centimeter of decorated surface.

**Plain Stamp.** A plain or bar stamp, with the concave surface to the left, forms the upper rim band decoration on three sherds. The width of the band on two measurable sherds is 12.0 mm. and 15.0 mm. The stamp impressions are 2.0 mm. wide and are 3 mm. to 5 mm. apart.

One body sherd bears parallel plain stamp impressions but their orientation is unknown.

**Bone stamp.** This rim sherd might be classified within the plain or bar stamp decorative group except for the distinctive implement used as a stamping tool. Experiments with plastocene indicate that the vertical impressions which constitute the upper rim band design were made with a piece of bone. Either the dense cancellous tissue of an antler or a piece of turtle carapace appear to be the most likely candidates. The individual stamp impressions, placed 5 mm. apart, are 3 mm. wide and 17 mm. long.

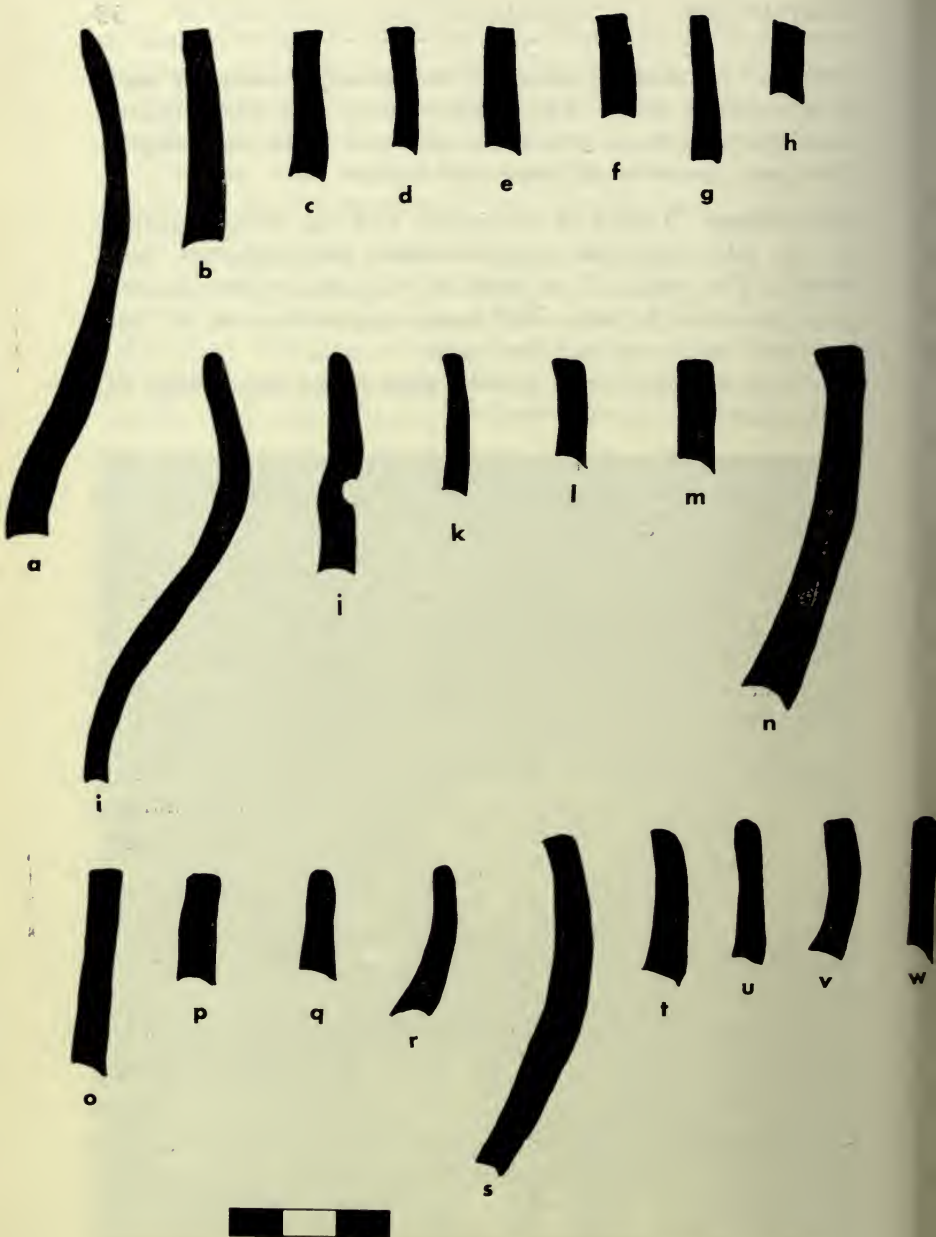
**Incised.** One rim sherd and seven body sherds bear incised line decoration. These lines are .5 mm. to 3 mm. wide and are "v" shaped in cross section. The rim has a decorated upper rim band composed of left diagonal lines.

The body sherds are too small for determination of the area decorated. A chevron design is present on one sherd, a single curved line on another, and parallel lines of indeterminate orientation are present on a third.

Four sherds have zoned decorations. The designs are linear bands of either diagonal or cross hatched lines set off by incised lines.

**Cord roughened.** Four sherds bear no decoration, but are cord roughened on the exterior, and in two instances, across the lip, with "z" twist cord.

**Punctate band.** Bands of punctates are present on three sherds. The surfaces on two of these is roughened with "z" twist cord, and round punctates raised bosses in the interior vessel walls. The punctates appear to be located close to the



3 cm

Figure 24. Rim Profiles, Havana Tradition Sherds. Dentate Stamped a-k, Cord-wrapped-stick l-n, Roulette o-r, Zone dentate s, Plain stamp t-v, Bone stamp x.

a. F41, b. F38, c. F73, d. F46, e. F44, g. F122, h. F44, i. F135, j. F6, k. F173, l. F123, m. House 1, n. F44, o. F162, p. F87, q. F43, r. F43, s. F44, t. F112, u. F90, p. F109, x. F33.

lip and it is assumed that these sherds come from otherwise undecorated vessels.

A band of round punctate with resultant interior bosses is present on one sherd which has a smoothed surface.

A comparison of Havana Tradition rims at Millville to those from Illinois provides us with several differences between the two groups. Vessel shape is apparently similar although at Millville there are some flaring rims and rounded shoulders in contrast to the more vertical rims and slightly rounded shoulders of Havana Ware (Griffin, 1952:101). An inward beveled lip is rare at Millville but is characteristic of a high proportion of Havana Ware sherds (Ibid). Calculations of vessel size at Millville indicates that the vessels are small, and one suspects that they are smaller than those of Illinois Havana Ware.

While the decorative devices on Millville sherds are identical to those on some Havana Ware types, frequency of occurrence differs (see Table 3). This is particularly true of the cord-wrapped-stick stamped sherds which are highest in frequency next to dentate stamped sherds. Griffin states that cord-wrapped-stick is a minor decorative device in Naples Stamped (1952:112). At Millville, notching or stamping on the interior lip is absent. Exterior rim bosses are rare. More frequent, but still a minor device, are exterior punctates which produce interior bosses. Decoration on the interior lip and rim bosses are common on Havana Ware sherds (Ibid.:101).

TABLE 3. Havana Tradition Decorated Sherds

Design Element	Rims	Body Shreds	Total	Percent
Dentate Stamped	18	29	47	44.3
(square or rectangular)	14	22	36	(33.9)
(round)	4	7	11	(10.3)
Cord-wrapped-stick	5	18	23	21.7
Zone dentate	2	8	10	9.4
Incised	1	7	8	7.5
Plain rocker	6	—	6	5.7
Plain stamp	3	1	4	3.8
Bone stamp	1	—	1	.9
Cord roughened	4	—	4	3.8
Punctate band	—	3	3	2.8
<b>TOTAL</b>	<b>40</b>	<b>66</b>	<b>106</b>	<b>99.9</b>

Channelled Rim Ceramics (Fig. 25, 27)

Sample: 18 rim sherds.

Temper: Small, angular, quartz fragments and rounded quartz sand grains appear in sparse to moderate amounts. Occasionally small and large angular quartz fragments are present in moderate amounts. Mica occurs in a few sherds and a few contain grog temper. Grog appears to be present in more sherds of this group than in those of the Havana Tradition. Limestone is present in one sherd and accompanies angular quartz fragments.

Texture: Compact.

Surface finish: All sherds were smoothed prior to application of design, and most are more carefully smoothed than the Havana Tradition sherds. Some are slightly polished. Grains of temper are rarely visible on the surface.

Lip form: Flat (4 sherds), rounded (4 sherds), pointed (3 sherds), inward bevel (1 sherd).

Dimensions: Lip thickness varies from 3.0 to 8.0 mm., averaging 4.9 mm. on 13 rims. Body (lower rim) thickness ranges from 4.0 to 6.2 mm. in 9 cases. One sherd is large enough to make an estimate of its size: 128 mm. orifice diameter, about 160 mm. high.

Decoration: Produced by dentate stamping, cord-wrapped-stick impressions, incising, cross hatching, and plain rocker stamping. The upper rim band decoration present on all sherds may be set off from the plain areas below by a row of annular punctates and/or a single incised line. Decorated bands on the middle or lower rim appear on only two sherds.

Channel form: The upper margin of the channel on the interior vessel wall is immediately adjacent to the inner edge of the lip or 5 mm. below the lip on ten of the rims. On three other rims the upper margin of the channel is 17 mm. to 18 mm. below the lip. Channels are 5 mm. to 25 mm. wide, averaging 11.2 mm. on 12 sherds and is .5 mm. to 3 mm. deep, averaging 1.5 mm. on 12 sherds.

On two sherds, in addition to the channel adjacent to the lip, there is a second interior channel which is placed 28 mm. or 32 mm. below the lip. These second channels are 11 mm. and 12 mm. wide and 1 mm. and 3 mm. deep.

**Straight dentate stamped.** Nine rim sherds are decorated with

a square or rectangular toothed dentate stamp. The stamping appears as horizontal circling bands adjacent to the lips of the vessels. The individual stamp impressions forming the bands are oriented vertically (1 sherd) or diagonally to the left (8 sherds). On six measurable sherds, the bands vary in width from 11 mm. to 25 mm., averaging 16 mm. The rim channel placement corresponds to the upper rim band decoration.

The upper rim band is set off from the area below by an incised line in one case, and by a dentate stamped zone line on seven sherds, two of which are probably from the same vessel. One rim has hemiconical punctates below the upper rim band decoration. These punctates have produced dome-shaped bosses on the interior wall. The same rim has "z"-twist cord impressions across the lip.

Below the decorated rim band, seven sherds are smoothed, presumably to the shoulder. One sherd has a smoothed band below the upper rim and vertical bands composed of left diagonal dentate stamping, alternating with smoothed bands, on the lower rim.

One sherd within the dentate stamped group (Fig. 26, d) has two interior channels, one immediately adjacent to the lip and one 28 mm. below the lip. Corresponding to these two channels on the exterior of the vessel, are horizontal bands of left diagonal impressions bordered by horizontal impressions.

**Cord-wrapped stick.** Two rims are decorated with impressions of a stick wrapped with "z"-twist cord. The upper rims, adjacent to the lip, are decorated with encircling bands of impressions oriented vertically and left diagonally. This band is 13 mm. wide on one sherd.

**Plain rocker stamp.** Three rims are decorated with plain rocker stamping which forms the upper rim band decoration. On one sherd the rockering is parallel to the plane of the vessel mouth and creates a band 13 mm. wide. The surface of the vessel is smoothed below the decorated band.

On the other two rims the rocker impressions are at right angles to the plane of the vessel mouth. On both, notches, pendant from the lips of the vessels, are present above the rockering. The upper rim band on one sherd is 24 mm. wide,

and the interior rim channel lies immediately below this decoration. On the other sherd the upper rim band is composed of notches, vertical rockering, and a band of horizontal rockering, and is 41 mm. wide. Two interior channels are present, the upper one corresponding to the lower portion of the vertical rockering, and the lower channel corresponding to the horizontal rockering (Fig. 26, i).

**Incised.** An incised decoration occurs on three rim sherds. Two sherds, probably from the same vessel, are decorated on the upper rim with left diagonal lines which are carelessly executed and resemble brushing. This band is 14 mm. wide.



Figure 25. Channeled Rims

a. F123, b. F24, c. F88, d. F16, e. F44, f. F161, g. F171, h. F63, i. F28, j. F91, k. F28.



Incised lines form a cross-hatched design on one rim. Below the hatching is a narrow (3 mm.) incised line, and below this are annular punctates 2 mm. in diameter. The entire rim band decoration is 14 mm. wide.

**Undecorated.** One body sherd has an interior channel and a smoothed, unpolished surface. The narrow, shallow, channel (6 mm. wide and 1 mm. deep) is apparently located well below the lip of the vessel.

**TABLE 4. Decoration on Channelled Rim Sherds**

Design Element		Rims	Percent
Dentate Stamped		9	50.0
Plain Rocker stamped		3	16.7
Incised			
(x-hatch	1	5.5%	
other	2	11.1%)	16.7
Cord-wrapped-stick		2	11.1
Undecorated		1	5.5
		18	100.0
TOTAL			

The Channelled Rim pottery and the Havana Tradition pottery from Millville are virtually identical in the kinds and amounts of temper present, paste, and also in techniques of decoration. Dissimilarities lie in the presence of interior rim channels and more careful surface smoothing on the former.

It is apparent that the Channelled Rim pottery resembles Hopewell Ware, albeit somewhat tenuously. The greatest similarity between the Channelled Rim Sherds and Hopewell Ware lies in the presence of interior rim channels. However, two interior channels and a single channel starting well below the lip are characteristics at Millville which are not recorded for Illinois Hopewell Ware. Resemblances between the two groups also occur in shared decorative techniques, but not in relative percentages of the various techniques used. Dentate stamping, rocker stamping, and cross-hatching comprise 83.4% of the upper rim decoration on Channelled Rim sherds. While such decoration is also characteristic of Hopewell Ware, cross-hatching is more frequent and straight dentate and rocker stamping less frequent on this ware (Griffin, 1952: 116). Zoned decorations are not present on the bodies of Millville vessels. This is in direct contrast to many Hopewell Ware vessels. Certainly, the Channelled Rim sherds are

not comparable to the Hopewell Ware in terms of temper paste, nor in the aesthetic qualities of vessels.

It looks as if the inhabitants of the Millville site were acquainted with the decorative and, to a much lesser degree, with the technical concepts involved in the manufacture of Classic Hopewell pottery. What they produced, however, is a purely local decorative and technical expression of the fine Hopewell pottery.

**Notched Rims (Fig. 26, 27)**

Sample: 19 sherds



**Figure 26. Notched Rims**

**a. F63, b. F24, c. F9, d. F136, e. F38, f. F24, g. House 4, h. F88**

Temper: Large angular quartz particles and sand grains are present in sparse amounts in the paste. Angular black particles and grog are present in all sherds in varying amounts. Mica is present in a few.

Texture: Compact

Surface finish: The surface is well smoothed and temper particles are not visible on the surface. Two sherds have a "z"-twist cord roughened surface.

Lip form: Flat (13 sherds), or round (6 sherds).

Vessel form: Sherds of one vessel indicate a nearly vertical rim, with an elongated globular body, and subconoidal base. Three undecorated rims have slight interior rim channels.

Dimensions: Lip thickness ranges from 3 mm. to 7 mm., averaging 4.9 mm. for 19 sherds. Vessel size can be estimated from sherds of a single vessel. Orifice diameter is calculated to have been 144 mm., and vessel height 158 mm.

Decoration: Twelve rims, with a smooth surface, are decorated. Notches are present across the lip (8 sherds) or pendant from the lip (4 sherds). The pendant notches vary from 5 mm. to 8 mm. in length. Notch width varies from 2 mm. to 4 mm., and averages 2.7 mm. for 12 sherds. Five sherds, all undecorated, are included in this ceramic group because temper and paste are identical to sherds with notched rims. Three of these sherds have a smoothed surface and faint interior rim channels, the other two have a "z"-twist cord roughened surface.

Similar to: Weaver ware: Weaver Plain and Weaver Cordmarked.

### Madison Cord Impressed

Five sherds of the type called Madison Cord Impressed were found in features at the site. The two rims of this type are decorated on their smoothed interior surfaces with short, vertical impressions of a "z"-twist cord. The exterior of one is decorated with vertical cord impressions pendant from the lip succeeded by horizontal cord impressions. Again the impressions are of "z"-twist cord. On the exterior surface of the other rim there are vertical impressions of "z"-twist cord made over "s"-twist cord roughening. The remaining sherds

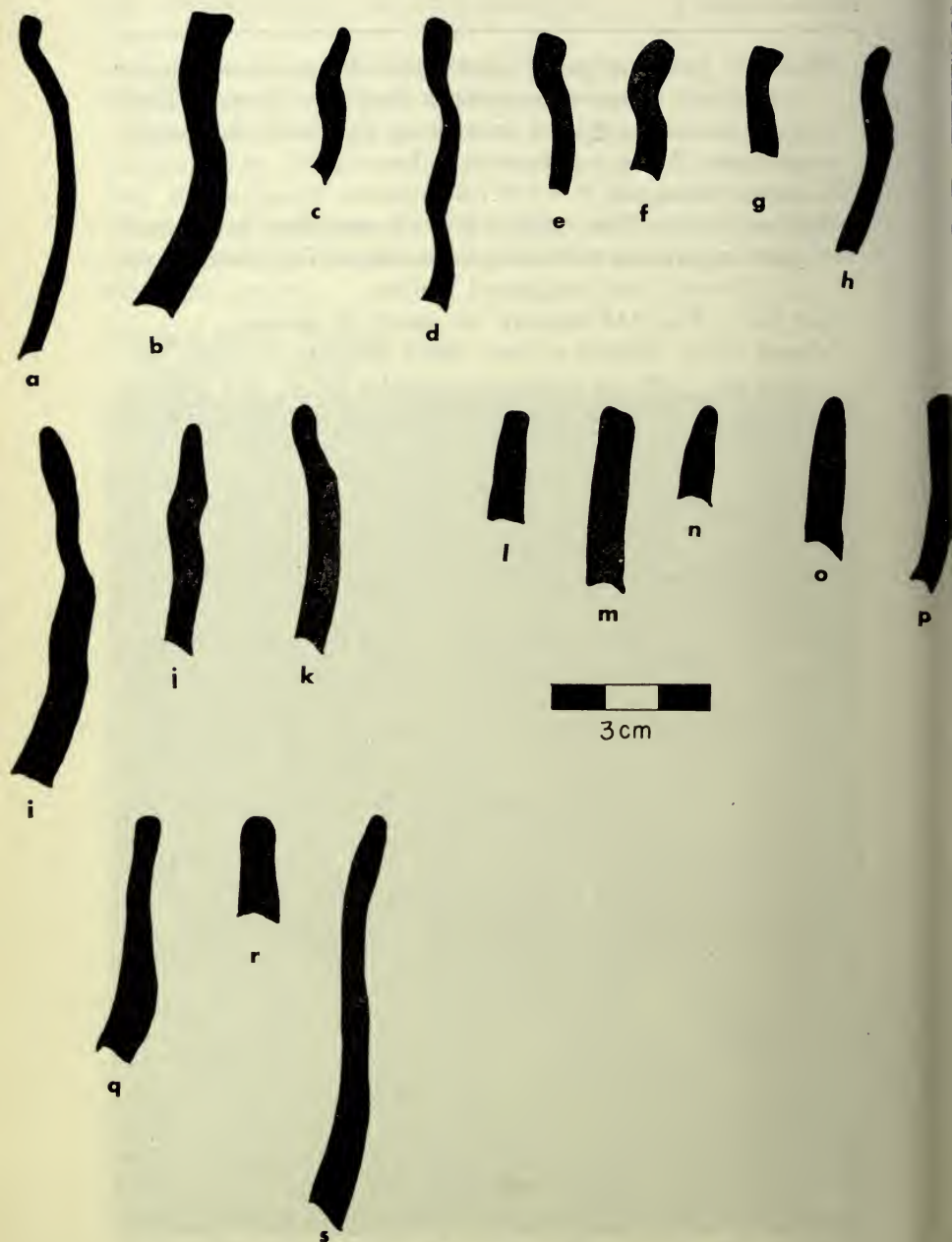


Figure 27. Rim Profiles, Channelled Rims (a-k) and Notched Rims (l-s)

a. F123, b. F24, c. F88, d. F16, e. F44, f. F161, g. F171, h. F63, i. F28, j. F91, k. F28, l. F63, m. F24, n. F9, o. F136, p. F38, q. F24, r. House 4, s. F88.

are from the upper rim section of vessels. All are decorated with "z"-twist cords. Horizontal impressions are present on one sherd, short vertical impressions on another, while the third is decorated with cord impressed triangles.

Of these sherds, two are from a feature which was located at the edge of the site where there had been considerable erosion. The feature was also riddled with animal burrows. It seems probable that this pottery was deposited in the feature by non-human activity. Fourteen Madison Cord Impressed sherds were found on the surface and in the plow zone of the site, indicating that an Effigy Mound occupation was present. However, the presence of so few specimens of Madison Cord Impressed in features is not a strong indication of the contemporaneousness of the predominating Middle Woodland material with that related to Effigy Mound Culture. It seems more likely that ground disturbance is responsible for the apparent association of the Madison Cord Impressed sherds with those of the Havana Tradition.

**TABLE 5. Undecorated Body Sherds**

	N	Percent
Cord roughened — "z"-twist .....	248	32.3
Cord roughened — "s"-twist .....	141	18.3
Cord roughened — unknown twist .....	98	12.8
Smooth over cord roughened .....	56	7.3
Smooth .....	225	29.3
<b>TOTAL</b> .....	<b>768</b>	<b>100.0</b>

### Unclassified Pottery

Six miniature pottery vessels were found. One of these is complete, the other represented by ten rim sherds.

The complete miniature pot is heavily tempered with sand. The rim flares and both the shoulders and base are gently rounded. Five rims, representing one vessel, are tempered with sand, but unlike the complete vessel, these rims are vertical. The other three rims, representing two vessels, are sparsely tempered with sand. These have slightly flaring rims and gently rounded shoulders.

Five rims, all tempered with sparse amounts of sand and angular quartz, have smooth surfaces. The temper and paste of these sherds do not match that of the other ceramic groups at the site, so they remain unclassified.

TABLE 6. Decorated Sherds

	N	Percent
Havana Tradition Sherds -----	106	67.5
Channelled Rim -----	18	11.5
Notched Rim -----	17	10.8
Madison Cord Impressed -----	5	3.2
Unclassified -----	11	7.0
<b>TOTAL -----</b>	<b>157</b>	<b>100.0</b>
Havana Tradition Sherds -----	106	75.2
Channelled Rim -----	18	12.8
Notched Rim -----	17	12.0
<b>TOTAL -----</b>	<b>141</b>	<b>100.0</b>

### Discussion and Conclusions

Havana Tradition sherds from the Millville site are similar to types defined for Havana Ware in Illinois (Griffin, 1952). The majority (66%) of the Havana Tradition sherds at Millville are decorated with straight dentate stamping and cord-wrapped-stick stamping. Such sherds bear similarities to Naples Stamped, a variety of Havana Ware which in Illinois, appears in Early Hopewell sites, but is most frequently found at Middle Hopewell sites.

Types usually associated with Early Hopewell are lacking at Millville. At such sites in Illinois decorative elements including ovoid stamping, crescent stamping, and straight dentate stamping are present, as well as sherds of Liverpool Ware (Bluhm, 1951; Fowler, 1955; Griffin, 1952; Struever, 1964). Such a configuration is lacking at Millville.

The Channelled Rim sherds provide additional evidence for the Middle Hopewell occupation of Millville. Other pottery from Millville is taken to be the equivalent of Weaver Ware, a group of pottery types, which in Illinois, appears with increasing frequency at sites which are Late Hopewell (Griffin, 1952).

When diagnostic sherds of the three groups mentioned above were recovered from features or house basins which were found to have been superimposed on other features or house basins, no pattern emerged which would indicate a ceramic sequence. In fact, sherds of all three ceramic groups were found mixed in single features at Millville, and all three varieties of pottery were also found in association with Expanding Stem projectile points.

There is no evidence that the houses were rebuilt nor is there extensive disturbance of refuse pits by the construction of later, intersecting, pits. These facts counterindicate a protracted occupation of the site.

The Havana Tradition and Channelled Rim sherds which make up the bulk of the pottery from Millville indicate a Middle Hopewell occupation at the site. Since sherds similar to Weaver ware are also present, the site must have been occupied late in the span of Middle Hopewell when the local equivalent of Weaver Ware began to appear.

Four other sites of Middle Woodland affiliation have been excavated in the lower Wisconsin River Valley by the State Historical Society of Wisconsin through its Highway Salvage Program. These are the Miller site (47 Cr1) in Crawford County, the Price sites (47Ri2 and Ri3) in Richland County, and the Jones site (47Gt52) in Grant County. Both the Jones and Miller sites were occupied early in the Middle Woodland period. Most pottery from these sites belongs to the Havana Tradition but a high percentage of it is similar to Liverpool Ware. Projectile points are of the Durst Stemmed type and varieties of large side-notched forms. These appear at Late Archaic sites in southwestern Wisconsin and continue into the Early Middle Woodland in this area. An identical assemblage of pottery and points was found at the Price sites, together with a few Channelled Rims and Expanding Stem points like those from the Millville site. Hence, the occupation of the Price sites appears to overlap with that of Millville.

Millville occupies a relatively small area of land. It is impossible to say how much of the site was eroded away, but the area excavated covers almost the entire village. At most, the site occupied  $\frac{1}{4}$  acre of land. The other Middle Woodland sites excavated in the Wisconsin River Valley are at least as large or larger. Both the Price and Miller sites cover about  $\frac{1}{2}$  acre of land, and the Jones site about  $\frac{1}{4}$  acre. All like Millville, are located on the first terrace of the Wisconsin River, at the base of a hollow through which flows a small stream tributary to the Wisconsin. The sites lie from three quarters of a mile to fourteen miles apart. Reconnaissance of Middle Woodland sites in the lower Wisconsin River Valley

has not been made, but I would guess that such sites will be found at points where a tributary flows into the Wisconsin and there is a habitable terrace.

These sites, located on terraces near a major river, are situated so that the inhabitants could have exploited identical biotic provinces in each case. While the village at Millville was located in an area ideal for exploitation of river, marshland, woodland, and grassland species, the inhabitants concentrated on hunting deer, (cf. Pillaert). Other animals were not ignored but they comprised only a minor part of the diet. A few charred hickory nuts which were recovered from refuse pits indicate that gathering of plant resources was also an aspect of the economy. There is no direct evidence of agriculture at Millville.

The high frequency of houses and refuse pits relative to the land area occupied is a pattern similar to the one seen at Illinois River Valley sites (Struever, 1965:214). At the Millville site the density of artifacts and faunal remains is low. This is in part explainable by loss of material through plowing and erosion, but the low yield is also characteristic of the general sparseness of material at Middle Woodland sites in the area. As Struever has pointed out, the size and number of lower Wisconsin Valley Middle Woodland sites and their artifact yields do not suggest a population expansion such as is postulated for sites of Middle Woodland affiliation in the Illinois Valley (1964:104).

#### Radio-carbon Dates

Eight determinations of radio-carbon dates for Millville were made by the Center for Climatic Research at the University of Wisconsin. Financial support was provided by National Science Foundation Grant GS 1141.

The samples, all charcoal, yielded these results:

Wis-208	1760 + — 65	A. D. 190 + — 65	Feature 170
Wis-209	1770 + — 65	A. D. 180 + — 65	Feature 86
Wis-210	1820 + — 55	A. D. 130 + — 55	Feature 144
Wis-211	1760 + — 55	A. D. 190 + — 55	Feature 18
Wis-212	1770 + — 65	A. D. 180 + — 65	Feature 47
Wis-212	1780 + — 65	A. D. 170 + — 65	Feature 47
Wis-213	1610 + — 55	A. D. 340 + — 55	Feature 56
Wis-214	1580 + — 55	A. D. 370 + — 55	Feature 115
Wis-215	1640 + — 80	A. D. 310 + — 80	Features 44 and 154 (combined sample)



The location of these features within the site is shown in Figure 1. Feature 18, a refuse pit, and Feature 144 and 170, both firepits, all contained unworked flakes, and bone and shell refuse. Feature 115, a refuse pit, contained three smoothed body sherds, four cord roughened body sherds, unworked flakes, and bone refuse.

Feature 86, a refuse pit, contained two decorated Havana Tradition sherds (one cord-wrapped-stick stamped, the other plain stamped) and six body sherds, smoothed and cord roughened. Feature 47, a firepit, contained a dentate stamped body sherd and a bone awl. Feature 56, a refuse pit, yielded percent of the total, and there are no other ceramic indicators of a relatively late time placement of the site within the Havana Tradition. The dates clustering toward the end of the second century A. D. appear best to represent the actual time of the site's occupation.

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the base of an Expanding Stem point and two cord roughened body sherds. Feature 154, one of the elongated fire or bake pits, contained a Havana Tradition, cord-wrapped-stick stamped, body sherd and a Channelled Rim sherd decorated with cord-wrapped-stick stamping. Feature 44 yielded eight Havana Tradition sherds: four dentate stamped, three zoned dentate stamped, and one cord-wrapped-stick stamped. A dentate stamped Channelled Rim sherd was also recovered from this refuse pit. All of the features also contained flakes, bone and shell refuse, and undecorated body sherds.

The range in dates from A. D. 130 to A. D. 370 (250 years) seems an excessively long occupation of this small and unprolific site. However, dates of A. D. 130 to A. D. 370 fall well within the range of radio-carbon dates for Middle Woodland Sites elsewhere (Griffin, 1958). Even though pottery like Weaver Ware is present at the site, it occurs only as a small

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## APPENDIX I

### BONE IMPLEMENTS

#### E. Elizabeth Pillaert

The implements manufactured from bone are not numerous (35) and the majority were made from the scapulae or the limb bones of deer. The only exceptions to this are the modified turtle carapaces, one worked elk scapula, and the tools made from bone which could not be identified. Techniques for working the bone involved breaking or cutting and then grinding to produce the final form.

#### Awls

Eighteen bone implements which may be classified as awls were recovered. Awls, in this case, include those implements with narrow sharpened tips and a base which may or may not be modified. Ten specimens, fragments of tip sections, are too badly damaged to be assigned to any specific category, but

the remaining eight can be classified as scapula, ulna, and splinter awls.

**Scapula Awls:** Three awls were fashioned from the caudal (posterior) ridge of deer scapulae. Their bases are the unmodified vertebral border. The caudal ridges run roughly through the longitudinal midsections of the implements. The ridge edges toward awls' tips have been ground smooth to produce tapering shafts with rounded cross-sections and pointed tips. All are fragmentary, but the most complete specimen, with only a small section of the tip missing, measures 14.1 in length and it has a maximum width, which is slightly above the base, of 2.8 cm (Fig. 1, a).

These three specimens are similar to ones found at Early Woodland sites in the Upper Ohio Valley (Mayer-Oakes, 1955: 212-213).

**Ulna Awls:** Two ulna awls were found, but each was made by somewhat different procedures. Both have had their distal ends ground to sharpened points, but in the longer specimen (11.4 cm.) the proximal end, which forms the base, is unmodified and obviously from an immature animal (Fig. 1, h). In the shorter specimen (8.0 cm.) the proximal end has been extensively modified by cutting and grinding to form a rounded base (Fig. 1, g). In addition, the articular area of the bone in the latter has been cut and extensively smoothed.

**Splinter Awls:** Long splinters from deer metapodials were used in the manufacture of three specimens. These splinters have not been otherwise modified except at one end where the bone was ground to produce a sharp tip. These awls range in length from 10.5 to 11.0 cm. (Fig. 1, d-f).

#### Perforated Phalanges

One complete and two fragmentary first phalanges of deer have been worked. The complete specimen has had the proximal articular area removed and the porous cancellous tissue in the interior reamed out. The more nearly complete of the fragmentary specimens had the distal articular area broken off. The proximal condyles and cancellous tissue had been removed, as in the phalanx just described. In addition, small V-shaped notches were placed at the posterior and both lateral edges of the proximal end. There may originally have been another notch on the anterior edge, but the bone was

broken in this area and no evidence of a notch was preserved. The remaining specimen had been recently broken and the proximal articular end was missing. The distal end had been ground until the articular condyles had almost disappeared. Enough of the bone was ground away so that the interior cavity was exposed, thus producing a hole on this end of the bone..

#### **Antler Drift**

A cylindrical, slightly curved section of deer antler has tentatively been classified as a drift. The entire surface of this bone has been ground and smoothed; the cut ends are rounded and the burr, at the base of the antler, has been rubbed down, but not completely obliterated. This specimen measures 6.9 cm. in length and 2.2 cm. in diameter.

#### **Antler Flaker**

One deer antler tine which has been burned may have served as a flaking tool. This specimen, 3.4 cm. in length, has a scarred rounded tip and exhibits polish along the adjacent shaft.

#### **Needle**

A flat, slightly curved needle measures 10.2 cm. in length, and 0.6 cm. in width. This specimen has a rounded, perforated end, and tapers to a well-defined point at its other extremity. The perforation measures 0.2 cm. in diameter and was drilled on the median 0.7 cm. from the rounded end. This artifact shows extensive over-all polish.

#### **Incised Bone**

One slightly curved strip of bone has two parallel lines incised on a well polished surface. This specimen is 2.3 cm. long and 1.2 cm. wide; however, this is only a fragment of its original size since the specimen has been broken along three of its edges.

#### **Worked Elk Scapula**

An implement of indeterminate use was manufactured from the scapula of an elk (Fig. 2). A portion of the infraspinous fossa has been removed and the adjacent thin section of bone possesses an irregular edge that is worn smooth. The posterior ridge is also missing, but this may not have been intentional since the adjoining edges of the caudal border have been recently broken.

### Worked Turtle Shell

A total of nine pieces of worked turtle carapace which probably represent portions of at least two bowls were recovered. These specimens have had the inner surfaces polished, the interior tubercles ground down, and the rim areas smoothed and polished. Fragments from both Blanding's and map turtles exhibit such modification. A right pleural from a Blanding's turtle had a hole 0.4 cm. in diameter, drilled through it.

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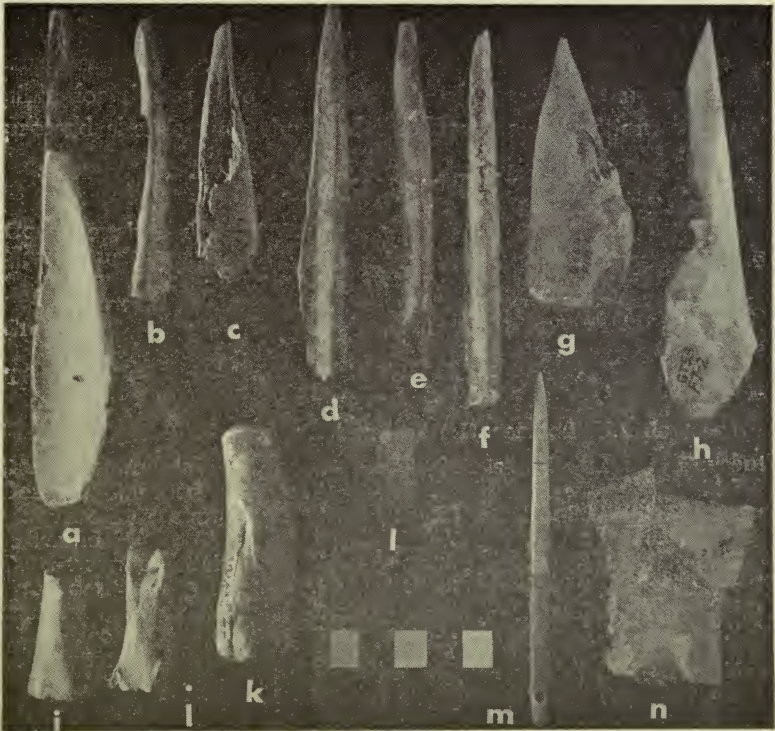
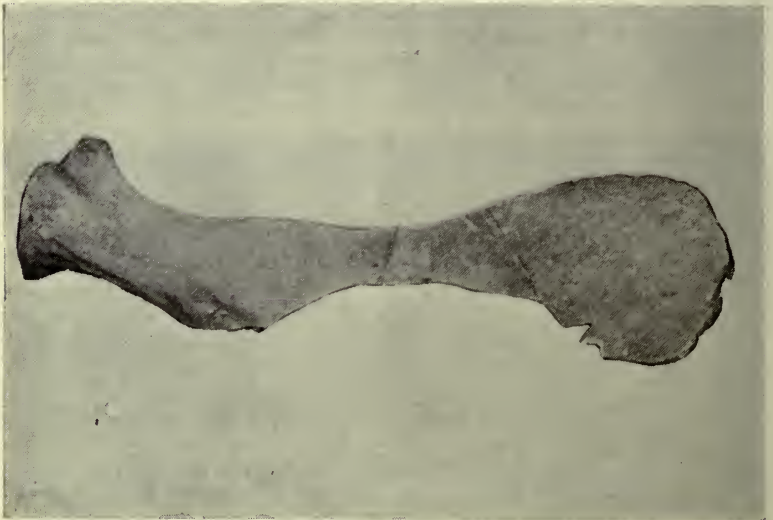


Figure 1. Bone Tools. Scapula awls a-c, splinter awls d-f, ulna awls g-h, deer toes i-j, antler drift k, engraved bone l, needle m, turtle shell n. a. Feature 11, b. F11, c. F121, d. F36, e. F36, f. surface, g. F107, h. F7, i. F36, j. F136, k. F16, l. F44, m. F36, n. F45.



**Figure 2. Worked Elk Scapula**

# FAUNAL REMAINS FROM THE MILLVILLE SITE (47-Gt 53), GRANT COUNTY, WISCONSIN

E. Elizabeth Pillaert

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## INTRODUCTION

Faunal remains, as has been demonstrated at many other archaeological sites, can provide important supplementary information not only about the inhabitants of the site, but also about the prehistoric ecology. Consequently, the faunal remains recovered in the 1962 excavations at the Millville Site (47-Gt 53) were subject to special analysis. This report is concerned with these faunal materials, and it has three objectives: (1) attempt to determine which species were being utilized by the inhabitants of the site in order to make inferences about the prehistoric environment of the area and the extent to which it was being utilized, (2) attempt to determine if the hunting practices at the site represented a seasonal or year round occupation of the site, and (3) attempt to make observations on the cultural patterns involved in the butchering techniques.

In this report, first the methods used in the analysis will be discussed and the faunal remains recovered will be described. A brief discussion of the ecology of the site will follow and will be given before the final conclusions.

## LABORATORY METHODOLOGY

The methods used in the analysis of the materials, all of which had been washed and catalogued, involved four procedures: (1) identifying the materials according to genus and species; (2) determining the minimum number of individuals of any given species and, when possible, the age and sex; (3) estimating the pounds of meat provided for each species; and (4) determining methods of butchering and/or skinning.

In order to identify the faunal remains taxonomically, all

the materials were compared with the study collections in the Osteological Laboratory of the University of Wisconsin. This analysis indicated that 1,850 bones could be identified and 3,824 were unidentifiable.

The minimum number of individuals of each species was determined by separating each of the skeletal elements into right or left components and into mature or immature categories. The total of the single most abundant skeletal element, within each age group, gave the minimum number of individuals for that particular species.

The deer mandibles were examined in order to estimate the age of the animal at the time of its death. This age determination is based on tooth eruption and degree of wear on the teeth (Severinghaus, 1949:195-216). Finally, the frontal bones of the deer from which the antlers arise were checked to establish sex ratios and the antlers were classified according to their seasonal growth.

The estimated pounds of meat provided by each species were calculated according to the method formulated by White (1953:397-398). For species not listed by White, the average live weights were obtained from various other sources.

All the bones were examined for butchering and/or skinning marks, but unfortunately these were rare. This is not surprising, however, considering the highly fragmentary nature of most of the sample.

The faunal remains discussed in this paper and the basic data involved in the analysis are now housed in the State Historical Society of Wisconsin.

## FAUNAL REMAINS

Faunal remains from Millville, which is a single component site, consisting of vertebrates and mollusca. All of the material recovered came from features and house basins. Thirty-four species of vertebrates were recognized including fifteen species of mammals, eight birds, five turtles, and six species of fish (Table 1). Mollusca identified from the site include fifteen species of fresh water mussels and three species of terrestrial snails (Table 2).

The osteological sample consisted of 5,674 bones, of which only 33% were identifiable at the genus and/or species level



(Table 1). The unidentifiable bone is extremely fragmentary, but the greater portion appears to be deer.

In the following, the faunal remains will be discussed in a descending phylogenetic scheme starting with the mammals followed next by the birds, the turtles, the fish and terminating with the mollusca.

TABLE I -- VERTEBRATES IDENTIFIED FROM THE MILLVILLE SITE (Gt-53),  
GRANT COUNTY, WISCONSIN

SPECIES	ITEMS	%	MINIMUM		ESTIMATED	
			NO. OF INDIVID.	%	LBS. OF MEAT	%
<b>MAMMALS</b>	<b>1,736</b>	<b>93.84</b>	<b>72</b>	<b>66.06</b>	<b>6,241</b>	<b>98.67</b>
* <u>Scalopus aquaticus</u> , Eastern Mole	2	.11	2	1.83	--	--
<u>Marmota monax</u> , Woodchuck	3	.16	1	.92	6	.09
* <u>Tamias striatus</u> , Chipmunk	15	.81	2	1.83	--	--
<u>Sciurus carolinensis</u> , Gray Squirrel	9	.49	2	1.83	1	.02
<u>Castor canadensis</u> , Beaver	11	.59	2	1.83	77	1.22
<u>Ondatra zibethicus</u> , Muskrat	16	.86	2	1.83	4	.06
<u>Canis familiaris</u> , Domestic Dog	28	1.51	3	2.75	26	.41
<u>Canis lupus</u> , Gray Wolf	8	.43	1	.92	30	.47
<u>Procyon lotor</u> , Raccoon	39	2.11	6	5.50	105	1.66
<u>Mustela vison</u> , Mink	2	.11	1	.92	1	.02
<u>Taxidea taxus</u> , Badger	1	.05	1	.92	13	.21
<u>Lutra canadensis</u> , Otter	2	.11	1	.92	13	.21
<u>Lynx rufus</u> , Bobcat	2	.11	1	.92	15	.24
<u>Cervus canadensis</u> , Elk	31	1.68	5	4.59	1,750	27.67
<u>Odocoileus virginianus</u> , White-tailed Deer	1,567	84.70	42	38.53	4,200	66.40
Unidentified	3,530	--	--	--	--	--
<b>BIRDS</b>	<b>20</b>	<b>1.08</b>	<b>11</b>	<b>10.09</b>	<b>36</b>	<b>.57</b>
<u>Branta canadensis</u> , Canada Goose	1	.05	1	.92	6	.09
<u>Anas platyrhynchos</u> , Mallard	3	.16	1	.92	2	.03
<u>Anas discors</u> , Blue-winged Teal	1	.05	1	.92	1	.02
<u>Aythya americana</u> , Redhead	1	.05	1	.92	2	.03
<u>Aythya affinis</u> , Lesser Scaup and/or <u>Aythya</u> <u>collaris</u> , Ring-necked Duck	2	.11	2	1.83	3	.05
<u>Mergus merganser</u> , Common Merganser	1	.05	1	.92	2	.03

\* Not considered to be a food item.

(TABLE I -- CONTINUED)

SPECIES	ITEMS	%	MINIMUM NO. OF INDIVID.	%	ESTIMATED LBS. OF MEAT	%
BIRDS (continued)						
<u>Pedioecetes phasianellus</u> , Sharp-tailed Grouse	4	.22	2	1.83	3	.05
<u>Meleagris gallopavo</u> , Turkey	7	.38	2	1.83	17	.27
Unidentified	48	--	--	--	--	--
TURTLES	32	1.73	8	7.34	13	.21
<u>Chelydra serpentina</u> , Snapping Turtle	2	.11	1	.92	5	.08
<u>Emys blandingii</u> , Blanding's Turtle	14	.76	3	2.75	3	.05
<u>Graptemys sp.</u> , Map Turtle	7	.38	2	1.83	2	.03
<u>Chrysemys picta</u> , Painted Turtle	7	.38	1	.92	1	.02
<u>Trionx sp.</u> , Soft-shelled Turtle	2	.11	1	.92	2	.03
Unidentified	12	--	--	--	--	--
FISHES	62	3.35	18	16.51	35	.55
<u>Lepisosteus osseus</u> , Long-nose Gar	8	.43	2	1.83	3	.05
<u>Amia calva</u> , Bowfin	6	.32	1	.92	2	.03
<u>Ictalurus sp.</u> , Catfish	12	.65	3	2.75	12	.19
<u>Ictalurus, sp.</u> , Bullhead	16	.86	4	3.67	6	.09
<u>Perca flavescens</u> , Yellow Perch	7	.38	3	2.75	2	.03
<u>Micropterus, sp.</u> , Bass	13	.70	5	4.59	10	.16
Unidentified	234	--	--	--	--	--
TOTALS	1,850	99.98	109	99.98	6,325	100.01

### Mammals

Mammals, as a class, were by far the most abundant, comprising approximately 94% of the identifiable remains, 66% of the minimum number of individuals and 99% of the estimated pounds of meat (Table 1). However, of the fifteen species identified, two were probably not associated with the site as food animals and nine occurred in such limited numbers that they can not be considered important in the dietary pattern of the people. The eastern mole (*Scalopus aquaticus*) and the chipmunk (*Tamias striatus*) are burrowing mammals, and it is possible that these animals tunneled into the site at a later date and therefore are not contemporary with the rest of the remains. The woodchuck (*Marmota monax*), gray

wolf (*Canis lupus*), mink (*Mustela vison*), badger (*Taxidea taxus*), otter (*Lutra canadensis*), and bobcat (*Lynx rufus*) are represented by one individual each and the gray squirrel (*Sciurus carolinensis*), beaver (*Castor canadensis*), and muskrat (*Ondatra zibethicus*) are each represented by only two individuals. These species will not be discussed individually.

*Canis familiaris*. The Millville people had domestic dogs, but the paucity of the remains suggest that they were not numerous. Twenty-eight bones representing at least three

TABLE 2 -- MOLLUSCA IDENTIFIED FROM THE MILLVILLE SITE (GT-53)

SPECIES	VALVES		TOTAL NUMBER	%
	RT.	LT.		
PELECYPODS	71	73	144	99.98
<i>Fusconaia undata</i> , Pig-toe	11	13	24	16.67
<i>Fusconaia ebenus</i> , Niggerhead	8	11	19	13.19
<i>Megalonaias gigantea</i> , Washboard	1	-	1	.69
<i>Amblema costata</i> , Three-ridge	8	8	16	11.11
<i>Quadrula quadrula</i> , Maple-leaf	2	2	4	2.78
<i>Quadrula pustulosa</i> , Pimple-back	7	3	10	6.94
<i>Quadrula metanevra</i> , Monkey-face	2	3	5	3.47
<i>Tritogonia verrucosa</i> , Buckhorn	1	1	2	1.39
<i>Cyloniaias tuberculata</i> , Purple Pimple-back	3	0	3	2.08
<i>Plethobasus cyphus</i> , Bullhead	8	3	11	7.64
<i>Elliptio dilatatus</i> , Spike	7	6	13	9.03
<i>Lasmigona costata</i> , Fluted-shell	1	-	1	.69
<i>Actinonaias carinata</i> , Mucket	10	19	29	20.14
<i>Lampsilis siliquoidea</i> , Fat Mucket	1	2	3	2.08
<i>Lampsilis ventricosa</i> , Pocketbook	1	2	3	2.08
TERRESTRIAL GASTROPODS			24	99.99
<i>Anguispira alternata</i>			20	83.33
<i>Mesodon thyroidus</i>			2	8.33
<i>Triodopsis multilineata</i>			2	8.33

individuals were recovered. The facts that these bones were scattered over a wide area and that in one case the bone was burned suggest that dogs were used as a source of food.

**Procyon lotor.** A total of thirty-nine bones representing at least six adult raccoons were recovered. The highest counts were obtained from the right mandibles (Table 3) and it is perhaps significant that of the 39 bones present, 16 were from the skull of this animal.

**Cervus canadensis.** The quantity of elk bone is negligible, only thirty-one bones were recovered. However, it is of interest that one-third of this total were scapulae yielding a minimum count of five individuals (Table 3). The amount of meat contributed by these is substantial, since elk ranks second to deer in importance on the basis of estimated pounds of useable meat.

**Odocoileus virginianus.** The white-tailed deer was the principal dietary animal at the Millville Site. A minimum of forty-two individuals were represented (based upon right metatarsals) which would have produced roughly 4,200 pounds of meat or 66% of the total meat estimate (Table 1). Approximately 85% of the identifiable bone was attributed to the white-tailed deer, and at least thirteen or 46% of the bone artifacts were manufactured from this animal's bones.

The frontal bones of mature animals indicate that thirteen of the individuals were males and eleven females. Mature antlers attached to the frontal bones of eleven skulls suggest that these animals were hunted between September and December. Two bucks had cast their antlers indicating that they had been killed sometime between January and April.

Mandibles were examined for tooth eruption and dental attrition and on this basis were assigned to age categories (Figure 1). This data indicates that at the time of their death nineteen (76%) of the animals aged were under three years of age. Assessments of age based on the proportion of unfused to fused bones suggest that 14% of the animals were immature (Table 4).

**Butchering Technique.** An attempt was made to determine the technique used by the Indians in butchering the deer. This was to be ascertained by following the procedure formulated by White (1952, 1953, 1954, 1955). He has endeavored to



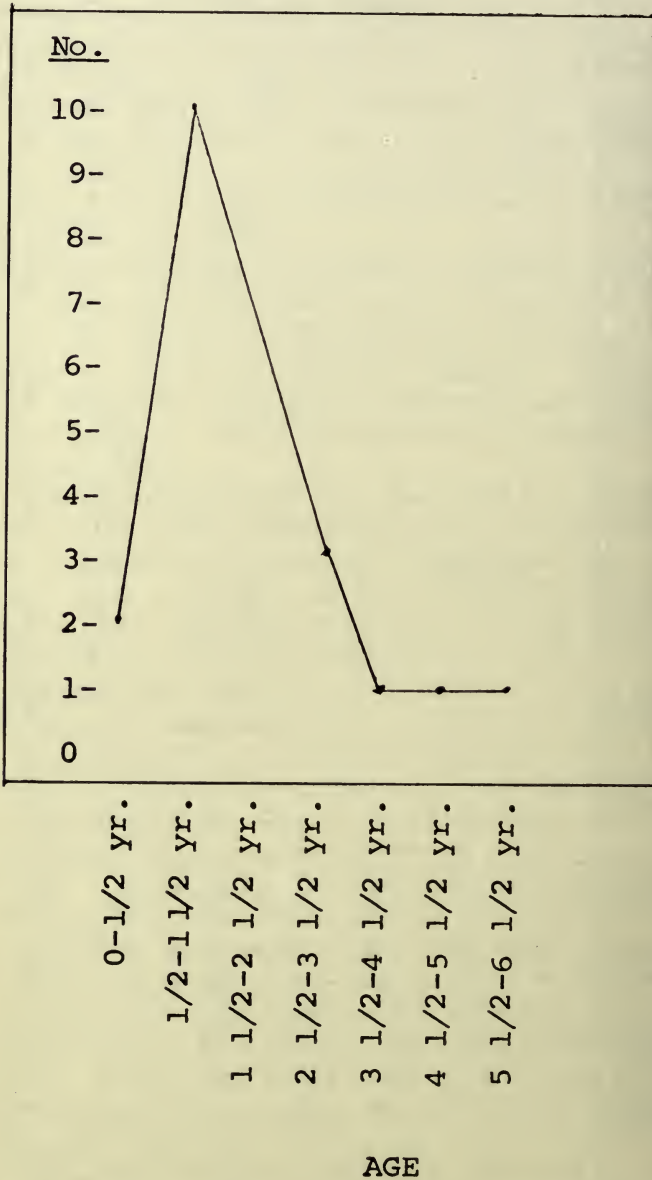


Fig. 1. AGE DISTRIBUTION OF DEER

reconstruct aboriginal butchering practices by comparing the ratios of the various osteological elements present at a site to each other and also to the greatest number of individuals represented. White (1952: 337) suggests that although the numerical count of the elements is subject to accidents of preservation, ratios are probably an accurate reflection of the parts originally brought into camp.

The procedure first involves determining the minimum number of individuals represented in the collection. This is done by calculating the minimum number of individuals for each element. For example, at the Millville Site there were thirteen right and four left distal portions of deer humeri. There were then at least thirteen deer represented by this particular element. The greatest number shown by this method was forty-two (right metatarsal). Minimum numbers for the other osteological elements were then converted to percentages, taking forty-two as 100%. If the people were bringing back the whole animal to the site one would expect the percentages of the various elements to be similar. If they were selective at the kill site and bringing back only certain portions of the animal, there should be some consistent pattern in the percentages of the appendicular skeleton to suggest this alternative. An examination of Table 4 reveals that the frequency distribution of the deer bone shows little congruity either within the appendicular skeleton or between it and the minimum number of individuals. Therefore, the percentages do not produce a pattern that would be conducive to determining the butchering process.

A pattern does seem to be present in all those elements whose numbers represent 40% or more of the minimum number of individuals. All are bones that are so low in marrow content that conceivably they were not utilized in the preparation of bone grease. If the people at the Millville Site were exhausting the resources of the white-tailed deer then one might expect the elements of high marrow or grease content to be battered beyond recognition, and this may be the reason that no butchering patterns are obvious in this analysis. The presence of large quantities of bone splinters (3,530), of which the majority is presumed to be deer, helps substantiate this premise.

TABLE 4 -- FREQUENCY DISTRIBUTION OF THE DEER BONE FROM THE MILLVILLE SITE (GT-53)

ELEMENT	Mature		Immature		Worked		Individuals Represented	Percent of Greatest #
	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.		
skull, antler	11	9					11	26.2
" , maxilla	21	18				2	21	50.0
" , cranium	17	14					17	40.5
" , teeth								--
mandible	21	30		4			34	81.0
vertebra, atlas			11				11	26.2
" , axis			13				13	31.0
" , cervical			16				4	9.5
" , thoracic			24				2	4.8
" , lumbar			27				5	11.9
" , unid.			77				--	--
sternum			4				1	2.4
ribs							2	4.8
scapula	15	19	241				17	40.5
humerus, proximal	14	10	10		1	2	6	14.3
" , distal	5	1	3				13	31.0
" , shaft	13	4					6	14.3
radius, proximal	6	5	1				8	19.0
" , distal	5	7	2		1		2	23.8
" , shaft	5	7	2				9	21.4
ulna	14	16		3	1	1	22	52.4
carpal, magnum	3	6					6	14.3
" , unciform	4	3					4	9.5
" , scaphoid	4	5					5	11.9
" , lunate	3	4					4	9.5
" , cuneiform	9	2					9	21.4
metacarpal	19	9	5				19	45.2
metatarsal	40	28	17	2	1		42	100.0
cannonbone, shaft			76			3	--	--
pelvis	7	2	4				7	16.7
femur, head	2	1	2	2	1		4	9.5
" , proximal	8	3		2	2		10	23.8
" , distal	3	4	1				4	9.5
" , shaft	12	3	1				12	28.6
patella	2	2					2	4.8
tibia, proximal	19	18		1	1		20	47.6
" , distal	13	7		1	1		14	33.3
" , shaft	19	13	4				19	45.2



(TABLE 4 Continued)

ELEMENT	Mature		Immature		Worked		Individuals Represented	Percent of Greatest #	
	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.			
fibula	5	2					.5	11.9	
astragalus	17	15					17	40.5	
calcaneum	10	13	6	6			19	45.2	
naviculo-cuboid	18	14	1				19	45.2	
tarsal, cuneiform	1	2					2	4.8	
sesamoid					27			--	
phalanx's, 1st	33	35	2	3		1	10	23.8	
" , 2nd	21	22	7	3			8	19.0	
" , 3rd	14	9	2	1			4	9.5	
TOTAL	441	368	172	509	34	30	4	2	7

Minimum number of individuals

42

**Bone Artifacts.** The majority of the bone artifacts were fashioned from elements of the white-tailed deer. The only bone tools not manufactured from this animal's bones are modified turtle carapaces, one worked elk scapula, and the implements made from bones which could not be identified.

#### Birds

Identifiable bird bones were not plentiful (20 elements) and it would appear that birds were not an important food source. Eight different species encompassing eleven individuals are represented. All of the species present are either seasonal visitors (forms of migratory waterfowl) or native to the region (turkey and sharp-tailed grouse). The paucity of their remains is surprising since the proximity of the Wisconsin River would offer enough open water to attract waterfowl during the migratory periods, and the area borders the Mississippi flyway.

#### Turtles

Turtles were utilized as food to some extent; however, the sparsity of remains suggests that they were of minor importance. Eight individuals are present, although less than fifty bones were recovered (Table 1). These include five species; all are aquatic or semi-aquatic in habitat and would have been available from the Wisconsin River or the nearby wetlands. The carapaces of at least two have been altered by scraping and smoothing the inner surface, probably to make bowls.

#### Fishes

Eighteen individuals representing six species of fish were present at the site. *Ictalurus* sp. which includes both the channel cat and the bullhead was the most numerous, constituting approximately 45% of the identifiable fish remains.

#### Mollusca

Fifteen species of fresh water mussels were recognized from the Millville Site (Table 2). They are predominantly thick-shelled specimens characteristically found in medium or large rivers. Of the six most abundant naiads at the site, four (*Fusconaia undata*, *Fusconaia ebenus*, *Elliptio dilatatus*, and *Plethobasus cyphus*) are typically found on a mud bottom in deep, swift water. The remaining two (*Actinonaias carinata* and *Amblema costata*) usually occur on a sand or gravel bot-

TABLE 5 -- FREQUENCY DISTRIBUTION OF THE BIRD BONE FROM THE MILLVILLE SITE (CT-53)

	sternum Axial	humerus Rt. Lt.	radius Rt. Lt.	ulna Rt. Lt.	coracoid Rt. Lt.	tibiotarsus Rt. Lt.	Carpometacarpus Rt. Lt.	Total	Minimum no. of Individ.
<u>Branta</u> <u>canadensis</u>	1							1	1
<u>Anas</u> <u>platyrhynchos</u>				1			1 1	3	1
<u>Anas</u> <u>discors</u>			1					1	1
<u>Aythya</u> <u>Americana</u>							1	1	1
<u>Aythya affinis</u> and/or	1 1							2	2
<u>Aythya collaris</u>									
<u>Mergus</u> <u>mergamser</u>		1						1	1
<u>Pedioecetes</u> <u>phasianellus</u>	1	1			2			4	2
<u>Meleagris</u> <u>gallopavo</u>	1	2	1	1		1		7	2



tom in shallow water. All of these species now occur in the Wisconsin River.

Gastropod remains were scarce suggesting that they were not utilized for food. Twenty-four individuals representing three terrestrial species were associated with the site. *Anquispira alternata* was the most numerous constituting approximately 83% of the total.

### ECOLOGY

The Millville Site is located within the meander belt of the Wisconsin River floodplain. Above this floodplain there lies a series of terraces and then steeply-raising bluffs. North of the river, the bluffs are covered with grasslands, while to the south they are overgrown with trees and shrubbery. This type of habitat along with the adjacent marshlands would have provided a variety of species types. Shelford (1963: 119) has placed the general area in a Floodplain Forest biotic district and as such suggests that the vertebrates present are principally deciduous forest-edge species and those associated with marshlands.

The species recovered at the site which are normally associated with a woodland habitat are the woodchuck, chipmunk, grey squirrel, grey wolf, raccoon, bobcat, elk, deer, turkey, and sharp-tailed grouse. Species present which prefer grasslands include the eastern mole, and the badger. Those which have affinities with marshlands are the beaver, muskrat, mink, otter, migratory birds, Blanding's turtle, and painted turtle. Aquatic species include the snapping turtle, soft-shelled turtle, six species of fish, and the mussels.

The fauna listed above suggests that the habitat surrounding the site during its occupation was basically the same as that existing in the area today.

### CONCLUSIONS

The analysis of faunal remains indicates that the Millville Site was probably occupied year-round in an environment of forest-edge, nearby marshlands, rivers and streams. The low count of minimum number of animals, other than white-tailed deer, suggests that the entire biotic community at hand was not fully exploited by the village's inhabitants. The relatively high count for deer leads to the view that this creature was intensively hunted and that its use constituted a major aspect

of the Millville economic base.

The data concerning the age of individual deer specimens as reflected in mandibles and antler growth and casting implies that animals were taken at random from the natural population. These data do not support the view that Millville was occupied seasonally nor that deer hunting had discernable seasonal aspects.

Information on the frequency of deer in different age classes in undisturbed populations is scarce; however, during the 1950 and 1951 hunting seasons in Wisconsin, 73% of the harvest was composed of deer under three years of age (Dahlberg and Guettinger, 1956: 98). At Millville a comparable percentile (76%) of the same age class was present.

All faunal specimens recovered were entirely modern and of the species identified, only four, the grey wolf, bobcat, elk and wild turkey, are no longer to be found in the area.

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# DESCRIPTION OF HUMAN SKELETAL MATERIAL FROM THE MILLVILLE SITE \*

(47-Gt-53) Grant County, Wisconsin

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This report describes the human skeletal material recovered during archaeological excavations at the Millville Site in the summer of 1962. The material was cleaned, restored and analyzed in the Physical Anthropology Laboratory at the University of Wisconsin, Madison. Table 1 includes a listing of the skeletal remains available for study. As can be seen, the site yielded three nearly complete adult skeletons in various states of preservation. The bones found in Features 99 and 102 (which were superimposed upon Feature 103 which contained **Burial-2**) are believed to be parts of **Burial-2**. In addition to the three adults, incomplete skeletons of two infants were obtained. The individual specimens from Features 76, 91, and 137 only provided enough basic information for identifying them as human remains.

## Sex and Age of the Adults

In general, the bone of all three individuals are relatively small, with slightly developed muscle markings in **Burials-3a** and **-3b** and moderately prominent muscle attachment areas in **Burial-2**. Hence, the skeleton of **Burial-2** is somewhat more rugged in appearance. However, the skeletal indicators of sex, primarily located on the skull and pelvis, clearly show all three adults to be female. For example, the median type supraorbital ridge is small in **Burials-3a** and **-3b** and medium-sized in **Burial-2**. Furthermore, the mastoid processes are small in size. Finally, the sciatic notches on the innominates are characteristically female since they are broad and shallow in all of these cases.

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Table 1. Skeletal Material Inventory

## A. Skeletons

Feature	Burial Number	Material	Condition
25	1	fragmentary, incomplete infant skeleton	fair
103	2	nearly complete adult skeleton	good
172	3a	nearly complete adult skeleton	fair
172	3b	nearly complete adult skeleton	poor
24	4	fragmentary, incomplete infant skeleton	fair

## B. Isolated Bones

76	GT 53 F-76-3	Deciduous incisor
91	GT 53 F-91-9	Cranium fragment
99	GT 53 F-99-3	Pubis fragment
	-4	Pubis fragment
	-5	Proximal Phalanx of hand
102	GT 53 F-102-5	Proximal phalanx of foot
	-6	Middle phalanx of foot
137	GT 53 F-137-2	Left patella

Symphyseal faces of the pubic bones were not available for estimating age. Consequently, age determination depended upon suture closure, dental information and age-influenced pathological conditions. First of all, with regard to endocranial suture closure, **Burial-2** and **Burial-3a** have obliterated coronal sutures and advance stages of union in the other vault sutures. Later stages of suture union were also observed on the poorly preserved cranium of **Burial-3b**. On the basis of the above information, it seems probably that the skeletal age of each of the three adults is in excess of forty years. It might be noted here that there are several, deep, arachnoid depressions on the internal braincase of **Burial-2**. These features are generally found in crania of old individuals.

Secondly, some of the dental information used in estimating age can be summarized as follows. The lower dentitions of **Burials-2** and **-3a** are in Stage Two attrition (i.e., cusps worn smooth) while the upper teeth in both individuals generally show more wear since there are several cases of Stage Three attrition (i. e., pulp cavity exposed). **Burial-2** has a



rather high incidence of missing teeth which had been lost antemortem. Those teeth absent included the second and third lower left molars, both upper second premolars and the upper first and second right molars. For comparison, **Burial-3a** had three teeth lost antemortem which included the lower left first and second molars and the upper right first molar. Thus in both individuals the molar region has been involved in tooth loss. Because the teeth were lost antemortem, there was complete or partial resorption of the alveolar sockets.

The dentition of **Burial-3b** shows a somewhat modified pattern of attrition due to antemortem tooth loss. At least six teeth, including the central incisors and the first two molars of each side of the upper tooth row, are missing. The great amount of alveolar bone resorption perhaps indicates that these teeth were absent a considerable time before death. (Of course, the missing upper central incisors also suggest the possibility of dental ablation). Some of the lower teeth, those which normally would have occluded with the absent teeth, might be extruded to some extent due to the lack of contact from opposing teeth. In addition, these lower teeth do not show extensive wear. That is, the crown surfaces are not worn completely smooth (i. e., Stage One attrition). In contrast, the other teeth in the mandible show more wear since they occluded for a longer period. The result of the condition described above is to produce a wavy occlusal surface along the mandibular tooth row. This is not the case in **Burials-2** and **3a** since in their dentitions there is relatively uniform attrition along the tooth row.

This picture of dental attrition and antemortem tooth loss suggests that all three individuals are of old age. However, the dental information might be giving an overestimate of age when diet is considered. That is, much of the tooth wear can be attributed to abrasive particles within a relatively coarse diet. In this case, attrition would have proceeded at a rapid rate. Unfortunately, this rate is not known. Hence, any age estimate based upon the above dental features must be given a wide range of approximation.

Dental pathologies, including those which may have contributed to the high incidence of missing teeth, are described

as follows: In **Burial-3a**, the upper right second molar is carious over most of the crown surface and in part of the root area. In **Burial-3b**, extensive caries on both upper first premolars have also involved much of the crown surfaces. **Burials-2** and **3a** have small, pin-hole, fissural caries on the occlusal surfaces of the lower right third molars.

In **Burial-2**, there is a large abscess pocket in the buccal root area of the upper left first molar. The tooth itself was not recovered and presumably was lost because of the infectious condition. The same individual also has a smaller abscess opening, just mesial to the larger pocket, which has involved the root socket of the left second premolar.

Evidence for periodontal disease comes from the amount of bone recession at the alveolar margin. Both presence and severity of the disease are more firmly established if the teeth are still in place since bone resorption will also proceed after any cases of tooth loss. The effect of this disease is to reduce the depth of the tooth socket. Consequently, the teeth involved will be loosened and more subject to loss, which is then followed by continued resorption of the alveolar bone. With regard to the dentitions of **Burials-2** and **3b**, it is suggested that periodontal disease probably accounts for many of the missing teeth while caries and extreme attrition are possible contributing factors. In these individuals, recession of the alveolar bone in the area of the teeth still in place was observed to range from medium to marked. In contrast, the amount of alveolar recession is slight in **Burial-3a**. This last individual also has the fewest number of missing teeth. The etiology of periodontal disease is not entirely clear. It may be due to several factors, such as, poor oral hygiene leading to irritation from accumulated calculus deposits, or to dietary deficiencies (Brothwell 1963: p. 149).

The time of onset of the above dental pathologies is not strictly age dependent. However, it can be presumed that chronic cases will develop later in life, if the conditions are left untreated. The rather high frequency and extreme nature of dental pathologies (including marked attrition) tend to confirm an advanced age status for the three adult skeletons which is also indicated by other lines of evidence.

Additional observations were available for estimating the

skeletal age of **Burial-2**. First of all, there are osteophytic growths at the margins of the iliac crest, ischial tuberosity, and patella. These bony growths are commonly found on skeletons of older individuals. Furthermore, **Burial-2** shows bony lip-ping, which is characteristic of osteoarthritis, at several sites including the articular borders of the elbow, shoulder and temporomandibular joints, and the body margins of the sixth and seventh cervical and third and fourth lumbar vertebral elements. As in the case of dental pathologies, osteoarthritis is not entirely age dependent but rather denotes development of the condition through time. Consequently, it will be more common and evident on the skeletons of older individuals. The general picture of extra bony growth, some of which is arthritic in nature, again indicates that **Burial-2** was an older individual. The other two skeletons from Millville were not preserved very well at the articular borders, but do show some degree of osteoarthritic lip-ping at observable sites.

In conclusion, the age at death of the three female skeletons can be estimated to be within the latter half of a middle-adult range, which runs from 36 to 55 years of age. The decade from 45 to 55 years is the age span in which the conditions described above would most likely be found.

#### Additional Observations

This section includes several morphological characters which illustrate observed variation among the three adult skeletons. Some of the features also have significance for assigning the individuals to an American Indian population.

The form of the external auditory meatus in all cases is oval. No exostoses were observed within the auditory canals. Nor are there any dehiscences of the tympanic plate. The tympanic plate is thin in **Burials-2** and **3b** and medium in thickness in **Burial-3a**.

Unique to **Burial-3a** is a medium-sized palatine torus which is accompanied by bony spicules at the sides of the posterior hard palate.

The crania of **Burials-2** and **3a** have several small wormian bones in their lambdoidal sutures. In addition, **Burial-2** has fairly large bilateral sutural bones in the asterionic region, which lies posterior to the mastoid process. It has been suggested that wormian bones can be produced by physical stress

on the cranium during late fetal and early post-natal periods of development (Bennett 1965: p. 259). In American Indians, mechanical stress is commonly provided by various cradle-board devices. Applied pressure on the posterior cranium results in deformation which is characterized by flattening of the occiput or lambdoidal area. In apparent agreement with the above suggestion, the crania of **Burial-2** and **-3a** show a high degree of occipital flattening over the sutures containing wormian bones (see Figure 1). In both individuals, the posterior cranial profile seen in lateral view is very nearly vertical. **Burial-2** also has a medium degree of asymmetry to the right side of the posterior crania. Some of the occipital flattening might have been produced by postmortem ground pressure since there is distortion of the cranial base and facial skeleton in both crania. However, it is unlikely that earth pressure distortion is a primary explanation of the occipital



Figure 1. Occipital cranial deformation in **Burial-2** (upper right) and **Burial-3a** (upper left) compared with undeformed female cranium from Aztalan (Middle Mississippi Period — Wisconsin).

flattening. Although the lambdoidal and sagittal sutures are not completely obliterated in either cranium, suture closure is at a stage where the braincase would be a fairly solid unit and not subject to extensive flattening from earth pressure, unless the cranial vault was severely damaged. There appears to be no postmortem damage in the flattening occipital region of either **Burial-2** or **Burial-3a**. Thus the occipital deformation which is present in these individuals is best explained by artificial pressure applied to the skulls during infancy. The cranium of **Burial-3b** was not preserved well enough to allow observation of any possible artificial deformation.

The vertically flattened posterior crania of **Burials-2** and **-3a** strongly resemble a skull and cranial vault fragment pictured by McKern (1931: p. 286: Fig. 1). He postulated that this Hopewell material from the Trempealeau mounds (Wis.) shows occipital deformation due to the use of cradleboards



Figure 2. Bifrontal and occipital cranial deformation in Burial-2 (right) compared with Aztalan cranium (left).

(*ibid.*: p. 214).

The cranium of **Burial-2** differs from **Burial-3a**, and presumably from the Trempealeau material, in that it also has deformation of the frontal bone. That is, there are flattened areas just anterior to the coronal suture, directly above the temporal lines on both sides of the frontal bone (see Figure 2). The presence of this bifrontal flattening makes the forehead appear narrow and unusually bulbous. There is also a prominent sagittal elevation, most marked at bregma, whose posterior extension includes about one-half of the sagittal suture area. Whether or not this last feature, sometimes called keeling, is directly related to bifrontal flattening is unclear. Sagittal keeling is present to a minor degree in **Burial-3a** but bifrontal flattening does not occur.

The co-occurrence of bifrontal and occipital flattening has been reported in crania from Indian Knoll (Snow 1948), Adena (Snow 1957) and in a cranium from a Missouri Hopewell site (Hrdlicka 1910). Hopewellian dated skeletal material from the Klunk and Albany mounds in Illinois, which is at present being studied at Indiana University and the University of Wisconsin, includes crania of both sexes which show bifrontal-occipital deformation. Stewart (1940: p. 15) made the following relevant remarks.

The narrowing of the foreheads of the Hopewellian skulls probably can be attributed to artificial deformation, although its association with occipital flattening is not always clear. If it is artificial, it contrasts sharply with the more common type of deformed frontal in which the flattening broadens the forehead. Presumably the Hopewellians fastened their children's heads to the cradleboard in such a way as to bring pressure to the sides of the forehead.

Snow (1957) suggests that pads placed on either side of the forehead which were incorporated into binding cords, could have been used to produce the type of bifrontal deformation found in the Adena crania. The cranium of **Burial-2** from Millville appears to have undergone a similar shaping process. However, the widespread occurrence of bifrontal flattening in several Indian groups mentioned above would seem to limit its usefulness as a diagnostic trait for a particular time period unless the trait significantly varied between popula-



Figure 3. Bone fracture scars on left radius and ulna of Burial-2 compared with the normal right forearm bones. X-ray and photograph were made by Charles F. Merbs.

tions in such factors as frequency and appearance.

The chin form is bilateral in **Burials-2** and **-3a**, while in **Burial-3b** the medio-bilateral type is present. In addition, the sub-incisive fossae are rather deep on all three mandibles. These features tend to give prominent looking chins on the individuals. No mandibular tori were observed. Gonial eversion is slight in **Burials-3a** and **-3b** and moderate in **Burial-2**.

The postcranial material contained the following morphological variants. The left humerus of **Burial-3b** has a perforated olecranon fossa. This trait, called a septal aperture, is not present on the right side of **Burial-3b** or on any of the other humeri. A case of trauma was present in **Burial-2**. The left radius and ulna have projecting bone masses (exostoses) which are located in the area between the attachment surfaces for the flexor and pronator muscles of the distal forearm. These features appear to be scar sites of fractures which were poorly aligned during healing.

#### Measurements <sup>1</sup>

Because of cranial deformation, the following measurements are subject to a certain amount of un-measurable error which should be recognized in any future comparisons. As would be expected, the artificially deformed crania of **Burials-2** and **-3a** fall within a brachycranic or broadheaded category. Maximum cranial length in **Burial-2** is 163 mm and maximum breadth is 138 mm. These dimensions for **Burial-3a** are 160 mm for length and 130 mm for breadth. The calculated cranial indices are 85 per cent for **Burial-2** and 81 per cent for **Burial-3a**.

The only other cranial measurement available for **Burial-3a** is minimal frontal diameter which is 92 mm, compared to 89 mm for the same diameter in **Burial-2**. Additional cranial measurements for **Burial-2** are listed in Table 2.

The narrow forehead and high cranial vault observed in **Burial-2** are reflected in the values for minimal frontal diameter and basi-bregmatic height, respectively. Presumably, bifrontal deformation is partly responsible for these observed traits and their corresponding metrical values. The various calculable

<sup>1</sup> Unless otherwise specified, measuring technique was standardized according to **Hrdlicka's Practical Anthropometry**, T. D. Stewart, editor, 1952.



facial indices would contain compounded errors and for this reason are not included.

**Table 2. Cranial Measurements of BURIAL-2. (in mm)**

Basion-Bregma Height .....	143
Auricular Height <sup>2</sup> .....	118
Bizygomatic Diameter .....	123
Menton-Nasion Height .....	110
Prosthion-Nasion Height .....	65
Horizontal Circumference .....	475
Endobasion-Nasion Length .....	100
Endobasion-Prosthion Length .....	96
Left Orbital Height .....	36
Left Orbital Breadth .....	38
Nasal Height .....	48
Nasal Breadth .....	24

<sup>2</sup> Taken with craniostat

The measurements for the three adult mandibles appear in Table 3. As can be seen, the mandibles of **Burials-2** and **-3a** are nearly completely preserved in the measurable areas. Furthermore, all of the lower jaws appear to be little affected by postmortem distortion. However, during the process of head deformation there might also have been compensatory growth in the mandible, as has been reported for the Peruvian Series (Bjork and Bjork, 1964).

**Table 3. Mandibular Measurements (in mm)**

	Burial-2		Burial-3a		Burial-3b	
	R	L	R	L	R	L
Mandibular Body Length .....	96	94	95	93	86	X
Minimum Breadth of the Ascending Ramus .....	31	32	34	36	30	X
Height of Ramus at Middle of Sigmoid Notch <sup>3</sup> .....	48	47	41	41	48	X
Thickness of Body at M2 .....	14	X	11	X	13	12
Symphyseal Height .....		30		34		30
Bigonial Diameter .....		105		98		X
.....	.....	.....	.....	.....	.....	.....
Gonial Angle .....	125°	X	122°	121°	X	X

<sup>3</sup> Author's measurement.

Table 3 can be summarized as follows: The lower jaw of **Burial-3a** has a smaller bigonial breadth and a larger symphyseal height than either of the two other mandibles from the Millville site. The relatively larger symphyseal height in was mentioned earlier in connection with periodontal disease. The height-breadth ratio of the ascending ramus of **Burial-3a** perhaps indicates less recession of the alveolus as

differs considerably from the corresponding ratios in **Burial-2** and **3b**. An index was derived by the writer to illustrate this difference.<sup>4</sup> The ramal index in **Burials-2** and **-3b** is about 65 per cent while in **Burial-3a** it is well over 80 per cent. The contrast here is due to a relatively shorter and broader ascending ramus found in **Burial-3a**. The gonial angles of **Burials-2** and **-3a** lie within an expected middle-age adult range. Generally speaking, the gonial angle becomes greatly increased in old age.

The postcranial skeleton of **Burial-3b** is not measurable. In **Burial-3a**, only the femora could be restored enough to allow measurements to be taken. These measurements and those available for **Burial-2** are presented in Table 4.

There are some differences between the two individuals with regard to femur shaft characteristics. First of all, **Burial-2** has more heavily sculptured muscle attachment areas, especially at the gluteal ridge where the beginnings of a third trochanter was observed. Secondly, the amount of anterior-posterior flattening of the femur shaft below the trochanters is less

Table 4. Postcranial Measurements.<sup>5</sup> (in mm)

Femur	Burial-2		Burial-3a		
	R	L	R	L	
Maximum Length .....	421	422	405	410	
Bicondylar Length .....	415	419	400	403	
Sub-trochanteric a-p dia. ....	24	23	22	21	
Sub-trochanteric m-l dia. ....	32	31	31	30	
.....	.....	.....	.....	.....	
Tibia	R	L	Burial-2		
			Humerus	R	L
Maximum Length .....	355	X	Maximum Length	297	290
Nutrient for a-p dia. ....	33	32	Ulna		
Nutrient for m-l dia. ....	24	23	Maximum Length	252	X

<sup>5</sup> Taken according to Brothwell (1963)

in **Burial-2** than in **Burial-3-a**. The platymeric index, which measures such flattening, has a value of 74 per cent in **Burial-2** compared to about 70 per cent in **Burial-3a**. Both percentages, however, fall within a hyperplatymeric category. It might also be mentioned here that **Burial-2** has a rather low amount

<sup>4</sup> Ramal Index =  $\frac{\text{Minimum Breadth of Ascending Ramus}}{\text{Height of Ramus at Middle of Sigmoid Notch}} \times 100$

of transverse (medio-lateral) flattening of the tibia at the level of the nutrient foramen. The corresponding platycnemic index is about 72 per cent. This value lies at the upper end of the human range in the so-called eurycnemic category. Consequently, platycnemia is not associated with platymeria in **Burial-2**.

The longer femora of **Burial-2** obviously results in a greater stature estimation for this individual as compared to **Burial-3a**. In calculating stature, the regression equations derived from several studies were employed. The stature estimates for **Burial-2** range from 158 cm. to 163 cm. when four different equations were used. One equation, that for American white females (Trotter and Gleser 1958), which combined humerus, femur and tibia lengths, yielded an estimation of maximum living stature of 160 cm. which has a Standard Error of 3.51 cm. Only femur length was available for stature reconstruction of **Burial-3a**. In this individual, the range of estimates is from 154 cm. to 160 cm., where again the standard errors are well over 3 cm. Since there is no regression equation which is strictly appropriate for the Millville skeletons, the stature estimates are approximate, indeed. However, it seems probable that **Burial-2** was on the order of 3 cm. taller than **Burial-3a** during their respective adulthoods.

#### Notes on the Infant Skeletons

The two infant skeletons (**Burials-1** and **-4**) are fragmentary and incomplete. However, they could be aged with relative certainty because several primary centers of ossification are present along with various limb bones, pelvic fragments, and vertebral elements. The skeletal material was evaluated according to the developmental sequence described in a standard textbook of human anatomy (Romanes 1964) and was also compared to available infant skeletons of known age. The results of this analysis show that although **Burial-4** is slightly larger in certain dimensions, such as in femur length and iliac breadth, both individuals were most likely at the newborn stage of skeletal maturation. In other words, they represent full-term osseous development, but there is no indication, from size and shape of the bones and the epiphyses present, of post-natal growth. Sex and cause of death could not be determined from the skeletal material present.

### Summary

Human skeletal material from the Millville Site has been described. The material includes three fairly complete, middle-aged, adult, female skeletons, two fragmentary infant skeletons, and a few isolated skeletal fragments.

Artificial deformation was found on two of the adult crania. In both cases the occipital area was vertically flattened and thus is similar to cradleboard deformation observed in many American Indian groups. However, one individual with occipital deformation also had artificially produced flattened areas on both sides of the frontal bone. Bifrontal flattening, presumably of this type, is reported to occur along with occipital flattening in Adena, Indian Knoll and Hopewell cranial series.

Judging from the numerous pathological conditions observed in the dentitions of the Millville skeletons, it can be inferred that all three adults would have been in a poor state of dental health. Dental pathologies encountered included extreme attrition, caries, abscess pockets and periodontal disease. These conditions probably account for the high frequency of missing teeth in at least two of the individuals. The sites of the absent teeth were generally characterized by considerable alveolus bone resorption.

The small, only moderately well preserved sample of adults from the Millville Site is not adequate for detailed comparison with other American Indian skeletal collections.

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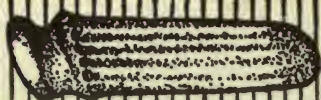
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Milwaukee, Wisconsin

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## THE GOODWIN-GRESHAM SITE, 20 IS 8, IOSCO COUNTY, MICHIGAN

James E. Fitting, David S. Brose, Henry T. Wright,  
James Dinerstein

### INTRODUCTION

The importance of the Carolinian-Canadian transition area in central Michigan was realized long before the National Science Foundation undertook support of research in this area in 1965. The contrast between the Late Woodland materials in the Straits of Mackinac (McPherron 1967) and southeastern Michigan (Fitting 1965) was quite apparent. We knew that there were some differences between the Middle Woodland materials in the southern parts of the state (Flanders 1965) and those in the northern areas but our knowledge of this northern manifestation in Michigan was limited to the Arrowhead Drive site on Bois Blanc Island (Bettarel and Harrison 1962).

The major excavation in eastern Michigan during the summer of 1964 was that of the Schultz site located on Green point in Saginaw. While this was a multicomponent site, we were most concerned with the Middle Woodland occupation during the 1964 excavations. While most of the crew worked at this site, several advanced undergraduates, supported by National Science Foundation Undergraduate Research Participation Grants, undertook smaller excavations at nearby sites as individual research projects. The Schmidt site (Harrison 1966) was excavated in this manner as was the Goodwin-Gresham site, 20 IS 8, in Iosco County.

The site was located in June of 1964 by Henry T. Wright as a part of a weekend survey of the lower reaches of the Au Sable River. The importance of the site was readily recognized. It was a distinctively northern Middle Woodland site only 75 miles to the north of the Schultz site in the Saginaw

Valley which seemed to have a southern Middle Woodland assemblage. We felt that it was just the type of site needed to compare the difference between the adaptive patterns of northern and southern Middle Woodland groups. As it turned out, the adaptive patterns were most similar (Fitting n. d. b).

Wright, accompanied by Richard E. Morlan, returned to the site on July 18 and the two of them worked on the site until July 24. They were assisted at various times by James E. Fitting, Elizabeth Stern, Jasmina Stefanovic, Diane Foster, Richard Ford, Karen Ford, and Michael Clark.

The report was originally to have been prepared as an Undergraduate Research Participation Project but a number of factors and the intervening years prevented this. Wright went on to graduate school at the University of Chicago and directed his attention to work in the Near East, while Morlan went to the University of Wisconsin and became involved in research in Japan and the Arctic. All of the other participants who had worked on the site directed their attentions to other areas or other disciplines. For a number of years the collections languished in the Museum cabinets but in 1967 their importance for the understanding of the edge area was even greater than in 1964. In 1967 a number of us made a concentrated effort to prepare a report on this site and the results of this study are presented in the following pages.

Wright and Morlan had made a preliminary analysis of the faunal remains from the site. April Allison identified the plant materials under the supervision of Volney Jones as another Undergraduate Research Participation project. David Brose prepared a report on the ceramics from the site while supported by a National Science Foundation grant "Archaeological Investigations in Michigan" (GS-1486) which had been awarded to Fitting. James Dinerstein worked on the lithic materials from the site with Fitting while supported by this same research grant. In 1968, Fitting assembled the present report working with the Brose's manuscript and Wright's and Dinerstein's notes.

## EXCAVATION AT THE SITE

The Goodwin-Gresham site, 20 IS 8, is located on the north

edge of the town of Oscoda in Iosco County, Michigan, at a point approximately one mile to the north of the Au Sable River. At one time it was more extensive but sand removal, highway construction and building activity had nearly destroyed the site by 1964. Even then, we were able to collect cultural material for approximately one-half mile along this ridge.

Like most major Michigan sites, this one was listed in W. B. Hinsdale's *Archaeological Atlas of Michigan* (1931) although we have been unable to locate the source of Hinsdale's information on the site. The area where we worked was probably the northern end of the site mentioned by Ellis (1960: 66) as being located on the north edge of the town of Oscoda. Several residents of Oscoda had extensive collections obtained from the surface of this site.

The site (Figure 1) is located on a sand ridge, a former beach of Lake Huron, with a maximum elevation of 602 feet above sea level. The elevation of a gravel ridge at the base of this beach is 594 feet above sea level. This would appear to be a beach which was formed during the high lake level stage which Speth (n. d.) has suggested existed in the Michigan and Huron Basins around A. D. 200. The site is slightly to the north of the hinge line in Michigan so there has been some uplift of this beach while comparable features at the Schultz site indicative of this lake stage remained at the same elevation.

The Middle Woodland Arrowhead Drive site on Bois Blanc Island is located on a beach with a base of 598 feet above sea level which is what we would expect of a site located even further to the north of the hinge line. As Speth has pointed out, Mason's date from the Door Peninsula in Wisconsin also attests to this Lake Stage.

Most of the profiles of excavation units on the site seem to indicate a normal soil development with distinct A, B, and C soil zones. Since most of the cultural material was found in the B zone, it could be argued that the process of soil formation has been continuous since the aboriginal occupation of the site. Wright's field observations, however, indicate a much more complex situation. He noted that:

- 1) The lower interface of the B zone is not always parallel



FIGURE 1

to the upper interface of zone A.

- 2) The B zone is complex with a lower light level and an upper darker level.
- 3) Several of the pits and postmolds contain fill of a dark humic sand which appears to have fallen in from the upper and darker levels of the B zone.
- 4) The B zone is thicker than we would expect from the thin humic zone and A<sup>2</sup> leached zone.

This was interpreted as indicative of two periods of soil formation. The original soil horizon formed on the lighter, slightly weathered dune sand of the site. This soil probably formed after the high lake level receded. Occupation of the site by man disturbed this soil formation and allowed soil creep and blow outs were apparently formed in some areas of the site. After the period of aboriginal occupation more sand blew in covering the occupational surface. As a new soil horizon was formed its B zone developed in the earlier humus level which had been disturbed by the aboriginal occupation. Cross sections of the ridge also suggest that it had a higher elevation and steeper slope at the time of occupation. It appears to have been an uneven surface similar to the undisturbed dunes in the area today. As we indicated earlier, post-occupation disturbance, by both human and natural causes, has been considerable and parts of the occupation area have probably been blown out and refilled by wind action to further complicate our task of site interpretation.

Only 200 feet of the crest of the ridge remained for possible excavation in 1964 and we were only able to excavate 710 square feet of this area (Figure 2). Care was taken in the upper levels to the subdivisions within the Z zone but this proved of little aid in interpreting the cultural material. Much of the site was cleared with a trowel. All of the material was sifted through a quarter inch mesh screen and features were sampled with a fine window screen.

The site was excavated in five by five foot, and five by ten foot units with occasional extensions of these units to include all of a pit or hearth area. All units were referred to by a designator number which related them to the grid system imposed on the site. The largest block of excavation units was located on the southern end of the remaining parts of the site.

This is where the deposits were thickest and where the cultural material was most plentiful.

The first excavation in this area was a five by ten foot unit with an east to west orientation, 465E490. Later, seven additional five by five foot units, 460E490, 460E495, 460E500, 465E500, 470E490, 470E495, and 470E500, were opened to

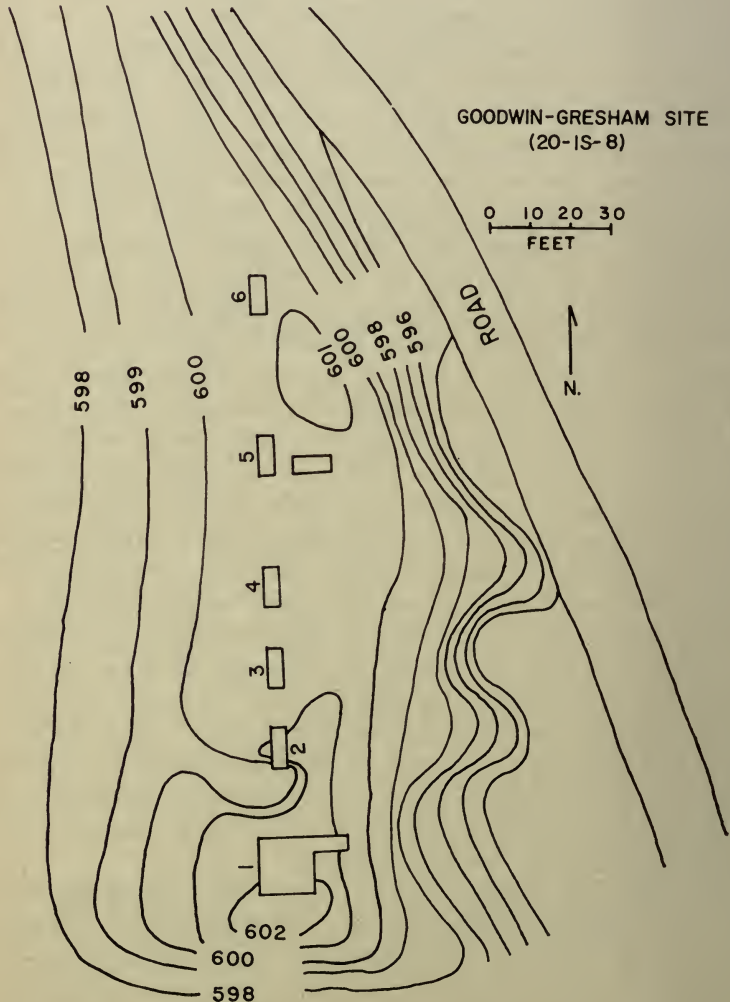


FIGURE 2



the south, east and north of 465E490. A three by ten foot trench was open to the east of 470E500 to provide a long, continuous profile of the ridge. In the remainder of this report we shall refer to this entire block of excavation, an area of 255 square feet, as Unit No. 1 (see Table 1).

Unit No. 2 was a single five by ten foot unit, 500E495, with a north-south orientation, located 25 feet to the north of Unit No. 1. No extensions were made of this unit so it represented 50 square feet of excavated area.

Unit No. 3, 520E495, was a single five by ten foot unit with a north to south orientation. Seven square feet of additional

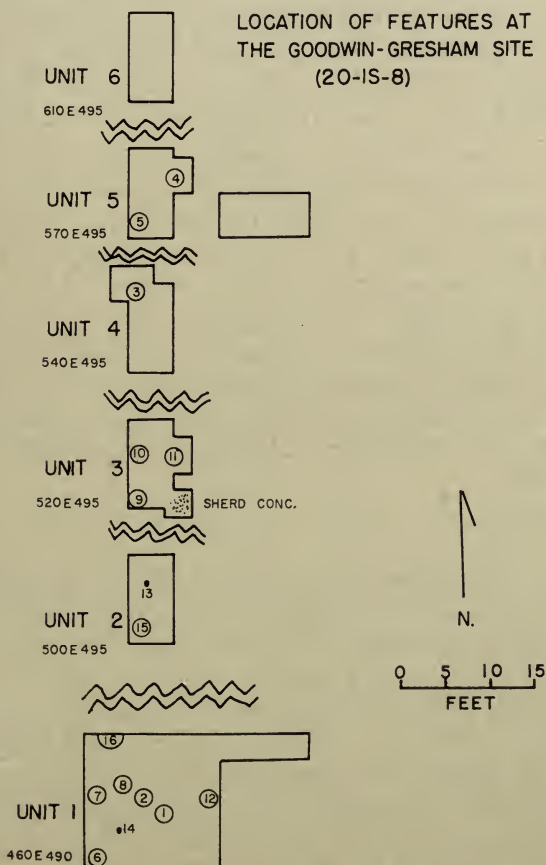


FIGURE 3

area were excavated to recover all of a concentration of ceramics and eight square feet were opened to include all of Feature No. 11 so a total of 65 square feet were excavated in Unit No. 3.

Unit No. 4, 540E495, was also a five by ten foot unit with a north to south orientation. Twelve additional square feet were opened around Feature 3 so 62 square feet were cleared in this unit.

Three excavation units, 570E495, a five by ten foot unit with a north to south orientation, and five by five foot units, 570E505 and 570E510, are included in Unit No. 5. Feature No. 4 in 570E495 required an eight square foot extension, so Unit No. 5 contained 108 square feet of excavated area.

The last unit, Unit No. 6, was a single five by ten foot unit with a north to south orientation at 610E495. No features were encountered so only 50 square feet were excavated.

Twelve features were recognized in the field including seven shallow hearths and five pits. Two post molds and two concentrations of rock, either fire-cracked or discolored by fire, were given feature numbers in the laboratory (Table 2). The hearths were roughly oval, two to three feet in diameter and were very shallow. Pit dimensions ranged from one to five feet while pit depths varied between 1.0 and 1.6 feet. The two rock concentrations were 2.0 and 2.5 feet in diameter.

A charcoal sample from Feature No. 12 yielded a radio-carbon date of A. D. 610 + - 110 years (M-1625, Crane and Griffin 1966).

## CERAMICS

A total of 2,917 severely weathered sherds over one inch in diameter were recovered from the 1964 excavations and from later surface collection. Rim-sherds and decorated body-sherds accounted for 924 of these or 31 per cent of the total sample. Undecorated bodysherds accounted for the rest of the sample. Matching rimsherds and decorated body sherds suggest that there were a minimum of 31 vessels represented in our collections. Matching sherds from a single vessel were recovered from as many as three distinct field levels and from areas as much as 110 feet apart. If more than a single occupation is postulated, subsequent mixing has obliterated all cer-

TABLE 1

EXCAVATION UNITS, SQUARE NUMBERS, AREA OF EXCAVATION AND LOCATION OF FEATU.  
AT THE GOODWIN-GRESHAM SITE.

Excavation Unit	Excavation Numbers	Square Feet	Features
UNIT #1	460E490 460E495 465E490 465E500 470E490 470E495 470E500 East-West Trench	255	1,2,6,7, 8,12,14, 16
UNIT #2	500E495	50	13,15
UNIT #3	520E495	65	9,10,11
UNIT #4	540E495	62	3
UNIT #5	570E495 570E505 570E510	108	4,5
UNIT #6	610E495	50	
TOTAL		<b>610</b>	

amic evidence for it. Cordmarked sherds, as an example, were quite evenly distributed throughout the entire vertical and horizontal extent of the occupation (Table 3). There is some tendency for plain-surfaced sherds to decrease through time but Table 4 shows that this is clearly not a replacement by cordmarked sherds. As a result of these observations, the ceramics will be considered as a single complex.

The 31 minimal vessels from Goodwin-Gresham were rep-

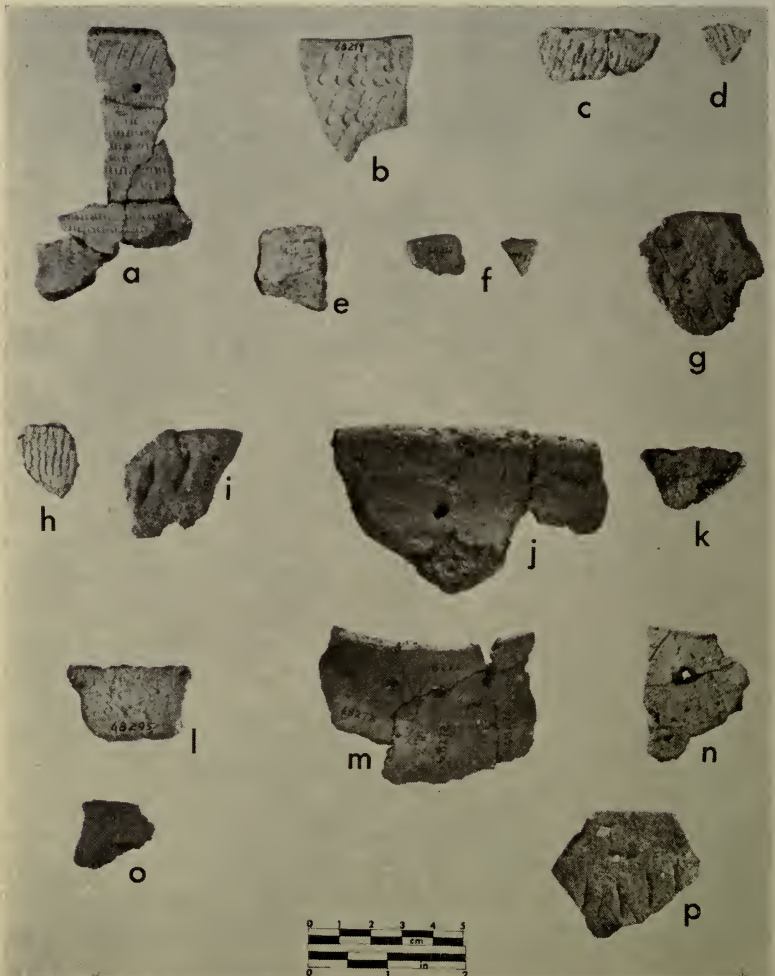


FIGURE 4. Goodwin-Gresham Ceramics

TABLE 2

FEATURES FROM THE GOODWIN-GRESHAM SITE.  
Numbers in parenthesis are estimates.

Feature Number	Unit	Square	Description	Dimensions in Feet		
				Width	Length	Depth
1	1	460E495	Hearth	1.8	2.6	0.2
2	1	460E495	Pit	1.2	2.0	1.0
3	4	540E495	Hearth	2.5	3.5	0.3
4	5	570E495	Pit	3.0	3.3	1.2
5	5	570E495	Hearth	2.0	3.5	0.1
6	1	460E490	Pit	(corner of unit)		1.1
7	1	465E490	Hearth	(wall of unit)		0.2
8	1	465E490	Pit	2.0	4.0	1.6
9	3	520E495	Pit	(corner of unit)		1.0
10	3	520E495	Hearth	(2.0)	2.5	(0.2)
11	3	520E495	Hearth	2.8	3.0	0.2
12	1	465E500	Hearth	1.8	2.3	(0.2)
13	2	500E495	Post Mold	0.5	0.7	0.5
14	1	460E490	Post Mold	0.3	0.3	0.4
15	2	500E495	Rock Concentration	2.0	2.0	--
16	1	470E490	Rock Concentration	2.5	(2.5)	--

TABLE 3

DISTRIBUTION OF CORDMARKED AND PLAIN SURFACE SHERDS BY LEVEL.

	Level				Total
	Surface	Surface-Sheet #1	Sheet #1-#2	Sheet #2-#3	
Cordmarked surface	5	72	475	179	731
Plain surface	375	412	565	834	2186
TOTALS	380	484	1040	1013	2917
$\chi^2 = 405.57$	$df = 3$	$p < .001$	$\phi^2 = .1390$		

TABLE 4

PERCENTAGES OF CORDMARKED AND PLAIN SHERDS BY SITE LEVEL

Level	Cordmarked	Plain
Surface	2%	98%
Surface to Sheet #1	15%	85%
Sheet #1 to Sheet #2	45%	55%
Sheet #2 to Sheet #3	18%	82%

representative of 26 distinct varieties which were designated by the letters A to Z. Three rather distinct paste groups were present and all sherds fell into one of these groups. The first was characterized by a very sandy clay which is generally quite friable. Hardness is between 2.0 and 2.5 (Moh's scale) as taken on interior breaks. The sherds seem quite poorly fired and colors range from salmon to buff with a noticeable absence of firing clouds. Temper, excluding sand, is not very abundant, representing 15 to 25 per cent aplastic. Tempering particles consist of crushed granitic rock with some preference for darker minerals such as biotite, anorthosite and hornblende with some quartz. Tempering particles range in size from 2.5 mm to over 13 mm with a mean of 4.1 mm. Manufacture was by coiling and coil breaks are common. Bodysherd thickness ranges from 7.8 mm to 14 mm with a mean of 9.2 mm. This series has been named **Au Sable Ware**. It is represented at the Goodwin-Gresham site by 17 vessels, nine of which (56 per cent) display strong interior channeling (Figure 6, g).

The second ware at the site is represented by six vessels characterized by a very smooth, non-sandy paste which is considerably more compact than that of Au Sable Ware. These sherds were better fired and colors ranged from buff to brownish gray with noticeably darker interiors and large firing clouds on both surfaces. Tempering particles consisted of crushed granitic rock with lighter minerals such as plagioclase feldspars, muscovite and quartz predominating. The tempering particle ranged from 1.0 to 3.5 mm. with a mean of 2.25. Density temper was 25 to 35 per cent aplastic. No coil breaks were observed in these sherds and the manufacturing technique is unascertainable although the contorted interior surfaces and lamellar paste suggests the use of a paddle and anvil at same stage of manufacture. Bodysherds were from 6.5 to 11.0 mm thick with a mean of 7.8 mm. This series of vessels has been called **Iosco Ware**. Only one vessel from this series displayed interior channeling.

The third series represented at the site has been called **Goodwin-Gresham Ware**. This group of nine vessels is characterized by a sandy clay with lammellar fracturing. The clay is not too well fired with a hardness of 2.5 to 3.0 in interior

breaks. Colors ranged from salmon to buff on exterior and interior breaks. Temper consisted of crushed dolomite, limestone and light quartz with some chert and crystalline fossilized corals. Temper was well distributed throughout the vessel with between 25 to 40 per cent aplastic represented. Tempering particles ranged from 0.5 mm to 4.5 mm with a mean of 1.5 mm. Bodysherds ranged in thickness from 6.2 to 11.8



FIGURE 5. Goodwin-Gresham Ceramics



with a mean of 6.4 mm. Coil breaks were quite clear on all vessels. No interior channeling occurred on Goodwin-Gresham Wares.

These vessels manifest the attribute combinations which the potters felt were important. They are the substantive expression of what Rouse (1954) has called "modes". When certain attribute combinations are consistently found in significant association they form types according to the criteria proposed by Spaulding (1953). The vessels from the Goodwin-Gresham site have been analyzed in terms of types and type clusters or wares.

### **Au Sable Ware**

Two types of surface treatment occur on Au Sable Ware vessels. Plain or smoothed surfaces are found on thirteen of the vessels (81 per cent) while three are marked with a cordwrapped paddle. Two of the former have a partially smoothed cordmarked surface.

One vessel of **Au Sable Cordmarked**, represented by one rimsherd and 36 bodysherds, was recovered from excavations in 465E490 and 470E500. A second vessel represented by two rimsherds and 70 bodysherds, was found during surface collection. The first vessel (Figure 4, c, d) has a globular body with a rim diameter of about 29 cm. Bodysherds are from 8.0 to 11.0 mm thick. The rim is 9.1 mm thick with a rather sharp interior angle, where the outflaring occurs, and a gradual curving interior. The lip is about 5 mm. wide and is rounded. The exterior surface finish is very clear vertical cordwrapped paddle impressions from just above the base of the vessel to 11.8 to 12.2 mm below the lip. There are about six cord impressions to the centimeter. The cord is an <sup>s</sup>Z with the two smaller s elements about 0.8 mm wide. The interior surface shows heavy horizontal channeling. Lip decoration consists of notching by laying a stick across the rim. The stick impressions are 5.8 mm in diameter, 11.2 mm apart and about 3 mm deep. There is a light extrusion of the clay below each indentation to the exterior surface for about 1.2 mm. The third vessel of Au Sable Cordmarked is represented by two rimsherds and 35 bodysherds from 465E490. It has a straight non-flaring rim (Figure 7, b) about 7.0 mm thick. The lip is rounded and is thinned to 5.4 mm. There is no decoration on

this vessel except for the somewhat obliterated cordmarked which extends from 6.8 to 8.0 mm below the lip to just above the base. These cord impressions are 1.5 to 2.2 mm wide and are formed by an <sup>s</sup>Z cord wrapped about two mm apart on paddle.

A single vessel of **Au Sable Corded Impressed** (Figure 4, a) was recovered from 470E500 and 465E500. This vessel, represented by eight rimsherds and 162 decorated bodysherds, is globular in shape with a maximum rim diameter of



FIGURE 6. Goodwin-Gresham Ceramics

of 38 cm. It has a constricted neck with a diameter of 27 cm and an outflaring rim (Figure 7, c) with a diameter of 30 cm. The body and neck sherds range from 8.5 to 11 mm thick while the rim sherds have a uniform thickness of 9.1 mm. The exterior surface finish is a smoothed over cordmarking while the interior displays heavy channeling (Figure 6, g). Each interior channel is flat bottomed, 1.8 mm wide, 0.5 mm deep and separated by a ridge 1.0 mm wide. Cooking residue is present on most of the interior surface about the shoulder. The lip of this vessel is 9.0 mm wide and flat with an exterior bevel. It is crossed by parallel rows of four windings of a 1.1 mm diameter <sup>s</sup>Z cord around a cylindrical tool. These impressions are 3.5 mm wide and 1.5 mm apart. The exterior rim is marked by a series of oblique incisions about 12.0 mm long angled up to the right. These incisions are very shallow and quite narrow (0.5 to 1.0 mm). They are about 3.5 to 5 mm apart and began about 2.5 mm below the lip. Below these incisions are single horizontal rows of punctates encircling the vessel 22 to 25 mm below the rim. These punctates are four to 4.5 mm in diameter, three to four mm deep and about 14 mm apart. They appear to have been made with a bird bone or very symmetrical twig. Ten parallel horizontal rows of cordwrapped cord impressions encircle the vessel below the row of punctates. These rows are 1.8 wide and appear to have been the same cord as used on the lip. The rows are 2.5 to 3 mm apart and cover a zone 94 mm wide. Below this horizontal banding are groups of three more or less vertical cordwrapped stick impressions. Within each group the impressions are 24 mm long and 5 mm wide. The groups are 46 to 50.5 mm apart. The same corded element as used on the lip seem to have been used here too.

**Au Sable Punctate** is represented by three quite distinctive plain surfaced vessels from the site. The first vessel (Figure 4, p) is represented by two rimsherds and 15 bodysherds from the surface collection. Bodysherds are 9.5 and 11.5 mm thick and thin to 6.0 to 10.0 mm with a straight to slightly everted outsloping rim (Figure 7, d). The lip is flattened and slightly beveled to the exterior. It is 5.5 to 6.0 mm across. The junction of the lip and exterior is irregularly cut by notches which do not cross the lip-exterior surface junction. These



FIGURE 7. Goodwin-Gresham Ceramics

Rim Profiles (interiors to the left)

notches are 1.0 mm wide, 1.5 mm deep, and 12 to 13.2 mm apart. Irregularly spaced fingernail impressions encircle the vessel in two opposed horizontal rows. The upper row is slightly oblique to the upper right while the lower row is slightly oblique to the upper left. Where these rows overlap, the impressions form a cross-hatched design. In general, these impressions are 6.0 to 9.8 mm long, five to 8.5 mm apart, and 0.5 to 2 mm deep. Below this double band is a single horizontal row of circular bosses formed by interior punctation with a cylindrical tool 4 mm in diameter and 5.5 mm deep. This row lies 37.5 mm below the lip.

The second vessel of *Au Sable Punctate* is represented by six rimsherds and 44 bodysherds from 460E495 (Figure 4, i). Bodysherds are 9.2 to 10.1 mm thick and thin to the somewhat constricted neck where they are 8 to 9.2 mm thick. The lip (Figure 7, e) is 6.5 to 8 mm thick, flattened and slightly beveled to the exterior of the vessel. Below the lip, seven to ten mm is a single horizontal row of vertical semicircular punctates. These appear to have been created by pushing a large stick into the clay at an angle of about 45° from the right. The left edge of each punctate is straight and 14 mm long. The punctates are about 3.5 mm deep and about four mm at their widest point. Below this band of rim decoration is a single horizontal row of circular bosses about 2 mm high and 21 mm apart. These are caused by punctation from the interior by a tool 12 mm in diameter and very irregular on its end (Figure 6), probably a broken bone or twig.

The third *Au Sable Punctate* vessel is represented by three rimsherds and 28 bodysherds from 460E495 (Figure 4, m) and has the same rim form and measurements as the previously described vessel. The decoration on this vessel consists of a zone of very irregularly spaced shallow fingernail impressions from the exterior lip down about 15 mm. Below this crude decorative area is a single horizontal row of circular punctates 14 to 16.2 mm below the lip. These punctates are 4 mm deep, 3 mm in diameter, and about 15 mm apart. There is no other decoration.

**Au Sable Incised** is represented by three plain surfaced vessels from the site. The first vessel, represented by three rimsherds and five bodysherds from the surface, has a slightly

outsloping thinned rim (Figure 7, d) about 5.5 mm across. The rim is flattened and beveled to the outside. The decoration on this vessel (Figure 4, n) consists of a single row of alternatively oblique (chevron) incised lines one mm wide and 0.5 mm deep. These lines do not extend more than 30 mm below the lip. Interspaced with these incised chevrons is a single horizontal row of circular bosses 13.5 to 14.5 mm below the lip and 19 to 20 mm apart. These bosses are formed by interior punctations with a cylindrical tool 2.5 to 3 mm in diameter.

The second vessel of Au Sable Incised (Figure 4, g) is represented by two rimsherds and 24 bodysherds from the surface. Bodysherds are 8.7 to 9.5 mm thick. The flattened square lip is 8.9 mm wide. The exterior surface finish is plain but shows some scraping beneath the decoration, possibly indicating a semi-dry state of hard-brushed smoothing. The interior surface shows moderate horizontal chaneling. The only decoration on this vessel consists of oblique (from the left) parallel lines running from lip to shoulder. These lines are formed by dragging a sharp tool across the surface of the semi-dried vessel. These incisions are 5.5 to 8 mm apart, 0.8 to 1.2 mm wide, and 0.7 to 1.2 mm deep.

The last vessel of Au Sable Incised (Figure 4, j) is represented by two rimsherds and 48 bodysherds from 500E495. The bodysherds are 10 to 12.1 mm thick, thinning to 9.5 mm thick at a somewhat constricted neck. The rim is considerably thickened (Figure 7, f) to a flattened lip 12 to 14.5 mm across. The exterior surface of this vessel also shows some evidence from scraping or twig-brushing in a nearly vertical direction: striae are clear where weathering has not obliterated them. Interior surfaces show only some weak, side chaneling. Exterior decoration consists of three roughly parallel horizontal incised bands about 2.5 mm wide at 7.5, 12 to 13, and 19 to 20.1 mm below the lip. These are quite shallow (0.2 to 0.5 mm) and form a step-like impression to the rim profile. On the upper edge of the shoulder is a single horizontal row of punctates 24.5 to 26.5 mm below the lip. These punctates are 25 mm apart and 4.5 mm in diameter. These were put into the vessel from the upper right and have occa-

ionally gone completely through the vessel wall and have been patched on the interior.

**Au Sable Dentate** vessels are represented by two varieties; **Au Sable Dentate Rim** and **Au Sable Dentate Lip**. There are two vessels in each group and a third **Au Sable Dentate** vessel that combines the two. The first vessel of **Au Sable Dentate Rim** (Figure 7, b) is represented by 14 rimsherds and 74 bodysherds from 460E495. The vessel is 9 mm thick at the shoulder and thins to 7 mm at the constricted neck. The rim (Figure 7, b) has a diameter of 24 cm and is 7 mm thick at 1 cm below the lip thinning to 3.5 mm at the lip. The interior lip is decorated with oblique simple rectangular tool impressions 3.5 mm wide, 5 mm high, and 3.5 mm apart. The exterior rim is decorated from 4.5 mm below the lip to the shoulder with four horizontal rows of dentate stamping. Each dentate element is two-toothed and is set obliquely from vertical to the upper left. The dentating implement seems to have been rectangular-ended 10 mm long and 3 mm wide. Across the end of this tool a notch was cut 1.8 mm wide and 1.5 mm deep. This tool was impressed into the still plastic clay at an angle from the upper right with the result that a right-hand margin of each impression gradually flattens out to the surface. There are a few sherds which show striae between these discrete dentate impressions but this is rare and should not be taken as true dragged stamping.

A second vessel **Au Sable Dentate Rim** (Figure 4, o) is represented by one rim sherd and eight bodysherds from 465-E500. The bodysherds are 7 to 8 mm thick with a rim about 7.8 mm thick and a lip thinned on the interior surface, about 5 mm wide and flattened or round depending on the portion of the rimsherd examined (Figure 7, a). There is some interior channeling on this vessel. The only decoration on this vessel consists of a single horizontal row of vertical double-toothed dentate impressions. These dentate impressions are 6.5 to 7 mm apart and 2 to 2.5 mm below the lip.

The two **Au Sable Dentate Lip** vessels (Figure 4, o, l) are represented by three rimsherds and eight rimsherds respectively, recovered from 470E495 and 470E500. Both vessels show heavy interior channeling. Both vessels have bodysherds 8.5 to 9.8 mm thick, thinning at the short constricted

neck to 6.8 to 7.5 mm thick and abruptly flaring externally to a slightly thickened flat lip about 8.2 mm thick (Figure 7, h). Both vessels are devoid of decoration except for transverse to oblique (left exterior - right interior) dentate stamps along the top of the lip at 7 to 9 mm intervals. In both cases the dentate tool has teeth about 3 mm long and 1.1 mm wide separated by a 0.8 to 1.2 mm notch. On both vessels, only two teeth of this tool show and it may have had more.

The last Au Sable Dentate vessel combines both a dentate rim and a dentate lip (Figure 4, e). In rim profile it is equivalent of the dentate lip type while the exterior rim decoration is indential to that of the first vessel of Au Sable Dentate Rim. The vessel is represented by two rimsherds and one decorated bodysherd from 465E500.

There are two vessels of **Au Sable Plain** (Figure 4, k, f); one represented by one rimsherd from 460E490 and the other by two rimsherds from the sherd concentration in 520E495. The first of these displays a lip 6.9 mm thick. The second has a somewhat thinned lip about 5.2 mm thick (Figure 7, b). None of these sherds have any decoration.

There were 930 sherds (877.5 grams) with undecorated surfaces, sandy, coarse grit-tempered paste, often with interior channeling and coil breaks. Twenty-two per cent of these has some evidence of cordmarking. They were assigned to an Au Sable Ware bodysherd category but, due to heavy weathering (Figure 6, c), could not be further typed.

### **Iosco Ware**

Four of the six vessels in this series are designated **Iosco Cordmarked**. The first two of these (Figure 5, j, k) have been irregularly smoothed. They are represented by two and one rimsherds and 37 and 80 bodysherds respectively. Both were recovered from 465E500. Both vessels had bodysherds about 7.5 mm thick, thinning above the shoulder to about 5 mm thick with a rounded outcurved lip 4.5 to 5 mm thick. The exterior rim is decorated with a single horizontal band of vertical incisions from just below the lip to 4.5 to 5.8 mm down the vessel. These incisions are one to 1.5 mm apart, and 0.5 to 1 mm wide. On one vessel there is a single horizontal row of circular punctates 14 mm below the lip. These punctates are 4 mm in diameter, 20 mm apart and 3.5 to 4 mm deep.



The third Iosco Cordmarked vessel, represented by two rimsherds and nine bodysherds from 465E500, has an out-curving lip which thins to about 3 mm (Figure 7, j). There is some weak interior channeling present on this vessel but it is confined to the upper portions. The vessel has no decoration (Figure 6. o) and is cordmarked from the lip to well below the shoulder with a <sup>s</sup>Z cordwrapped paddle with seven cords per centimeter.

The fourth vessel of Iosco Cordmarked has been partially smoothed. This vessel, represented by one rimsherd and six bodysherds from 465E490, displays a thickened lip (Figure 7, i) but no external decoration save an irregular row of irregularly spaced punctates 3.5 mm wide and seven mm apart along the lip (Figure 5, m). These punctates look as if a stick end had been pressed halfway into the lip from the interior at an angle of 45°.

A single vessel of Iosco Plain is represented by two rimsherds and nine bodysherds from 610E495. The vessel displays a characteristic Iosco Ware thickened lip (Figure 7, i) about 7.5 mm thick. The vessel (Figure 5, p) displays no decoration.

The last vessel in the Iosco Ware group is Iosco Dentate (Figure 4, n) represented by 8 rimsherds and 14 decorated bodysherds from 570E505 and 610E495. This vessel has a rounded lip thinned to 3.5 to 4.5 mm (Figure 7, j) with a fairly sharp eversion. The exterior surface-lip junction is marked with an encircling row of short (2 to 2.5 mm), thin (less than 0.8 mm), slightly oblique incisions 4 mm apart around the curve of the junction. Beginning 13 to 14.5 mm below the lip is a single horizontal band of slightly oblique (to the right) pseudo-scallop shell or dentate impressions one to 1.2 mm wide, 3.5 to 5 mm apart, and 12 to 14.5 mm long. It is difficult to distinguish between the two possible techniques involved in creating these impressions. There is good evidence that variation in the angle of application of an implement notched along a single edge can produce either design (Wright 1967: 10). Since the dentate-pseudo-scallop shell impression from Goodwin-Gresham are literally sand-blasted it is impossible to determine which of these effects was, in fact, intended.

Three hundred and sixty-nine undecorated bodysherds of this ware were recovered from excavations and surface collections and could not be assigned to any type. Eighty-four of these were cordmarked and the rest were plain. A single smooth conical base (Figure 6, b) assignable to the ware was also recovered.

### Goodwin-Gresham Ware

Three of the vessels within this series are designated **Goodwin-Gresham Dentate**. All are globular smooth surfaced vessels with clear coil breaks and no decoration below the shoulder. The first vessel is represented by sixteen rimsherds and 238 bodysherds recovered from a single concentration in 520-E495. The shoulder of this vessel is 12.5 cm below the lip and has a maximum diameter of 22.7 cm. The sherds are 6 mm thick at this point. The rim sherds at the point of neck constriction are 5.5 mm thick and gradually thin to a rim with a diameter of 19 cm and a thickness of 3.5 mm at the lip (Figure 7, o). The decorations on this vessel (Figure 5, e) are found as a series of 0.5 to 1.2 mm wide transverse notches at 5 mm intervals along the lip. From just below the lip to below the shoulder at a depth of 19 cm from the lip, there is a series of 5 parallel horizontal rows of vertical double dentates. The distance between rows varies from 5 to 12 mm. Each row is 13 to 15 mm high and each dentate element within a row is 2.7 to 7 mm from the next. Each element is composed of two isosceles triangles pointed in opposite directions with a height of 3.5 mm, a width of 2 mm and bosses separated by a ridge 2.5 mm high. The impressions are 1.5 mm deep along the left margin and merge with a vessel surface to the right. They seem to have been put in from the right by a tool held at about a 30° angle. The tool used may have been the end of a partially scraped stick with shavings still in place on it.

Two different vessels of Goodwin-Gresham Dentate are represented by four rimsherds and 76 decorated bodysherds recovered from 570E495. These two vessels differ only in rim profile, one being slightly excurvate and abruptly thinned (to 3.5 mm) above the shoulder (Figure 7, k) while the other is gradually thinned (to 4 mm) and is more everted (Figure 7, l). Decoration on both vessels is identical (Figure 5, a) and consists of parallel horizontal rows of oblique linear rec-

tangular dentates. Each row is oblique from the left and runs from 1.5 to 1.8 mm below the lip to 14.5 to 0.6 mm below the lip on the upper shoulder. Each tooth within the dentate rows is 0.8 mm wide by 1.5 mm high and 0.8 to 1 mm deep. The impressions display more than usual care in the amount of pressure used on the implement and all seem to be applied with the dentate tool held perpendicular to the surface of the vessel. The oblique dentate lines are 2.5 to 3.5 mm apart.

Two vessels within the series were designated **Goodwin-Gresham Bessed**. Both have a flattened lip, although one is considerably more thinned than the other. The first vessel, represented by two rimsherds and 12 decorated bodysherds from 540E495 (Figure 5, f), has a rim that thins from 7.2 mm thick at three cm below the lip to five mm at the lip with a very little eversion (Figure 7, 1). This vessel has a single horizontal row of slightly oblique (to the left) plain tool impressions from the exterior edge of the lip to about 4.5 mm below the lip. These impressions are 1.5 mm wide, 2.5 to 3 mm apart, and 1 to 1.5 mm deep along their right edge. They also appear to have been made from the upper left with a rectangular-ended tool held at a 45° angle both horizontally and vertically. The second vessel, represented by 4 rimsherds and 15 decorated bodysherds from the west bank of 470E500 (Figure 5, d), has a much sharper rim eversion (Figure m) and a lip which thins rapidly from 7.5 mm thick at 1 cm below the lip to a flattened lip of 4.5 mm thickness. Most of the thinning is accomplished by an outward camber of the interior surface from about nine mm below the edge of the lip. The lip is covered with an oblique dentate stamp 3 mm long and 4 mm apart (Figure 5, c). This vessel also is decorated with a double horizontal row of plain tool impressions which are in all respects identical to the previously described vessel with the qualification that these impressions seem to have been made from the upper right. The two rows are 4.5 mm and 16 mm below the lip. Both vessels are strongly marked by a single horizontal row of exterior bosses centered 38 and 41 mm below the lip. The bosses are raised 2.5 to 3 mm above the surface of the vessel. They are created by internal punctation with an oval to circular tool about 6.5 in diameter. The bosses are not uniformly distant but range from 24 to 32.5 mm

apart. In both vessels the punctation seems to have been accomplished with the rough end of a broken twig.

Two vessels of **Goodwin-Gresham Cordmarked** (Figure 5, g, h) are represented by four rimsherds and six bodysherds and two rimsherds and three bodysherds respectively. The first vessel recovered from excavation unit 570E495 and 460E495 while the second was recovered from 570E495 alone. The two vessels differed only in rim treatment; one having a series of oblique transverse incisions across the lip and continuing for a short distance on the interior at irregular intervals from 3.5 to 11.5 mm apart (Figure 5, g). Both vessels have slightly outflaring rims with slightly thinned, flattened lips (Figure 7, l) about 5.5 mm wide at the lip edge. Both are undecorated below the lip and have a surface covered with cordwrapped paddle impressions from just below the lip to well below the bottom of the shoulder or low (Figure 5, h). The cord impressions tend to be slightly oblique (to the left) and are spaced about three or four to the centimeter. The cord seems to have been composed of an <sup>s</sup>Z twisted bast fiber, each element of which seems to have been about 0.8 mm in diameter.

The last definite vessel in the Goodwin-Gresham series is represented by three rimsherds and four bodysherds from 610E495. This vessel of **Goodwin-Gresham Corded Impressed** has a smooth surface finish (Figure 5, b) although this does look like well smoothed-over cordwrapped paddle impressions. The rim is 6.2 mm thick and 2 cm below the lip thickening to 5.2 mm at 1 cm below the lip, then thinning from the exterior to a plain, slightly rounded lip 2.5 to 3 mm wide (Figure 7, n). There is a row of very irregular interior punctates 11.5 to 13.5 mm apart, 2.5 mm deep, 2.5 mm high, and 3.5 mm long at between nine and 12.2 mm below the lip. These have not raised any exterior bosses. A hole has been drilled through one of these punctates from the exterior surface. The exterior decoration consists of four uneven horizontal rows of irregular cordwrapped stick or corded cord impressions. These rows are 9 to 10 mm apart and the uppermost is 9.5 mm below the rim. The wrapping element is an <sup>s</sup>Z cord about one mm wide, wrapped about 2 mm apart around a stick or cord end.

There are several miscellaneous bodysherds of Goodwin-

Gresham Ware that could have been considered as separate vessels since they do not duplicate any previously described types. The absence of rimsherds has caused us to hesitate in doing this since they might well be from zoned areas of decoration on a plain rimmed vessel. However, two of these seem worthy of tentative typological status as **Goodwin-Gresham Rocker Dentate** (Figure 6, a) and **Goodwin-Gresham Cross-Hatched** (Figure 6, d). The Goodwin-Gresham Rocker Dentate sherd displays two roughly parallel lines of rocker dentate stamping. Each row is 12 to 14.5 mm high and each curved dentate line has 9 to 12 teeth about 0.8 mm long, 0.5 mm wide and separated by a notch 0.3 mm wide. The sherd is 5.3 to 6.0 mm thick and seems to represent the part of a vessel just above the shoulder. The Goodwin-Gresham Cross-Hatched sherd is also about 5.6 mm thick and seems to represent the rim area of a vessel just below the lip. The even appearance of the top of this sherd represents a coil break. Three hundred seventy-six undecorated bodysherds (159.2 grams), of which 38 were cordmarked, were assigned to this series as untypable Goodwin-Gresham Wares.

### Analysis

The distribution of ceramics at the Goodwin-Gresham site has been shown to be relatively independent of vertical or horizontal stratigraphy. When the vessels are viewed as wares, some horizontal separation can be seen. All excavated sherds assigned to the Au Sable Wares were recovered between 460E490 and 520E495. That is, they were located in Units No. 1 and No. 2. In addition, five Au Sable vessels were represented by sherds recovered from surface collections. Two areas of excavation, 465E500 and 470E500 in Unit No. 1 accounted for six vessels or 37.5 per cent of the series. The Iosco wares were recovered from the entire length of the excavated area of the site with three vessels, 50 per cent of the series, found in 465E500 in Unit No. 1. The Goodwin-Gresham wares were recovered from excavation units 470E500 to 610E495, with 570E495 in Unit No. 5 yielding three vessels or 37.5 per cent of the series and Units No. 3 and No. 5 accounting for another two vessels or 25 per cent of the series.

It seems reasonable to say that the Au Sable Wares seem

to be concentrated in the south end of the site with some occurrences in other areas. The Goodwin - Gresham Wares seem to be centered in the northern parts of the site with some occurrence elsewhere on the site but they lack the wide distribution of the Au Sable Wares. The Iosco Wares show no spatial clustering. Unit No. 1 represents the ceramic concentration on the site with 60 per cent of the vessels from the site found in 36 per cent of the excavated area.

Table 5 indicates the distribution of all sherds recovered by ceramics types. It is evident that the Au Sable Wares make up over half the sample by count or by weight of sherds as well as by vessels. What is surprising is that the Au Sable sherds do not constitute a larger proportion by weight of the sample as they are considerably thicker than the Iosco or Goodwin-Gresham wares. This may indicate that vessels of Au Sable Ware were smaller than those of the other two wares. This hypothesis would tend to be borne out by the two vessels whose height and rim diameter could be reconstructed. Table 5 also supports the impression that cordmarking is much less popular in the Goodwin-Gresham series than in the other wares. Since the association between interior channeling and exterior surface treatment shows that there is a significant correlation between plain exterior surfaces and channeled interiors (Table 6), it is interesting to note that the Goodwin-Gresham series, with the highest proportion of plain surfaces, also displays the lowest frequency of interior channeling (Table 7). Table 7 also clearly shows the strong association between the Au Sable Ware and interior channeling.

While the preceding discussion of the ceramics from Goodwin-Gresham has been primarily in terms of minimal vessels, Table 8 lists the distribution of ceramic attributes by sherd frequency. It should be clear that this listing does not deviate markedly from the analysis by vessels. Table 9 demonstrates that any such deviation is non-significant. Most of the variation which does occur is a result of a greater than expected proportion of sherds to vessels with dentate stamped decoration. This is probably a reflection of the fact that this decoration reached its highest frequency within the Goodwin-Gresham ware, the largest and thinnest of the ceramics from the site (also see Table 5).

TABLE 5

## DISTRIBUTION OF SHERDS BY TYPE

Type	Vessels	Dec. Body- sherds	Undec. Body- sherds	Rim- sherds	Weight in Grams
Au Sable Plain	2	-	-	3	37.4
Au Sable Cordmarked	<del>2</del> 23	-	51	4	394.0
Au Sable Cord Impressed	1	56	-	7	420.0
Au Sable Punctate	3	87	-	11	501.8
Au Sable Incised	3	77	-	28	247.4
Au Sable Dentate	5	83	-	3	264.0
Au Sable Unassigned Plain	-	-	618	-	674.1
Au Sable Unassigned Cordmarked	-	-	372	-	263.0
TOTAL Au Sable	<del>16</del> 17	303	1041	56	<del>2791.8</del> 2801.7
Iosco Cordmarked	4	132	-	6	140.6
Iosco Dentate	1	14	-	8	27.3
Iosco Plain	1	-	-	2	31.2
Iosco Unassigned Plain	-	-	295	-	72.9
Iosco Unassigned Cordmarked	-	-	83	-	265.0
TOTAL Iosco	6	146	378	16	537.0
Goodwin-Gresham Cordmarked	2	9	-	6	86.2
Goodwin-Gresham Bossed	2	27	-	6	36.5
Goodwin-Gresham Dentate	3	<del>31</del> 34	-	20	403.9
Goodwin-Gresham Cord Impressed	1	4	-	3	22.4
Goodwin-Gresham Unassigned Plain	-	-	308	-	279.4
Goodwin-Gresham Unassigned Cordmarked	-	-	68	-	103.2
TOTAL Goodwin-Gresham	8	<del>36</del> 359	376	35	<del>949.6</del> 931.6
SITE TOTAL	30	<del>813</del> 808	1795	107	<del>4270.4</del> 4270.3

TABLE 6

## SURFACE TREATMENT AND INTERIOR CHANNELING

	Interior Channeled	Interior Plain	Total
Exterior Cordmarked O/E	94/227	637/504	731
Exterior Plain O/E	751/618	1237/1370	1988
TOTAL	845	1874	2719
$\chi^2 = 154.54$ $df = 1$ $p < .001$ $\phi^2 = .5638$			

TABLE 7

## INTERIOR CHANNELING BY WARE

	Interior Channeled	Interior Plain	Total
Goodwin-Gresham Ware O/E	12/241	763/534	775
Iosco Ware O/E	74/168	466/372	540
Au Sable Ware O/E	759/436	645/968	1404
TOTAL	845	1874	2719
$\chi^2 = 739.11$ $df = 2$ $p < .001$ $\phi^2 = .271$			



If the ceramic assemblage is viewed as a single complex it can be characterized by no less general appellation than Middle Woodland. Heterogeneity seems to be the outstanding attribute of these ceramics. When paste attributes are used to discriminate within this complex (Table 10) three clear classes can be seen. These are the three wares from the site.

The Au Sable Wares, defined by large, coarse dark granitic tempering, thick bodysherds ( $X=9.2$  mm) and a very contorted interior surface with interior channeling on about 56 per cent of the sherds. This seems to be related to sites of the Saugeen Focus such as Donaldson (Wright and Anderson 1963) across Lake Huron and there are even closer affinities with the North Bay Complex of the Door Peninsula of Wisconsin (Mason 1966, 1967). The Iosco Wares from the site also seem to have affinities with both Saugeen and North Bay ceramics. These two wares are closely related and will be grouped together for purposes of further comparison.

The major difference between the North Bay ceramics and the Au Sable and Iosco wares from Goodwin-Gresham is the relatively high frequency of interior channeling at the later site (51 per cent) compared with its apparent absence at both Mero and Porte des Morts. Even at the Donaldson site only 7 per cent of the sherds exhibited this treatment (Wright and Anderson 1963: 33). Where this characteristic has been quantified for Point Peninsula sites further east there are also low percentages. As an example, 25 per cent of the sherds from the Kant site showed interior channeling (Emerson 1955: 36). The only site with a comparable frequency is the Ontario Serpent Mound site (Johnson 1968: 94-98) where it occurred on 47 to 54 per cent of all sherds.

In terms of paste, rim profile and exterior decoration, the Au Sable and Iosco Wares duplicate the range of North Bay I and North Bay II ceramics. Au Sable Plain vessel exteriors from Goodwin-Gresham are similar to North Bay I Plain sherds excavated from the Mero site (Mason 1966: Plate XII) and the Porte des Morts site (Mason 1967: Plate 2). Similar plain rimsherds have been excavated at the Donaldson site (Wright and Anderson 1963: Plate XVII). Some of these vessels from the Donaldson site had short oblique dentate impressions across the lip which conforms to our Au Sable Den-

TABLE 8

CERAMIC ATTRIBUTE DISTRIBUTION FOR DECORATED RIM AND BODYSHERDS

	N	%
Cordmarked	208	19.8
Cord Impressed	70	6.6
Punctate	33	3.1
Bossed	98	9.3
Incised	84	8.0
Dentate Stamped	472	44.7
Rocker Stamped	1	0.1
Plain	88	8.4
TOTAL	1054	100.0

TABLE 9

SHERD FREQUENCY COMPARED WITH VESSEL FREQUENCY AS A PERCENTAGE OF THE TOTAL SAMPLE

	Cord-marked	Cord Imp.	Plain	Punctate	Bossed	Incised	Dentate	Total
Sherd Attributes O/E	20/22.5	6/6	8/9	4/7	9/8	9/9.5	44/37	100
Vessel Attributes O/E	25/22.5	6/6	10/9	10/7	7/8	10/9.5	30/37	100
TOTAL	45	12	18	14	16	19	74	200
$\chi^2 = 11.56$ $df = 6$ $p > .05$ $\phi^2 = .055$								

TABLE 10

PASTE ATTRIBUTES AND THICKNESS OF GOODWIN-GRESHAM SITE CERAMICS

	Bodysherd Thickness in Milimeters				Total
	5.0-7.0	7.1-9.0	9.1-11.0	11.1-15.0	
Coarse Grit O/E	12/313	200/344	831/533	361/214	1404
Medium Grit O/E	51/120	336/133	112/205	41/82	540
Medium Fine Grit and Limestone O/E	542/172	131/190	90/295	12/118	775
TOTAL	605	667	1033	414	2719
$\chi^2 = 2081.44$ $df = 6$ $p < .001$ $\phi^2 = .7655$					

tate Lip. The Au Sable Cordmarked vessels from Goodwin-Gresham are similar to North Bay I Cordmarked from Mero (Mason 1966: Plate XI) and Porte des Morts (Mason 1967: Plate 1). Wright also reports similar sherds from Donaldson (Wright and Anderson 1963: Plate XVII). Point Peninsula plain and cordmarked sherds similar to those of Au Sable Wares have been reported from the Frank Bay site (Ridley 1954: 43-44) and Serpent Mound (Johnston 1968: Plate 67). Mason has also reported North Bay II Plain (1967: 283) and North Bay Cordmarked (1966: 121-124; 1967: 282) from Mero and Porte des Morts which correspond to Iosco Cordmarked and Iosco Plain from Goodwin-Gresham. These, as well as the Goodwin-Gresham Plain and Cordmarked vessels are quite similar to Havana-like Tittabawassee Wares which date to the first several centuries of our era at the Schultz site in Saginaw County, Michigan.

The Au Sable Punctate and Au Sable Incised ceramics also find their closest relationships with the North Bay ceramics. While nothing similar to Mason's Porte des Morts Becker Punctate (1967: Plate 10) occurred at Goodwin-Gresham, the wide assortment of Becker Punctate from Mero (1966: Plate XVI) includes several squared-tool, angle applied sherds which are quite similar to Au Sable Punctate. Mason also illustrated an unclassified vessel from Porte des Morts (1967: Plate 10) which is identical to one from Goodwin-Gresham (Figure 4, i) with the exception of two brushed lines on the former. Wright has reported incised and punctated sherds from Donaldson and several of his oblique incised (Plate XV) and punctated (Plate XVII) seem similar to the Au Sable Incised and Punctate. This is also true for the punctate sherd from the Burley site (Jury and Jury 1952: Plate XII). These sherds from Goodwin-Gresham also bear a strong resemblance to some illustrations of Steuben Punctate (Griffin 1952: Plate XXXIII, i, n, o) or to the punctated rimsherds recovered from Heron Bay (Wright 1967: Plate II, 6). One of the most widespread divergences between Point Peninsula wares and Goodwin-Gresham ceramics seems to be the presence of a single horizontal row of punctates or bosses on the latter. These seem much more reminiscent of Laurel (Stoltman 1962) or Illinois derived Hopewell (Griffin 1952) than either North

Bay or Saugeen Focus ceramics with which Goodwin-Gresham shares most of its decorative motifs. This is most clearly seen when analogies for the dentate stamped ceramics from Goodwin-Gresham are sought. Dentate stamped ceramics similar to Goodwin-Gresham Dentate are found as far east as Quebec (Ritchie and MacNeish 1949: 100-102) with Vinette Dentate. The paste characteristic of the Vinette Dentate is much more akin to the Au Sable and Iosco Wares however. Similar linear dentate sherds have been reported to the east from the Kant site (Emerson 1955: 55-57), the Frank Bay site (Ridley 1954: 44-45), the lowest level of the Burley site (Jury and Jury 1952: 67-68), the Inverhuron site (Kenyon 1959: 45) and the Donaldson site (Wright 1967). The North Bay I and II Dentate Stamped rims have the strongest resemblances (Mason 1966: Plate XIII; Mason 1967: Plate 3). The North Bay Dentate Stamped, however, seems to lack the Hopewell or Laurel-like row of bosses and/or punctates found at Goodwin-Gresham. The closest geographical occurrence of such bosses is in the Tittabawassee Wares from the earlier of the two main Middle Woodland Occupations of the Schultz site to the south.

The two cord impressed decorated vessels recovered from Goodwin-Gresham are quite dissimilar from each other. The Au Sable Cord Impressed vessel is similar to a sherd recovered from the Porte des Morts site (Mason 1967: Plate 8) and matched descriptions of Mero site Corded Stamped sherds (Mason 1966: 86). There are strong resemblances to sherds of Manitoba Horizontal and Lockport Cordwrapped Stick (MacNeish 1958: Plate XVII) to the west and sherds of Point Peninsula Corded on the east (Ritchie and MacNeish 1949: 101). Strong relationships can also be noted to such Illinois types as Naples Cordwrapped Stick (Griffin 1952: Plate XXXIII) although this type was far less common than Dentate stamped Tittabawassee Wares on the Schultz site in the Saginaw Valley. This type of decoration was quite rare in Laurel sites to the north (Stoltman 1962; Wright 1967). Nothing similar was reported from Donaldson or other Saugeen Focus sites.

The vessels of Goodwin-Gresham Cord Impressed is very similar to sherds of Weaver Cordwrapped Stick illustrated

by Griffin (1952: Plate XXXVI) and Naples Cordwrapped Stick (1952: Plate XXXIII) from Illinois. Stronger resemblances can be seen in North Bay Corded Stamped from *Porte des Morts* (Mason 1967, Plates 5, 6) and *Mero* (Mason 1966: Plate XIV). This vessel also shows relationships with Jack's Reef Corded Punctate (Ritchie and MacNeish 1949: 105). Again, direct comparison with any Laurel Wares is difficult.

Goodwin-Gresham Incised sherds, on the other hand, can be directly compared with Laurel material. Stoltman (1962: 43) has indicated similar cross-hatched sherds occur as a minor element in all Minnesota Laurel sites. Mason (1967: 300) indicates similar elements in his North Bay component at *Port des Morts* (1967: Plate 10). Wright (1967:147) illustrated parallel incised sherds from Heron Bay similar to those from Goodwin-Gresham. There are also similarities to Point Peninsula types like Kipp Island Criss-cross and Wickham Incised (Ritchie and MacNeish 1949: 103-105). Cross-hatched rims were also common in the later, A. D. 300 to A. D. 500, Middle Woodland levels at the Schultz site and were grouped with Green Point Wares there.

The ceramic complex from Goodwin-Greshman displays general affinities with Point Peninsula, Laurel, Saugeen and Hopewell sites to the north, east, and south. The strongest ties seem to be with the North Bay complex although interior channeling suggests relationships to the east. The Goodwin-Gresham wares, in contrast to the *Au Sable* and *Iosco* wares, seem to be more strongly influenced by the Illinois oriented Middle Woodland cultures of the Saginaw Valley.

## CHIPPED STONE

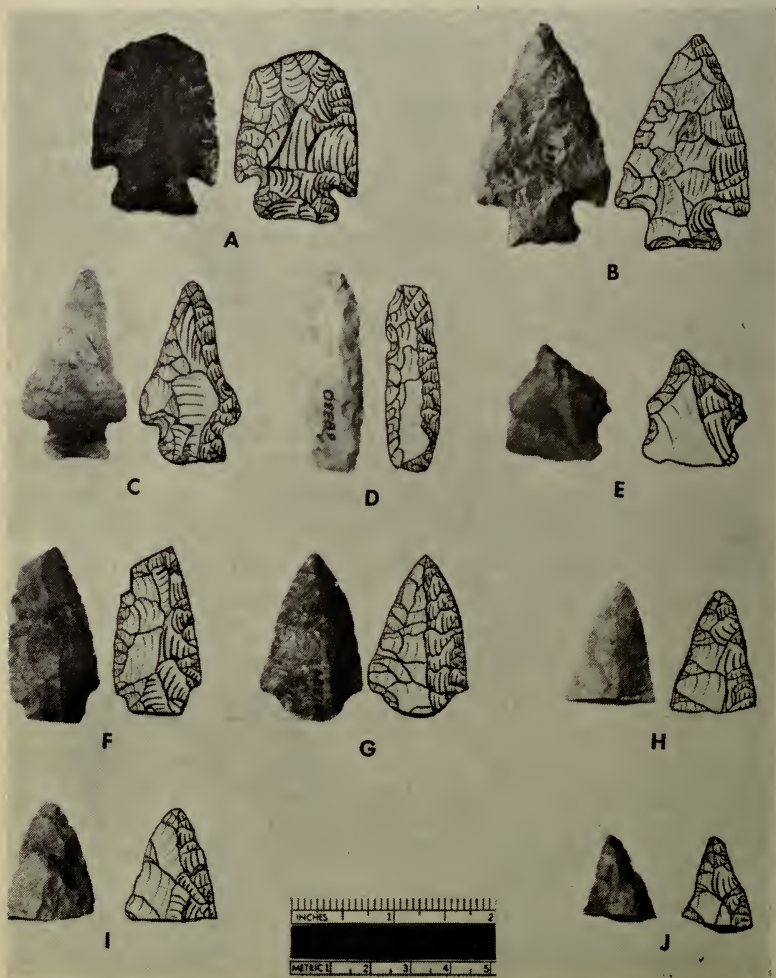
Chipped stone materials were collected in large quantities from much of the site; particularly from the blowout areas to the north and south of the excavation. These collections were generally controlled as to areas of the site but since a number of different people made these collections under a variety of circumstances there was no real standardization of collection technique. The quantity of chipped stone from the entire site was overwhelming so we ultimately had to limit the parts of this collection which we analyzed. We decided to eliminate the surfaced materials and deal only with the materials re-

covered from excavation. These were materials that were recovered by standard sampling techniques and standard screen sizes gave some assurance of comparable samples from different units. We also would be dealing with more realistic ratios of flakes to artifacts and artifacts to each other. The blowout area had been favorite collecting areas for years and almost all implements of some categories, particularly projectile points, had been removed. Even when limiting ourselves to the excavated materials we had a sample of 116 cores and artifacts and over 9,500 unworked pieces of debitage.

Almost all of the flint from the site appears to fall within the very wide range allowed for local Bayport chert (Dustin 1968) with specimens running from a porous white limey cortex to shiny dark grey, and even brown, interior fragments. As Dustin pointed out, even chalcedony centers are known from Bayport nodules. Since the results of at least one analysis of Bayport knapping (Fitting, DeVischer and Wahla 1966) had suggested a correlation between flake type and degree of discoloration, this attribute was initially included in our study. However, the first several thousand fragments of debitage showed no correlation between flake type and chert variant so this element was not used for the complete study.

As Wobst (1968: 200) has recently pointed out, "many industry-specific methods of analysis have recently been presented proving that every industry has its own character, and the model used in the analysis of one industry will not be of much help in the analysis of another assemblage." Our attempts at using the Northern Lake Michigan flake categories (Fitting 1967, 1968a) proved as difficult as the use of the Holcombe chert model when applied to the sample from the Goodwin-Gresham site. The first change was the elimination of the category of decortication flakes. This was done for several reasons. The poor quality of some of the Bayport chert on the site made it difficult to separate true cortex from weathered interior fragments. It appears that much, if not all, of the raw material was brought to the site in the form of cores, so even cortical fragments had been subject to preliminary trimming. This, of course, stands in strong contrast to those sites studied in the Northern Lake Michigan area where

chers were primarily derived from pebble cores right on the site. The categories of blocky flakes, soft hammer flakes, hard hammer flakes and flakes of bifacial retouch were retained. Since much of the site was fine screened many small flakes, similar to the small retouch flakes at the Holcombe site (Fitting, DeVisscher and Wahla 1966), were present. This category reflects more than fine screening, however, for many other sites which we have fine screened lacked this

**FIGURE 8**



class of very small flakes. The numbers of flakes of the several groups, as recovered from each of the excavation units, are given in Table 11.

There were a total of 116 cores and tools from the site. This included ten cores, 39 bifacially worked implements and 67 complete and fragmentary unifacial tools. Two core types were present; plano-convex cores similar to those from the

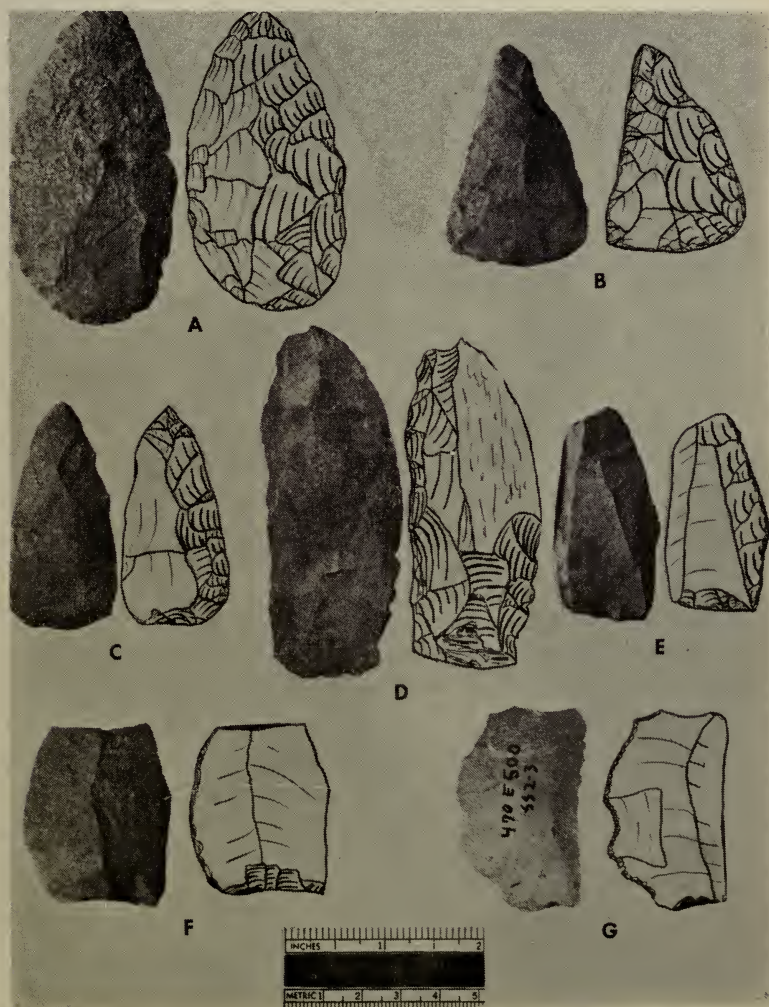


FIGURE 9

TABLE 11

DISTRIBUTION OF FLAKE TYPES FROM THE GOODWIN-GRESHAM SITE, SHOWING OBSERVED AND EXPECTED COUNTS

	<u>UNIT #1</u>		<u>UNIT #2</u>		<u>UNIT #3</u>		<u>UNIT #4</u>	
	O	E	O	E	O	E	O	E
Blocky Flakes	394	276	119	184	33	49	107	114
Bifacial Retouch	277	393	269	262	80	69	332	163
Soft Hammer	365	274	189	183	35	48	60	114
Hard Hammer	48	31	12	20	2	5	12	13
Flat Flakes	1157	1057	740	704	170	187	448	436
Small Retouch Flakes	1026	1236	846	823	257	218	393	511
TOTAL	3267		2175		577		1352	

	<u>UNIT #5</u>		<u>UNIT #6</u>		TOTAL	% TOTAL
	O	E	O	E		
Blocky Flakes	108	144	46	40	807	8.4
Bifacial Retouch	155	206	35	56	1148	12.0
Soft Hammer	128	144	25	39	802	8.4
Hard Hammer	10	16	6	4	90	1.0
Flat Flakes	455	554	121	151	3091	32.4
Small Retouch Flakes	855	647	235	177	3612	37.8
TOTAL	1711		468		9550	100.0

Schultz site (Fitting n. d. a) and the Butterfield site (Wobst 1968) and block cores similar to those from the Schultz site (Fitting n. d. a), Riviere au Vase (Fitting 1965) and the Eastport site (Binford and Papworth 1963). Three of the cores were block cores and seven were plano-convex cores (Figure 9, j) and fragments. This ratio, 0.43, more closely approximates the ratio of 0.41 for block cores to plano-convex cores from the earlier of the two main Middle Woodland occupations at that site. Small cores were not found at all in the collections from the Goodwin-Gresham site. The small core chipping technique is very common in areas where there are quantities of small chert pebbles in the upper Great Lakes area (Binford and Quimby 1963; McPherron 1967; Fitting 1968a). Bayport chert, as used by the Goodwin-Gresham knappers, did not lend itself to this type of core preparation. On the other hand, small cores were almost as common as block cores at the Schultz site and were found at the Schmidt site (Harrison 1966), both sites with a near exclusive use of Bayport chert. It has been suggested that these small cores functioned as tools, "wedges", in association with hunting activities. This may be the case at the Schultz site where they are most common in levels with the greatest emphasis on hunting. If this is the case then their absence at Goodwin-Gresham could reflect an emphasis on exploitative activities other than hunting.

The bifacial implements from the site were divided into four categories. These included projectile points, preforms and knives, point tips and a category of miscellaneous biface fragments. These are illustrated in Figures 8 and 9 and the metric attributes of the points are given in Table 12 and the knives and preforms in Table 13.

All but one of the points are of local Bayport chert. There is a great deal of variation in this small sample and they do not form a particularly distinct group. Five could probably be considered expanding stemmed forms and the rest might be called corner-notched but there does not seem to be a gradation. While individual points could be duplicated in the much larger Schultz site assemblage, the entire range seems to be more characteristic of projectile points from the North Bay complex (Mason 1966, 1967), the Burnt Bluff Caves

TABLE 12

METRIC ATTRIBUTES, IN CENTIMETERS, OF POINTS FROM THE GOODWIN-GRESHAM SITE

Point		Length	Width	Hafting Width	Stem Width	Thickness	Provenience
68321a	1	4.5	2.3	1.6	1.6	0.9	Unit #5
68320	2	4.6	3.2	1.7	2.2	0.9	Unit #5
68285	3	4.8	2.6	1.4	1.6	0.8	Unit #1
68324	4	5.7	3.4	1.6	1.8	1.0	Unit #5
68276	5	4.3	2.6	1.7	1.7	0.8	Unit #1
68330	6	5.0	1.5	1.2	1.1	0.7	Unit #5
500E495, ss#1-2	7	3.1	2.8	2.2	2.4	0.7	Unit #2
<u>BASES</u>							
68320	8	1.6	1.8	1.0	1.2	0.5	Unit #5
68323	9	1.2	2.6	2.1	2.6	1.0	Unit #5

TABLE 13

METRIC ATTRIBUTES OF PREFORMS AND KNIVES FROM THE GOODWIN-GRESHAM SITE

Preforms and Knives		Length	Width	Stem Width	Thickness	Provenience
68321	10	5.8	3.8	3.7	1.3	Unit #5
570E495, ss#2-3, F#4	11	6.0	2.9	3.0	0.9	Unit #5
68283	12	6.5	5.0	4.5	1.6	Unit #1
68283 (inc)	13	4.3	4.4	-	1.3	Unit #1
68316 (inc)	14	3.4	4.3	-	1.0	Unit #4
68283	15	8.2	4.4	-	1.3	Unit #1
68301 (inc)	16	4.5	3.8	-	1.0	Unit #1
68323 (inc)	17	3.3	4.3	-	1.1	Unit #5

(Cleland and Peske 1968) and some of the Ontario Middle Woodland sites (Kenyon 1959; Lee 1960; Wright and Anderson 1963) than it does the Schultz site. This group of large expanding stemmed and notched forms does seem to differ from the smaller corner and sidenotched points found at more

**FIGURE 10**

northern Laurel sites in the Lake Superior Basin which tend to be thinner as well (Wright 1967).

The size range of the projectile points from the Goodwin-Gresham site is also closer to the size range of projectile points from the earlier of the main Middle Woodland occupations at the Schultz site than it is to the later Middle Woodland or Late Woodland occupations on the same site.

The second major group of bifacial implements consists of a series of sub-triangular to ovate bifaces which might have functioned variously as knives or preforms or both in turn. These are illustrated in Figure 9, a-c, and the metric attributes are given in Table 13. It is significant that the same series of extra-site comparisons given for the projectile points also apply to this group of bifaces. They are forms characteristic of northern Middle Woodland materials of the Lake Michigan and Huron basins. If comparisons are to be drawn with the Schultz site to the south, it is again the earlier of the two principal Middle Woodland occupations to which we must turn for specific comparisons.

The category of projectile point tips is of interest because there are so few of these items (Figure 8, h-j), only 4.3 per cent of the sample as opposed to 9.8 per cent for the grouped sample from the Schultz site. This is significant because projectile point tips reached their lowest frequencies at the Schultz site in those levels where activities other than hunting, particularly fishing, reached its greatest significance as a subsistence activity.

Miscellaneous biface fragments account for the rest of the bifacial implements. The distribution of these items among the excavation Units at the the site is given in Table 15.

The unifacial implements were also divided into four groups. these included side scrapers (Figure 9 d-g), endscrapers (Figure 10, a-c), blades (Figure 10, d-i), and utilized flakes. The two groups of scrapers were separated on the basis of the relationship of the retouched working edge to the long axis of the flake. In contrast to many sites, the scraper categories were rather loose and did not form the tight clusters that are characteristics of some sites. They grade into the general category of retouched flakes. Unifacial artifacts from the site are illustrated in Figures 9 and 10 and tool counts for each

TABLE 14

METRIC ATTRIBUTES OF BLADES FROM THE GOODWIN-GRESHAM SITE

Blades		Length	Width	Thickness	Provenience
68283	18	3.0	1.2	0.4	Unit #1
68270	19	3.7	1.4	0.9	Unit #1
68300a	20	3.1	1.4	0.5	Unit #1
68300	21	4.0	1.4	0.5	Unit #1
68287	22	3.1	1.5	0.5	Unit #1
68316	23	3.3	1.4	0.3	Unit #4
68316	24	3.8	1.7	0.4	Unit #4
68285	25	2.9	1.1	0.3	Unit #1
68285a	26	2.4	0.9	0.3	Unit #1
470E490, ss#1-2	27	2.5	1.1	0.3	Unit #1
470E490, ss#1-2	28	3.0	1.3	0.4	Unit #1
500E495, ss#1-2	29	3.1	1.4	0.2	Unit #2

TABLE 15

DISTRIBUTION OF ARTIFACTS FROM THE GOODWIN-GRESHAM SITE

Type Tool	UNIT #1				UNIT #2				UNIT #3			
	N	%N	Wt.	%Wt.	N	%N	Wt.	%Wt.	N	%N	W	%W
<u>Cores</u>												
Block	1	0.8	136	14.2	2	1.7	52	5.4	-	-	-	-
Plano-Convex	6	5.2	124	13.0	-	-	-	-	-	-	-	-
TOTAL CORES	7	6.0	260	27.2	2	1.7	52	5.4				
<u>Bifaces</u>												
Proj. Points	2	1.7	14	1.5	1	0.8	4	0.4	-	-	-	-
Pref. & Knives	3	2.6	86	9.0	-	-	-	-	-	-	-	-
Tips	3	2.6	14	1.5	-	-	-	-	-	-	-	-
Other Fragments	8	6.9	57	6.0	1	0.8	17	1.8	-	-	-	-
TOTAL BIFACES	16	13.8	171	18.0	2	1.6	21	2.2				
<u>Unifaces</u>												
Sidescrapers	3	2.6	88	9.2	4	3.4	24	2.5	1	.8	8	.8
Endscrapers	6	5.2	17	1.8	-	-	-	-	-	-	-	-
Blades	9	7.8	13	1.3	1	0.8	1	0.1	-	-	-	-
Utilized Flakes	15	13.0	63	6.6	8	6.9	16	1.7	-	-	-	-
TOTAL UNIFACES	33	28.6	181	18.9	13	11.1	41	4.3	1	.8	8	.8
TOTAL UNIT	56	48.4	612	64.1	17	14.4	114	11.9	1	.8	8	.8

Type Tool	UNIT #4				UNIT #6				TOTAL UNITS			
	N	%N	W	%W	N	%N	Wt.	%Wt.	N	%N	Wt.	%Wt.
<u>Cores</u>												
Block	-	-	-	-	-	-	-	-	3	2.6	188	19.7
Plano-Convex	-	-	-	-	1	0.8	10	1.0	7	6.0	134	14.0
TOTAL CORES					1	0.8	10	1.0	10	8.6	322	33.7
<u>Bifaces</u>												
Proj. Points	-	-	-	-	6	5.2	43	4.5	9	7.8	61	6.4
Pref. & Knives	1	0.8	14	1.5	3	2.6	48	8.3	7	6.0	148	15.5
Tips	1	0.8	1	0.1	1	0.8	2	0.2	5	4.3	17	1.8
Other Fragments	6	5.2	34	3.6	3	2.6	28	2.9	18	15.5	136	14.2
TOTAL BIFACES	8	6.8	49	5.1	13	11.2	121	15.9	39	33.6	362	37.9
<u>Unifaces</u>												
Sidescrapers	1	0.8	2	0.2	1	0.8	2	0.2	10	8.6	124	13.0
Endscrapers	1	0.8	1	0.1	3	2.6	12	1.3	10	8.6	30	3.1
Blades	2	1.7	2	0.2	-	-	-	-	12	10.3	16	1.7
Utilized Flakes	3	2.6	16	1.7	9	7.8	17	1.8	35	30.1	102	10.7
TOTAL UNIFACES	7	5.9	21	4.3	13	11.2	31	3.3	67	57.9	272	28.5
TOTAL UNIT	15	12.7	70	9.4	27	23.2	162	20.2	116		955	



excavation Unit are given in Table 15.

The blades from the site were separated out from the general sample of flakes on the basis of the length-width ratio and evidences of retouch or use. They seem to have been derived from block cores as well as plano-convex cores as suggested by the large angle between the striking platform and exterior surfaces on many specimens. This is in contrast to the Schultz site where most blades seem to have been drawn from plano-convex cores. The blades from the site are illustrated in Figure 10 and the dimensions are given in Table 14.

## OTHER MATERIALS

### Copper

One copper implement, a small celt, was found while collecting materials from the surface of the site during our first visit. This was 11.6 centimeters long, 4.1 centimeters wide, and 0.8 centimeters thick, with a weight of 180 grams. It is illustrated in Figure 10, k.

### Fire Cracked Rock

A large quantity of fire cracked rock was recovered from the site. The count, weight, and distribution of this fire cracked rock among the several excavation units at the site is given in Table 16.

### Faunal Remains

Bone fragments from the site were extremely small and, for the most part, were recovered from fine screening of the features. During the summer of 1964 Wright and Morlan separated these remains into fish, mammal, bird, reptile, and unidentifiable bone fragments for Features 1, 2, 3, 4, 6, 7, and 12. The counts and weights derived during this initial sorting are given in Table 17. No further specific identification has been possible.

The close correlation between counts and weight is significant. Most discrepancies are within a few percentage points and most are predictable. We should expect the average weight of fragments of bird and fish bone to be less than that of mammal and turtle. The largest variation between percentage of weight and percentage of count are among the unidentifiable bone fragments; a result of these fragments being too small to identify.

TABLE 16

COUNT AND WEIGHT IN GRAMS AND AVERAGE WEIGHT IN GRAMS OF FIRE CRACKED ROCK FROM DIFFERENT EXCAVATION UNITS AT THE GOODWIN-GRESHAM SITE

	Count	Weight	$\bar{X}$ Weight
Unit #1	1059	7110	6.71
Unit #2	46	681	14.80
Unit #3	233	1828	7.85
Unit #4	99	718	7.25
Unit #5	235	3554	15.12
Unit #6	48	1162	24.21
TOTAL	1720	15053	8.75

TABLE 18

BOTANICAL IDENTIFICATIONS FROM THE GOODWIN-GRESHAM SITE

EXCAVATION	IDENTIFICATION
460E495, Sheets 2-3	2 Butternut Fragments 1 Bean, <u>Phaseolus vulgaris</u>
610E495, Sheets 1-2	4 Butternut Fragments
Feature #4	5 Hazel Nut Fragments
Feature #8	2 Hickory Nut Fragments 11 Butternut Fragments
Feature #12	Gourd Fragments

TABLE 17

BONE IDENTIFICATIONS FOR FEATURES FROM THE GOODWIN-GRESHAM SITE

Feature	N	%N	Wt.	%Wt.	N	%N	Wt.	%Wt.
	FISH				MAMMAL			
1	127	8.8	7.76	8.1	1298	89.5	87.64	91.3
2	282	88.1	7.75	69.5	30	9.4	2.78	25.9
3	2854	78.2	118.35	77.2	219	6.0	21.54	14.1
4	616	72.3	25.79	70.8	192	22.5	7.07	19.4
6	3	100.0	0.60	100.0	-	-	-	-
7	9	81.8	1.00	69.0	-	-	-	-
12	-	-	-	-	1	2.6	0.02	2.2
Total	3891		161.25		1740		119.05	
% Total	61.5		53.8		27.5		39.4	
	BIRD				REPTILE			
1	22	1.5	0.40	0.4	3	0.2	0.15	0.2
2	8	2.5	0.62	5.6	-	-	-	-
3	29	0.8	0.44	0.3	77	2.1	3.92	2.6
4	-	-	-	-	29	3.4	3.36	9.2
6	-	-	-	-	-	-	-	-
7	-	-	-	-	2	18.2	0.45	31.0
12	36	92.3	0.82	92.1	-	-	-	-
Total	95		2.28		111		7.88	
% Total	1.5		0.8		1.8		2.6	
	UNIDENTIFIED				TOTALS			
1	-	-	-	-	1450		95.95	
2	-	-	-	-	320		11.15	
3	471	12.9	9.03	5.9	3650		153.28	
4	15	1.8	0.19	0.5	852		36.41	
6	-	-	-	-	3		0.60	
7	-	-	-	-	11		1.45	
12	2	5.1	0.05	5.6	39		0.89	
Total	488		9.27		6325		299.73	
% Total	7.7		3.1					

### Floral Remains

The floral remains from the site were identified by April Allison in 1964 as a part of a National Science Foundation Undergraduate Participation project. These identifications were checked by Volney Jones of the University of Michigan Ethnobotanical Laboratory. The identifications are given in Table 18.

Two periods of nut collecting seem to be in evidence. From Yarnell's (1964) description, both butternuts and hickory nuts become available in October and are easily stored. Hazel nuts, found only in Feature 4, are available from early August into September.

### CONCLUSIONS

The excavations at the Goodwin-Gesham site were limited and the collections from the site were relatively small. Our tendency has been to interpret this material as representative of a single occupation or type of occupation. Many of the internal relationships and non-artificial associations, however, suggest a much more complex pattern of occupation which can best be interpreted against a background of possible site function.

The site, obviously, was an extremely large site; even though much of it had been destroyed when we worked there in 1964. Ceramics were not common in the general surface collection but at least 24 distinct vessels were reported in the 690 square feet of the area of the site which we excavated. This is a ratio of 0.035 vessels per square foot of excavated area. For comparison, the Spring Creek site (Fitting 1968b) had a ratio of 0.32 vessels per square foot but this is unusually high for Michigan. The ratio for all of the Juntunen site occupations (McPherron 1967) combined is 0.34 so the ratio for a single phase would be about 0.11 which is very close to the 0.13 ratio at the Eisen site in Cheboygan County (Griffin 1963). The agricultural Moccasin Bluff site in southwestern Michigan has a ratio of .11 vessels per square foot of excavated area. The ratio of ceramic vessels per square foot of excavated area at the Schultz site is about 0.13 for the Middle Woodland levels. It appears that a densely settled village of a ceramic horizon has a ratio of 0.10 or more ceramic vessels

per square foot of excavated area. This is about three times that of the Goodwin-Gresham site.

Sites which appear to be clearly hunting camps with a low ceramic density are to be found in the Saginaw Valley. The ratios of vessels per square foot for the Late Woodland occupations at the Schultz, Mahoney, Stadelmeyer and Foster sites are 0.017, 0.038, 0.037, and 0.034 respectively (Fitting n. d. a; Bigony n. d). These closely approximate the ceramic occupational intensity ratio for the Goodwin-Gresham site. This site might then be interpreted as an extensive, low density occupation.

It has been suggested (Fitting and Cleland 1969) that the ratio of ceramic vessels to cores and tools from a site may be related to the sexual composition of the group which inhabited the site. This ratio has been found useful in tracing the development of different types of settlement patterns found during the historic period in the major biotic provinces of the Upper Great Lakes. It is a very rough indicator and useful particularly if the ratio is considerably higher than one to one. If this ratio is less than one to one it does not preclude the possibility of a group balanced sexual composition. Fitting and Cleland have suggested that winter sites would be expected to have lower ratios of vessels to stone tools than corresponding summer sites and have presented some evidence in support of this contention. The ratio of vessels to stone tools and cores in the excavated areas of the Goodwin-Gresham site is 0.22 or within the range of sites believed to have been Chippewa winter sites with small groups of balanced sexual composition (Fitting and Cleland 1969).

If the site is a large extensive area occupied by a group of balanced sexual composition, it does not fit the pattern of an Ottawa winter or summer camp of the Ottawa type of settlement pattern or a winter camp of the Chippewa type of settlement pattern as these patterns have been interpreted by Fitting and Cleland. It has some resemblance to either a summer camp of a group with a Chippewa pattern or the winter hunting camp of a group with a Miami type of settlement system. If it were a Chippewa type summer settlement, we would expect evidence of fishing activities while if it were a Miami type winter camp, we would expect evidence of hunting ac-

tivities and perhaps remains of cultigens brought to the site from the main agricultural village further to the south. The interpretation of the site would then rest with the economic information which we can extract from it.

The extremely high ratio of chippage to finished artifacts suggested the possibility of a functionally specific flint knapping site. This was definitely not a quarry site since the raw material seems to have been brought to the site in the form of cores. The ratio of artifacts to flakes was 0.012. This compares very favorably to the ratios of 0.009 for the Butterfield site (Wobst 1968), 0.011 at the Schultz site (Fitting n. d. a), 0.013 at Hamlin Lake site (Fitting 1967), 0.014 at the Port Bar site and 0.021 at the Sack Bay site (Fitting 1968a). It contrasts to the ratios of 0.043 for the Bergquist site, 0.059 for Riverview Cemetery, 0.071 for the Bear Creek site (Fitting 1968a) and 0.159 for the Spring Creek site (Fitting 1968b). The later group of sites are all located on rivers near the mouth and all are sites which do not utilize Bayport chert. The Schultz and Butterfield sites are also located on rivers but have assemblages composed primarily of Bayport chert like the Goodwin-Gresham site. All of the other sites with a ratio of artifacts to flake similar to Goodwin-Gresham are located on lakeshores like that site. If we were to make a generalization on the basis of this evidence we would state that a low ratio of artifacts to flakes, less than 0.025, on a Michigan site could indicate that the site was either on a lakeshore or the knappers used Bayport chert or both. In any event, this ratio of flakes to artifacts is not unusual in Michigan and can not be used to suggest an extraordinary amount of flint knapping at the site.

At the Schultz site the ratio for bifaces to unifaces fluctuated with the relative frequency of fish bone to mammal bone (Fitting n. d. a). This was found, in general, to be true for a number of other sites in the Great Lakes area (Fitting 1968a, 1968b) although at least one site in the Saginaw Valley does not appear to follow this pattern (Bigony n. d.). The ratio of unifacial to bifacial implements from the Goodwin-Gresham site is 1.72. In contrast, this ratio at the Butterfield site (Wobst 1968), a hunting site, was 1.20 and at the Schultz site, a site with a mixed hunting and gathering base as in-

icated by the bone refuse (Cleland 1966), was 0.73 (Fitting n. d. a). The Spring Creek site (Fitting 1968b), where no fish bone was found, had a ratio of 0.24 and the ratios of 0.25, 0.33 and 0.50 for the Sack Bay, Hamlin and Port Bar sites (Fitting 1968a) have been taken with the site environments to suggest that these were hunting stations. In contrast, the Bergquist, Riverview Cemetery and Bear Creek sites, all excellent localities for fishing, have uniface to biface ratios of 3.45, 5.00 and 6.52 respectively (Fitting 1968a). The uniface ratio at the Goodwin-Gresham site is intermediate between sites which are primarily hunting stations and sites which are primarily fishing sites.

At the Goodwin-Gresham site we have faunal and floral remains which can be used to check some of the inferences derived from the artifact ratios. A glance at Table 17 shows a great deal of variation in the ratios of fish and mammal bone between features; perhaps as a warning to us against overgeneralizing about an entire site collection. In contrast to other features, Feature 1 contains less than 10 per cent fish bone and approximately 90 per cent mammal bone. In fact, three quarters of all the mammal bone from the site came from this feature. While the total site presents a near balance of fish and mammal bone with a slight favoring of fish, the picture changes drastically if we exclude Feature 1 from the analysis and it changes even more if we eliminate Feature 12 from the series. We then have a series of features with between 70 and 100 per cent fish bone and 23 per cent or less of mammal bone. It appears that both hunting and fishing were practiced at the Goodwin-Gresham site; a conclusion which supports the interpretation based on artifact ratios.

The individual features also demand further attention. The two aberrant features, No. 1 and No. 12, are both located in Unit No. 1 and are the two features which contain the cultigens from the site. Feature No. 1 is a shallow hearth with primarily mammal bone and is located in the single five by five foot unit from which the bean and some butternut fragments were recovered. Feature No. 12, the feature with the radiocarbon date of A. D. 610, is an unusual "bird and gourd" feature unique to the site. The other features seem to be char-

acterized by fish bone and nut shells.

In spite of the consistency of the ceramic assemblage, it is true that **all** of the excavated cordmarked vessels from the site were, of all wares, found in Unit No. 1 along with these two features. It may be that several periods of occupation are represented at the site with different site functions during different time periods. To support this contention we must go back to our artifact analysis and the external comparisons within the site.

In Mason's recent review of the relationship between North Bay and Saugeen ceramics (1967: 330-338) he (correctly) concluded that the Donaldson and Burley site dates of B. C. 530 + - 60 years (S-119) and B. C. 669 + - 220 (C-192) do not date the relevant ceramics. Mason accepts the A. D. 160 + - 100 years (I-888) date for the North Bay Complex at the Mero site. This is in line with a date of A. D. 250 + - 120 years (M-2014 from a feature containing dragged dentate stamped and Becker Punctate-like sherds from the Summer Island site in Delta County, Michigan, as well as dates of A. D. 160 + - 170 (GSC-208) for the Laurel component at the Heron Bay site in Lake Superior and A. D. 128 + - 200 (M-850) for the Serpent Mound in Ontario. The latest of the Middle Woodland levels at the Schultz site in the Saginaw Valley has been bracketed by dates of A. D. 310 + - 120 (M-1646) and A. D. 450 + - 200 (M-1647). Most of the specific resemblances to Schultz site materials are to materials from the earlier Middle Woodland occupation which pre-dates this time period. On the basis of the site geology this occupation has been placed between 10 B. C. and A. D. 300 (Speth n. d.). In short, the majority of the cultural material finds its closest correspondences to materials dating between the beginning of our era and A. D. 300 and the date of A. D. 610 + - 110 (M-1625, Crane and Griffin 1966: 263) is out of line with this interpretation.

The radiocarbon date for the site would seem to be more clearly aligned with such dates as the one of A. D. 680 + - 120 years (M-1759) for the Late Woodland burial in the Carrigan Mound A in Newaygo County, A. D. 700 + - 120 for the Sissung site in Monroe County (M-1519), A. D. + - 150 years (I-678) for the Heins Creek site in Door County,



Wisconsin, and A. D. 750 + - 150 years (M-1843) for the early Late Woodland burials at the Fort Wayne Mound in Wayne County, Michigan. The Sissing site has produced corn. All of these sites are marked by a predominately cord-marked ceramic assemblage.

Two conclusions could be drawn from this information. The date could be accurate and an accurate reflection of the main phase of the site occupation. This could be a "transitional" site from Middle to Late Woodland and the ceramic assemblage could represent this transition with many "hold overs" from earlier times. This could mean that the site was occupied by people shifting from a northern Chippewa type of settlement system with a summer village based on fishing and a number of small winter camps where hunting was of greatest importance, to a southern Miami orientation with large summer agricultural villages further to the south and the Goodwin-Gresham site used as a northern winter hunting station.

Two things would argue against this hypothesis. First, the ceramic styles are most characteristic of those found during earlier times. We would need to imply three or more centuries of cultural lag to the Goodwin-Gresham site. These ceramics are **not** typical of those found in early Late Woodland agricultural villages to the south. We would need to postulate two ceramic assemblages for summer and winter to the same people; an unlikely situation.

It is also unlikely that the shift from a Chippewa type of adaptation to a Miami type of adaptive pattern would have been gradual. Both patterns are directed toward an optimal exploitation of environmental resources. Any intermediate stage between these two extremes would have supported fewer people than either of them. It is difficult to conceive of a group choosing a marginal middle course with a little adaptive value when several optimal alternatives are available and necessary to be at all competitive with other groups in the same environmental zone.

An alternative interpretation would be that the major occupation of the site took place when the beach with the elevation of 595 feet above sea level was becoming stabilized, some time between A. D. 50 and A. D. 300. The majority of

the ceramic and lithic correspondences would indicate such an occupation. This Middle Woodland occupation would have been a summer-fall occupation by a group with a Chippewa type of settlement pattern and land use system. The Goodwin-Gresham site was an extensively occupied summer village with nutting and fishing carried out by a group of balanced sexual composition.

After the abandonment by Middle Woodland peoples, the site was later sporadically reoccupied by groups of fall and winter hunters who brought some cultigens with them. We have already suggested the possibility of these being large groups of balanced sexual composition with a Miami type of settlement pattern. If this was the case, then the similarity of ceramics could have been caused by the use of similar clay and tempering sources with the cordmarked forms of all wares late and the plain forms early. We have already pointed out that the stratigraphic placement of such materials does not support this position.

Still another alternative, one consistent with the geographical location of the site within the Canadian-Carolinian transition zone, is that the Late Woodland occupation of this site was by a group of people with an Ottawa type settlement system. In this case, the hunting camp might have been occupied exclusively by males who left few or no ceramics. This seems to have been the case at the Hamlin Lake and Headquarters sites in western Michigan (Fitting 1967; Fitting and Cleland 1969). In view of the uniformity and Middle Woodland relationships of the ceramic assemblage, this is the view which we would tend to favor.

The archaeological interpretation of the Goodwin-Gresham site is difficult to derive and far from certain although a pattern does emerge. It does appear that this is primarily a northern Middle Woodland site with sporadic later occupations by hunting groups, possibly of male composition. With the evidence at hand, however, any number of alternative interpretations are possible. Because of its destruction, from residence and road building activities, we are unlikely to ever have the complete picture of the occupation of the site.

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## PRELIMINARY REPORT ON AN EARLY HISTORIC SITE, COOK COUNTY, ILLINOIS

Cheryl Ann Munson and Patrick J. Munson

For the last several years the Field Museum of Natural History has directed an NSF sponsored, six-week Summer Science Training Program in Anthropology for high aptitude secondary school students, and one week of this program is devoted to in-the-field archaeological training. A small Upper Mississippian village site located in the Southwest Forest Preserve was selected for the 1968 excavation program. This portion of the program was supervised by the authors and this paper is a report on the results of the 1968 season. It is anticipated that additional excavations will be carried out at this site under the same program in the following summers.

The Palos site (Ck-26, IAS) is located on a high sandy terrace immediately north of and overlooking the Sag Channel, a major historic portage route now occupied by the Cal-Sag Canal. A total of 1250 square feet of this site was excavated to the base of the plow and/or humus zone, which varies from 4 to 18 inches in depth and which contained a considerable, and thoroughly mixed, array of historic artifacts and modern debris, the latter of which relates to a farmhouse and associated buildings which occupied this site during the first quarter of this century.

At the base of the plow/humus zone, sterile yellow sand was encountered and intruded into this 21 aboriginal pits and several scattered post-holes were discovered. The pits were essentially of two varieties. The most common were relatively shallow, basin-shaped in profile and round or oval in plan. Less common were circular pits about three feet in diameter and three feet deep with vertical or belled sides and flat bottoms. Both categories of pits typically contained fire-cracked rocks, ash and charcoal in their fills.

Chipped stone material recovered from the excavations, combining both plow/humus zone and pit-fill proveniences, include numerous chert flakes, 18 small triangular unnotched projectile points (with both straight and concave bases), 5 end scrapers, 9 amorphyously shaped flake scrapers, 16 "hump-backed scrapers" (we suspect that functionally these are actually knives), and 2 small ovate knives. Several possible

pebble manos and a hammerstone complete the lithic inventory. Bone and antler artifacts include a long awl made from a deer rib which is perforated at one end, a fragmentary bone awl, a hollow-based antler tine projectile point, and four small cylindrical "gaming pieces."

A total of 534 sherds were recovered from all proveniences. Sixteen of these are very small, weathered, grit tempered, cordmarked body sherds, possibly representing an earlier, very light Late Woodland occupation of the site or some slight Langford contacts. The remainder of the sherds are shell tempered and have either smoothed or cordmarked body surfaces. Included among these are several strap handle fragments and one loop handle. Unfortunately, of this group only four are rimsherds of sufficient size to reveal the shape and decoration of the vessels they represent.

Three of the rims indicate jars with globular bodies, out-flaring necks, and flattened lips. Decoration, however, differs slightly on all three. One (Fig. 1a) has broad shallow notches on the lip and vertical, finely incised lines on the upper shoulder. The surface, with the exception of the incised lines, is smoothed. The second rimsherd (Fig. 1b) has shallow cord-wrapped-stick stampings on the lip surface and the upper shoulder is decorated with vertical, somewhat wider, shallow incisions. In addition this sherd has a strap handle. The last of these three rimsherds (Fig. 1c) has no decoration on its lip, and rather narrow, neatly applied vertical cordmarks take the place of incised lines on the shoulder. A strap handle is also present on this sherd. These specimens are very similar to ceramics found at the Anker site (Bluhm and Liss 1961), the Oak Forest site (Bluhm and Fenner 1961), and the Huber and Hoxie sites (University of Illinois collections), all of which are Blue Island (Huber) focus sites in this same general area.

A fourth rimsherd (Fig. 1d) is not typical of the assemblage and may represent a trade vessel. It has a slightly out-curving rim with a hint of castellation, an exteriorly beveled and undecorated lip, a smoothed undecorated surface, and on the neck there is a horizontal strip of appliqué with diagonal notches. The vessel form and the appliqué decoration suggest a relationship with Danner Cordmarked and/or Danner

Grooved-Paddle, two types found at the Zimmerman site which Brown (1961:41-45) has equated with the historic Shawnee.

Of perhaps greatest significance are the several items of European manufacture found in direct association with aboriginal materials deep within three large pits. These large items include a fragment of a copper or brass tinkler, two fragments of sheet brass (kettle fragments?), a fragment of a brass ring or other ornament made by folding in the edges of a strip of metal so that a B-shaped cross-section results, and a

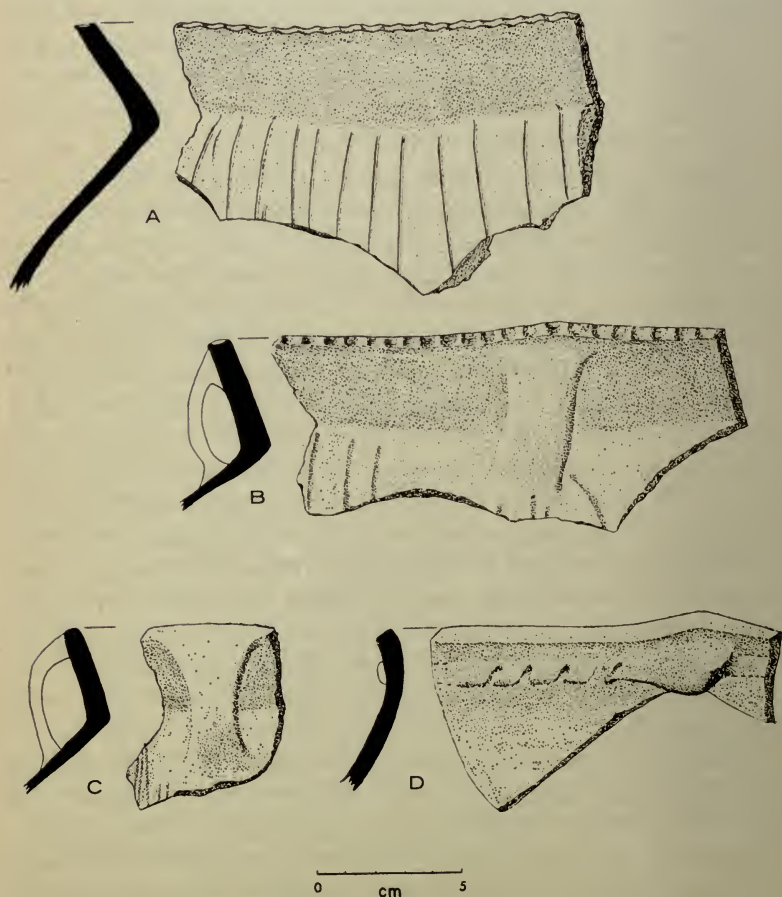


FIG. 1. Rimsherds from the Palos Site.



fragment of a larger, thicker brass object of the same construction. The latter two items may be portions of "double-wire" spring coil ornaments similar to those found at the Zimmerman site (Brown 1961: Fig. 20g) and which have been interpreted as ear ornaments. Also found at the bottom of an aboriginal pit was a heavily corroded iron object containing wood in the rust (a clasp knife?) Although a single unidentified iron object was found in a pit at the Blue Island focus Oak Forest site (Bluhm and Fenner 1961:159), the associations at the Palos site are considerably more numerous and consequently should demonstrate conclusively that this complex did persist up to contact times.

In addition to the artifacts, rather large quantities of faunal remains were recovered in the excavation. Most numerous were bones of deer and fish, although remains of crayfish, mussels, and some as-of-yet unidentified birds, turtles and smaller mammals were also recovered in limited quantities.

Floral remains recovered during actual excavation consisted only of two carbonized hazelnut fragments. However, approximately two cubic feet of pit-fill was saved and later subjected to a flotation process. The carbonized vegetal material recovered in this manner was submitted to Mr. Leonard W. Blake of the Missouri Botanical Gardens, who identified among them five small fragments of corncobs, one corn kernel, one common bean, several sedge seeds (*Carex* sp.), and a few seeds which are either *Chenopodium* sp. or *Amaranthus* sp.

The faunal and floral remains give some indication of the season of occupation of the site. Fish and mussels, and particularly crayfish, would have been available essentially only between Spring and Fall. The abundance of deer skulls with attached antlers, however, suggest that the site was not occupied from early Spring through mid-Summer. And the paucity of nuts would argue against a Fall-Winter occupancy. Consequently late Summer would seem to be the primary period when the site was occupied.

The date of the Palos site can, we feel, rather confidently be placed within a twenty year period. The presence of brass and iron items suggests that the site was occupied after, at, or only slightly before the first European contact, which in

this region was 1673. The absence of glass beads, however, would suggest a date prior to 1693, the earliest date that these were being traded into northern Illinois (Brown 1961:62): i. e. the site was probably occupied between 1673 and 1693.

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**Figure 1. Rimsherds from the Palos Site.**

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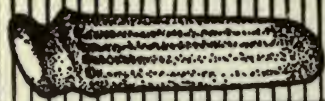
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# WISCONSIN ARCHEOLOGICAL SOCIETY

Milwaukee, Wisconsin

Incorporated, 1903

For the purpose of advancing the study and preservation of  
Wisconsin Indian Antiquities

Meets Third Monday of Month, 8 P. M., Milwaukee Public  
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# THE WISCONSIN ARCHEOLOGIST

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## A PRELIMINARY STUDY OF WISCONSIN FLUTED POINTS

James B. Stoltman and Karen Workman

University of Wisconsin, Madison

### INTRODUCTION

This paper is the preliminary stage of what we hope will be a comprehensive analysis of the typology and distribution of fluted points in the state of Wisconsin. Numerous fluted points have been reported as surface finds from most of the counties in the southern half of the state (e. g. Byers, 1942; Ritzenthaler and Scholz, 1951; Quimby, 1958), but rarely has more than a photograph coupled with provenience at the county level been published. Complete metric data are available for only one of the published fluted points (Salzer and Storck, 1961). No overall synthesis of published or unpublished fluted points in the state has yet appeared in print.

As a first step in our study, this paper presents the metric data and provenience, when known, of 65 fluted points contained in the collections of three institutions, the Milwaukee Public Museum, the Wisconsin State Historical Society, and the University of Wisconsin at Madison. Although such a small sample is likely to be biased (especially since the three collections come from institutions all situated in southeastern Wisconsin), we shall nevertheless put forth some tentative working hypotheses suggested by these data. In particular, we shall examine the typological character of our sample and the comparative distribution of the points with respect to Cary and Valdres drift in order to make some chronological inferences.

### Identifying "Fluted Points"

Exactly what is to be considered a fluted point is a problem for which there exists no ready solution. Since there is presently no excavated fluted point site in Wisconsin, we lack an archaeologically defined "population" to aid us in delimiting a range of variation for our type(s). Consequently, it has been necessary to use arbitrary typological and technological criteria of our own choosing as the basis for selecting our sample from among the thousands of projectile points con-

tained in the collections we have examined.

Fortunately, typology seems to be fairly reliable in this case. Lanceolate-shaped points with pronounced longitudinal flakes detached from the base onto one or both faces are generally considered "fluted". Typically the edges and/or bases of such points manifest evidence of grinding, i. e. having been dulled either intentionally or from wear by the lashings. Such points in the Eastern Woodlands are considered to be of Pleistocene age because of their obvious typological similarities to points associated with extinct elephants and bison in western sites well-dated between about 8000 and 9500 B. C. (Haynes, 1964; see also Mason 1962:236; Griffin 1965:660; Williams and Stoltman 1965-670). A recent battery of thirteen radio carbon dates from the Debert site in Nova Scotia averaging  $8,639 \pm 45$  B. C. (Stuckenrath 1966) confirms the essential validity of these typological inferences regarding Eastern fluted points. The distribution of fluted points in Michigan relative to glacial end moraines and beach ridges of extinct glacial lakes likewise lends support to the postulated late Pleistocene age of such points. (Mason, 1958a: esp. 36). While the Eastern evidence is still insufficient to properly control for regional variations in age, the great antiquity of such a geographically marginal fluted point site as Debert leads us to affirm our belief in a comparable antiquity for at least the early stages of the fluted point tradition in Upper Midwestern areas such as Wisconsin.

Although there is wide concensus that fluted points can be identified typologically (and that such points are old, i. e. attributable to the so-called Paleo-Indians who were among the first occupants of North America), there is considerable ambiguity concerning criteria to be used in making such identifications. A particularly sticky problem is to distinguish between fully fluted points and related forms that are characterized by "basal thinning". Wormington (1957:274) defines basal thinning as "the removal of **small** longitudinal flakes from the basal edge of stone artifacts" (emphasis ours). Because the difference between fluting and thinning presumably has chronological as well as typological significance, it is desirable to make the distinction. However, how does one objectively define "small" (i. e. thinning)? As far as we are aware, Fitting (1965:486) has been the only archaeologist to specifically confront this question, and he has answered it by



utilizing an admittedly arbitrary criteria of **absolute-length** — points with basal removals 1 cm. and longer were classed as fluted.

We find such a criterion based on absolute length of basal removals to be undesirable. Thus, while a 1 cm. long basal removal might indeed represent a "flute" on a point whose total length is 3.17 cm., it could scarcely be considered comparable to a basal removal of the same length on a point 12.93 cm. long. Because there is at least this much variability in the length of fluted points (See Nos. 1 and 48 below; also see cover of the issue of *Science* in which Haynes 1964 appears), we prefer a criterion of **relative** as opposed to absolute length of basal removals in arriving at a decision as to which individual points can be considered fluted.

After grappling with this problem for a considerable time, we have come to the following, also admittedly arbitrary, definition of what constitutes a fluted point:

a lanceolate-shaped, stone projectile point with at least one flake detached from the base longitudinally onto a face leaving a flake scar that is longer than any other flake scar on the point.

Such a definition has the virtues of being independent of point size or geographic limits, easily applied to specific points, reproducible by other workers, and of discriminating what is usually considered a fluted point. We offer this in the form of a hypothesis to be tested further. To work, we would expect this criterion to sort projectile points that were fashioned by Paleo-Indians in the waning stages of the Pleistocene, perhaps the early Recent in some marginal areas. Needless to say, we do not expect this criterion to be one hundred per cent accurate in its ability to discriminate all Paleo-Indian points. We are willing to admit the possibility that some of the points classified by our criterion as basally thinned may have been contemporary with what we are calling fluted points. Indeed, at the Lehner site three of the site's thirteen Clovis points were classed as basally thinned (Haury et al 1959:14). This alone would not cause us to abandon the criterion, but if subsequent evidence should indicate that any of our "fluted points" are in fact younger than we infer (we infer them to be pre-Archaic age in the local or regional chronology), then we must be willing to redefine or even discard the criterion. In short, we feel a reasonable expectation for our admittedly arbitrary criterion is to isolate certain kinds of

projectile points that we can confidently consider both to be roughly contemporary with one another and with similar Paleo-Indian points elsewhere in North America. We are willing to exclude typologically a few "thinned" points that may be contemporary on the grounds that the majority of such points are indeed younger than "true" fluted points. The sample thus isolated we hope can then be regarded as a "pure" sample of Paleo-Indian points.

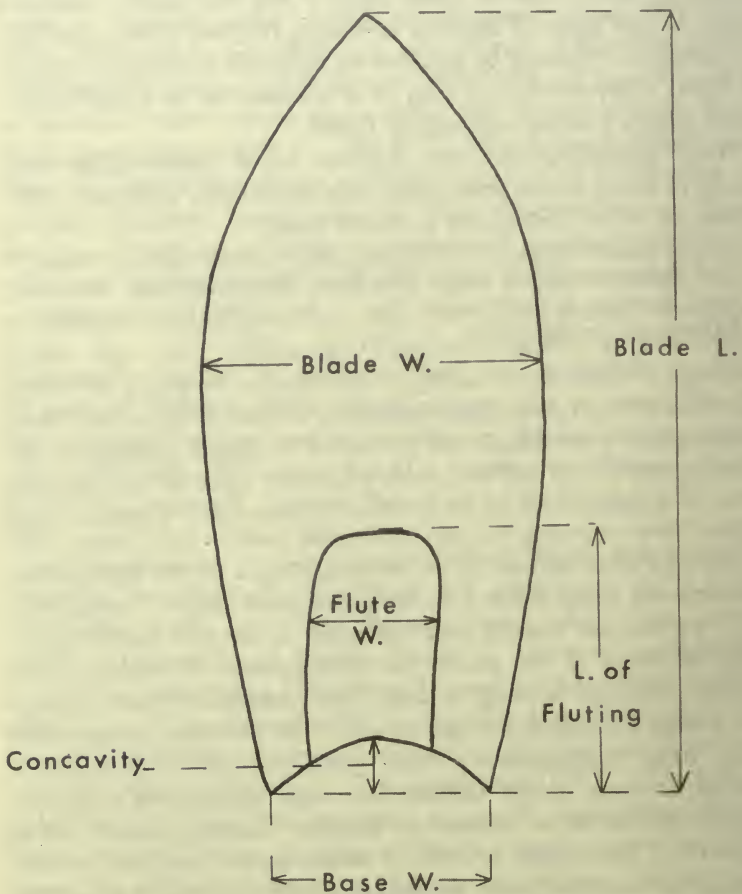


Figure 1. Fluted Point Measurements

#### Measurements of the Points

Figure 1 illustrates the seven measurements that we have taken on each of the 65 fluted points; these are recorded in

Table 1. Additional measurements were taken and many more are possible; however, space limitations dictated that we publish only those we consider basic. As indicated in Figure 1 and Table 1, we have divided each point into three observational areas — the blade, base and flutes.

On the blade (excluding the fluted area) we record three measurements; length, width and thickness (all maximum values). Length was always measured from the point tip along the line perpendicular to a line connecting both basal ears; that is, blade length is the distance between tip and base with the point oriented so that both basal ears are in contact with the same horizontal line. We have retained this orientation for all longitudinal measurements (i. e. length of flute and depth of basal concavity as well as blade length) in order to ensure their comparability and their reproducibility by other workers. Blade width is recorded in Table 1 only when the maximum width of a point lies between its base and its tip. In such cases, a plus or minus sign after the blade width value in Table 1 denotes whether the position of maximum width lies on the tip side (+) or the base side (-) of the point's midpoint. Whenever the maximum breadth of a point occurs at the base, no value for blade width is recorded.

Two measurements on the base are recorded in Table 1, width and depth of concavity (if present). Both are shown in Figure 1.

The number of flutes per face plus the length and width of the longest flute on each face are recorded in Table 1. Our flute length measures the distance from a line connecting the two basal ears to the end of the longest flute, what Mason (1958b) refers to as "length of fluting". In applying our criterion for defining fluted points we have not used this value, but rather what Mason defines as "length of fluting scar". To determine this latter measure from our data — the distance from the apex of the basal concavity to the end of the flute — one may simply subtract the depth of concavity from the "length of fluting" as these are recorded in Table 1.

## Typology

### General Discussion

Formidable obstacles block the path of anyone attempting to assign specific type designations to individual fluted points. For many years, two major types have been recognized in North America, Clovis and Folsom; however, what precisely

TABLE 1

Measurements and County of Discovery of Individual Points

all values are in millimeters and are maximums

\* denotes grinding ( ) denotes tipless points

+/- indicates position of maximum width relative to L/2

Pt. No.	Blade		Th.	Base		Concavity	# per face	Flutes		W	County
	L.	W.		L.	W.			L.	L.		
1.	31.7	---	4.5	14.1	2.2*	2.2*	1/1	22.1/17.5	8.1/6.1	Da.	
2.	37.2	---	5.5	19.4	3.5*	3.5*	3/4	28.6/27.1	9.8/5.7	Da.	
3.	90.6	30.3-	8.0	26.0	6.5*	6.5*	1/1	51.9/45.8	17.2/16.2	Da.	
4.	44.0	26.0-	8.5	25.8	4.5*	4.5*	2/2	19.4/17.7	8.3/9.8	Da.	
5.	55.6	26.0+	6.5	22.2	5.6*	5.6*	2/1	28.4/24.0	9.7/12.2	Lt.	
6.	75.4	38.2-	8.0	33.6	6.2*	6.2*	3/1	29.0/19.0	14.3/11.2	Lt.	
7.	69.2*	28.9-	7.0	?	6.9*	6.9*	1/3	36.1/32.5	15.1/16.2	Mi.	
8.	(42.7)*	23.4-	8.5	21.8	2.4*	2.4*	1/1	27.2/24.9	14.0/13.8	Ra.	
9.	47.8*	24.7+	5.5	23.6	6.2*	6.2*	1/1	37.0/34.6	19.9/10.8	Ro.	
10.	34.3*	23.8+	5.0	23.2	4.8*	4.8*	1/1	31.2/27.1	17.9/14.7	Ro.	
11.	48.8*	25.0-	7.0	24.1	3.3*	3.3*	1/1	18.8/13.0	11.3/18.0	Ro.	
12.	81.2	36.7-	9.5	?	5.5*	5.5*	2/1	44.4/20.5	16.0/21.1	Sk.	
13.	90.0*	25.5-	10.5	17.9	2.6*	2.6*	3/1	22.6/19.5	6.4/8.1	Sk.	
14.	77.6*	30.0+	8.0	25.8	5.0*	5.0*	1/1	34.8/28.6	14.7/15.7	?	
15.	79.4*	26.2-	10.0	25.0	5.0*	5.0*	2/1	38.8/26.2	8.6/10.4	?	
16.	91.8*	28.0-	10.0	26.0	5.2*	5.2*	1/1	41.9/38.1	16.0/16.0	?	
17.	55.3*	18.6-	5.0	16.1	2.2*	2.2*	3/1	52.8/31.8	12.3/15.7	?	
18.	(56.5)*	20.4-	7.1	19.0	3.1*	3.1*	2/1	43.2/30.4	10.3/10.5	?	
19.	40.3*	17.2-	6.4	?	4.8*	4.8*	2/1	27.0/19.4	5.2/7.7	?	
20.	39.3*	18.3+	6.0	17.1	3.0*	3.0*	1/1	28.8/28.3	8.9/7.3	?	
21.	79.1*	27.6-	8.4	24.6	6.7*	6.7*	1/1	40.9/33.2	16.1/13.2	?	
22.	68.0	29.8-	7.0	25.2	3.0	3.0	1/1	36.2/19.2	12.4/14.5	?	
23.	(65.5)	22.1-	9.5	20.9	1.7	1.7	3/1	25.2/11.6	5.3/12.7	Sb.	
24.	64.2	20.5-	9.0	18.7	2.2	2.2	1/1	14.7/13.9	11.7/9.3	?	
25.	64.5	---	6.5	24.8	1.6	1.6	2/0	17.1/0	17.2/0	Ct.	
26.	68.7	29.9-	8.0	25.9	1.8	1.8	1/0	27.7/0	14.0/0	Ct.	
27.	48.2*	23.2-	8.5	21.4	.8*	.8*	2/0	19.1/0	.7.0/0	Je.	
28.	40.8*	---	7.5	21.2	3.6*	3.6*	2/0	36.1/0	8.3/0	Je.	
29.	55.2*	21.3-	7.0	19.1	2.3	2.3	1/1	30.9/21.5	9.6/8.0	Je.	
30.	(47.4)*	22.1-	6.9	21.7	4.6*	4.6*	1/3	37.2/27.8	7.4/7.3	Je.	
31.	40.3*	---	8.0	21.9	3.2*	3.2*	1/2	38.6/28.6	10.0/10.7	Je.	
32.	56.3*	25.2-	6.5	23.9	4.2*	4.2*	1/1	45.4/39.0	17.8/18.8	Mn.	
33.	54.8	22.7+	9.5	19.9	3.5	3.5	1/0	35.7/0	9.6/0	Mi.	
34.	48.9*	10.4-	6.5	18.7	3.8	3.8	1/0	17.6/0	8.7/0	Mi.	

Pt. No.	Blade		Th.	Base		# per face	Flutes		County
	L.	W.		W.	Concavity		L.	W.	
35.	54.2	---	8.1	25.3	3.8	2/1	18.7/17.5	11.3/8.0	?
36.	72.0*	22.8+	9.5	20.0	1.4*	2/0	17.5/0	8.0/0	Rt.
37.	43.9	20.1-	8.1	19.6	1.9	4/0	17.5/0	6.0/0	Sb.
38.	39.5*	22.3-	8.2	20.9	2.1*	4/0	20.9/0	11.2/0	Sb.
39.	60.9	26.3-	10.9	25.8	1.4*	3/2	20.8/10.0	8.3/9.1	Sb.
40.	58.3*	31.2-	---	29.6	0*	1/2	31.0/11.4	13.9/11.6	Wt.
41.	116.9*	27.6-	10.0	24.1	2.7	2/2	20.0/15.1	6.8/9.0	Wp.
42.	62.8*	26.5-	7.7	25.8	5.4*	1/1	38.0/36.8	13.0/15.4	Rt.
43.	40.9*	18.0-	5.1	17.2	3.8*	1/1	32.2/24.1	11.8/12.3	Da.
44.	(38.0)*	21.8-	9.0	21.2	3.0*	3/1	19.4/17.8	13.6/12.0	Da.
45.	37.3*	---	6.5	22.7	4.5*	1/1	27.4/23.6	17.3/13.7	Da.
46.	79.0	27.0-	9.0	24.0	7.0	2/0	23.2/0	13.5/0	Da.
47.	92.8	38.8-	9.0	26.3	0	1/1	46.8/39.8	18.5/16.0	Mn.
48.	129.3	39.3+	8.0	35.0	7.8	1/1	76.6/55.7	25.5/19.0	Mt.
49.	(91.5)	27.0-	6.5	22.0	3.5	1/1	73.8/51.7	13.7/15.0	Da.
50.	72.3	28.0-	6.5	23.5	4.2	1/1	71.7/54.6	15.0/12.7	?
51.	60.0*	---	6.5	23.2	5.0*	2/2	22.8/17.2	11.0/6.0	Da.
52.	51.5*	24.6-	8.0	24.3	6.5*	2/1	30.5/28.8	14.2/15.5	Da.
53.	42.2*	---	7.5	26.0	4.0*	1/1	34.8/22.0	20.5/11.7	Da.
54.	65.7*	25.9-	8.2	22.8	3.2*	1/1	43.0/32.0	11.5/12.5	?
55.	35.5*	---	6.0	17.1	3.5*	1/1	25.0/17.5	9.4/7.8	?
56.	39.0*	15.3-	4.0	14.2	4.4*	1/0	27.0/0	6.1/0	Do.
57.	49.6*	---	7.0	19.2	3.5*	1/2	20.0/19.2	11.8/14.9	Do.
58.	50.1*	22.2-	8.0	21.8	5.0*	1/1	19.0/15.5	14.0/16.2	Mn.
59.	57.9*	---	6.0	21.5	4.0*	1/1	27.5/25.5	13.8/21.5	Fd.
60.	73.3*	23.8-	7.0	22.2	5.0*	2/0	22.0/0	14.0/0	Mn.
61.	104.2*	34.0-	9.0	32.3	6.0*	1/1	58.5/34.0	15.8/18.5	Ra.
62.	90.0*	26.2-	8.0	24.3	7.0*	1/2	30.0/29.5	18.8/17.2	Wt.
63.	80.6*	28.0-	9.0	26.3	3.2*	1/2	37.8/35.0	15.0/17.4	Je.
64.	67.2*	24.3+	7.0	21.8	3.0*	1/1	37.0/16.5	13.8/9.1	Do.
65.	52.3*	---	7.0	24.1	3.5*	3/0	17.5/0	15.8/0	Wt.

distinguishes them from one another and from subsequently defined types is not always clear. "Typical" Folsom points are ordinarily easily recognized, but until the full range of fluted point variation at a major Folsom site is published, we must avoid falling into the error of thinking all Folsom points are like the few select, "classic" forms that have been repeatedly illustrated in the literature.

Following Roosa (1965) and Crabtree (1966), we shall assume the related attributes of base preparation and manner of flute removal to be of paramount significance in identifying Folsom points. True Folsom points are characterized by a complex process of pre-flute preparation of the base that involves beveling, isolating a striking platform in the center of the base, polishing this platform to prevent shattering, and then flute removal via indirect percussion. These steps are followed for the fluting of both faces.

In contrast to Folsom points, Clovis points lack such extensive pre-flute base preparation. This is evidenced by the absence of any visible signs of basal beveling or of an isolated central striking platform on known Clovis points of the West. Evidently the flutes were detached from a symmetrical (i. e. unbeveled) base by direct percussion without the use of an intermediate tool. The substantial size of the negative bulbs of percussion on most Clovis points (e. g. Haury 1953:89) suggests this. Moreover, Crabtree reports that he is able to duplicate Clovis flutes experimentally by free-hand percussion (1966:5). A qualifying note must be interjected here, however, and that is that no Clovis occupation or workshop sites have yet been reported in the West. As a result, all reconstructions of the Clovis fluting procedures are currently dependent upon inferences drawn only from studies of completed points.

Secondary retouch of the base after fluting may subsequently obscure or even obliterate any remnants of basal preparation that may have survived the fluting process. As a result of this latter practice, it is difficult, sometimes even impossible, to ascertain the precise manner by which the base of a completed point was originally prepared for fluting. The surest way to obviate this difficulty is to study site collections containing partially finished as well as completed points. Unfortunately, our present Wisconsin sample is composed solely of completed points recovered as isolated surface finds.

In the absence of either unfinished points or points with remnants of the striking platform still adhering, the flute scar itself can afford some helpful clues as to the nature of the fluting process. According to Crabtree (1966:5), a Folsom flute has a unique cross-section both transversely and longitudinally: in transverse section it is wide, nearly as wide as the point, while in longitudinal section the fluting begins and ends in a feather edge (i. e. is not "deep", nor does it terminate in a hinge fracture **ordinarily**). Roosa (1965:91) reports that "Folsom-type fluting usually runs for at least 30 to 40 mm, and is 8 to 10 mm. wide".

By contrast, the flute scars on Clovis points tend to be shorter and narrower relative to the length and breadth of the point than are Folsom flutes. Roosa (1965:93), in an analysis of Clovis points from five Western sites, notes that fluting length was "usually" less than the maximum breadth of the points, which has prompted him to refer to them as "partly fluted points" (*Ibid*). While this characterization may be apt for many Clovis points, it definitely does not apply to all such points, even at classic Clovis sites like Naco, Lehner, and Blackwater Draw (Haury 1953; Haury et al 1959; Rovenner personal communication). Thus, care must be taken not to impute to all Clovis points what is characteristic of only some of them.

Two additional observations on the flute scars themselves are of some taxonomic relevance. First, whereas one flute per face is normal for Folsom points, two or three flutes per face are characteristic of Clovis points. Second, unlike Folsom points, Clovis flutes normally terminate in hinge fractures.

The foregoing discussion of clues to the nature of the fluting process as reflected in the flute scars themselves has been generously sprinkled with such qualifying terms as "normally" and "usually". This was intentional to emphasize the fact that the various criteria are not invariable. The Folsom technique of fluting **normally** produces long, broad, shallow removals (one per face) that do not terminate in hinge fractures. Just the reverse is **normally** true of Clovis fluting. Exceptions occur, however, and the result is a zone of intergradation between Folsom and Clovis-type flute scars. In order to classify a fluted point it is vital that the taxonomist be aware of this zone of intergradation and be willing to admit that isolated points falling within it cannot be confidently classified, at least not by these criteria alone.

Attributes other than those of base preparation and flute removal are also much used in distinguishing Folsom from Clovis points. Indeed, outline form and various measurements of the points are normal ingredients of most typological analyses. In our opinion, however, the sharp distinction often drawn between Folsom and Clovis points on the basis of form is an over-exaggeration that has grown up around comparisons of "typical" specimens without due consideration being given the full range of normal variation. Thus, while the "typical" Folsom point will have its maximum breadth between the tip and the midpoint of the blade (in contrast to the typical Clovis position of maximum breadth at or below the blade's midpoint) and a basal concavity of roughly rectangular shape flanked by prominently projecting ears (in contrast to the typical Clovis' shallowly concave base lacking prominent ears), the fact is that true Folsom points often lack one or both of these formal attributes (see Coffin 1937: 8-9 and Muller-Beck 1966:1205). In short, formal attributes alone distinguish the extreme forms of the classic, Western Folsom/Clovis dichotomy, leaving a large zone of overlap and intergradation between the two types that does not fit obviously into either category.

In the Eastern Woodlands fluted point form is immensely variable and has been the basis for defining numerous regional types other than Clovis or Folsom. As used in the East, such types as Cumberland, Quad, Redstone, Enterline, or Debert include as ingredients in the definition some consideration of form. In the West, positive identification of fluting technique, preferably from visible remnants of the striking platform, but sometimes possible from a metric analysis of the flute scars, is often sufficient to distinguish Clovis from Folsom points regardless of form. Such is not the case in the Eastern Woodlands, however. Here we find the Folsom technique of fluting well represented, but rarely coupled with the typical Western Folsom form (e. g. Wormington 1957:262-3). Thus, we have such Eastern types as Cumberland, Bull Brook, Barnes and Debert characterized by Folsom-type fluting but possessing non-Folsom forms (Roosa 1965; Byers 1954; MacDonald 1968:78).

Yet another variable to be considered in fluted point typology, justly emphasized by Roosa (1965), is the manner in which the base was retouched after the fluting operation.



Characteristically, Folsom bases were finished via pressure flaking after fluting; this retouch was often so delicate that it did not remove all of the central striking platform (see Crabtree 1966:21). The presence of a striking platform remnant (so-called "nipple") on **completed** fluted points is one obvious attribute that effectively differentiates Western Folsom points from Western Clovis points and from most Eastern fluted points as well. The difficulty is, however, that the survival of the striking platform is not an invariable attribute of Western Folsom points. Indeed, at both the type site (Wormington 1957:28) and at Lindenmeier (Coffin 1937: 8-9) numerous indubitable Folsom points lack visible remnants of the central striking platform.

In the Eastern Woodlands only Cumberland fluted points, along with the few true Folsom points that have been found, manifest the Folsom finishing technique and thus retain traces of the central striking platform on completed points. At the Barnes, Bull Brook, and Debert sites a Folsom-like fluting technique has been recognized because the sites fortunately produced partially finished points on which the striking platform is still visible. On none of the completed points from the latter two sites does any trace of the central striking platform survive (Byers 1954:346; MacDonald 1968:78); the information available on the Barnes collection is ambiguous on this point. Roosa (1965:91) attributes this absence at Bull Brook and on at least some of the Barnes points (the Debert report had not yet been published at the time of Roosa's study) to percussion flaking of the base after fluting, what he calls the Barnes finishing technique (e. g. *ibid.* 96).

While the absence of striking platform remnants on completed Eastern fluted points can often be attributed to post-fluting percussion retouch, it should be noted that the fluting process itself may also carry away the platform. Byers' description of the Bull Brook points (1954:347) leads us to suspect that such was the case at this site, while MacDonald (1968:78) expressly states that "the striking nipple on Debert points was usually carried away with the channel flake . . ." One possible conclusion to be derived from this is that, while the pre-flute preparation resembles the Folsom technique, the manner of actually detaching the flute was different. The quality of fluting as manifest in the flute scars supports this position in the cases of Bull Brook and Debert. At both sites the quality of fluting as reflected in the flute scars does not

approach the standards of classic Western Folsom points. Thus, at Debert, "On no complete points is the length of the flute scar greater than the maximum point width" (MacDonald 1968:73), while "Bull Brook points usually are only partly fluted" (Roosa 1965:96). Other explanations for these observed differences may be offered. For example, the nature of the lithic material and the skill of the manufacturer may be expected to exert influence on the quality of fluting. Whatever the reasons, however, the impression remains that (a) the remnants of a central striking platform rarely are to be seen on completed fluted points in the East and (b) the quality of fluting in the East is considerably more variable than is found on Western forms with the mode falling somewhere between the "partly fluted" Clovis point and the "fully fluted" Folsom.

Table 2

Frequency and Catalog Nos. of Fluted Points by Type:

	<u>f.</u>	<u>Catalog Nos.</u>
Folsom	7	1, 9, 10, 17, 32, 43, 50
Enterline-Bull Brook	8	2, 18, 19, 28, 30, 31, 45, 53
Clovis	22	3, 4, 6, 11, 13, 14, 15, 16, 24, 37, 39, 44, 46, 51, 57, 58, 59, 60, 61, 62, 63, 65
Quad?	2	25, 35
Cumberland?	1	33
Untyped	25	5, 7, 8, 12, 20, 21, 22, 23, 26, 27, 29, 34, 36, 38, 40, 41, 42, 47, 48, 49, 52, 54, 55, 56, 64

65

In summarizing this discussion on typology, and before attempting to classify our Wisconsin sample, it may be stated that four variables have been considered as basic to any fluted point taxonomy: (1) manner of pre-flute base preparation. (2) quality of fluting (as manifest in the flute scars). (3) blade form and (4) method of post-flute basal finishing. The interplay of these variables results in a bewildering number of theoretical permutations of the fluted point theme, nearly

all of which can be actually observed in North America. From among these variations, certain recurrent attribute combinations can be recognized as "types", that is, groups of points to which we can attach names emphasizing what we believe to be their corporate cultural and/or temporal significance. We currently recognize five named categories of fluted points within our present Wisconsin sample in addition to a sizeable Untyped category—Folsom, Enterline-Bull Brook, Clovis, Cumberland, and Quad (See Table 2). The criteria we have used to classify these points cannot be regarded as providing adequate type definitions. Rather, they are merely rules of thumb for isolating only those points about whose typology



Figure 2. Fluted Points No. 1 to 14



Figure 3. Fluted Points No. 15 to 26 and No. 42

we can feel a reasonable degree of confidence. Considering the presently inadequate state of our knowledge about the range of variation of fluted point types, (we conceive of types as "populations" of points with varying degrees of internal diversity, some of which can overlap that of other "populations") to attempt more comprehensive definitions would be premature.

#### Folsom Category

Our classification of Folsom points takes cognizance of all four of the variables discussed above. For our purposes, we have allowed the Lindenmeier specimens illustrated in Coffin (1937:8-9) and Muller-Beck (1966: Fig. 15, Nos. 2-10) to establish the limits of formal variation for the our "type". The limits of metric variation that we have used are those reported

by Roberts (1935:22): length, 17 to 75 mm and width, 14 to 32.5 mm. Those points that in our judgment fall within this range of variation while possessing a visible remnant of a central, Folsom-type striking platform, Folsom-type basal finishing, and Folsom-quality flute scars (here defined for our purposes as having a length at least  $3/5$  the point's total length and a width at least one half the point's maximum breadth) were classified as Folsom (Point No. 1, 17, and 43). Points characterized by all of the above criteria with the exception of the retention of a visible striking platform were



Figure 4. Fluted Points No. 27 to 41



Figure 5. Fluted Points No. 43 to 54

considered "possible" Folsoms when, in our judgment, their high quality fluting and outline form were proto-typically Folsom-like (e. g. Nos. 9, 10, 32, and 50). These are recorded as Folsom points in Table 2, but the lesser degree of confidence we feel in their identification should be kept in mind. Also, we again implore the reader to bear in mind what our criteria are designed to do: they should reliably identify some fluted points as to type, but they afford inadequate definitions of the types because their specificity will inevitably exclude a portion of the culture — historically valid range of variation of any type. In short, our criteria sacrifice all-inclusiveness

in the hopes of attaining reliability.

### Enterline-Bull Brook Category

Because we have been unable to differentiate in our sample the closely related Bull-Brook and Enterline types of Roosa (1965), we have lumped them together in a single hyphenated category. Technologically they supposedly differ in manner of pre-flute base preparation, Folsom-like for Bull Brook and Clovis-like for Enterline (Byers 1954-347), but typologically they are similar. Since we are currently working only with completed points and have not had the opportunity to study the type specimens first hand, we are in no position to challenge the validity of these as separate types. We thus refer what we presume to be related points in our Wisconsin



Figure 6. Fluted Points No. 55 to 65

A55, A'56, B57, C58, D59, E60, F61, G62, H63, I64, J65.

series to a combined Enterline-Bull Brook category to signify our present inability to separate them.

The identification of our Enterline-Bull Brook category depends upon a consideration of attributes of the finished base, the flute scars, and the outline form. We separate this category from Folsom on the basis of the **absence** of a visible striking platform remnant and of the Folsom post-flute basal finishing technique along with the **presence** of multiple flute scars on at least one face. (We do not claim all Enterline or Bull Brook and Folsom types, we are simply too uncomfortable to do. Rather, considering the range of variation of the Bull Brook points have two or more flutes per face—although able about classifying a point as Enterline-Bull Brook unless this attribute is observable.)

To distinguish our Enterline-Bull Brook and Clovis categories, we have relied heavily on attributes of quality of fluting and of outline form. A study of the illustrated specimens from such classic Western Clovis sites as Blackwater Draw (Sellards 1952:34-5), Naco (Haury 1953), Lehner (Haury et al 1959), Dent (Wormington 1957:45), Miami (Sellards 1952:25-6), and Domebo (Leonhardy 1966) reveals two major differences between classic Clovis points and our Enterline-Bull Brook category. First, none of the illustrated Clovis points from these sites has a flute whose length exceeds  $3/5$  of the total point length. By contrast, at both Shoop and Bull Brook flute length in excess of  $3/5$  total point length is definitely present on many specimens (Witthoft 1952:469; Byers 1954:346). Second, all of the above Clovis points have outline forms such that the maximum breadth dimension always occurs somewhere **between** the base and the tip, whether or not it also occurs at the base. At Shoop and Bull Brook, by contrast, the most common form is roughly triangular; that is, the maximum breadth occurs at the base only and is not equalled elsewhere on the blade. Based on these observations, we thus define our Enterline-Bull Brook category to include those fluted points that formally and metrically fall within the range of variation of the illustrated Shoop and Bull Brook samples, that possess two or more flutes on at least one face, and that have at least one flute scar whose length exceeds  $3/5$  total point length (Point Nos. 2, 18, 19, 28, 30, and 31). Those non-Folsom points with the distinctive trianguloid form — trianguloid in the broadest sense that maxi-



mum breadth occurs only at the base (Roosa 1965:97-8 refers to such points as possessing a slight "fishtail") — we place in our Enterline-Bull Brook category regardless of whether or not the above two attributes of fluting are also present (e. g. Point Nos. 45 and 53). We might also add that we have been unable to differentiate the Barnes type as defined by Roosa (1965:96-7) from our Enterline-Bull Brook class. Because we are dubious of the validity of Barnes as a separate type (it differs in no significant way from Bull Brook) we have not used its name in our hyphenated category.

### Clovis Category

We must now consider what we mean by Clovis points. Roosa (1965:93) feels "The term Clovis should logically be applied only to points which closely resemble those from the type site in size, shape, fluting technique, etc." While we agree with this, we are inclined to disagree with the statement "that there are few if any true Clovis points from the area east of the Mississippi River" (*Ibid.*). As long as the existing evidence supports the supposition that Eastern fluted points meeting the above typological specifications are culturally related to the Western Clovis forms (We believe such a supposition is warranted at the present time.), we see no useful purpose in restricting the term only to points found "in a specific area of the High Plains and the adjacent Southwest" (*Ibid.* 93).

We have classified as Clovis those points in our sample that (a) fall formally and metrically within the range of variation of the sample from the six Western Clovis sites mentioned above (Lengths range from 31 to 116 mm and widths from 17 to 34 mm), (b) have bases prepared for fluting and retouched (if at all) after fluting by the Clovis techniques, and (c) have flute scars that are all shorter than one-half the point's total length when the value for point length falls within the range of variation found at Bull Brook and Shoop (i. e. 32 to 85 mm; Roosa 1965: 96-7). Those points whose length exceeds that of the Bull Brook-Shoop samples but remains within that of the Western Clovis samples, we still classify as Clovis if the length of fluting falls between 1/2 and 3/5 point length (e. g. Point Nos. 3 and 61).

### Cumberland and Quad Categories

Three of our points are reminiscent of forms commonly found in Southeastern United States (Point No. 25, 33, and

35). We wish to point out their resemblances to the Cumberland and Quad types, but because the state of Wisconsin is beyond the normal geographic distribution of these types, our classification of them must be regarded as tentative. In outline form Point No. 33 falls somewhere between those atypical Clovis points with slight "fishtails" (e. g. Haury et al 1959: Fig. 13i) and Cumberland points with their pronounced concavo-convex edges (e. g. Rolingson 1964:38-9). Because the quality of fluting on our point surpasses that of the known Clovis points and because this plus all metric attributes of the point fall within the range of variation recorded for Cumberland points found in the state of Kentucky (Rolingson 1964: 37-8), we have classified it as a possible Cumberland point. Similarly, Points No. 25 and 35 fall metrically entirely within the stated range of variation of Quad points from Kentucky (Rolingson 1964:32). Both are weakly fluted (most Quads are unfluted, the rest weakly fluted). In form, Point No. 35 is nearly identical to some Kentucky Quads, while No. 25, although somewhat peculiar, would also seem to have its nearest relatives in the Southeast (See Rolingson 1964:32-4).

### Untyped Category

Our untyped category is composed of the residue of fluted points that do not fall securely into one of the previous categories. Most of these have been left untyped because, in our opinion, their characteristics place them in those segments of the fluted point tradition where the ranges of variation of two or more types overlap. Thus, we have left untyped eleven completed points (Nos. 5, 7, 8, 12, 21, 22, 29, 38, 40, 52 and 64) whose manner of pre-flute basal preparation we could not determine and whose outline form and quality of fluting (longest flute length greater than  $\frac{1}{2}$  but less than  $\frac{3}{5}$  point length) is duplicated both at western Clovis sites and at Bull Brook or Shoop. Likewise, we have left unclassified seven points (Nos. 20, 34, 42, 49, 54, 55, and 56) with flute lengths in excess of  $\frac{3}{5}$  total point length and which possess a maximum of one flute per face; typologically, these points fall within the zone of intergradation between the Folsom and Enterline-Bull Brook categories. Actually, it is our suspicion that all except perhaps Point No. 49 (whose length exceeds that of known Folsom points but is otherwise Folsom-like) could be considered Bull Brook points; however, until we know more precisely the permissible range of variation in the

Folsom type, we prefer to leave these points untyped. Finally, our Untyped category contains seven additional points (Nos. 23, 26, 27, 36, 41, 47, and 48) that for various reasons do not fall within our categories nor within the zones of gradation between them.

### Geographic Distribution

The geographic distribution of our fluted points is shown in Figure 7 and is tabulated by counties in Table 3. There can be no doubt that the distribution pattern presented by our sample is somewhat biased. The sample is small and entirely derived from institutions located in the southeastern corner of the state. Thus, it comes as no surprise that the vast majority of our fluted points (59 of 65) are concentrated in that

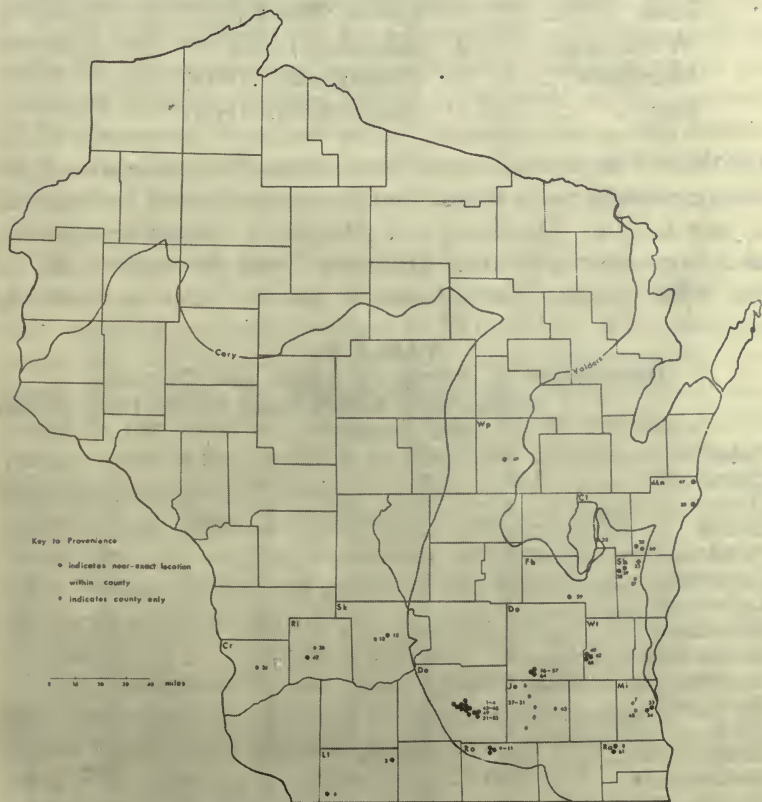


Figure 7. Distribution of Fluted Points Relative to Cary and Valdres Moraines (following Black 1966)

portion of the state southeast of a line connecting Green Bay with Dubuque, Iowa. Moreover, the remainder of our sample comes from counties immediately to the northeast of this line, i. e. Crawford, Richland, Sauk and Waupaca.

A comparison of this distribution with that of Wisconsin fluted points published previously reveals a reasonably close correspondence. Of twenty-four previously published fluted points that we were able to find in the literature, seventeen are from counties already represented in our sample. Two others were found in a county (Waukesha - Mason 1958a: 38) from which we have recorded no points, but which lies well within the area southeast of the Green Bay to Dubuque line. The remaining five were found in the following counties:

Rusk .....	1	(Jones 1948:8-9)
Winnebago .....	2	(Quimby 1958)
Marinette .....	1	(Ritzenthaler 1963)
Juneau .....	1	(Ritzenthaler 1966)

Of these five points, three, (those from Winnebago and Juneau counties) were found contiguous to counties represented in our sample. The Rusk and Marinette county finds, however, represent a drastic departure from the distribution of the other points. The Marinette county point is especially

**TABLE 3**  
Distribution of Points by Types and Counties  
Folson Ent.- Clovis Quad Cumb. Unty. Totals

	Bull Brook					Totals
Calumet .....	0	0	0	1	0	1
Crawford .....	0	0	0	0	0	1
Dane .....	2	3	5	0	0	12
Dodge .....	0	0	1	0	0	3
Fond du Lac .....	0	0	1	0	0	1
Jefferson .....	0	3	1	0	0	6
Lafayette .....	0	0	1	0	0	2
Manitowoc .....	1	0	2	0	0	4
Milwaukee .....	0	0	0	0	1	4
Racine .....	0	0	1	0	0	2
Richland .....	0	0	0	0	0	2
Rock .....	2	0	1	0	0	3
Sauk .....	0	0	1	0	0	2
Sheboygan .....	0	0	2	0	0	4
Washington .....	0	0	2	0	0	3
Waupaca .....	0	0	0	0	0	1
Unknown .....	2	2	4	1	0	14
	7	8	22	2	1	65

interesting, for the site of its discovery in the town of Peshigo is on top of terrain traversed by Valders ice.

One obvious, though admittedly premature, inference to be drawn from the overall distribution of these fluted points is that their makers moved into Wisconsin not directly from the west but from the south or southeast. Point No. 32, which is made of Indiana hornstone, supports such an inference as do the Quad (?) and Cumberland (?) points. However, until more data are available from the western part of the state, we can regard the current distribution pattern as no better than suggestive in this respect.

Some chronological inferences may also be drawn from the geographic distribution of our fluted point sample, although the only information we have in most cases is the name of the town nearest which a particular point was found. In the absence of field observations by a competent geologist, we shall make the assumption that each point was found on top of the youngest geologic surface currently exposed in the vicinity of its discovery. Needless to say, such an assumption is open to question, but so long as its inherent limitations are kept in mind, it at least permits us to offer some hypotheses capable of further testing.

We believe all fluted points in our sample to be of pre-Archaic age although we do not presently know what that age might be in absolute years in Wisconsin. This does not mean that we consider all to have been contemporary. Indeed, the reason for distinguishing the various types was based on the belief that some, at least, of the typological differences are to be ascribed to temporal differences. Unfortunately, our present sample reveals no obvious pattern that suggests age differentials among our various types. We have hopes that, as our future studies increase the sample size, some spatial distribution patterns will emerge that will have temporal, possibly ecological, or even culture-historical significance.

The distribution of our total sample relative to late terminal moraines of the Wisconsin glaciation suggests an age of the fluted point tradition in the state of Wisconsin beginning after the Cary maximum (ca. 13,000 B. C.) and persisting beyond the Valders maximum (ca. 8,500 B. C.). The large number of fluted points found in counties underlain by Cary drift (Figure 7) leaves little doubt that the fluted point tradition was present in Wisconsin after this glacial

substage. Exactly when the fluted point makers first arrived in Wisconsin is unknown, but considering the existing continent-wide evidence, an arrival sometime in the 10th millennium B. C. or possibly in the early 9th millennium seems most likely.

If our distributional data can be taken at face value, it may be inferred that the fluted point tradition in Wisconsin survived into post-Valders times. At least three of our points (Nos. 25, 47, and 58) were supposedly found on terrain within the limits of the Valders end moraine, thus presumably on top of Valders till. Combined with three fluted points published earlier (Quimby 1958; Ritzenthaler 1963), this brings to six the number of fluted points in Wisconsin presumably found on top of Valders till. (It should be noted that we omit from this tally the Waupaca county point reported by Quimby because the presumed location of its discovery is actually beyond, i. e. west of, the Valders moraine.)

A review of the typology of those points of possible post-Valders age raises some interesting problems. The Quad-like point (No. 25) can be reasonably expected to be of post-Valders age, for this type is generally regarded as a late member of the fluted point tradition. The Untyped point (No. 47) must remain in a sort of limbo for the moment, but Point No. 58, which we have classified as Clovis, would seem to challenge the validity of our typology. Numerous well-dated Clovis sites in the West (Haynes 1964) document a pre-9000 B. C. age for this type there, yet the presence of the Clovis point on top of Valders drift in Wisconsin suggests a post-8500 B. C. age here. In such cases, shouldn't we have another name for our Wisconsin type? Our answer is, not necessarily. If a common cultural heritage united Western Clovis points with the Eastern fluted points that we are unable to differentiate typologically, age differences do not *per se* vitiate the typology. For the moment, at least, we are willing to argue for such a common cultural heritage linking Western and Eastern Paleo-Indians.

We have put forth a number of hypotheses, not the least of which is our whole typology, that are frankly based upon inadequate data. In order to minimize the adverse affects of such inadequacies on our study, we expect to expand our survey more intensively into other parts of the state, thereby increasing sample size and reliability. The present study is but a first step along the path that hopefully will lead us

deeper into the earliest era of Wisconsin prehistory.

### Acknowledgements

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**THE BIGELOW SITE (47-Pt-29)**  
**PORTAGE COUNTY, WISCONSIN**  
**An Ethnohistoric Analysis of the Historic Artifacts**  
**Frederick W. Lange**  
Department of Anthropology  
University of Wisconsin - Madison

## **INTRODUCTION**

During the summer of 1966, archaeological excavations were conducted at the Bigelow Site (47-Pt-29) in Portage County, Wisconsin, under grant GS-1141 from the National Science Foundation to Professor David A. Baerreis as principal investigator. In addition to prehistoric materials, intrusive historic Indian burials in mounds and large quantities of historic artifacts, mainly concentrated in a suspected habitation area, were found.

The main focus of the excavation was the recovery of cultural materials and environmental data related to the Effigy Mound group and habitation at the site; the presence of historic materials was not anticipated and their excavation was not a major aspect of the field project.

The analysis, interpretation and report on the prehistoric artifactual material from the site is presently being completed by William M. Hurley, Field Director of the project. The writer, who served as Assistant Field Director, is concerned with the study of the historic materials.

The initial step in the analysis was the description and temporal identification of the excavated materials. Written historical records from Wisconsin and Portage County which could be brought to bear on the archaeological locality were then investigated. Repetitive evaluations of the combination of historical and archaeological data provided an estimate of the cultural activities represented by the materials from the site.

Although our excavation procedure of selecting prehistoric concentrations and avoiding, when possible, the historic concentrations, produced a somewhat biased and smaller than ideal historic sample, the data recovered were felt to be adequate to illustrate and discuss two points:

- 1) a general temporal description of the historic artifacts represented at the site, and
- 2) the way in which these artifacts reflect the acculturative processes of the aboriginal population in this limited geographical region during nineteenth century European contact and incursion.

A chance occurrence of solid documentation for certain aspects of the analysis of the site locality provided far greater insight into the area than would have otherwise been possible and this source, the diaries of Simon A. Sherman, have been utilized extensively where pertinent.

### ACKNOWLEDGEMENTS

Many persons have contributed their time and knowledge to the body of data which comprises this report—to them many thanks are due. Professor William M. Hurley of the Department of Anthropology, The University of Toronto, Canada, not only afforded me the fun, privilege, and benefit of sharing in the 1966 field season during which the archaeological materials were excavated, but has also been most generous in allowing me the use of field notes, drawings, and other manuscript materials while I was preparing this report; Miss Lois K. Lippold of the University of Wisconsin was also most generous in allowing me access to unpublished data concerning the faunal analysis at the site; Dr. Joan Freeman and Mr. Jay Brandon of the State Historical Society of Wisconsin gave freely of their time in aiding the identification of artifacts, making collections of comparative materials available, and offering many helpful suggestions; Mrs. Joan Severa of the State Historical Society provided valuable information on the historic ceramics from the site; Mr. Raymond Ronk of the Gagnon Clay Products Company of Green Bay rendered a much appreciated service in analyzing samples of the brick material from the House 1 area; Mr. Nelis Kampenga, President of the Portage County Historical Society, was of assistance in checking for resource materials in the possession of that organization; Professor Margaret M. Cooper of the Textiles and Clothing Department of the School of Home Economics of the University of Wisconsin examined the various fabric samples from the burials; and Mr. F. Gerald Ham, State Archivist, cooperated in ordering microfilm materials. This paper was originally prepared for Anthropology 914, a Seminar in Ethnohistory under Professor David A. Baerreis, at the University of Wisconsin—Madison, during Spring Semester 1968. Comments by Professor Baerreis which aided me in preparing this slightly revised version are gratefully acknowledged. The responsibility for the interpretation of the data is mine alone.

dicates that there were three different agents associated with the agency: 1) Oliver H. Lamoreaux (notified July 8, 1864); 2) John T. Kingston (April 14, 1869); and 3) Captain David A. Griffith (June 23, 1869).

In the microfilms of the letters received from this agency, only Lamoreaux is represented. On July 20, 1864, he wrote to Indian Commissioner W. P. Dole to inform him of his acceptance of the appointment. He followed this with another communication on August 20, in which he stated that "I would here say that these Indians are scattered in small bands over a space of ten or fifteen counties each squad or band under some petty chief and the whole of each tribe in a measure subservient to a principal chief. "A further observation on the 14th of November of the same year noted that:

These Indians rely entirely for subsistence upon hunting and trapping which in summer keeps them comfortable but in winter I learn that they are destitute and often suffer severely. . . In my judgment they would be the most materially benefitted by receiving what they are to receive from the government during the three winter months.

It appears that by this time there were relatively few Indians left in the immediate Plover area. Lamoreaux requested permission to purchase some of his goods to be distributed in closer proximity to the Indians rather than in Plover, "taking into consideration the fact that those Indians are very much scattered and so far from here that it would be no object for them to travel the distance in coming here for what they would get (January 30, 1865)."

In 1866, the Agent's sparse communication with Washington deal solely with gross finances and the investigation of a complaint in Waupaca County that had been referred to him; the 1867 letters contained similar routine reports on total expenses and budget requests. In November and December of 1867, Lamoreaux advertised in the *Plover Times and Republican* for goods for the Indians; an almost identical list that was bid on in November of 1868 is listed here, as it also reported the prices in the accepted bid:

50 pairs Mackinac		40 barrels flour	\$280.00
Blankets	\$525.00	2000 yards prints	300.00
10 barrels pork	350.00	100 lbs. smoking	
200 yards cassimere	250.00	tobacco	30.00

50 lbs. plug tobacco	30.00	3 kegs powder	27.00
5 sacks shot	22.50	100 lbs. lead	11.00
10,000 gun caps	10.00	100 yards denims	28.00
25 small axes	25.00	50 wool shirts	100.00
50 yards Kentucky		50 prs. wool socks	20.00
jeans	25.00	2 tons hay	20.00
40 prs. shoes	60.00		
100 bushels oats	80.00		

Total: \$2,193.50

This lot of goods was distributed in Plover on January 14, 1869. In this same year Lamoreaux reported investigating an incident in Crawford County. It appears that much of his official business was carried on in areas some distance from Plover and that there was not a local situation which drew on his time. There is no evidence that the agency served any other function than loose supervision and the distribution of material goods.

An entry in Simon Sherman's diary during the agency period, written on September 11, 1864 while he was inspecting timber up the Big Plover River, noted that "There is a camp of Potawatomi Indians a few rods above our camp."

A later incident in the series of attempts to remove the Indians from Wisconsin occurred in 1874, when some 860 Winnebago were transferred to the agency near Omaha. It was said that at least half of these found their way back to Wisconsin within a period of four months (Shattuck, 1904:28). Some homesteads were finally allotted for these peoples in Wisconsin and were located in Jackson, Adams, Marathon, and Shawano counties (Lawson, 1907:116). No such homesteads were ever established in Portage County and it appears that as long as the forests continued to provide cover and the white settlement was sparse enough to preserve game animals, the Indians maintained their old ways of life.

## HISTORIC INDIAN BURIALS

It is not a unique occurrence to find intrusive historic Indian burials in aboriginal earthen mounds in Wisconsin. T. T. Brown noted that "Both the Winnebago and the Potawatomi during the early days of white settlement continued to bury some of their dead in shallow graves in the surfaces of mounds (1924:99)." Other descriptions of Indian burials and

customs during the early nineteenth century are also available. Publius V. Lawson reported that one of the oblong mounds found by Increase Lapham near Theresa in north-eastern Dodge County was entirely covered with recent graves of the Menominee and Winnebago residing in that area and that "The conical mounds so common in our state were frequently selected as burial places by the Winnebago and other Indians (1907:128)."

Lawson also reported a burial in Portage in 1832 of White Pawnee, the son of a Winnebago chief, in a large conical mound and listed some general burial customs of the time: the deceased was wrapped in birch bark or matting and placed in a shallow grave. Personal possessions or symbolic objects were buried with them; women were accompanied by utilitarian items (Lawson, 1907:127)."

Andrew Jackson Turner reported a Winnebago burial which took place at Fort Winnebago in 1830: "His body, according to their custom, having been wrapped in a blanket and placed in a rude coffin along with his gun, tomahawk, pipes and a quantity of tobacco, had been carried to the most elevated point of the hill opposite the fort (1898:85)." Lawson mentioned that in the 1840's, when the Winnebago were living on the Turkey River reservation in Iowa, the graves were dug with an east-west orientation so that the deceased might ". . . look toward the happy land of the west (1907:127)." Whether this was Lawson's interpretation or an Indian practice is not indicated by the text.

An 1817 expedition down the shore of Lake Michigan south of Green Bay reported that ". . . we found the dead body of a man extended on a scaffold, after the manner of the Chippewas (Storrow, 1872:166)." This appears to be at variance with Simon Sherman's description of the death of the Chippewa Wabekenich in 1871: "It appears to have been a custom among the Early Indians that when they became old and feeble and unable to take care of themselves to tie them up to a tree in some secluded spot and let them die (Book 25)." This description by Sherman may represent some social deterioration from earlier times, and be tied to the small band nomadic pattern, since abandonment of the aged does not seem to have been a general practice of Indians in Wisconsin. The Chippewa seem to have practiced both simple interment and scaffold burial, the latter practice being

limited to chiefs and geographical regions where the soil was not of sufficient depth to allow graves to be dug (Kinietz, 1947:146).

Six historic burials were excavated at the site, five of these intrusive into Mound B and one intrusive into Mound A. These burials will be described below in the order that field numbers were assigned to them. Seven burials are actually described; one was examined in the laboratory and found to be non-human, although the cremated remains were so fragmentary that more positive identification of the mammal type

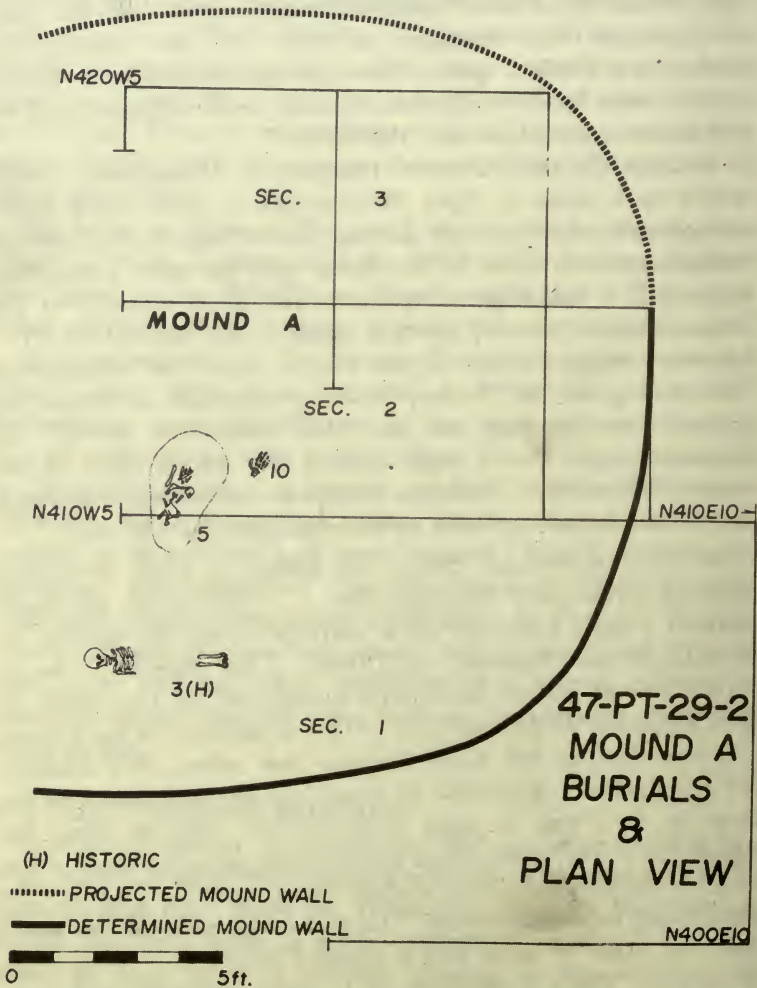
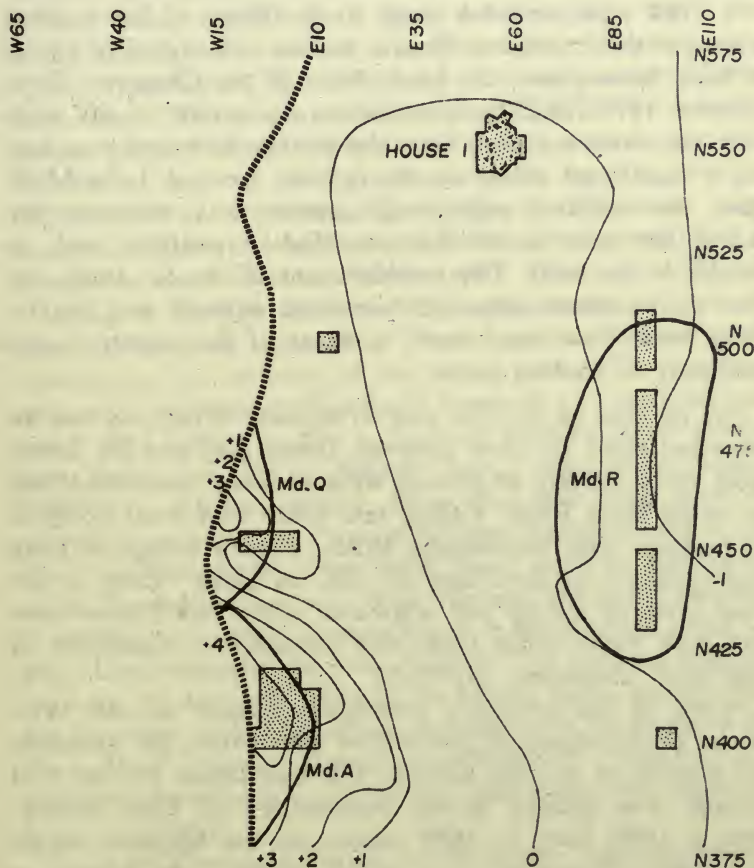


FIGURE 4. Mound A, showing location of Burial 3.

materials were found in various excavation units, mostly north of the N200 line. Generally, areas with historic disturbance were avoided and no attempt was made to collect a full sample of this element.

### EARLY HISTORY

None of the historic artifacts from the site appear to fall into what George I. Quimby designated as the "early period."



### 47-PT-29-2 PLAN VIEW

■ EXCAVATED

0 25ft.

FIGURE 3. Section of northern end of excavation area.

from about 1700 to 1760 (1938:25). Nonetheless, a very brief resume of the European advent in the area may be historically useful.

The first record of a white man in Wisconsin is that of Jean Nicolet in 1634; twenty years were to elapse before others ventured into the area. Most early travels were along the major rivers and with the establishment of the Fox River—portage—Wisconsin River route to the Mississippi, travel through, and interest in, Wisconsin increased.

A 1767 report cited a large Sauk village of hewn plank houses at the location of Prairie du Sac and a smaller village of forty houses near the headwaters of the Chippewa River (Durrie, 1872:225,232). Even before the arrival of the white man, his westward push from the eastern seaboard was having a significant effect on the Indians west of Lake Michigan; the Indians' political geography was seriously disturbed by multi-facted European-Indian conflicts and removals to the west. The establishment of the fur trade created an emphasis upon this economic activity and the Indians tended to concentrate in areas of fur resources and proximity to trading posts.

The portage of the Fox and Wisconsin Rivers became an important point en route between Green Bay and St. Louis; while early settlers in Illinois were pushing northward into the upper Rock River Valley, few white men went north of the portage. The Winnebago White Crow's village at Lake Koshkonong was described in 1830 as being "Built in the usual style of lodges not wigwams, more like houses covered with white cedar bark, and contained a population of 1200 souls (Satterlee, 1879:313)."

Word of the extensive pine-lands farther up the Wisconsin River began to accumulate and excite the commercial aspirations of some settlers. The first timber cut north of Portage was utilized in the construction of Fort Winnebago in 1828; later, in 1839, timber for the Mormon temple at Nauvoo, Illinois, was cut in the "Pinery," as it came to be called, and floated down the river by George Stevens.

The 1830's saw the execution of numerous and sometimes contradictory treaties that paved the way for the removal of Wisconsin tribes to areas west of the Mississippi River. According to a treaty signed at Fort Armstrong on September 15, 1832, the Winnebago ceded all lands to the south and



east of the Wisconsin River; however, instead of moving to their western lands, where the Sioux were perhaps a worse threat than the whites to the east, most of the Winnebago simply moved north of the Wisconsin.

In contrast to what were apparently large, prosperous and sedentary groups of Indians in southern Wisconsin, the lands to the north offered poor environmental opportunities for survival. Henry Gratiot wrote that after the 1834 treaty he conducted the Rock River Winnebago to areas north of the Wisconsin: "They remained there only a few months, being compelled to leave because they could not subsist themselves . . . such was the scarcity of game north of the Wisconsin (1836:215)." In this same report, Lewis Cass added "The country north of the Wisconsin is a sterile, barren region, almost destitute of game and very unfavorable to any of the products raised by the Indians (1836:215)." In 1836 the Winnebago in Wisconsin numbered approximately 4,600 and \$40,000 was appropriated to attempt to move them out of the state (Shattuck, 1904:22).

Living in Portage in 1834, Moses Paquette noted an epidemic of smallpox among the Winnebago in the region; approximately one-quarter of the tribe died. "The medicine men soon abandoned their futile attempts . . . and the survivors fled before it like a herd of stricken deer, leaving their dead and dying behind them, unburied (Harstad, 1960:254)." Moses's father, Peter Paquette, who was employed as a trader at Portage by the American Fur Company, was killed two years later. Since much of the trading in the Portage region was done through the elder Paquette, it would have been instructive to have records from his post. Unfortunately, he was illiterate and we are told that ". . . for the last four years of his life he had a book-keeper, but previous to that he relied completely on his memory and the Indians' honesty (Satterlee, 1879:317)." Whatever records may have been made by his book-keeper are apparently not available.

In 1836, Governor Dodge of Wisconsin recommended to the Federal government that it acquire all of the timber lands in Wisconsin. Thus, on September 3, the United States made a treaty with the Menominees at Cedar Point, Fox River, by which the Indians ceded four tracts of land. The one which interests us ran along the Wisconsin River, for three miles width on either side, from Amable Grignon's mill

on the "Grignon Bend" of the Wisconsin River (near Necedah) north to Wausau, encompassing 184,320 acres of timber land (Shattuck, 1904:15). This, in essence, was the opening of the "Pinery" to commercial exploitation and resulted in the previously mentioned Conat, Stevens, and Harper mills.

In January, 1837, Governor Dodge further proposed the purchase of all Sioux and Chippewa pine lands east of the Mississippi. Consequently, on July 29, 1837, the Chippewas of the Mississippi and Lake Superior region ceded all of their lands in the central Wisconsin area and on September 29 the Sioux yielded all of their lands ". . . east of the Mississippi River and all of their lands in said river (Shattuck, 1904:9)."

In the entire process of treaty-making and removal, no tribe seems to have caused the government more trouble than did the Winnebago. Following the Fort Armstrong treaty of 1832, they made little attempt to move. In a second treaty in 1837, they promised to cede all of their lands east of the Mississippi and to abide by the articles of the earlier agreement (Shattuck, 1904:22). By 1839 they had still made no attempt to move and General Atkinson was ordered to displace them, forcibly if necessary. He subsequently reported that he had conducted approximately 4,500 of the tribe across the Mississippi in 1840. Shattuck commented, "In reality, they were probably only there long enough to collect their annuities (1904:22)" and many began drifting back to campsites in western Wisconsin and along the Wisconsin River shortly thereafter; an additional 300 of the tribe are reported as never having left the state. Some 250 Potawatomi also escaped removal at this time and by 1856 their number is reported as 600 (Shattuck, 1904:19).

In 1846 the Winnebago participated in another treaty giving them a reservation in Minnesota; in addition to the 1300 that moved there, many took advantage of the opportunity to return to Wisconsin by slipping away en route.

The final treaty of importance to land transferral in Wisconsin was enacted on October 18, 1848: the Menominee signed a treaty by which they agreed to "cede, sell, and relinquish to the United States all of their lands in Wisconsin wherever situated (Shattuck, 1904:15)." This treaty was instrumental in opening lands outside of the three mile strip along the Wisconsin for settlement.

Another attempt was also made in 1848 to move some of the Winnebago who were living along the Wisconsin River. A contract for this purpose was let by the government to Mr. Henry M. Rice, who agreed "To supply them with the requisite number and quantity of tents and cooking utensils and with a comfortable outfit, to consist of blankets, shoes and other suitable articles of wearing apparel which they might need for their comfort (Thirty-first Congress, 1850:585)." Moses Paquette, employed by Rice to assist him, noted that "The Indians were quite widely scattered, not in villages but in small encampments of two and three families each. They had no definite abode, but roved about, following the game and pitching their wigwams wherever night overtook them (1892:407)."

The first farm in the Pinery was started in 1847, one-half mile east of Plover, where potatoes were raised. Although this was prior to the treaty of 1848, it was within the three mile strip along the river; another settler attempted farming outside the strip and ". . . before he got his house done the Indians burnt it up (Sherman, Book 27:11)." During the 1830's agreements were made with the Indians to allow individual traders to come into the area. Charles Allen, a half-breed, went to what was to become Stevens Point; Jim Daniels, another half-breed, married an Indian woman and built a log shanty in this same area; he sold out to George Stevens in 1839, when the latter arrived for the first time.

Thus, during the first half of the nineteenth century, the Portage County area north of the portage was apparently sparsely inhabited by small nomadic bands of Indians, who exploited riverine and apparently limited game resources for subsistence. Some were Indians who had escaped all removal attempts; their numbers were gradually swelled by refugees from west of the Mississippi, with Winnebago, Potawatomi, Menominee and Chippewa all being in the area.

## THE ARRIVAL OF THE WHITE MAN

In 1848 Simon A. Sherman arrived in Plover and built the first house upon the former Indian lands (Sherman, Book 5); although a man of limited education, Sherman was to become moderately wealthy and a leading citizen of the community. He described Plover, when he first arrived, as a little village located on a level plain "as far as the eye could see" among burr oak openings.

Sherman noted that the tribes inhabiting the area at the time of his arrival were "The Menomine, Potawatomi, the Winnebago, and the Chipaways," and goes on to write:

At this time the writer S. A. Sherman Settled at Plover and built the first house upon the Indian lands and Settled on the Wisconsin River at the foot of Conat Rapids and the mouth of the Big Plover River where he built a Saw Mill upon the favoured hunting and fishing grounds of the Indians and Wabekenich (A Chipewa) and his family were among the first Indians he became acquainted with they frequently coming here building their wigwams while they remained a few days hunting and fishing. Their wigwams usuly were from 12 to 16 ft. in diameter they are made of small poles one end stuck in the ground and the other the tops fastened together then covered with burch bark or rushes leaving a hole in the center for the Smoke to Escape after remaining a few days they leave for some other location The Squaws doing the packing and the bucks the hunting . . . Their clothing usualy consisted of a pair of Moskins for their feet legins for their leg a brich clout and Blankett for their body they usualy went bare-headed but some times wore a band around their heads with feathers in it. They were a roving class of people and their home was where night over took them (Sherman, Book 5).

Sherman became involved in the lumber business early and continued this endeavor all of his life. In a report on his first trip down the Wisconsin River (1849), he mentioned the site locality for the first time, writing that "On the 21st (of April) we stopped at Yellow Banks (1910:173)." On May 3, 1850 he ". . . ran my lumber down to the Yellow Banks, where my other timber was lying (Sherman, 1910:177)." References to the site locality appeared occasionally in Sherman's diaries up until the end of the nineteenth century, a few of which might be quoted here: "March 23, 1854. Gets my boat and a load of lumber at Yellow Banks;" "March 25, 1854. Goes over to Yellow Banks to get maple sugar;" "March 14, 1855. Goes down to Yellow Banks to see about Booming," a boom being a line or barrier of connected floating timbers used to enclose felled timbers in the water prior to their being floated to the sawmill.

An entry for July 30, 1883 stated that "Rachel (Sherman's wife) and Ritie went Blue-berrying at Yellow Banks." Through the 1860's and 1870's there was a decline in references to Yellow Banks and in some years a complete absence. Apparently the timber had been exhausted there and his diary indicated that much effort was concentrated on timber land up the Big Plover river. However, entries such as that of November 16, 1864, "William Packard gives me leave to cut timber on Conats," indicated that he continued to be active just north of the site, three-quarters of a mile from his home. Sherman's diaries are quite terse and deal almost exclusively with business dealings, land transactions, and events of note transpiring around him. Thus he mentions going to Conat's, the object of his business, without noting Yellow Banks, as there was apparently nothing there to interest him.

In 1850 an order was given to remove some 3,000 reticent Chippewas from Wisconsin. They were quite widely dispersed at this time and a large number were not located (Shattuck: 1904:36). Wabekenich, the previously mentioned Chippewa, and his roving family fit into this category; other Indians apparently lived in the area in relative peace with the whites. Simon Sherman mentioned that "John Dixon, an old Winnebago Indian . . . He and his family worked for me clearing the land from my mill to the railroad in Plover (Book 26)." The whites in the area seemed to be little concerned with or by the Indians and the following article in the Stevens Point Wisconsin Pinery on March 4, 1853 might be taken as representative of the general attitude:

On Saturday last a young Chippewa Indian saw and shot a young bear. Before he had got him scalped, he found himself in the embrace of the old Bruin herself; his gun was empty, his tomahawk fast in the bear's hug under his blanket—his only resource was his knife—The poor fellow survives and it is hoped will recover; he deserves a pension and a knighthood.

One serious problem which handicapped the various roaming Indians in Wisconsin at this time was that legally they did not even exist — according to various official reports, they had all been moved west of the Mississippi River. Consequently, no agencies were maintained for them in Wis-

consin, no schools were established, no homesteads allotted, and in general they were ignored.

Economic activity around Plover centered on the various mills, most of which were family-owned establishments that at most employed three or four additional workmen at some times of year. There was little, if any, opportunity for the Indians to engage in this economic cycle. In addition, local soils were so poor as to generally discourage agriculture by either whites or Indians and the leading volume crop in the area was potatoes. The Indians had little incentive to establish even semi-permanent residences and it seems that the earlier hunting-fishing-gathering pattern continued uninterrupted.

Those Indians who actually stayed on their reservation lands, at least among the Winnebago, apparently fared better materially and acculturated rapidly. On February 27, 1855 they were given a reservation on the Blue Earth River, just south of Mankato in southern Minnesota. We are told that "They settled here in the spring of that year and immediately began the erection of dwellings and improvement of the land. The teacher of the reservation school reported an enrollment of 118 in 1860 (Lawson, 1907:114)."

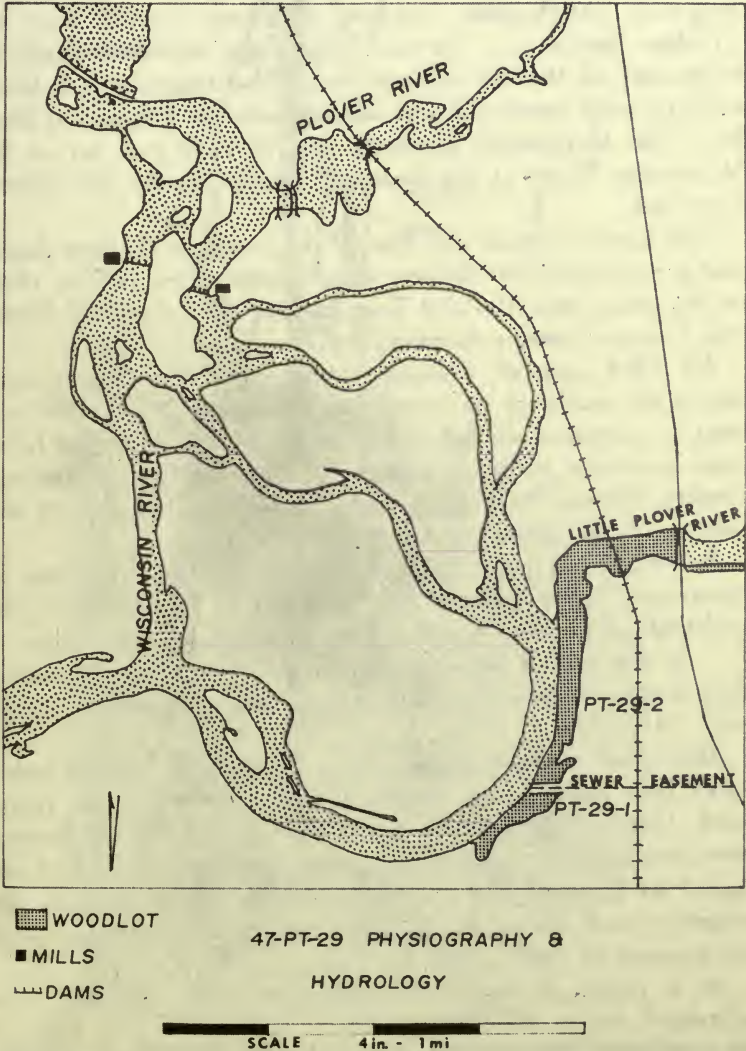
Around Plover, increasing numbers of whites and the decreasing welfare and general destitution of the Indians made conflicts inevitable. Simon Sherman noted in his diary for August 10, 1860 that "Curley Smith's wife comes to have me stay with her on account of the Indian's threatening to kill her." On June 15, 1863 about 1,000 Winnebago and Potawatomi Indians appeared on the outskirts of Stevens Point and caused considerable excitement. After a council, the Indians left without incident; the citizenry formed a military company. The Wisconsin Pinery commented:

The Indians are still in the neighborhood. They are bands of Potawatomi and Winnebago. There are several hundred of them and said to be increasing in number. These are strange Indians and have no legitimate business. They ought to be removed by the government at once to their proper position before collisions take place.

In an attempt to ease such situations, a special Indian agency for the wandering bands in Wisconsin was established in Plover in 1864 and remained in existence until 1869. A xerox page from a National Archives note-book in-

**THE SITE LOCALITY**

The Bigelow Site (47-Pt-29) is located in the W 1/4 of the NE 1/4 of the NE 1/4 of section 21, Township 23 North, Range 8 East, Plover Township, Portage County, Wisconsin. This locality is one-half mile northwest of the town of Plover, on a forty foot bank above the Wisconsin River. The Little Plover River enters the Wisconsin drainage slight-



**FIGURE 1.** Historic artifacts were excavated from the woodlot indicated by "PT-29-2."

ly north of the site area. (Fig. 1)

During the mid-nineteenth century economic development and settlement of Portage County, the emphasis was on lumbering and floating cut timber down the Wisconsin River; hence, early references to the site area are seen from the river level and in those times it was known as "Yellow Banks," referring to the eroded, sandy embankment that marks the western edge of the site. Simon A. Sherman, a long-time (1848-1906) resident of Plover, noted that the "Yellow Banks . . . are forty feet high and are noted for being one of the old ancient Indian battlegrounds, it being covered with many old and ancient mounds (Sherman, Book 9)." The Menominee purchase line of 1836 ran across the Wisconsin River at the head of Yellow Banks and thence eastward.

The Conat Rapids are just to the north of Yellow Banks and it was here that Gilbert Conat built a saw-mill in 1839; in this same year, Jim and Tom Harper built a mill at Plover and George Stevens founded Stevens Point.

An 1874 map of Portage County and the Plover area shows no residence or ownership in section 21; in 1894 the land is recorded as belonging to an H. G. Ingersoll who, from available records, apparently did not live in Portage County. Simon Sherman owned land in both section 16 and section 22, but never owned the area of the site.

Another early geographical reference to the area, that of "Boneyard Eddy" was at first thought to be related to the archaeological site; further investigation revealed that it ". . . is thus called, because when people are drowned above, their bodies usually float into it, and are found there (Sherman, 1910:177)."

Aboriginal mounds at the site are present in both a cultivated field and an uncultivated woodlot bordering the riverbank. One of the mounds in the cultivated field, all having been practically levelled by plowing, was excavated and reported by Bradley Blake (1961); four of the mounds in the woodlot were tested by William M. Hurley and party in the summer of 1965. (Fig. 2)

As a result of the 1965 testing program the site was scheduled for extensive excavation during the first half of the summer of 1966 as a part of the Woodland Culture project under National Science Foundation grant GS-1141. The



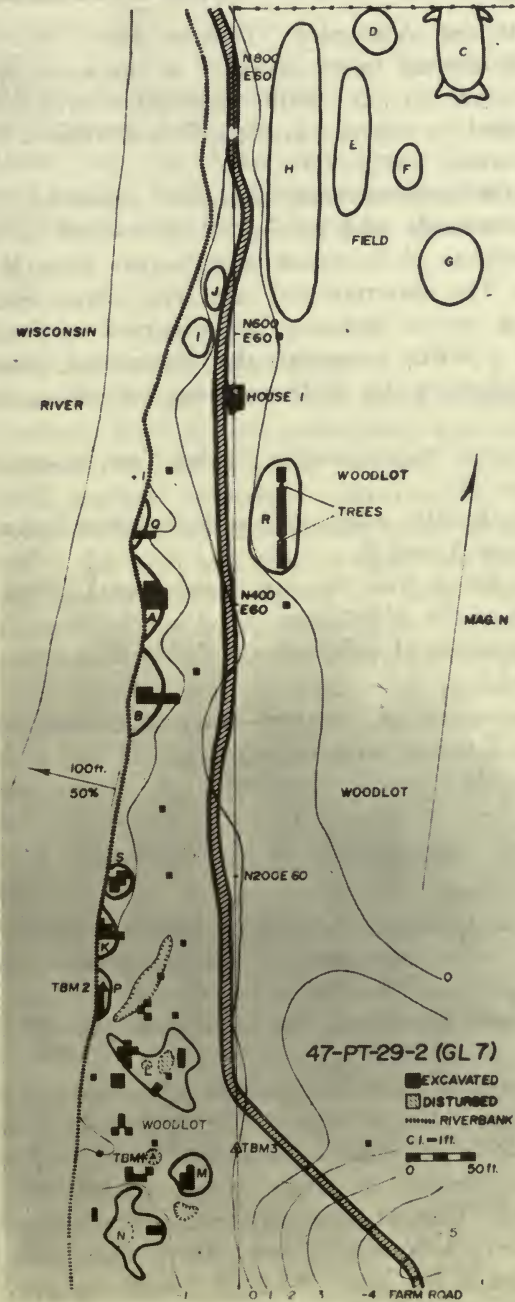


FIGURE 2. Bigelow Site, 47-Pt-29. Historic manifestation was concentrated south of TBM 3 and north of N200E60 (lower center).

site lies within the Wisconsin "Tension zone," the border between the hardwood forest province to the north and the grassland province to the south; excavation was environmentally oriented to recover ecological data related to prehistoric occupation.

In addition to environmental data and extensive cultural remains from mounds and associated aboriginal habitation at the site, artifacts of European manufacture were found in various areas. The materials fall into five categories:

1) Extensive recent dumping has occurred in the sandy area north of a sewer easement; the disturbance caused by this activity delimited the southern limits of testing and excavation;

2) a dump area approximately twenty feet square to the west of Mound N;

3) European articles associated with intrusive Indian burials into Mounds A and B;

4) scattered debris over the site, mostly south of the N100 line and north of the N200 line;

5) a concentration of debris in the N550 E50 area, designated "House 1."

With the exception of one iron knife found imbedded in Level 2 (1.0'-1.3' below surface) in square S60 RO of Mound N during the 1965 testing operation, all historic artifacts from the site were recovered in 1966. These will be summarized in preliminary fashion as 1) Burials, 2) "House 1," and 3) Other:

1) Six historic burials, all American Indian, were found at the site. Five were intrusive into Mound B and one into Mound A, both conical mounds. Historic artifacts were found in association with four of the burials and on the surfaces of the mounds.

2) A concentrated area of debris and post-mold patterns, designated in the field as House 1, was exposed in the area around N550 E50. This debris consisted mostly of quantities of broken historic ceramics, glass, square cut nails, bricks, and other items of nineteenth century manufacture.

3) Small concentrations of historic debris were also noted in other portions of the site. One such place was previously noted near Mound N; another dump area apparently existed around Test Square No. 4 at N350 E30 and around N430 E90 on the southern part of Mound R. Other historic ma-

could not be made.

**Burial 3:**

N405 W5 (3.15' Below Surface)

Sex: undetermined. Age: 6-8

Orientation: East-west, head west, supine

The single historic artifact associated with this burial was an iron, non-French knife found lying on the sternum.

**Burial 4:**

Mound B

N330EO (1.4' - 2.2' B.S.)

Sex: Male. Age: middle-aged adult

Orientation: East-west, head west (skull missing), supine

This extremely dis-articulated interment was found in a rectangular pit seven feet long and two and one-half feet wide. Associated artifacts included: approximately one hundred white seed beads in the feet region; silver beads around the chest and in the hair; one strike-a-light; one gun-flint (striking flint); and forty-three square cut nails. The presence of wood throughout the burial pit and the distribution of the square cut nails around the periphery of the pit, as well as in the fill, suggests that the body was buried in a coffin. Whether sawed or hewn lumber was used cannot be determined from the wood fragments that were recovered.

Another interesting fact about this burial, in light of descriptions of other males, is that there is no evidence of a firearm or accessories having been interred with the body. This may either be due to post-burial disturbance of some of the grave contents, or it may represent an Indian who had been deprived of his weapon during the course of removals to the west. There are historic accounts of the locks being removed from all of the Indians' rifles prior to the journey; without a lock there would seem to be a greatly reduced incentive for keeping the rifle.

Burial 6 is represented by extra thoracic ribs and a right cuneiform that were noted while making the skeletal inventory of Burial 4.

**Burial 7:**

Mound B

N330 W5 and 10 (2.5' B. S.)

Orientation: East-west, head west, supine

Sex: female, age: adult

This individual was articulated and extended in a pit ap-

proximately six and one-half feet long and two and one-half feet wide. A board was found to run the length of the vertebral column and fragments of birch bark were found in the burial pit. The presence of birch bark, as well as the small number of square cut nails (fifteen) suggests that this individual was interred in some type of wrapping, with the nails perhaps as fasteners, rather than in any type of coffin. Approximately five hundred white seed beads, apparently from leggings, were recovered, plus silver beads near the feet; one metal sheath knife in a sewn birch bark sheath; one complete "TD" style white kaolin pipe; one pipe-stem fragment; one glass mirror; five metal buttons from a wool coat; one



**FIGURE 5.** Historic artifacts recovered in association with Burial 7: A) Knife; B) Three-tined fork; C) Sewn birch-bark knife sheath; D) "TD" style clay pipe; E) Gunflint from wool pouch (F); F) Wool pouch (containing one strike-a-light); G) Mirror.



**FIGURE 6. Burial 7. Some of the artifacts illustrated in Figure 5 can be seen IN SITU in the pelvic region.**

three-tined fork with an antler handle; and a woven wool pouch which contained one strike-a-light, one gunflint (striking flint), red ochre, and cowrie shells. One mini-ball was recovered from the fill of the grave. The sheathed knife, mirror fork, pipe, and pouch were all in the pelvic region, which was encased in an acetone-alvar solution and brought into the laboratory for dissection. (Fig. 5, 6, 7)



**FIGURE 7.** Close-up of pelvic region of Burial 7. Fork, knife, pipe, birch-bark sheath, and metal buttons are visible IN SITU.

Burial 9:  
Mound B  
N330 W10

## Cremation

This burial was located adjacent to the north shoulder of Burial 7. It is a non-human mammal, but further identification could not be made with certainty because of the extreme fragmentation of the remains.

**Burial 11:**

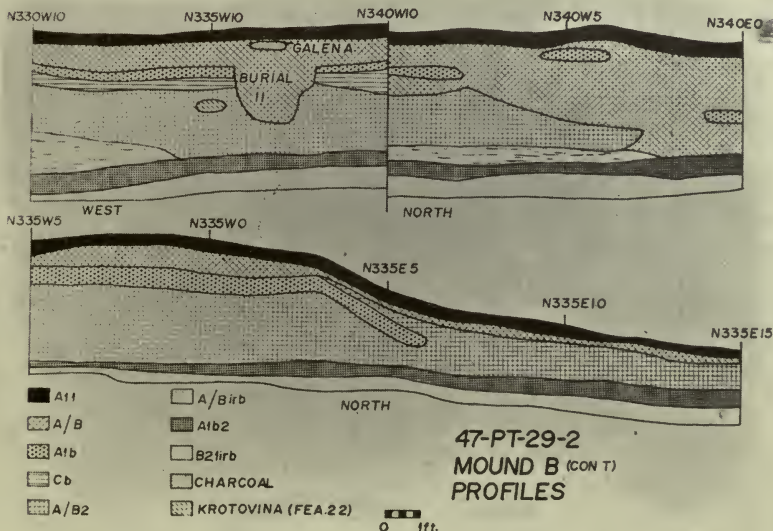
## Mound B

N335 W10 (1.3' - 3.7' B. S.)

Orientation: East-west, head west, supine

Sex: female. Age: 8-10

The left side of this skeleton was articulated and extended, while portions of the right side were missing. Approximately two hundred and fifty white seed beads were found in the leg area; small silver brooches were found on the sternum and also attached to a piece of cloth. This piece of cloth also held a large silver brooch with the touch-mark "JO" in Roman capital letters, enclosed in a square cartouche. A strike-a-light with preserved fabric adhering to it and one gunflint (striking flint) were also found. No evidence of a coffin or other type of interment container was found and no square cut nails were present. Slightly above the head of the burial, two cubes of galena were found in what was



**FIGURE 8.** Profile of Mound B showing stratigraphic location of Burial 11 and position of apparent ceremonial fire containing two cubes of galena (Fig. 10-I).

apparently an associated ceremonial fire. (Fig. 8)

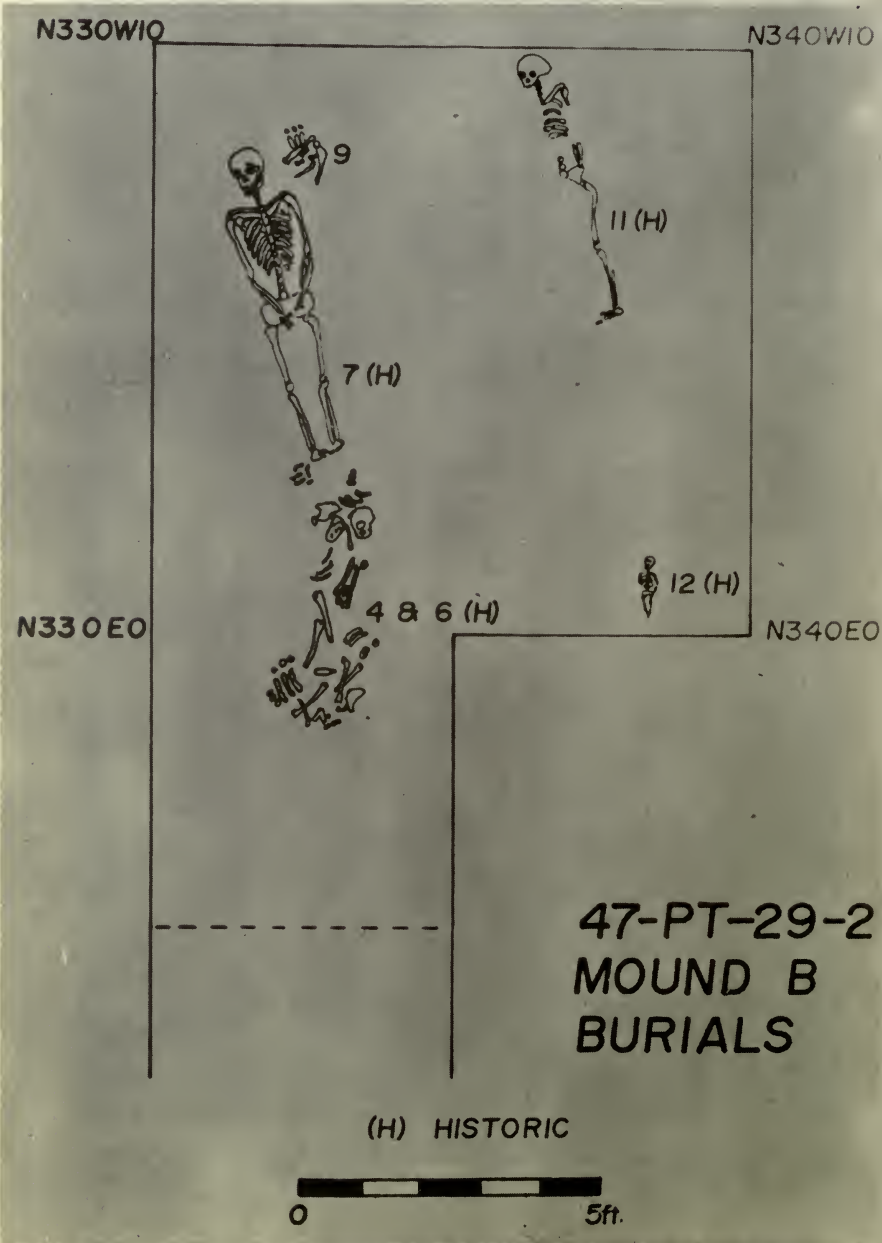
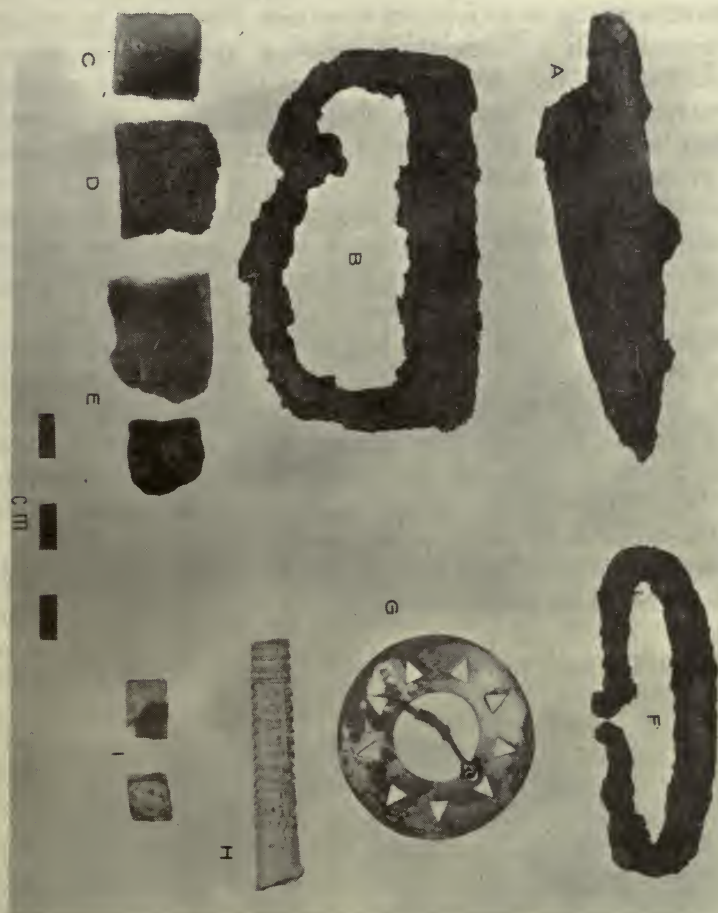


FIGURE 9. Mound B, location of historic burials in plan view.





**FIGURE 10. Historic artifacts.** A) knife found on sternum of Burial 3; B) Strike-a-light, Burial 11; C) Gunflint, Burial 4; D) Gunflint, Burial 11; E) Gunflint, Burial 11; F) Strike-a-light, Burial 11; G) Silver brooch, Burial 4; H) Peter Dorni style pipe stem, House 1 (plowed zone); I) Galena cubes, apparent ceremonial fire at head of Burial 11.

**Burial 12:**

Mound B

N355 W5 (.9' - 1.1' B. S.)

Infant

(Fig. 9) (Fig. 10)

These remains were not initially recognized as being human, but were subsequently identified as a result of laboratory

examination. No artifacts were associated.

Perhaps the most immediate questions that might be asked of these burials concern their temporal and cultural placement. There is the obvious possibility for them to represent a wide time range and, according to the previously quoted historic sources, to be Winnebago, Potawatomi, or Menominee in cultural affiliation.

**Burial 12** had no associated historic artifacts and its designation as an historic interment is based solely, but rather firmly, on the loose, friable soil matrix surrounding it, similar to the other historic burials.

None of the burials at the site contained items defined as being characteristic of the early period (1700-1760): Jesuit rings, brass rings set with glass, iron caltrops, Jesuit metals, Jesuit crosses and crucifixes, French-made iron knives, lead seals, polished stone Micmac pipes made with iron tools, copper and brass projectile points, blown glass bottles, shell runtees, stone molds, and brass bracelets (Quimby, 1938:25). The iron knife associated with Burial 3 can only be identified as non-French, probably dating to the early nineteenth century.

George Quimby described certain European trade goods as



**FIGURE 11.** Close-up of "JO" touch-mark on Silver Brooch, Burial 4 (Figure 10-G).

being characteristic of the late period (1760-1825), especially a variety of silver ornaments and types of brooches: "The great majority of these silver ornaments, identified by means of their touch-marks, were made by Montreal silversmiths between 1770 and 1825 (Quimby, 1938:25)."

Chronologically, Burial 11 may be the oldest interment of historic date at the site. The "JO" touch-mark on the silver brooch is that of John Oakes of Montreal, a silversmith during the late eighteenth and early nineteenth century. (Fig. 11) Oakes was an associate of Charles Arnoldi, whose work is represented in a burial from Michigan reported by Robert C. Alberts (1951:117) and placed at post-1780, with a more concrete date not suggested. In an illustration of the materials from the burial, Alberts showed a strike-a-light that is almost exactly like the one from Burial 11, differing from others at this site in being slightly larger and having a broad back.

In comparison with Burials 4, 6, and 7, another chronological consideration may be the lack of square cut nails in Burial 11. This could be attributed to: 1) a simple lack of possession of nails at the time of interment; 2) a type of interment in which nails were not used; and 3) interment prior to the time that square cut nails were available in the area. The square nail was brought into production around 1800 (Mercer, 1951:238), but was most likely not widely available (or needed) in most of western Wisconsin until the building of Fort Winnebago and the development of the first mills along the Wisconsin River, roughly from 1828 on. On the basis of this limited information, the placement of the time of this interment between 1790 and 1830 would seem reasonable.

The birch bark sheath in Burial 7 contained a knife of a type similar to those illustrated by Alberts for the previously mentioned burial in Michigan. The "TD" clay pipe does not provide as firm a temporal limitation as some other clay pipe style. H. Geiger Omwake, a leading authority on historic clay pipes, has found that this marking was used by different pipe-makers, including Thomas Dean of Bristol, Thomas Darkes of Broseley, and Thomas Dormer of London. The marking was adopted by others and continued in use after the death of these men. Pipes with "TD" initials are found from sites occupied from 1700 to the middle of the nineteenth century (Peterson, 1963:3). (Fig. 12)



**FIGURE 12.** "TD" marking of the variety found on clay pipe in association with Burial 7 (Fig. 5-D). (Courtesy, Mackinac Island State Park Commission).

Many of the "TD" varieties, of which Peterson counted at least fifteen, are easily distinguishable from others. A "TD" marking matching that of the Burial 7 pipe was illustrated by Peterson, although he gives no date other than ". . . the early 19th century." The metal buttons are of a manufacturing style dateable to 1812-1820 (Olson, 1963:553) and the cloth to which they were attached, as well as the belt around the waist, is wool. The presence of square cut nails in association with a bark wrapping may be transitional between the old style of wrapping and the use of coffins; at any rate, the nails seem to have been available at the time of interment. The uniform size of the nails suggests that they were obtained as a lot, rather than a variety of sizes that might have been present if they had been more casually acquired. The material culture inventory from the grave indicates substantial acculturation and the individual may have been involved in some of the early removal attempts and associated distribution of goods. A range of interment for this burial is suggested as from 1812 to 1840, with a weighting toward the latter.

Although white seed beads, a strike-a-light, and a flint were found in Burial 4, the grave had apparently been disturbed and other, more diagnostic artifacts may have been

looted, or never been present. The use of a coffin and the large number of square nails suggests a relatively late time placement for this grave; a range from 1840-1848 seems probable.

The latter date of 1848 for Burial 4 is also considered as the maximum terminal date for all of the burials at the site. This opinion is based partially on Simon Sherman's diaries; at one point (Book 30) he wrote: "Mr. Joseph Hodgeson died. I cut road to cemetary and Sunday (November 19, 1854) . . . He was the first one buried in a cemetry in the Pinery or upon the Wisconsin River." Extensive reading in the diaries suggests to this writer that had Sherman known of Indian burials along the river, he undoubtedly would have mentioned them at this point. More importantly, none of the graves contained artifacts post-1850 in manufacture; all suggest an earlier period.

Burials 7, 11, and 12 are well separated from each other spacially, and may have been buried within a few years of each other while the positions of the other bodies were either visible or known. The southern end of the pit containing Burial 7 and the northern end of the pit containing Burial 4 and 6 almost overlap and the location of Burial 7 may not have been apparent when the others were interred.

The age-sex distribution of the burials, one adult male, one adult female, two juveniles, and one infant certainly suggests the possibility that a family unit is represented, despite the locational aspects of Burials 4, 6, and 7. The ranges suggested for the individual interments do not rule this out and the temporal separation related to the use of nails is merely a suggestion; many other factors could have resulted in a difference in the burial practices. However, other historic burials which were not located during the excavation may have been present and this would change the appearance of the distribution. While there is no firm evidence for a particular interpretation, it is felt that some temporal separation occurred between the different burials.

Both Burials 4 and 11 show missing and disturbed skeletal elements that may be the result of post-burial molestation. The examination of another historically recorded event may shed some light on this, and suggests that burial customs as practiced by the Indians were not directly responsible.

In July 7, 1871, two Norwegian settlers found Wabekenich,

the Chippewa, dead near a spring at Pike Lake and reported this to Dewitt Brown, a white man and friend of the Indian's. Brown gave two Potaunie (Winnebago) Indians a quart of whiskey to go and bury him (Sherman, Book 25). What interest two Winnebago may have had in burying a dead Chippewa, especially after presumably dividing the quart of whiskey, might be open to question — at any rate, no report of what type of burial took place was recorded.

On April 29, 1876, Simon Sherman and his son Eugene had been driving logs over the Cedar Rapids on the Big Plover River; they moved their camp from what Sherman called the "Indian camp-grounds" to the foot of the rapids, where the son set up camp in a hollow beside a small knoll. Sitting down on the knoll he encountered a sharp object and discovered some bones. Thinking it to be the remains of an animal, he threw many of the bones in the river, until he discovered an old coat with buttons on it. Based on what Dewitt Brown told him, the elder Sherman assumed that this was Wabekenich's grave and he and the boy covered it again. While it is somewhat questionable that the two Winnebago ever buried the body in the first place, it is more certain that in five years insufficient decomposition would have occurred to allow the bones to be gathered up and thrown in the river.

Sherman mentioned that find to acquaintances and Albert Bentley, another white friend of Wabekenich's, told him that a Dr. Macholic (presumably from Stevens Point) was offering five hundred dollars for the skull from the grave and that Herman Webster was going up to get it. Bentley got there before Webster and gave the skull to the doctor; mention was also made by Bentley of getting a second skull for the doctor (Sherman, Book 25).

It is almost certain that neither skull was taken from the remains of Wabekenich, and I should hasten to add that I am not suggesting that either was taken from skullless Burial 4 in Mound B.

However, since the treaty of September 3, 1836, this area has been legally open to the white man; Yellow Banks was a stretch of calm water just south of the treacherous Conat Rapids and probably was visited occasionally as a resting spot. Normal curiosity, such as that described by Alberts in which the burial was discovered by a passer-by jerking on the muzzle of an old rifle protruding from the mound (Al-

berts, 1951:118); active vandalism, and an occasional Dr. Macholic offering considerable sums of money (a river pilot in charge of taking a whole fleet of lumber cribs down the length of the Wisconsin to the Mississippi received only \$90 for the whole trip and could manage only two trips per year) for skeletal pieces would contribute to non-aboriginal destruction of the graves. While there is certainly no concrete evidence that such activities were carried out at Yellow Banks, it is a likely possibility.

One other factor might be commented on: While all of the historic burials at the site conform to the east-west orientation described at the Winnebago Turkey River reservation, this alone is definitely insufficient to label the burials as being Winnebago. In many ways, the position of the burials at the site can be demonstrated as being controlled by the topography: an approach from the west is prevented by the river bank, which has eroded the edges of the mounds; approach from the north and south is limited by other mounds; the natural approach is from the level ground to the east. While it may also have conformed to a cultural preference, digging into the mounds from the east side into the slope and toward the west is also the most efficient way to put in a trench (as the archaeologists demonstrated).

It might be asked "Why did the Potawatomi, Winnebago, and Menominee choose to bury some of their dead in mounds?" The description by Publius V. Lawson of White Pawnee being buried on the highest point of the hill opposite Fort Winnebago seems to denote an aspiration to burial in high or elevated places, an aspiration that would be at least symbolically fulfilled in the surface of a mound. However, this would appear to be quite different from the position of burials in sub-surface pits, a general trait from earlier Effigy Mound times. From available data it is impossible to say what part, if any, of the practice of burial in mounds is a continuation of prehistoric practices or what part may be a later, independent religious development. More simply, the question of whether or not all, some, or any of the historic Indians practicing burial in mounds were descended from the prehistoric mound builders cannot even be approached from these data.

## HOUSE 1 AREA

The largest concentration of historic artifacts recovered

from the site was in a locality designated as House 1, in the area around N550 E50. This area has been plowed to a depth of eight-tenths of one foot below surface, as has all of the site area east of the E30 line. The area was excavated in arbitrary levels of Surface - .3'; .3' - 6'; and .6' to .8'. The cultural material recovered was extremely mixed, with square cut nails, grit-tempered cord-marked body sherds, portions of a plastic comb, and quartzite flakes being found throughout the deposit. Consequently, artifacts can be grouped into contemporary associations only along gross and sometimes questionable lines. On the surface of the .8' level, at the base of the plowed zone, eighteen post-molds were defined and mapped.

In my field notes from June 27, 1966 I noted "We now have a series of large posts on the interior, with a secondary row of smaller posts on the outside. Tomorrow we will photograph the house and excavate the posts . . ." Subsequent evaluation of the excavation reports raises considerable doubt that what we had defined was a structure of any kind. Post-molds No. 8 (.6' diameter), No. 12 (.4'), and No. 14 (.8') were not pedologically differentiated from the soil that surrounded them, were undefinable below the surface, and showed no evidence of wood, charcoal or other material; it is definitely questionable that these were post-molds. Post-mold No. 9 (.6') fits into this same category, except for the presence of some charcoal flecking.

Post-molds No. 6 (.4'), No. 11 (.4') and No. 13 (.4') were described as being areas with dark surfaces that diffused horizontally and contained no evidence of wood or charcoal. These may have been due to natural staining in the soil.

Hole No. 2 (1.0') is also described as spreading horizontally, but did contain "much charcoal." Hole No. 3 (.6') had lithic flakes, charcoal, three grit-tempered cord-marked body sherds and three charred mammal bones, but did not extend substantially below the .8' level; Hole No. 4 (.8') was a shallow basin shape and contained "little charcoal . . . lithic flakes, grit-tempered cord-marked pottery, one quartz scraper, and fifty charred mammal bones; Hole No. 5 (1.2') was described as "Shallow, pit-like, no charcoal, lithic flakes" and contained three charred mammal bones; Hole No. 6 (1.2') contained one grit-tempered cord-marked body sherd, charcoal, and fifty charred mammal bones. Hole No.



1 (.8') was described as "Well defined, charcoal bits throughout, several body sherds, numerous quartz flakes," and contained six charred mammal bones; Post-mold No. 7 (.8') was "Dark black in color: some charcoal, few tiny flakes" and Hole No. 18 (1.0') contained half-burnt flakes of wood. (Fig. 13)

It is possible that some or all of the pits in the preceding group may be due to aboriginal habitation at the site. There are no excavation records for Post-molds No. 15 and No. 17, both .6' in diameter. Bones representing the presence of pig.

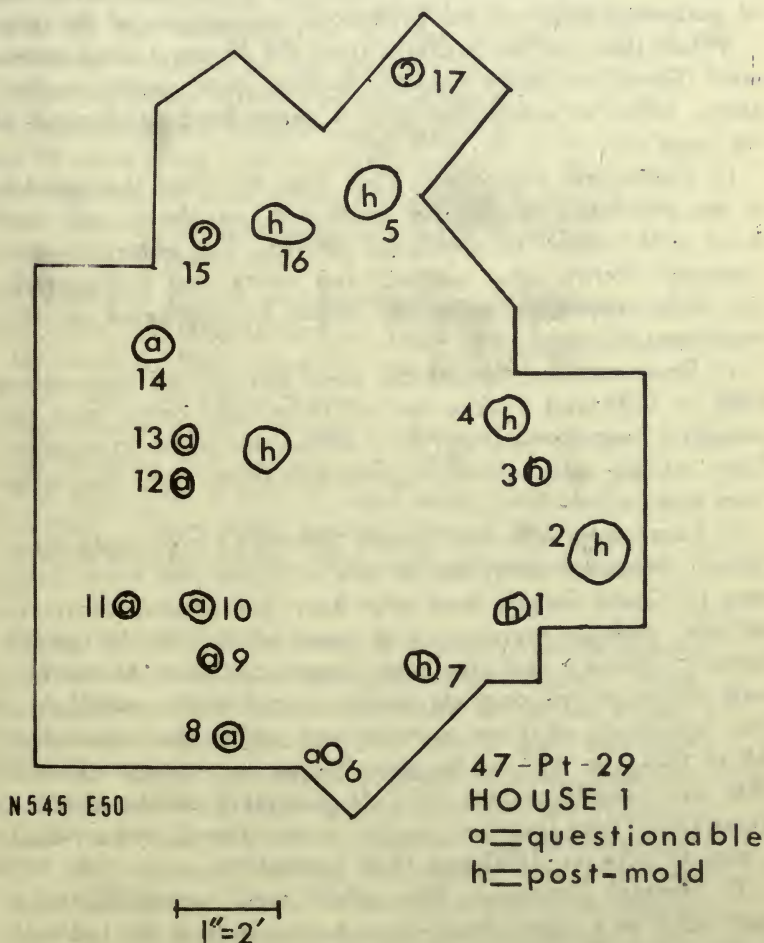


FIGURE 13. Excavated portion of the House 1 area.

birds, marmot, deer, and other unidentified mammals were recovered from the plowed zone over this area (Lippold, personal communication).

This area is somewhat difficult to interpret since it gives a distorted view of the distribution of historic materials at the site. Test Square No. 4 (N350 E30, 0. to 1.8' B.S.); T.S. No. 9 (W400 E95, 0. to 1.0' B.S.); and T.S. No. 10 (N500 E10, 0. to .9' B.S.) yielded historic artifacts throughout the depths noted. These areas were not expanded and in fact were purposely avoided since, after excavating the House 1 area, it became evident that continued attention to historic materials would seriously interfere with the primary objective of gathering data on the prehistoric occupation of the site.

What, then, do the artifacts from the House 1 area represent? There are many possible factors, none totally explanatory, which in summation give a generalized description of the area:

1) Prehistoric habitation: This area is, when the mounds in the cultivated field to the north are considered, still very much in the center of aboriginal activity. The numerous grit-tempered sherds, lithic artifacts and waste, and pits containing these aboriginal materials might be attributed to this manifestation.

2) Proto-historic: Square cut nails were in use from about 1800 to 1890 and a very few of these may come from the period(s) represented by the various intrusive interments. Some of the pits containing mammal bone may also come from this period.

3) Lumbering activities: Simon Sherman's previously mentioned "booming" activities in this area and the site's closeness to Conat Rapids may also have contributed debris to the site, perhaps represented in some of the broken glazed historic ceramics and clay pipe fragments. Most of the historic ceramics are coarsely made, glazed ware, although a few fragments of finer manufacture were also recovered. All of these, as well as the pipe fragments that are identifiable, are datable to post-1850. H. Geiger Omwake dated a Peter Dorni pipe fragment similar to that found in the House 1 area to between 1850 and 1875 (1965:136).

4) General Dumping: This whole area appears to have been used as a dump from time to time during the last one hundred and ten years with only the area between NO and N200 being free from considerable amounts of debris. The

brick in the House 1 area was almost certainly dumped there. Samples of the brick were submitted to Mr. Raymond Ronk of the Gagnon Clay Products Company in Green Bay and he provided me with the following report:

It is the firm belief of this writer that this brick was made on the north outskirts of Stevens Point in the late 1800's. I do not know the decade but it is believed to be between 1860 and 1895. Recognition is based on color and composition. The pinky brown color is peculiar to that area caused by its composition. Stevens Point is a portion of the State of Wisconsin where exposed Pre-Cambrian clays are in abundance. This is primary or residual clay formed by the decomposition of rock as the result of weathering, hastened by the presence of water freezing and thawing along with the action of the sun. So in that river bank area, we usually had a layer of sand, then a layer of sand stone and clay underneath. All three got mixed together to form a clay suitable for making brick in that period. Manufacturing has been discontinued in that area many years ago.

The Wisconsin Pinery was examined in an attempt to determine when the manufacture of brick was begun in the area described by Mr. Ronk. In an editorial comment on March 17, 1864, the editor wrote:

Stevens Point is a city! At least we have a charter and a city government. But, are we a city in fact? — Can there be, was there ever a city of wood alone; without Brick and mortar? — there might be one of stone. But we have as yet only wooden houses, that might all disappear in a night.

On August 24, 1867 an advertisement was run in the Pinery for the first time by Edward Langenberg proclaiming "Brick for sale on Wausau road, three miles north of Stevens Point;" it seems that the bricks at the site must date to after this time.

Additional evidence for dumping seems to come from examining the numerous glass fragments found in the House 1 area. Twenty-one of the seven hundred and seventy-four fragments show signs of having been melted under intense heat, but no glass was found in any of the pits containing charcoal. Any fire at the site, such as Simon Sherman's occasional mention that large sections of the woods and the land were on fire, would have produced general instead of

limited melting. The square cut nails may be, as previously mentioned, in small part due to pre-1850 historic Indians, but most likely are either remnants of some of Sherman's activities or are from dumping in the area, perhaps in association with the glass and brick materials.

The House 1 area was expanded because of the suspected habitation in that location, not for the purpose of recovering historic artifacts. It is suspected that if other Test Squares revealing historic materials would have been expanded in a similar manner, and additional testing conducted for the purpose of locating historic areas, additional concentrations would have been found.

The same general temporal distribution used to describe the House 1 materials might be used for other historic items encountered throughout the site. These too are mostly representative of their chance congruence with the prehistoric materials and do not represent an studied distribution. The earring found on the surface of Mound A and the small silver brooch from the surface of Mound R may well be roughly contemporary with any of the interments; these or some later articles may be from subsequent roving bands of Indians, but there is no context from which to judge this; the ceramics are all post-1850 and the Fitch hair tonic bottle and aluminum milk cap fragments from Mound N represent recent additions; numerous cartridge casings are dateable to the late nineteenth and twentieth centuries, while the mini-ball from the surface level of Mound A is probably somewhat earlier.

One class of artifacts which has not been discussed as yet, due to its absence from any firm cultural context, is the numerous fragments of what were initially identified as "worked glass." Although the use of broken glass as implements, by Indians or white men, is an obvious possibility, examination of piles of such material suggests that this classification should be used with caution. Not easily dismissed is a piece of glass recovered from the surface level (0. - .2') B. S.) of Square S25 E25 in Mound M which possesses all the attributes of, and is for all appearances, a burin. It is in association with no other historic (or prehistoric) materials and is an enigmatic foot-note to the list of historic artifacts.

Approximate date of manufacture can be assigned to many of the scattered historic artifacts, but as they are without significant stratigraphic or cultural association they would add little more than increasing the general impression that

the area has been in use as a dump for over a century.

## SUMMARY

The historic Indian materials reported in this paper are not the result of permanent or continuous habitation; consequently the content and distribution of artifacts common to residential locations are not part of the analysis. Many of the artifacts were deposited at the site by nineteenth century Europeans and have no relationship with the Indian materials. Except for perhaps a half dozen articles, the excavated historic Indian manifestation is limited to the burials found in Mound A and Mound B; other such burials may have been present, but the task of removing as much as one and one-half feet of sand overburden that buried many of the mounds would have been too time consuming. Some of the burials appear to be from the early nineteenth century, prior to the period of Indian removals from the state, while others date from removal times.

The broader area of the site locality was a refuge for Indians fleeing from removal and for those escaping and coming back from west of the Mississippi River. Documentary sources indicate that members of four different tribes were in the area and direct association of any of the burials with a single group is not reliable.

Historic reports described southern and eastern Wisconsin as prosperous areas with large villages, in contrast with the accounts of more unfavorable environmental conditions on the east bank of the Wisconsin River in the Stevens Point area. The situation here would not allow the Indians to settle into semi-permanent or permanent residences and they seem to have practiced a shifting, hunting, fishing, and gathering subsistence pattern.

This nomadic pattern seems to be confirmed by the temporal spacing of the interments in Mounds A and B and the absence, in areas we excavated, of data suggesting more extensive utilization of the site. This subsistence pattern was in practice when Simon A. Sherman arrived in 1848 and continued until the 1870's, when a combination of growing density of white settlers and the establishment of homesteads in adjoining counties brought an end to its viability.

The continuation of the pattern in this area was due to two basic factors 1) legal and 2) economic. As a result of the different treaties and removals, the Indians in Wisconsin

had no legal rights there and, conversely, the government had no responsibility for them. Schools, agencies, and other usual modes of acculturative influence were not introduced. The economic regime of the region was such that the Indians could not participate; there was no incentive to settle down for farming or to take jobs in the lumber industry.

While the people apparently acquired material goods as a result of varied contacts with white men, their economic and social patterns changed very little. Although the Indians who lived in the area were evidently tolerated and even "liked" by the whites, for the most part they stayed in the forests and received few influential contacts. This was a relatively local adaptation to a particular economic, legal, and environmental circumstances and should not be used freely to explain other areas. The concentration of the area on a lumber-centered economy also meant that there was little pushing by the whites to get the Indians off of what was poor farm land. In the early days, it was economical only to cut the timber close to the river, and this left a fair amount of space for the Indians to roam in and be relatively unmolested. The example of one thousand Indians appearing on the edge of Stevens Point, much to the surprise of everyone, shows the differences between the Indians' cultural pattern and the white man's pattern at this time; it was not one of substantial interaction.

For prehistoric materials, we tend to call concentrations of refuse by such terms as "middens," "refuse pits," etc. For historic areas we often use the more current term "junk." At the Bigelow site, this "junk" would have been very beneficial to the interpretation of the historic Indian utilization of the area, had it been associated with this element. However, with very few non-contextual exceptions, the European debris at the site is **post-1850** in manufacture and mostly represents the use of the area as a local dump for the past century. Should areas along the sewer easement be excavated in the distant future, areas of debris characteristic of a 1966 archaeological field party will be recovered.

There is little knowledge of the nomadic pattern and its antiquity in the area prior to Simon Sherman's time, but the practice of occasional coming and going suggests one word of caution for the interpretation of prehistoric remains at sites such as this one. The pits described in the House 1 area are

possibly assignable to three different sources: 1) prehistoric Indians; 2) historic Indians; or 3) pioneer white settlers. At such a site, where the evidence for re-use of the area is strong, excavated pits without radiocarbon dates, definitive artifacts, or stratigraphically secure positions, may be inaccurately lumped together and give a false impression of the subsistence patterns of the main aboriginal occupation, in this case associated with Effigy Mound construction.

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BOOKS RECEIVED

NOMADS OF THE LONG BOW by Allan R. Holmberg. American Museum Science Books, Doubleday & Co., N.Y., 1969. Price: \$1.95

OKLAHOMA ARCHAEOLOGY. AN ANNOTATED BIBLIOGRAPHY by Robert E. Bell. University of Oklahoma Press, Norman, 1969. Price: Cloth, \$6.15; Paper, \$2.15

NEW DIRECTIONS IN BIBLICAL ARCHAEOLOGY. Editors: David Noel Freedman and Jonas C. Greenfield. Doubleday & Co., N.Y., 1969. Price: \$6.95



## THE BOOKSHELF

Ohio Hopewell Ceramics: An Analysis of the Extant Collections by Olaf H. Prufer. *Museum of Anthropology, University of Michigan Anthropological Papers No. 33.* (156 pages, 29 figures, 46 plates). Ann Arbor, Michigan. 1968. Price: \$3.00.

Despite the fact that the spectacularly rich Hopewell burial mounds of southern Ohio have yielded their artifactual treasures to archaeologists for over one hundred years, our knowledge today of this prehistoric culture is spotty and uneven. In the opening words of the author of the monograph under review, "One of the least known aspects of the Hopewellian Phase in Ohio is the nature of the ceramics associated with Hopewellian sites." Such a state of affairs has been particularly perplexing to archaeologists specializing in the Eastern Woodlands because ceramics, probably more than any other class of artifacts, have been pivotal in helping us to understand something of the culture history and cultural processes in the later periods of the prehistoric East. The monograph under review goes far towards alleviating this situation.

Prior to this report, only two descriptions of Ohio Hopewell pottery were to be found in the literature. The first was a preliminary report by J. B. Griffin of his studies of the ceramics that had found their way into museum collections after the early twentieth century excavations of the Tremper, Mound City, Turner, Harness, Seip, and Hopewell mounds. This brief (four page) report, which appeared in Webb and Snow's *The Adena People* (1945), defined no types and contained no photographs, drawings, or sherd frequencies; percentages of each of the six samples were recorded for temper and surface finish. The second report, by Prufer along with Douglas H. McKenzie, described the ceramics from the McGraw village site (1965). Here for the first time Ohio Hopewell ceramic types were formally defined (lumped into three series, Scioto, Hopewell, and Southeastern) with frequencies, metric data, rim profiles, photographs,

etc., all included. Prufer's latest effort represents a continuation and expansion of the McGraw study.

The subtitle of **Ohio Hopewell Ceramics** would more truly reflect the emphasis of the monograph if it were "A Description of the Extant Collections". For, indeed, the report is almost totally a description of the ceramic contents of nearly all excavated Ohio Hopewell sites whose ceramics find repose on museum shelves, particularly those of the Ohio State Museum and Harvard's Peabody Museum.

The core of the report is Chapter IV. It is entitled simply "Sites" and takes up 132 of the report's 156 pages. This chapter is a site-by-site description of the ceramics from thirteen Ohio Hopewell sites; only the McGraw site and the recently excavated material from Brown's Bottom, Mound City, and Esch are excluded. Thus, with these exceptions, "The present analysis covers all available ceramics from Ohio Hopewell sites . . ." (p. 2).

The same basic pattern is followed in describing the ceramics of each site. Discussion opens with a brief description of the site, of the excavations there, and of the nature (provenience, representativeness, and even museum catalog number) of the ceramic sample being studied. Next comes the section heading "Analysis", under which the raw descriptive data (e.g., series, types, rim vs. body sherds, temper, measurements, etc.) are recorded for each major provenience unit at the site. Finally, under the sub-head of "Comments", some summary and/or comparative comments are presented. The monograph concludes with a six page "Discussion" (Chapter V) that is devoted totally to the chronological implications of the study. A notable omission here is the failure to examine the data in light of the possibility that some of the site-to-site ceramic variability might be attributable to spatial or functional as opposed to temporal differences.

Two additional features of the monograph make for difficult reading. At least they did for this reviewer. The core of the report, as noted above, is an enumeration of the ceramic contents of thirteen sites, but the format selected for the presentation of these data forces the reader to work unduly hard for his reward. Rather than presenting the numerical data in columns and rows in tabular fashion (note that there are no numbered tables in the report), under each site is a listing of sherd frequencies by series and then by type in

such a way that words and numbers are juxtaposed. Thus, while the raw data are there, because of the manner of their presentation it was difficult, at least for me, to get an overall impression of the ceramic assemblages of the sites of the sort that one can gain by glancing over a table with clear-cut columns and rows. Finally, the inclusion of a map showing the location of the thirteen sites under discussion would have been a most welcome addition to the report.

Prufer has attempted the arduous and unglamorous task of making available to the scientific public a description of long-neglected data gathered by other scholars. Because of the inherent limitations of these data (How many sherds were discarded or missed by the early excavators? How many sherds have been given away or lost from the original collections?), the conclusions drawn from them were necessarily also limited. Nevertheless, the author merits our gratitude for providing the first really substantive description of Ohio Hopewell ceramics.

The general reader of *The Wisconsin Archeologist* will probably find this monograph, with its narrow focus, of limited interest. Because it assumes a rather detailed knowledge of Ohio archaeology, because it is not an entirely self-contained study of Ohio Hopewell ceramics (Descriptions of most of the ceramic types are to be found in the McGraw site report and are not duplicated in this report.), and because it is solely concerned with Ohio pottery, its appeal is clearly to a limited audience. In short, this is not bedtime reading, but as a reference work for people seriously interested in Eastern archaeology, it is a most valuable and welcome addition to the literature.

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THE HISTORY OF THE INCAS by Alfred Metraux, translated from the French by George Ordish. Pantheon Books, New York, 1969. 205 pp., Bibliography, Chronology, Illustrations. \$5.95.

In an earlier issue (Vol. 49, No. 2), I discussed two new books on Andean Archaeology in the context of some older standard works of high quality. The book by Metraux now under discussion provides an interesting addition to the remarks made earlier. Metraux is best known for his work as an ethnologist, and perhaps for this reason he provides a

somewhat different perspective on the data.

**The History of the Incas** is a good, non-technical account for the Inca and Colonial Periods. Unfortunately, the Pre-Inca archaeological section is very much out of date, and one would want to consult the books reviewed earlier for those periods. For the Inca Period, however, Metraux provides a very readable and not overly detailed picture of the Inca Empire. It is especially pleasant to find him discussing the ethnic diversity within the empire and some of the problems of administering the provinces far from the capital city of Cuzco.

Unlike most other authors, Metraux carries the discussion on into the Colonial and Modern Periods, describing the problems, sufferings and sometimes violent reactions of the Indians under Spanish Colonial rule. The book concludes with the problems of the Indian in the modern world.

Thus, despite an outdated archaeological section and a rather poor selection of illustrations, this book is to be recommended as a well-written, popular account of the Andean Indians under Inca and Spanish rule.

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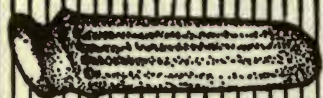
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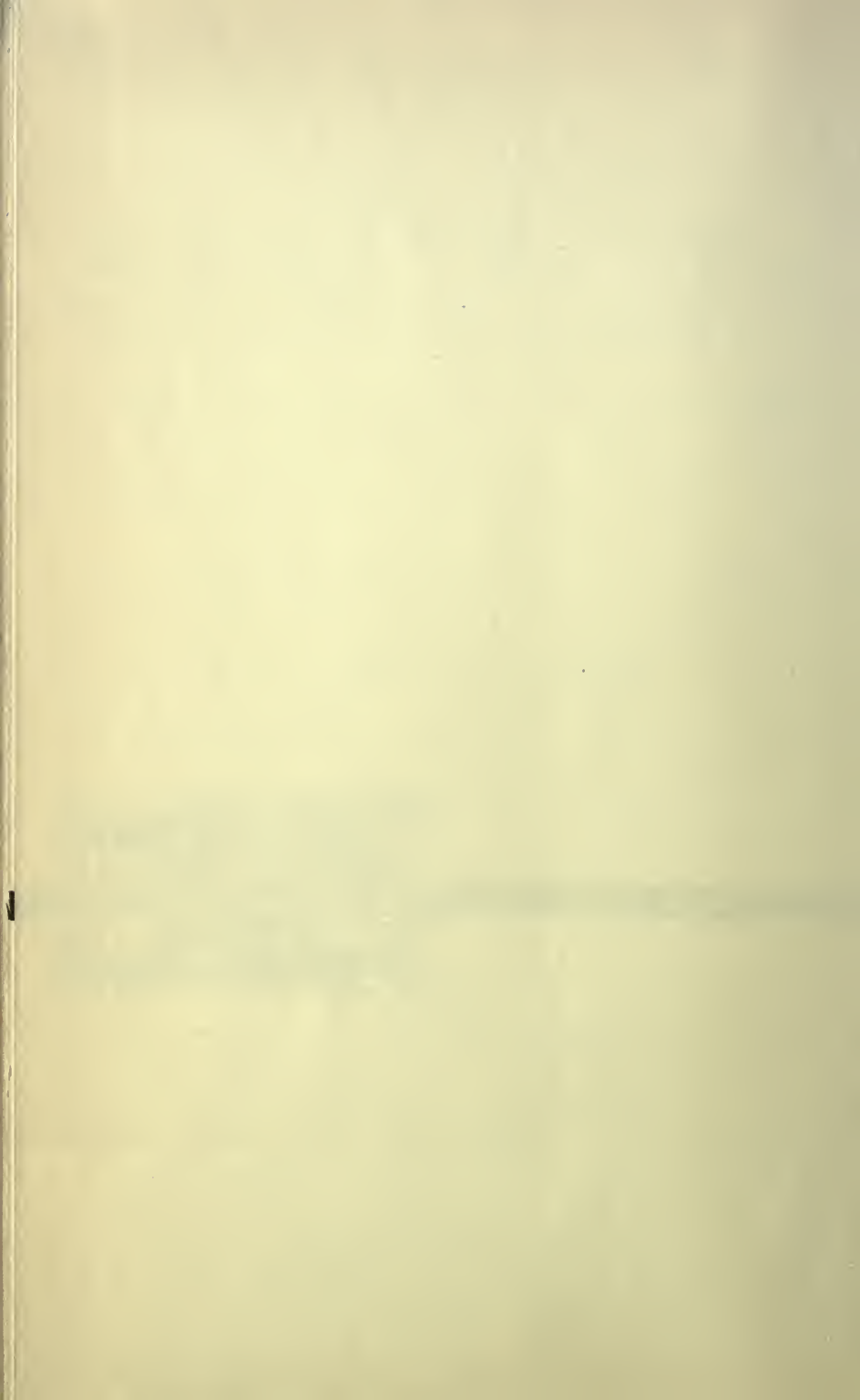
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