

WOODLAND CERAMICS
FROM THE PEDERSEN SITE

by G. JOSEPH HUDAK
Curator of Archaeology
The Science Museum of Minnesota

SCIENTIFIC PUBLICATIONS OF
THE SCIENCE MUSEUM OF MINNESOTA

New Series Vol. 3, No. 2

THE SCIENCE MUSEUM OF MINNESOTA
Saint Paul, Minnesota 55101

April 29, 1976

Standard Book Number 911338-19-5

Published by
THE SCIENCE MUSEUM OF MINNESOTA
Saint Paul, Minnesota 55101
April 29, 1976
Price 55c

WOODLAND CERAMICS FROM THE PEDERSEN SITE

by G. JOSEPH HUDAK
The Science Museum of Minnesota

Woodland cultural manifestations are among the most important in the prehistory of the eastern United States. The introduction and use of ceramics around 500 B.C. marked the beginning of the Woodland period, developing from late Archaic period innovations and expansions. Large villages, elaborate burial practices and the rudimentary beginnings of agriculture characterize the climax of these Woodland cultures.

To date, the Woodland period in southern Minnesota is divided into three successive periods established on the basis of ceramic comparison with ware groupings from the Illinois Valley, of which the basic sequence was first proposed by Griffin (1952). Subsequent works such as that of Struever (1968) have provided good comparative data for analysis.

The Early Woodland in southern Minnesota is marked by the first appearance of pottery. Grit tempered, thick walled, cord marked sherds of LaMoille Thick, a Minnesota ceramic type, are characteristic of this period; these are very similar to the Marion Thick pottery of the Ohio and Upper Mississippi River drainage regions (Hudak and Johnson, 1975).

The Middle Woodland period is distinguished by two factors that correspond to a geographical division of the southern region into a southeastern and a southwestern area. The first is an increasing influence of the Havana culture upon the riverine peoples of southeastern Minnesota. Resultant ceramic styles are very diversified, including incising, stamping, and various cord impressed "Havanoid" techniques that were usually fashioned in large zones over a plain surfaced vessel. The second factor is the appearance of the Fox Lake culture in the prairie grasslands of southwestern Minnesota. The Fox Lake culture persisted throughout the Middle Woodland period as a restricted environmental and cultural adaptation, with little evidence of any interaction with the diffusing Havana culture (Hudak, 1974). Fox Lake ceramics are very similar to an Illinois Valley Early Woodland, pre-Havana phase named Black Sand: cord marked vessels with horizontal or oblique incised lines forming patterns

as decorations around the jar rims. This similarity between the Early Woodland Black Sand and the Middle Woodland Fox Lake suggests a spatial cultural continuance.

The Late Woodland in Minnesota is generally marked by the disappearance of these Fox Lake incised and Havana-like "wares" across southern Minnesota. A more frequent occurrence of a style common over much of the surrounding Midwest region is noted. These are twisted cord and cord-wrapped dowel impressed decorative treatments. Ceramics from this period are known from both central and southern Minnesota.

The Pedersen site in southwestern Minnesota (21LN2) has ceramic components representative of both Middle and Late Woodland cultures. Continued excavations at this site have provided much data on these ceramic components. A preliminary analysis, based on data recovered from excavations in 1973, and 1974, has resulted in the determination of five distinct pottery series, descriptions of which follow.

Albert C. Spaulding's (1953, 1960) statistical techniques for the discovery of artifact types were utilized in the ceramic analysis. The selection of eleven dependent modes, using the Chi Square test of association as the discriminating method, was used for determining the five significant pottery series. Modes with low interdependent correlation (independent modes) were not used in formulating the series. The discovered series are statistically verifiable, an important factor for future model building or future hypotheses formulation involving additional, yet-to-be recovered data. Style changes within a series through time may become apparent when more rigorous chronological controls become available.

The investigation of Woodland culture subsistence-settlement systems within southern Minnesota depends on the availability of an established chronological framework; unfortunately, few confirmed radiocarbon dates in definite cultural association have been determined. The radiocarbon dating of two of the Pedersen site ceramics series, as presented here, establishes a firm chronological basis with which future comparative research may be temporally referenced.

CERAMIC SERIES DESCRIPTION

SERIES A (Figures 1-2):

These ceramics are very similar in all respects to the Onamia Series ceramics of central Minnesota, as described by Elden Johnson in "The Archaeology of Petaga Point" (Bleed, 1969:26). This series is commonly found throughout central and southern Minnesota, and is best known from excavations in the Mille Lacs Lake area (Johnson, personal communication). The chronological position of this ceramic series is not yet known in central Minnesota. A single sample from the Pedersen site was dated at 1245 A.D. \pm 80 (I-8982). This date was based upon collagen carbon obtained from a level of occupation in which these Late Woodland Series A ceramics were found. The cord impressed decorative treatment of this series is representative of a style which was common over much of the Midwest during the Late Woodland period, including the Madison Cord Impressed, and Clam River types of Wisconsin, and the Feye Cord Impressed of Nebraska and Kansas.

Mode:

- Rim Thickness \leq 8.0mm
- Smoothed or Smoothed-over Cord Markings
- External Cord-wrapped Stick Impressions

Sample:

- 50 vessels representing 20% of sample.

Technology:

- Method of Manufacture: Unknown.
- Paste: Poorly compacted with angular granitic temper.
- Temper: Small pieces of pulverized granite, averaging 1.0mm in diameter.
- Texture: Moderately compacted.
- Hardness: Average of 3.5 on the Moh scale.
- Color: Both exterior and interior colors range from 7.5 YR 5/4 brown to 5 YR 3/1 very dark grey (Munsell, 1973).
- Surface Finish: The internal surfaces are smooth while the external surfaces are marked by a cord-wrapped paddle or a rolled cord-wrapped rod, with vertical cord markings being most prominent.

Vessel Form:

Lip: Rounded or flat (flat usually demonstrates cord impressions).

Rim: Attitude: Vertical

Form: Outward flaring

Modifications: None

Body: Form: Subconoidal to rounded vessels with slight neck constriction and high straight to slightly flaring rims.

Base: Both round and subconoidal occur.

Size: Much variation occurs as suggested by sample.

SERIES B (Figures 3-4):

This series, originally described by L. A. Wilford as Fox Lake Incised (1955), is very similar in decoration to Black Sand Incised pottery found in Illinois (Cole and Deuel, 1937) and Dane Incised pottery of Wisconsin (Keslin, 1958). Incised-over-cord-marked ceramics have been found in pre-Havana contexts, and are assigned to the Early Woodland period in Illinois (Struever, 1968). The temporal placement of the Black Sand Incised potteries in Illinois has been confirmed by the excavation of stratified sites and radiocarbon dating. Struever found sherds of this type below an early phase of Middle Woodland Havana ceramics at the stratified Peisker site, in the Illinois Valley. The Black Sand Incised sherds from the Peisker site date from 500 to 150 B.C. (Struever, 1968:158).

A good example of Dane Incised, or Black Sand, was recovered from both the village and burial areas of the Riverside Site in Menominee County, Michigan (Hruska, 1967:250, Figure 74 top). No ceramics were recovered in direct association with the burials; however, the mound fill did contain ceramic sherds. Five burials were dated (designated M-1715 to M-1719), and range from 510 B.C. to A.D. 1, suggesting a reasonable chronological assessment for the associated potteries.

A single date has been obtained for a Fox Lake component: a collagen carbon sample designated I-8984 came from a level containing shallow rock-lined fire hearths, and representative Series B sherds at the Pedersen site. The date obtained, 100 B.C. \pm 80, is thought to mark the beginning of both Fox Lake Series B and pottery used at the Pedersen site. A pre-ceramic occupation level was encountered below this level. Few Havanoid ceramics were recovered from the Pedersen site and the next culture present after the Fox Lake Series ceramics was that of Series A.

Mode:

Rim Thickness \geq 8.0mm
Vertical Cord Markings
Interior Cord-wrapped Stick Impressions
Bosses
Incising

Sample:

29 vessels representing 11.6% of sample.

Technology:

Method of Manufacture: Breaks suggest coiling.
Paste: Very poorly compacted with large granitic temper.
Temper: Small to medium pieces of pulverized or friable granite, 1.0 - 3.0mm in diameter.
Texture: Coarse, porous, and laminated.
Hardness: Average of 3.0 on the Moh scale.
Color: Both exterior and interior colors range from 5 YR 5/6 yellowish red to 5 YR 2.5/2 dark reddish brown (Munsell, 1973).
Surface Finish: Interior surfaces are smooth with the exception of a few grit temper outcroppings. Exterior surfaces near the rim have been treated with vertical cord markings. There is no smoothing of the cord markings. The body is also cord marked but not consistently vertically orientated.

Decoration:

Technique: Incising with a stick-like object; bosses made with possibly a dowel-shaped object. Cord-wrapped stick impressions possibly made with the edge of a cord-wrapped paddle or a corded dowel.
Motif: Interior diagonal cord-wrapped stick impressions. Exterior rims exhibit horizontal parallel incised lines with rows of bosses; also, triangles incised over the cord markings, filled with horizontal incised lines are present.

Vessel Form:

Lip: Round or flattened with a cord-wrapped paddle.
Rim: Attitude: Vertical
Form: Straight or slightly outflaring
Modifications: None.

Body: Form: Wide-mouthed jar with rounded shoulders.

Base: Only conoidal base fragments recovered to date.

Size: No complete vessel profiles occur but sample suggests elongate cylindrical body contracting toward conoidal base. Large orifice with little rim constriction. Slight shoulders occur near midpoint of jar.

SERIES C (Figures 5-6):

This series is the same in all respects to Series B, excluding the appearance of incising, bosses, and occasionally the interior rim cord-wrapped dowel impressions. If Black Sand Incised can be equated with Fox Lake Incised, then the Series C would be recognized as Liverpool Cord Marked, with the same lack of decoration on the cord marked surface finish. Series C was most often recovered in direct association with Series B ceramics, suggesting contemporaneity.

Mode:

Rim Thickness \geq 8.0mm

Vertical Cord Markings

Interior Cord-wrapped Stick Impressions

Plain Exterior

Sample:

16 vessels representing 6.4% of sample.

Technology:

Method of Manufacture: Unknown.

Paste: Very poorly compacted with large granitic temper.

Temper: Pulverized or friable pieces of granite, ranging from 1.0 - 3.0mm in diameter.

Texture: Coarse, porous, and laminated.

Hardness: 3.0 on the Moh scale.

Color: Ranges from 5 YR 4/3 reddish brown to 5 YR 3/1 dark reddish brown (Munsell, 1973).

Surface Finish: Exterior surfaces are cord marked, usually vertical. There is no smoothing of the cord marks. Interior surfaces are smooth with a few outcroppings of grit temper.

Decoration:

Technique: Edge of a cord-wrapped stick used on the interior rims.

Motif: Diagonal interior rim cord-wrapped stick impressions; no exterior decorations.

Vessel Form:

Lip: Round or flattened with a cord-wrapped paddle.

Rim: Attitude: Vertical

Form: Slightly outflaring

Modifications: None

Body: Form: Large jar; wide-mouthed, straight necked, rounded shoulders.

Base: Conoidal base recovered to date.

Size: Similar to Series B.

SERIES D (Figures 7-8):

These ceramics are characteristically Middle Woodland, with thick walls, an unrefined surface finish, and a conoidal form. The average wall thickness (11.0mm) is greater than those of both Series B and C. The surface finish is different, too, in that the cord marks are partially smoothed-over, and are parallel to the jar rim. This series most likely represents a regional variant, as it, too, was commonly recovered from occupation levels containing Series B and C ceramics.

Mode:

Rim Thickness \geq 8.0mm

Smoothed-over Horizontal Cord Markings

Plain Exterior

Sample:

12 vessels representing 4.8% of sample.

Technology:

Method of Manufacture: Unknown.

Paste: Extremely poorly compacted with large granitic temper.

Temper: Small to medium size pieces of pulverized or friable granite, from 1.0 - 3.0mm in diameter.

Texture: Coarse, very porous, and poorly laminated.

Hardness: 2.0 - 3.0 on the Moh scale.

Color: Ranges from 5 YR 4/1 dark grey to 5 YR 3/1 very dark grey (Munsell, 1973).

Surface Finish: Exterior horizontal cord-wrapped paddle, partially smoothed-over; interior smooth.

Decoration:

None.

Vessel Form:

Lip: Slightly rounded.

Rim: Attitude: Vertical

Form: Straight

Modifications: None

Body: Form: Large jar, wide-mouthed, rounded shoulders, straight-necked, elongated body (based on limited sample).

Base: Presumed conoidal.

Size: Body fragments suggest large elongated cylindrical body with little rim constriction and slight shoulders.

SERIES E (Figures 9-10):

This series lacks any interior or exterior surface decoration other than the exterior surface finish of vertical cord impressions. The wall thickness of these vessels is usually thin (less than 8.0mm). In several respects the Series E ceramics are similar to Series A: the general vessel shape is very similar, as in the wall thickness, but these vessels lack the smoothing-over of the upper rim area, and the cord-wrapped dowel decorative impressions. Because Series A and E ceramics were found in the same occupation levels, Series E seems to represent a regional variant which occurred during the Late Woodland period. The Series E ceramics exterior cord roughened surface treatment is also common over much of the Midwest during the Late Woodland period. The Feye Cord Roughened ceramics of Nebraska and Kansas may also be representative of this pottery (Kivett, 1952: 101 plate XXIX A).

Mode:

Rim Thickness \leq 8.0mm

Vertical Cord Markings

Plain Exterior

Sample:

35 vessels representing 14.0% of sample.

Technology:

Method of Manufacture: Unknown.

Paste: Poorly compacted with angular granitic temper.

Temper: Small particles of pulverized granite or sand, 1.0 - 2.0mm in diameter.

Texture: Moderately compacted.

Hardness: Average 3.0 on the Moh scale.

Color: Surface colors range from 5 YR 5/2 reddish grey to 5 YR 2.5/2 dark reddish brown (Munsell, 1973).

Surface Finish: Vertical cord-wrapped paddle, on both exterior and interior surfaces.

Decoration:

None.

Vessel Form:

Lip: Rounded or flat.

Rim: Attitude: Vertical

Form: Straight or slightly flaring

Modifications: None.

Body: Form: Presumed wide-mouthed jar, with rounded shoulders.

Base: Sub-conoidal, conoidal, or rounded.

Size: Much variation occurs as suggested by sample.

In summary, the Fox Lake Incised or Series B vessels are representative of a very widespread Early Woodland ceramic influence, probably originating from the Illinois Valley. The Black Sand Incised ceramics of the Illinois Valley seemed to decline in popularity, or ceased to exist as a type, with the rise in popularity of Havana types in the Middle Woodland period. In southwestern Minnesota, specifically at the Pedersen site, no recorded evidence of strong Havana-Hopewellian interaction is evident. Therefore, the Fox Lake ceramics (Series B), along with the associated Series C and D ceramics, may be a persistence of Black Sand influence into the Middle Woodland period of southwestern Minnesota. Presumably these series were isolated from Havana-Hopewell expansion and possibly date late into the Middle Woodland period.

The twisted cord and cord-wrapped dowel decorative treatment of Series A vessels, along with the cord roughened surface finish of the Series E ceramics, appears to be a very widespread Late Woodland characteristic common to the Midwest. In southwestern Minnesota, this treatment seems to have crossed isolating factors which were present during the Middle Woodland period.

Further investigation of Woodland culture subsistence-settlement systems within southern Minnesota will hopefully be aided by the chronological placement of these Pedersen site ceramic series.

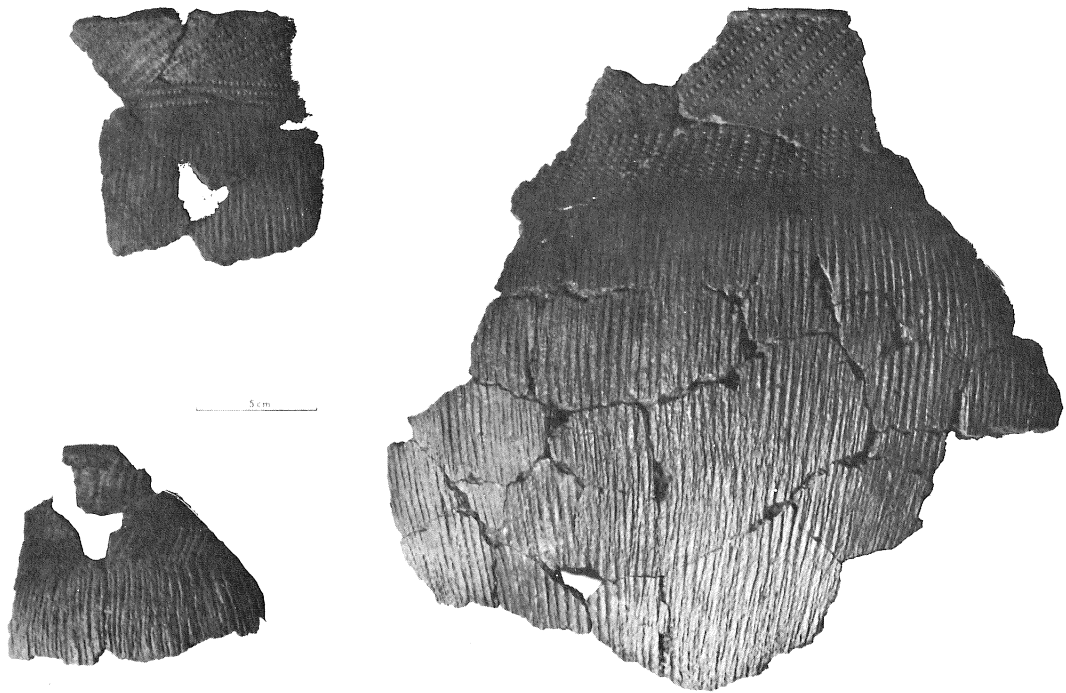


Figure 1
Series A ceramics, SMM accession numbers A74:5:931, A73:7:1134, A74:5:177.

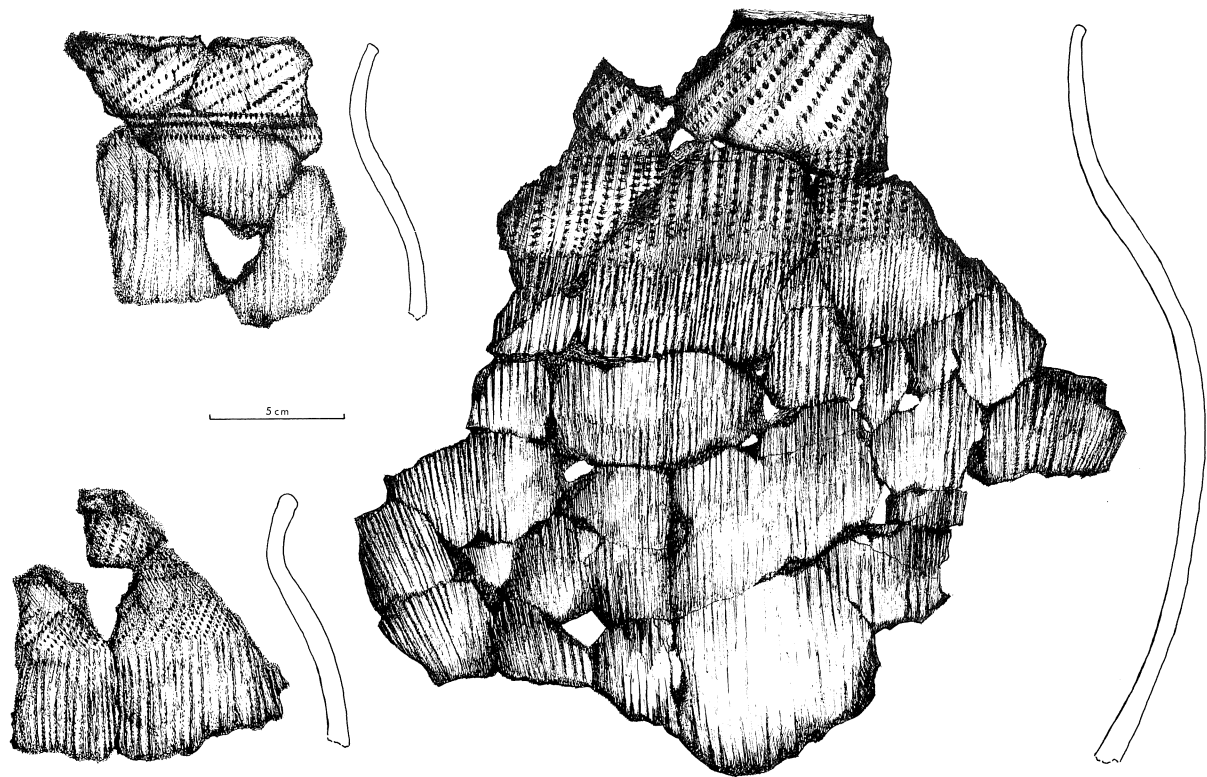


Figure 2
Series A ceramics and profiles.

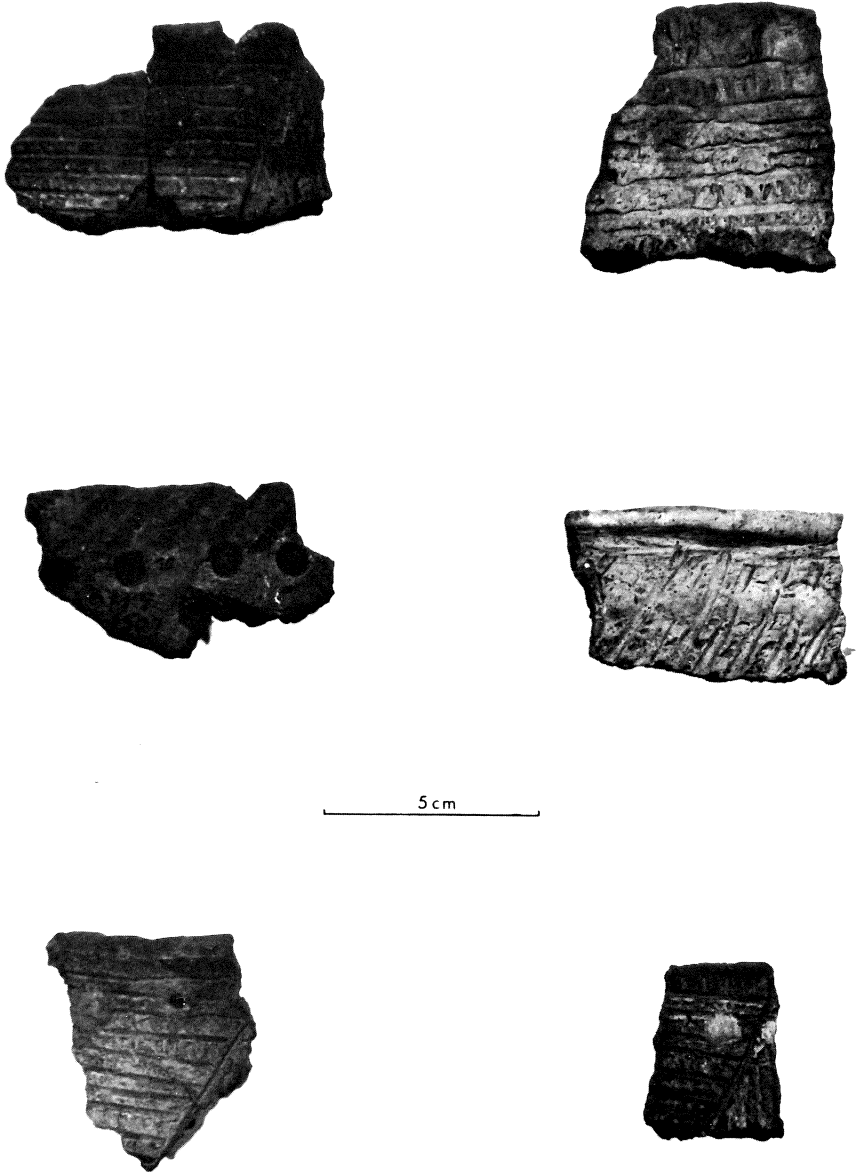


Figure 3
Series B ceramics, SMM accession numbers A73:7:1508, A73:7:654,
A73:7:1507, A73:7:1565, A73:7:1514, A73:7:1515.

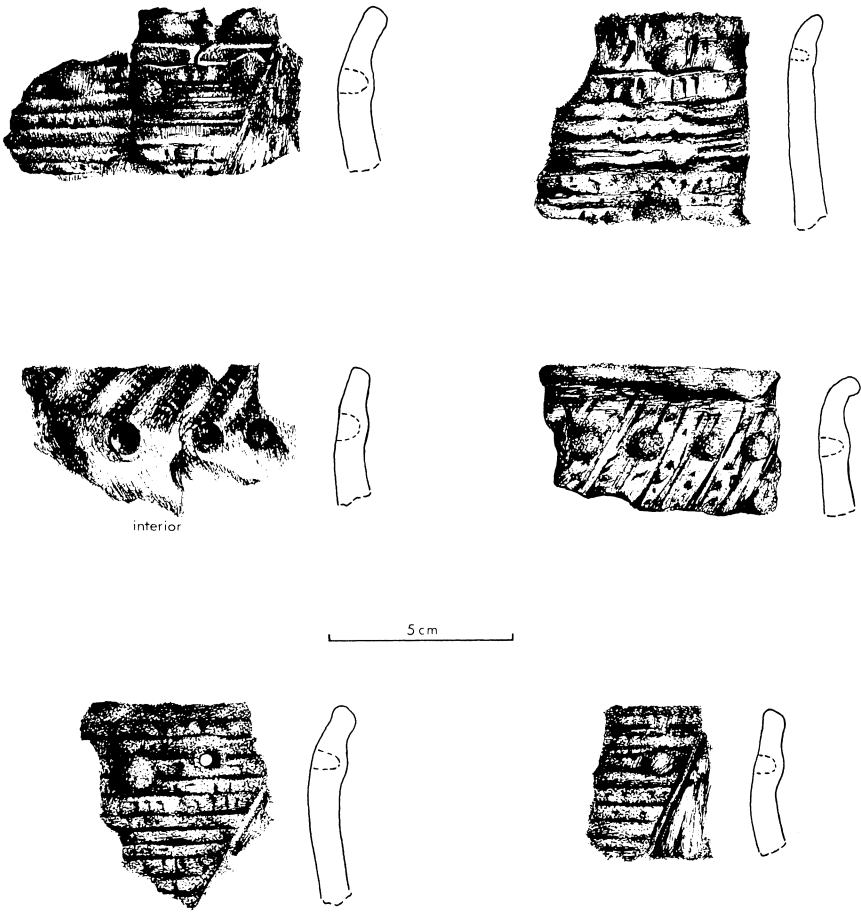


Figure 4
Series B ceramics and profiles.



Figure 5
Series C ceramics, SMM accession numbers A73:7:1501, A73:7:1021,
A73:7:1512.

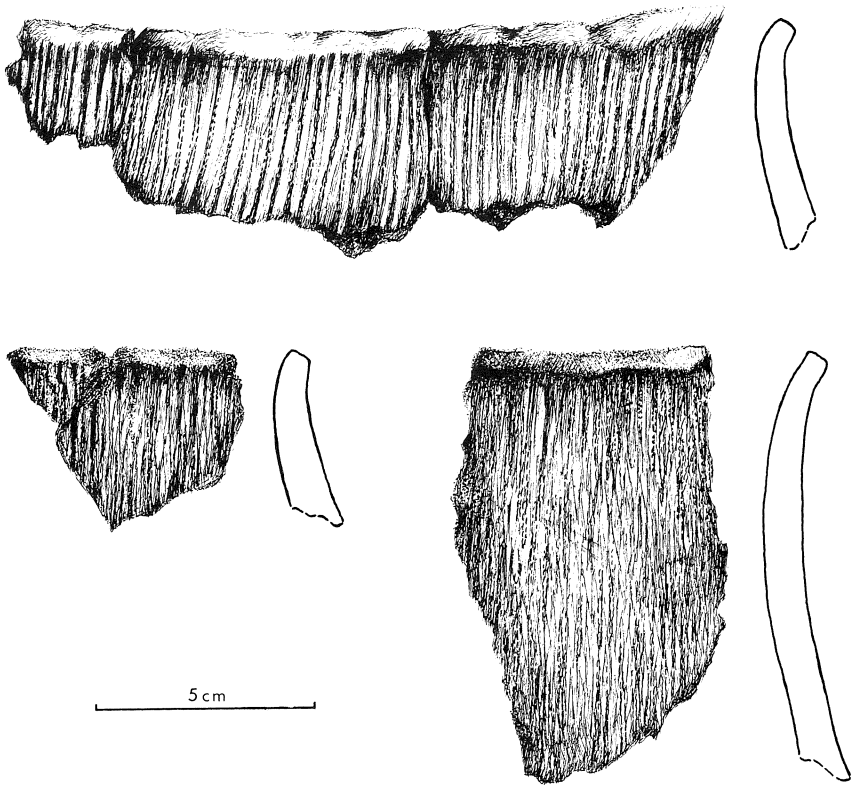


Figure 6
Series C ceramics and profiles.



Figure 7

Series D ceramics, SMM accession numbers A73:7:1136, A73:7:1566, A73:7:1182.

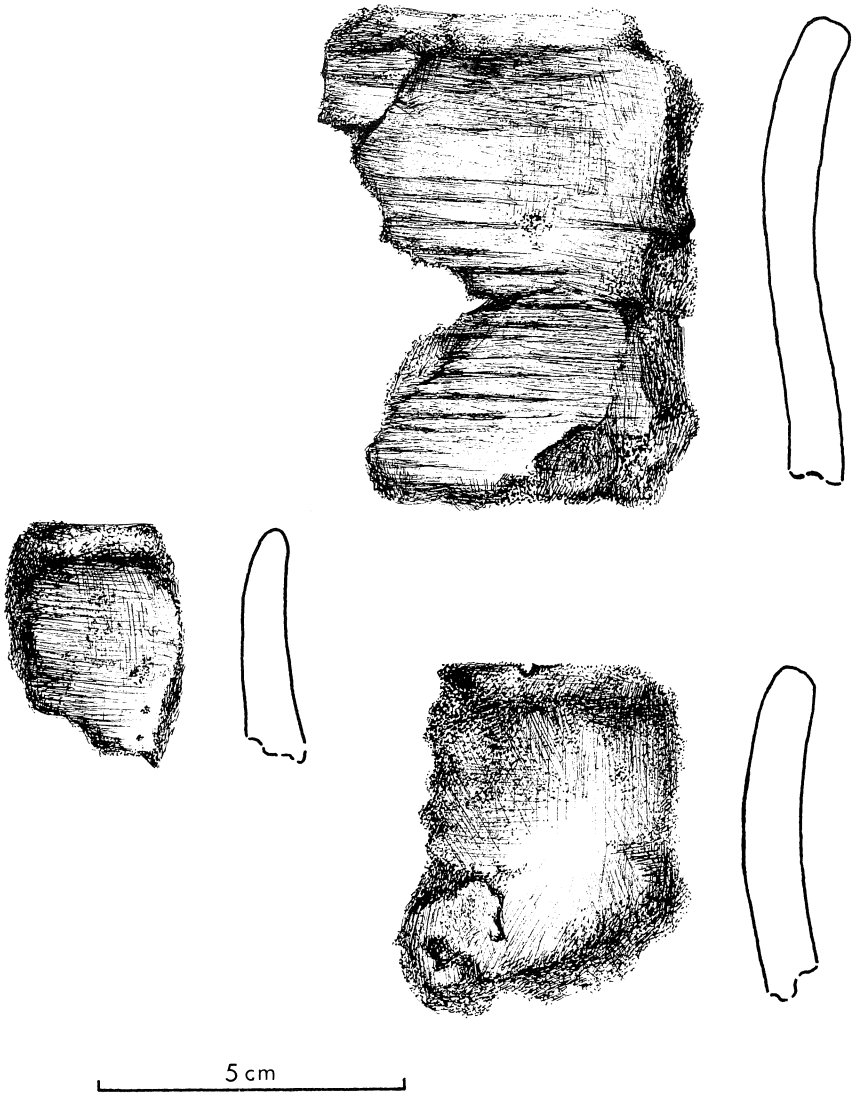


Figure 8
Series D ceramics and profiles.

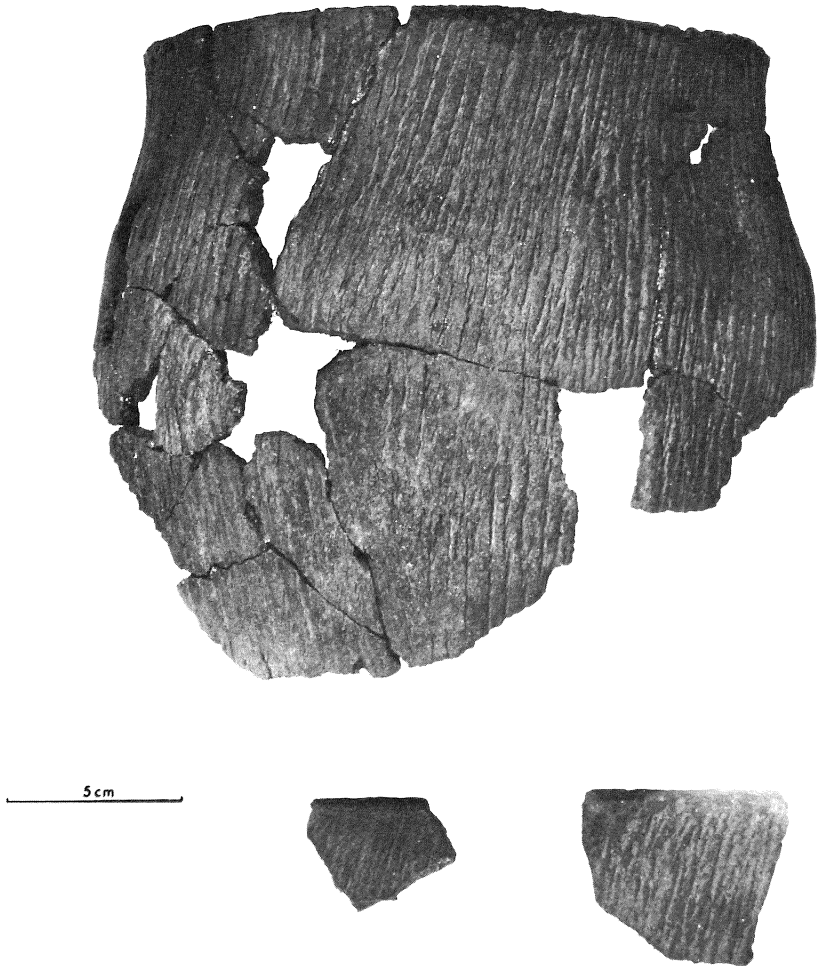


Figure 9
Series E ceramics, SMM accession numbers A74:5:930, A74:5:965,
A74:5:249.

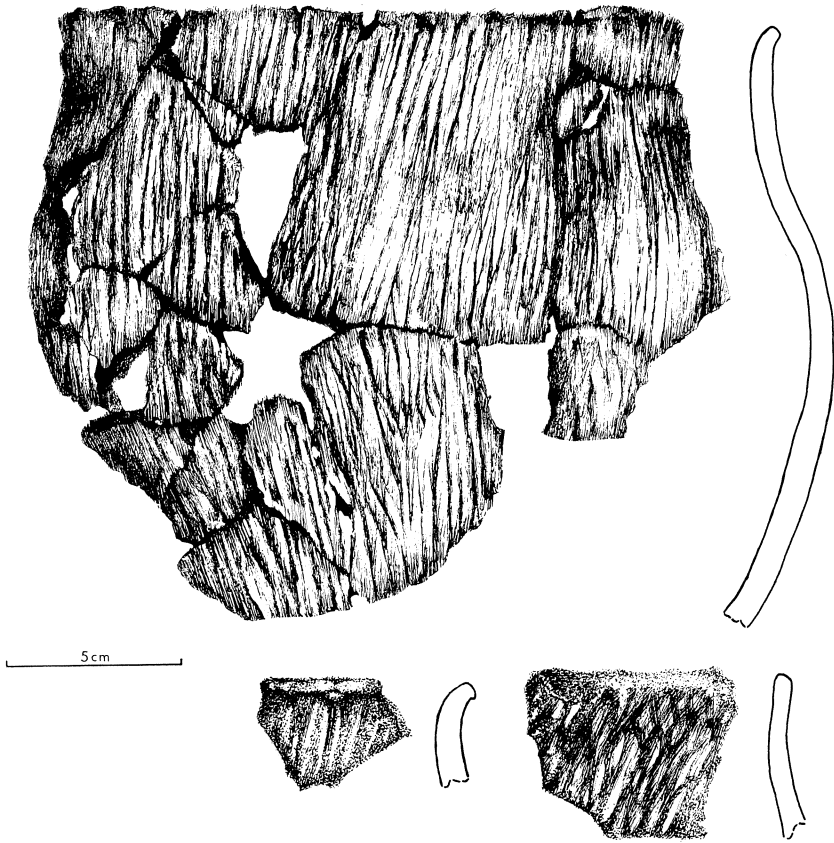


Figure 10
Series E ceramics and profiles.

ACKNOWLEDGEMENTS

Publications costs were supported by The McKnight Foundation and the Stoltze Scientific Publication Fund. Sincere appreciation is extended to Carolyn S. Benepe for editing, Nancy Petschauer for final typing and keylining, Scott Bouman for photographs and Joyce J. Johnston for illustrations. Jeffry A. Cottle and Martha E. King deserve special consideration for their aid and expertise with the actual ceramic analysis.

REFERENCES

- Anonymous. 1973. *Munsell Soil Color Charts*. Munsell Color Co., Inc., Baltimore.
- Bleed, P. 1969. The Archaeology of Petaga Point: The Preceramic Component. *Minnesota Prehistoric Archaeology Series*, Minnesota Historical Society.
- Cole, F.C. and T. Deuel. 1937. *Rediscovering Illinois*. University of Chicago Press.
- Griffin, J.B. 1952. Some Early and Middle Woodland Pottery Types in Illinois. *Hopewellian Communities in Illinois*. Edited by Thorne Deuel, Illinois State Museum. *Scientific Papers*, Vol. 5, pp. 93-129.
- Hruska, R. 1967. The Riverside Site: A Late Archaic Manifestation in Michigan. *The Wisconsin Archaeologist*, Vol. 48, No. 3.
- Hudak, G.J. 1974. *The Pedersen Site*. Unpublished Master of Arts thesis, University of Nebraska, Department of Anthropology.
- Hudak, G.J. and E. Johnson. 1975. An Early Woodland Pottery Vessel from Minnesota. *Scientific Publications of The Science Museum of Minnesota*. New Series, Vol. 2, No. 4.
- Keslin, R.O. 1958. A Preliminary Report of the Hagn (Dg 1 and Dg 2) and Horicon (Dg 5) Sites, Dodge County, Wisconsin. *The Wisconsin Archaeologist*, Vol. 39, pp. 191-273.
- Kivett, M.F. 1952. Woodland Sites in Nebraska. *Nebraska State Historical Society Publications in Anthropology*, No. 1.

- Spaulding, A.C. 1953. Statistical Techniques for the Discovery of Artifact Types. *American Antiquity*, Vol. 18, pp. 305-313.
- _____. 1960. Statistical Description and Comparison of Artifact Assemblages. Robert F. Heizer and Sherburne F. Cook, eds. *The Application of Quantitative Methods in Archaeology*, pp. 60-92 (Viking Fund).
- Struever, S. 1968. A Re-examination of Hopewell in Eastern North America. Unpublished Ph.D. dissertation, Department of Anthropology, University of Chicago.
- Wilford, L.A. 1955. A Revised Classification of the Prehistoric Cultures of Minnesota. *American Antiquity*, Vol. 21, No. 2, pp. 130-142.