tion and by surface collections. It raises certain questions and problems which can be attacked in our future work. Most of these problems will be described in the descriptions of pottery types in the following section.

Fig. 17 is a seriation chart similar to Fig. 16, but it contains the same information treated in terms of wares, rather than types.

There are several problems which are apparent from a careful examination of these charts. One of the Historic Monongahela sites, in Greene County, Pa., for instance (36Gr1), shows up in the Middle Monongahela period because of the presence of plain and incised types. Since the other Historic Monongahela site from which we have an adequate ceramic sample, fits in at the proper place at the top of the chart, our only explanation is that 36Gr1 was reoccupied by the historic group some years after it had been abandoned by earlier prehistoric Monongahela inhabitants. Future excavation work will no doubt help solve this problem.

Several sites appear to be multi-component sites and possibly stratified (although the obviously stratified sites have not been included on the charts), but our surface sample has in most cases dated the latest occupation of the site.

There is finally the question of the relationship between the ware chart and the type chart. It appears that both are rather crude tools for relative dating, but that the type chart is the more sensitive and presumably more nearly accurate one. The ware chart is useful for an overall or broad picture of ceramic development; the type chart is better for assigning relative dates to sites and for understanding the detailed pottery developments.

POTTERY TYPES

After all the Survey collection had been sorted, and rim and body sherds correlated, we were left with 50 recognizable variations in ceramic style. These are listed in Table 6 with the quantities involved.

Largely on the basis of size of sample, but also because of behavior on the seriation chart, many of these groups were lumped together to form the 18 tentative pottery types which were tested on the first seriation chart. This trial showed that certain tentative types, even though they appeared to be distinctive, did not have a significant spatial or temporal distribution. These types were therefore lumped with the most similar variety. The remaining types were then plotted and form the basis for the present seriation chart and the following definitions of types.

"Half-Moon Cordmarked"
(Plates 109-110)

Method of manufacture. Coiled. Malleated with a cordwrapped paddle.

Temper. Coarsely crushed fragments of rock predominantly granite or other igneous rock, but with chert and limestone used in certain varieties of this type. Temper fragments, often large, up to 10 mm. in maximum dimension, make up from 50 to 80 per cent. of the paste.

TABLE 6. RECOGNIZABLE VARIATIONS IN POTTERY

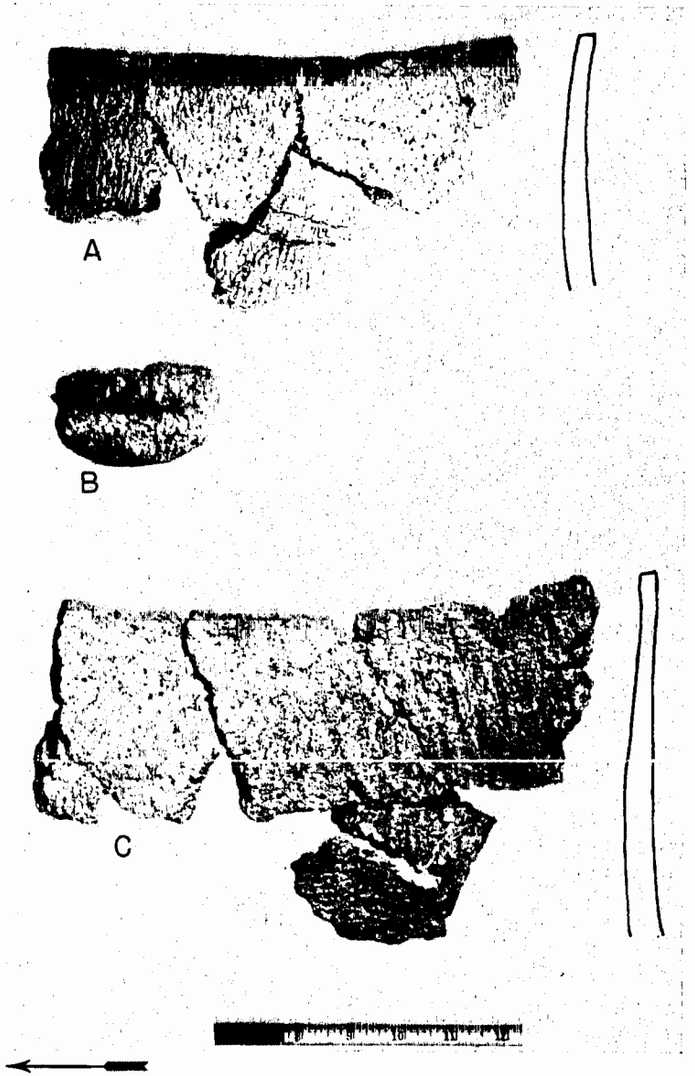
1.	Chert-tempered	
	a. cordmarked (exterior)	41
	b. cordmarked (exterior and interior)	128
	c. cordmarked and fabric-impressed	3
	d. plain	86
2.	Very heavy grit-tempered	
	a. cordmarked (exterior)	7
3.	Unusual heavy grit-tempered	15
4.	Heavy grit tempered	
	a. cordmarked (exterior)	449
	b. cordmarked (exterior and interior)	71
	c. cordmarked and fabric-impressed	65
	d. fabric-impressed	39
	e. interior striated	110
	f. net-impressed	1
	g. incised	2
	h. plain	74
5.	Josephtown heavy gritty paste	
	a. cordmarked (exterior)	65
	b. plain	12
6.	Heavy limestone-tempered	
	a. cordmarked (exterior)	60
	b. cordmarked (exterior and interior)	21
	c. plain	2
7.	Limestone-tempered	
	a. cordmarked	2,597
	b. plain	475
	c. incised	13
8.	Medium grit-tempered	
	a. cordmarked (exterior)	1,060
	b. cordmarked (exterior and interior)	38
	c. fabric-impressed	3
	d. cordwrapped stick stamped	1
	e. incised	11
	f. punctate	1

TABLE 6. (Continued)

8. Medium grit-tempered (Continued)	
g. plain	133
9. Fine grit-tempered	
a. cordmarked	102
b. net-impressed	2
c. punctate and incised	1
d. plain	10
10. Iroquois gritty paste	
a. cordmarked	40
b. plain	33
c. incised	12
11. Limestone and shell-tempered	
a. cordmarked	1
b. plain	14
12. Shell-tempered	
a. cordmarked	15,207
b. plain	5,025
c. rectilinear incised	619
d. curvilinear incised	2
e. punctate	126
f. simple-stamped	48
13. Untempered	
a. "Scarem Plain"	79
14. Other	
a. steatite-tempered	4
b. sandy paste	17
c. thin chert-tempered	4
d. clay-tempered	13
e. ?	24

Plate 109. "Half-Moon Cordmarked" potsherds in the Carnegie Museum collection

A, Rim exterior showing nearly vertical cordmarking. B, Oval lug and vessel wall. C, Rim interior showing impressions of a plain plaited fabric ("Legionville Fabric-impressed" variety).



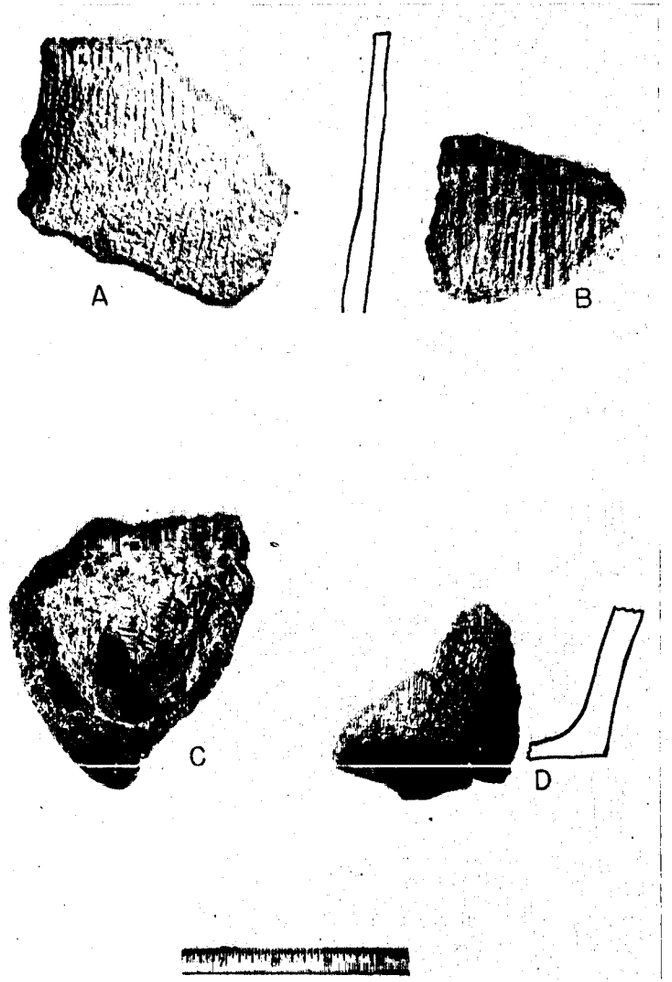


Plate 110. "Half-Moon Cordmarked" potsherds in Carnegie Museum collection

A, Rim with vertical exterior cordmarking and horizontal interior cordmarking. B, Interior striated sherd ("Bolinger Striated" variety). C, Conical base. D, Flat disk base.

Texture. Contorted and irregular with tendency to break into jagged-edge pieces if not along a coil break.

Hardness. Surface hardness from 2.0 to 3.5; interior often softer.

Color. Both surfaces and core tan to buff colored. The fabric-impressed and interior-striated varieties more likely to be gray.

Surface finish. Interior surfaces are predominantly smoothed. Interior cordmarking running horizontally is common and plain plaited fabric or trailed comb impressions are also known to occur. Exterior cordmarking is vertical near the rim but likely to be applied in various directions on other sections of the vessel. Cordmarking is often deep and roughly applied so that the surface is very irregular and cord impressions are indistinct.

Decoration. Practically none; two sherds with incised lines.

Form

Rim. Straight.

Neck. Straight.

Lip. Square to slightly pointed.

Body. Elongated globular with constricted basal portion.

Base. Flat circular disk four to six inches in diameter. One conical base known.

Thickness. From 10 to 20 mm., averaging about 14 mm.

Appendages. Oval or mammiform lugs known to occur on some vessels.

Diagnostic features. Paste, surface finish, rim form, thickness, base.

Geographic range. This type is concentrated in the Ohio Valley proper. A few examples come from the Monongahela, the lower Allegheny and the Beaver valleys. But the concentration appears to be in the area from Pittsburgh down. It is especially well known from sites in the northern West Virginia panhandle.

Probable relationships. This type is the basic Early Woodland pottery in the Upper Ohio Valley and the most common member of the Half-Moon ware (Fetzer and Mayer-Oakes, 1951). It is definitely associated with Adena burial mounds and village sites which were probably occupied by the builders of these mounds. The evidence from the Georgetown site places this type at the bottom of the pottery sequence and it may well be the earliest pottery in the area. Some of the interior cordmarked sherds look very much like Vinette I defined by Ritchie and MacNeish (1949), but are generally less well made. There are specific similarities to both Baumer (Cole, 1951) and Crab Orchard (Maxwell, 1951) types but the type "Fayette Thick" described by Griffin (1943*b*) is apparently most similar to "Half-Moon Cordmarked." The factor of thickness is not so constant in the Half-Moon type but it apparently agrees in most other characteristics. In general characteristics of form, this type is similar to the steatite-tempered pottery from Marcey Creek and Selden Island described by Manson (1948) and Slattery (1946).

Size of sample. 1012 sherds including the tentative types "Bolinger Striated" and "Legionville Fabric-impressed".

References. Cole (1951). Fetzer and Mayer-Oakes (1951). Griffin (1943*b*). Manson (1948). Maxwell (1951). Ritchie and MacNeish (1949). Slattery (1946).

"McKees Rocks Plain"
(Plate 111)

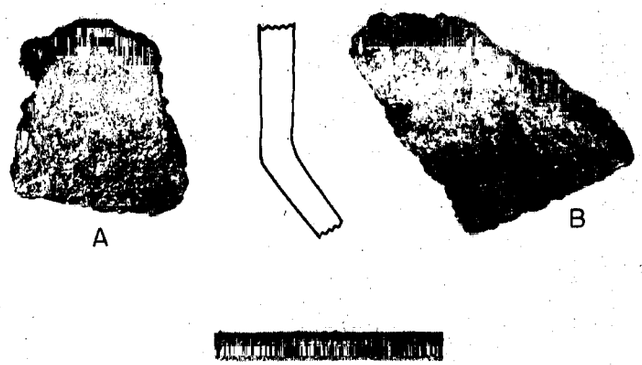


Plate 111. "McKees Rocks Plain" potsherds in Carnegie Museum collection A, Body sherd. B, Sherd showing portion of flat base.

Paste

Method of manufacture. Unknown. No coil breaks observed.

Temper. Coarsely crushed fragments of rock, predominantly a coarse-grained gray chert but sometimes granite or other igneous rock. Temper fragments often large, up to 10 mm. in maximum dimension, make up from 40 to 70 per cent. of the paste.

Texture. Contorted and irregular but more compact than that of "Half-Moon Cordmarked". Breaks into jagged-edge pieces.

Hardness. Surface hardness from 3.0 to 4.0; interior only slightly softer.

Color. Both surfaces gray to gray-buff colored; core often darker.

Surface finish. Both interior and exterior surfaces smoothed and consequently plain. Irregularities in the paste leave a few depressions in the surface but no evidence of a smoothing tool can be seen from the sherds.

Decoration. One example of a broad-trailed line in the neck area.

Form

Rim. Straight with some sherds showing slight flare outward.

Neck. Straight.

Lip. Square to slightly rounded.

Body. Elongated globular(?) with constricted basal portion.

Base. Flat circular disk about ten centimeters in diameter.

Thickness. Varies from 8 to 14 mm., averaging about 12 mm.

Appendages. Unknown.

Diagnostic features. Paste and surface finish; base.

Geographic range. Not yet well known. Apparently occurs as minority with "Half-Moon Cordmarked," on sites in the Ohio Valley below Pittsburgh. More than half of the sample comes from what may have been a complete vessel found in the 1896 excavation of McKees Rocks mound by Carnegie Museum.

Probable relationships. This type appears to be a late companion to the basic Early Woodland cordmarked pottery in the Upper Ohio Valley. It is found on Early Woodland village sites and with what may be a late Adena complex at the type site. The pottery is most similar to the type "Adena Plain" discussed by Haag (1940) and Griffin (1942, 1945).

Size of Sample. 174 sherds.

References. Griffin (1942, 1945). Haag (1940).

"Mahoning Cordmarked"
(Plate 112)

Plate 112. "Mahoning Cordmarked," "Mahoning Plain" and "Mahoning Incised" potsherds in Carnegie Museum collection

Paste

Method of manufacture. Coiled. Malleated with a cordwrapped paddle.

Temper. Crushed fragments of rock, predominantly granite or other igneous rock and sometimes quartz. Temper fragments are moderate in size, averaging about four millimeters in maximum dimension and make up from 30 to 60 per cent. of the paste. The fine grit-tempered category appears to be a variant of this type.

Texture. Rather regular and compact, although in the thicker and more heavily tempered sherds the paste is contorted and irregular. Breaks are fairly regular, often along a coil line.

Hardness. Surface hardness ranges from 2.5 to 3.5; core slightly softer.
Color. Both surfaces and core range from black and gray to tan with most of the sherds being the darker colors.
Surface finish. Exterior surface is characteristically cordmarked, vertically near the rim but in various directions on other parts of the vessel. In most cases the cordwrapped paddle has not been carefully applied but was slightly dragged over the plastic surface or applied over a previous paddle mark. A few sherds have carefully applied cordmarking on both interior and exterior surfaces—impressions are vertical on the exterior and horizontal on the interior. Three examples of fabric impressing were noted and one additional specimen exhibited stamping done with a cordwrapped stick.
Decoration. Confined to the lip area where notching or impressing with the edge of a cordwrapped paddle is common. One body sherd exhibits shallow punctates.
Form
Rim. Slightly flared, occasionally folded over to make a collar.
Neck. Slightly constricted.
Lip. Square to slightly rounded.
Body. Unknown, but probably elongated globular.
Base. Unknown, probably rounded.
Thickness. Varies from 3 to 10 mm., averaging about 7 mm.
Appendages. Unknown.
Diagnostic features. Paste, especially temper characteristics and surface finish.
Geographic range. Concentrated in the Beaver River drainage, especially in the Mahoning River Valley, but occurs in small numbers on sites in the Ohio River Valley proper and the Allegheny Valley.
Probable relationships. This type is rather amorphous and appears to cover a wide range of cultural and temporal differences. It is probably the local representative of what Griffin (n.d.) has called "Woodland Cordmarked" and as such is not particularly distinctive. There are definite similarities in some of the "Mahoning Cordmarked" sherds to the earlier "Half-Moon Cordmarked" and even greater similarities in form and decoration to the shell-tempered "Monongahela Cordmarked". The type is similar to the sherds described as Hopewellian (Mayer-Oakes, n.d.*a*) from the Marietta, Ohio, area, but is different in feel, and definitely does not have the distinctive stamped decoration technique.
Size of sample. 1103 sherds, including the fabric-impressed, cordwrapped stick-stamped and punctate varieties.
References. Griffin (n.d.). Mayer-Oakes (n.d.*a*).

"Mahoning Plain"
(Plate 112)

Paste. Same as "Mahoning Cordmarked".
Surface finish. Usually well smoothed on both interior and exterior with occasional evidence of the use of a smoothing tool.

Decoration. None.
Form
Rim. Slightly flared.
Neck. Slightly constricted.
Lip. Flattened, often L shaped with interior or exterior overhang.
Body. Unknown.
Base. Unknown.
Thickness. Varies from 4 to 10 mm., averaging about 7 mm.
Appendages. Unknown.
Diagnostic features. Paste and surface finish.
Geographic range. Same as "Mahoning Cordmarked".
Probable relationships. Seems to occur on sites which are Middle Woodland or Hopewellian in other artifact traits (Mayer-Oakes, 1953*a*, p. 120) and is almost identical with the plain sherds from Marietta, Ohio (Mayer-Oakes, n.d.*a*).
Size of sample. 143 sherds.
References. Mayer-Oakes (1953*a*). Mayer-Oakes (n.d.*a*).

"Mahoning Incised"
(Plate 112)

A tentative type similar in most ways to "Mahoning Plain" but decorated with incised parallel straight lines. Two of the 12 sherds in the sample show that the surface was marked with a cordwrapped paddle which was smoothed over before incising.

"Watson Cordmarked"
(Plate 113)

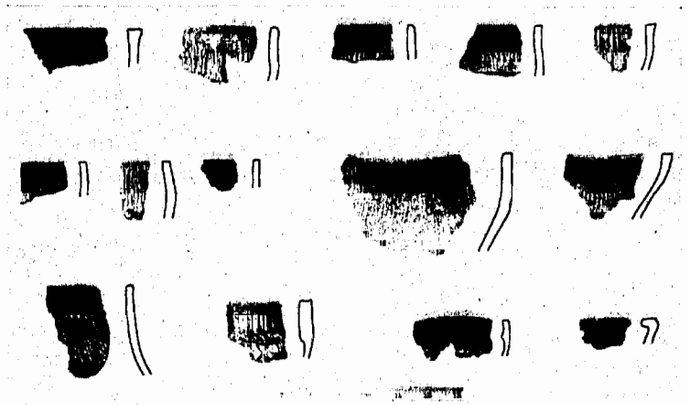


Plate 113. "Watson Cordmarked" sherds in Carnegie Museum collection

Paste

Method of manufacture. Coiled. Malleated with a cordwrapped paddle.

Temper. Crushed fragments of limestone which have a tendency to leach out in acid soil leaving angular holes in the paste. Temper fragments vary in size up to about eight millimeters in maximum dimension, and make up from 20 to 50 per cent. of the paste.

Texture. Compact but somewhat contorted and irregular because of shape of the limestone inclusions. Tends to break with a rough edge but sometimes along a coil line.

Hardness. Surface hardness ranges from 2.5 to 4.0 with most of the sherds between 3.0 and 3.5. Core is often softer.

Color. Both surfaces are uniformly a drab yellow-gray or tan with only slight variation. Core is slightly darker.

Surface finish. Interior surfaces are smoothed, often poorly done with the fingers. Exteriors are commonly rather deeply imprinted with the mark of the cordwrapped paddle which has been applied vertically from the lip down almost to the base.

Decoration. Confined to the lip which is cordmarked, transversely incised or impressed with the edge of the cordwrapped paddle.

Form

Rim. Straight, a few slightly everted, rarely a slight collar.

Neck. Straight, a few slightly constricted.

Lip. Square to slightly flattened.

Body. Elongated globular.

Base. Rounded ?

Thickness. Varies from 5 to 15 mm., averages about 7 mm.

Appendages. Unknown.

Diagnostic features. Paste, surface finish, rim form, color.

Geographical range. This type is concentrated in the Ohio Valley proper but is known to occur sparsely in the Monongahela Valley and on late sites reported from the upper Youghiogheny Valley. Scattered examples have been found in the lower Allegheny Valley and at one site on the Mahoning River. It is known to occur in the Marietta, Ohio, area (Mayer-Oakes, n.d.*a*).

Probable relationships. This pottery type appears as a homogeneous unit with some indication of typological overlap with earlier Half-Moon types and later Monongahela types. It is definitely post-Adena as evidenced by its presence in pits which are intrusive into Adena mounds (Fetzer and Mayer-Oakes, 1951) and is placed between Half-Moon and Monongahela types in the stratified sequence recovered from the Georgetown and Watson sites. It is possible that this type is the basic utilitarian Middle Woodland pottery for the area. It is quite similar to some of the limestone-tempered pottery mentioned by Griffin (1945, p. 240-243) from Ohio Hopewell sites. If this is so, the typological evidence for development, the stratified evidence from the Georgetown and Watson sites, and the seriation study all indicate a continuity in ceramics from an Adena stage through Hopewell and on into the final Mississippi period.

The type "Page Cordmarked" (Manson, MacCord and Griffin, 1948) is probably a late derivative of this type.

Limestone-tempered pottery characterizes the intermediate ceramic periods in several southern areas (Griffin, 1939; Haag, 1942; Heimlich, 1952; and Lewis and Kneberg, 1946) but the relationship of this material to the Watson ware has yet to be determined.

Size of sample. 2597 sherds.

References. Fetzer and Mayer-Oakes (1951). Griffin (1939). Griffin (1945). Haag (1942). Heimlich (1952). Lewis and Kneberg (1946). Manson, MacCord and Griffin (1948). Mayer-Oakes (n.d.*a*). Mayer-Oakes (n.d.*d*).

"Watson Plain"

(Plate 114)

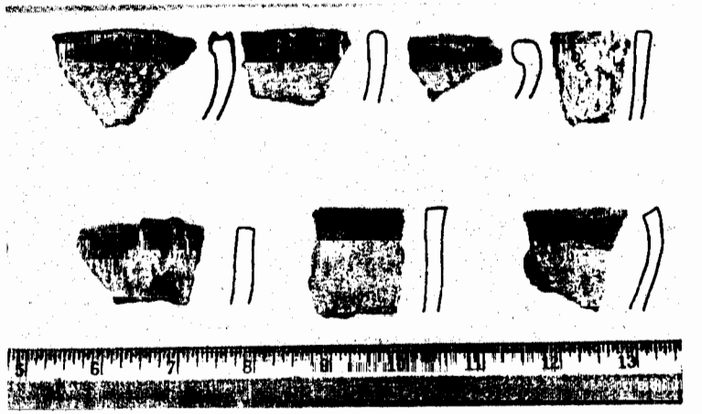


Plate 114. "Watson Plain" sherds in Carnegie Museum collection

Paste. Same as "Watson Cordmarked".

Surface finish. Smoothed.

Decoration. Various appendages applied to the lip.

Form

Rim. Moderately to sharply everted.

Neck. Moderately constricted.

Lip. Flattened and square to rounded.

Body. Elongated globular.

Base. Rounded; one small flat disk base known.

Thickness. Varies from 4 to 12 mm., averaging about 6 mm.

Appendages. Loop handles, mammiform and spout-like lugs, and castellations are the rare forms which appear on this type.

Diagnostic features. Paste, surface finish, appendages.

Geographic range. At present known from the northern West Virginia Panhandle area and the upper Youghiogheny area.

Probable relationships. The simple forms of this type are indistinguishable from the plain limestone-tempered pottery from the Tremper site now stored at the Ohio State Museum. The thinner sherds and everted rims with appendages are identical with "Monongahela Plain" except for the difference in temper. This has been noted at the Speidel site (Mayer-Oakes, n.d.*d*) and has been interpreted as signifying the impact of a new shell-tempered pottery style on the old limestone-tempered style.

Size of sample. 475 sherds.

References. Mayer-Oakes (n.d.*d*).

"Watson Incised"

In most cases identical with "Watson Plain" except for the addition of incised lines varying in width from 1 to 5 mm. Patterns usually consist of parallel rectilinear elements. Several sherds with incised-over-cordmarked surface have been noted, but they are in the minority. This type is identical with "Monongahela Incised" except for the difference in tempering material.

"Yock Punctate"

A tentative type included on the seriation chart since it appears to have a significant distribution. It is as yet little known. The pottery is essentially "Watson Plain," decorated with punctations, but it is recorded only from the upper Youghiogheny Valley.

"Monongahela Cordmarked"

(Plate 115)

Paste

Method of manufacture. Coiled. Malleated with a cordwrapped paddle.

Temper. Moderate to finely crushed shell particles under 2 mm. in diameter composing 10 to 30 per cent. of the paste.

Texture. Finely laminated, parallel to vessel walls.

Hardness. 2.5 to 3.5.

Color. Surfaces are predominantly dark, but exteriors range from buff to black. Core is usually black; majority of inner surfaces gray to black.

Surface finish. Interior surfaces are usually well smoothed. Exterior surfaces have been roughened by the impressions of a cordwrapped paddle; these impressions are partly obliterated on 30 to 50 per cent. of the sherds. On about 90 per cent. of the sherds, the impressions meet the lip at an oblique angle.

Decoration. Confined to the lip and adjacent lower rim area. Lips are incised transversely or obliquely, or indented with the edge of the cord-wrapped paddle or in some cases, a cordwrapped stick. Some lips also show cordmarking or punctation, with infrequent addition of pointed or rounded castellations.

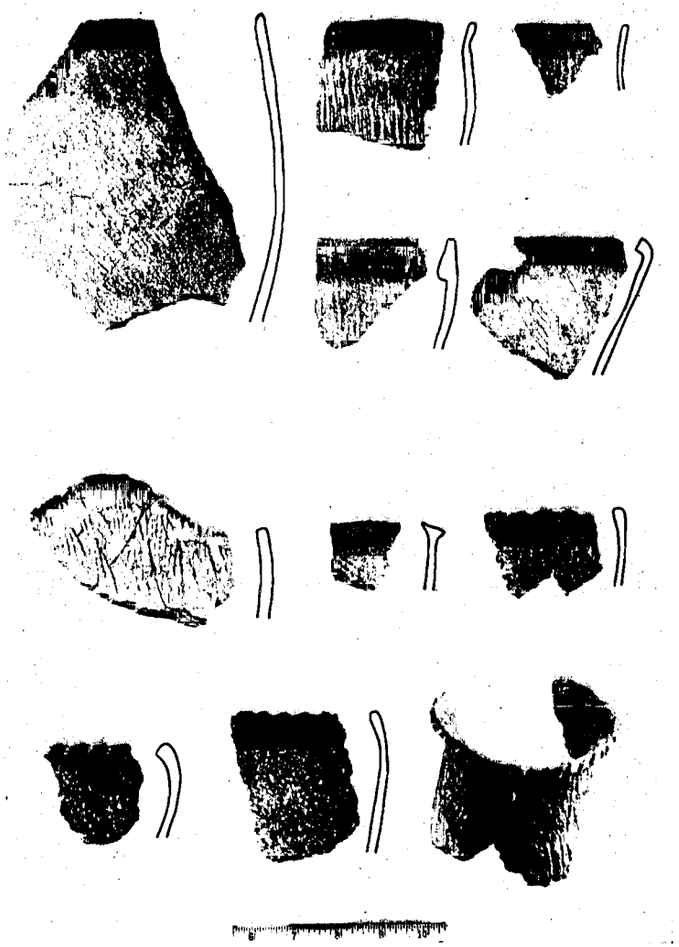


Plate 115. "Monongahela Cordmarked" sherds in Carnegie Museum collection

Form

Rim. Straight to slightly outflaring.

Neck. Slightly constricted.

Lip. Square to rounded; sometimes flattened or beveled.

Body. Elongated globular jar; bowl forms also known, but rare.

Base. Rounded.

Thickness. Ranges from 5 to 9 mm.

Appendages. Lugs and strap or loop handles are rare.

Diagnostic features. Paste, surface finish, rim form.

Geographical range. Entire Monongahela drainage, except extreme upper reaches in West Virginia; lower Allegheny Valley, with outliers in the upper reaches; Ohio Valley proper (with outliers in the Shenango Valley) down to the Marietta, Ohio, area where the type overlaps with the Fort Ancient type, "Clover Cordmarked". There are peripheral sites in the upper Potomac drainage, where Griffin has defined "Keyser Cordmarked," a geographic variant of this type.

Probable relationships. This pottery type is the basic and most common shell-tempered type in the Upper Ohio Valley. It is the most common member of the "Monyock" ware and apparently covers the longest span of occupation of any member of this ware. What are thought to be the earliest forms of this type show some similarities to the simple "Woodland Cordmarked" which is known to be present in Middle Woodland times. More specific shape, texture, and surface treatment similarities tie this type to the "Watson Cordmarked" type. Closest similarities are to early Fort Ancient types such as "Baum Cordmarked". The latest influences on this type appear to come from two different directions—the Iroquois area via the Susquehanna and Potomac drainages and the eastern Fort Ancient area via the Clover complex and the Ohio Valley.

Size of sample. 15,207 sherds.

References. Butler (1939, 1947). Cresson (n.d.). Engberg (1930, 1931). Manson, MacCord and Griffin (1948). Mayer-Oakes (n.d.*e*).

"Monongahela Plain"
(Plate 116)

Paste. Same as "Monongahela Cordmarked".

Surface finish. Both exterior and interior have been smoothed to a plain surface.

Decoration. Confined to the lip and rim area and consisting of longitudinal incising on the lip and the addition of castellations, spout-like lip notches and mammiform lugs.

Form

Rim. Moderately to sharply everted.

Neck. Moderately constricted.

Lip. Square; sometimes rounded.

Body. Elongated globular jar, sometimes with slightly carinated shoulder; water bottle and shallow bowl forms are known.

Base. Rounded.

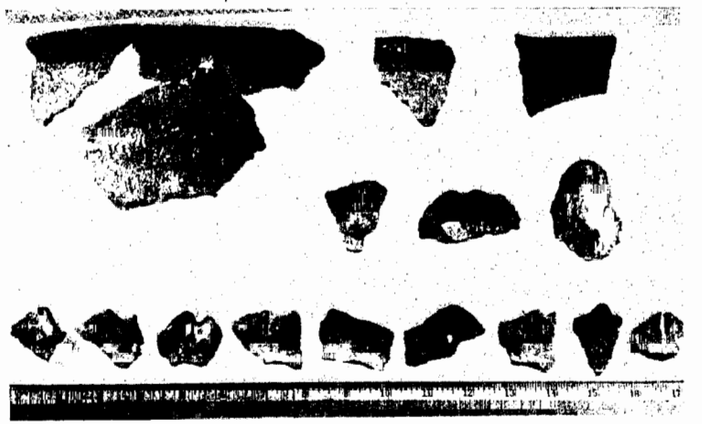


Plate 116. "Monongahela Plain" sherds in Carnegie Museum collection

Thickness. Ranges from 4 to 8 mm.

Appendages. Pointed or rounded castellations, lip notches, rounded or mammiform lugs.

Diagnostic features. Paste, surface finish, rim forms, appendages.

Geographical range. This type appears to be concentrated in two areas—the northern West Virginia Panhandle and the middle Monongahela Valley.

Probable relationships. This pottery type is one of the most puzzling of all discussed in this report. It is most popular early in the Monongahela period according to the seriation study and is very similar to the limestone tempered "Watson Plain" sherds. It appears to be the local representative of the widespread "Mississippi Plain" but has a definite local flavor which is best expressed in shape of vessel. A few vessels (Plates 60, "A" and 61, "A") do appear to be copies of "Middle Mississippi" pots but these items are quite rare.

Size of sample. 5025 sherds.

References. Mayer-Oakes (n.d.*d*).

"Monongahela Incised"
(Plate 117)

Identical with "Monongahela Plain" except for the addition of incised lines which vary in width from 1 to 10 mm. Patterns usually consist of parallel lines which are always rectilinear. (The two curvilinear incised sherds listed in Table 6 fit together to make a portion of a curvilinear guilloche design and they probably represent a Fort Ancient trade pot from the central Ohio Valley.) This type seems to be correlated in distribution

Plate 117. "Monongahela Incised" sherds in Carnegie Museum collection

with "Monongahela Plain" and, like it, is quite different from most other shell-tempered pottery in the northeast. The incising technique is not very much like the Fort Ancient types but the narrow line incising is similar to "Feurt Incised" while the broader incising is more reminiscent of "Baum Incised" or "Anderson Incised". The type is similar to the tentative "McFate Incised," though the latter has incising characteristically applied over cordmarking.

"Monongahela Punctate"
(Plate 118)

Identical with "Monongahela Plain" except for the presence of broad shallow punctates on the lower rim or possibly on the body. There is some evidence that these punctates often accompany the incised decoration as a bordering row. This type is a minor stylistic variation on the general plain surface theme.

"Scarem Plain"
(Plate 119)

Paste

Method of manufacture. Modeled (often crudely) from a single lump of clay.

Temper. Rarely any. Some suggestion of very small amounts of finely crushed shell; gritty hematite inclusions in the natural clay are often apparent. Temper makes up from 0 to 15 per cent. of the paste.

Texture. Irregular and contorted.

Hardness. 1.5 to 2.5.

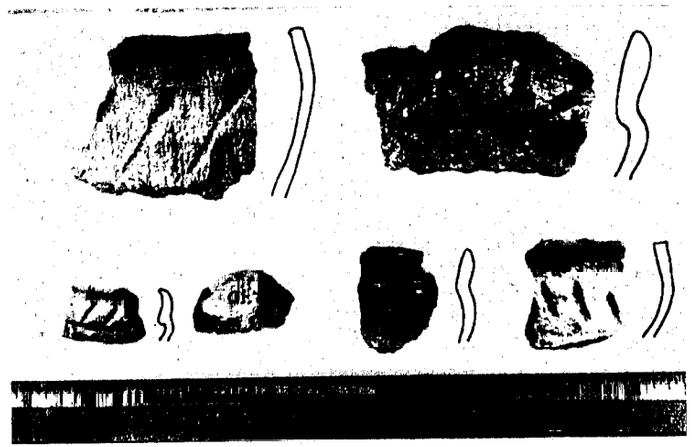


Plate 118 "Monongahela Punctate" sherds in Carnegie Museum collection

Color. Surfaces are predominantly light reddish brown; core is rarely darker.

Surface finish. Interior surfaces are irregular, showing finger impressions. Exterior is fairly well smoothed with some examples showing horizontal roughening in the neck area.

Decoration. Confined to transverse indentations of the lip.

Form

Rim. Moderately outflaring.

Neck. Moderate constriction in most cases.

Lip. Slightly pointed or beveled.

Body. Small globular jar or bowl.

Base. Rounded.

Thickness. 2 to 5 mm.

Appendages. Unknown.

Size of vessel. Height, 3 to 6 cm.; mouth diameter, 2 to 4 cm.

Diagnostic features. Paste, surface finish, size.

Geographical range. Monongahela drainage and Raccoon Creek Valley.

Probable relationships. This type seems to be related in its distribution to "Monongahela Cordmarked" but may not cover so long a span of time or so wide a geographic area. It is apparently made in imitation of these larger vessels. Very similar sherds, some of which have been marked with a cordwrapped paddle and are from slightly larger vessels, appear on sites in the middle Monongahela Valley. These "Scarem Plain" vessels perhaps represent items made by or for children as they have been found associated with juvenile burials.

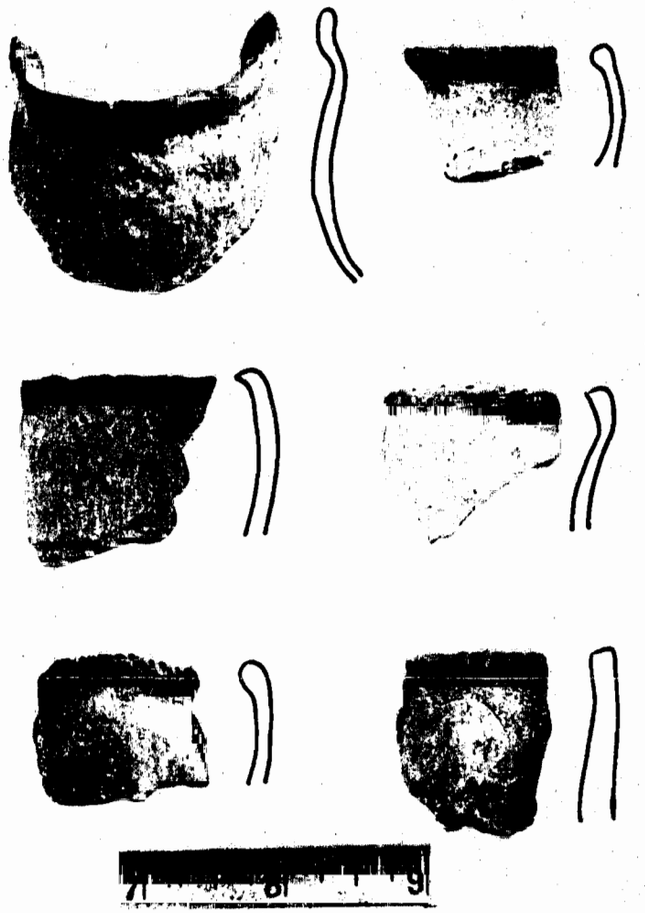


Plate 119. "Scarem Plain" sherds in Carnegie Museum collection

Size of sample. 79 sherds.
References. Engberg (1930, Plate VIII, 1 and 2). Mayer-Oakes (n.d.*e*).

Tentative Types

"Josephtown Cordmarked" and "Josephtown Plain" are recognizably different units of the Half-Moon ware which occur at only one site and for the time being are considered variants of the pertinent Half-Moon ware types. The paste characteristics of these two types are the same and are the distinctive feature which prompts their suggestion as separate types.

"Legionville Fabric-impressed" is a variant of "Half-Moon Cordmarked" characterized by interior marking with a plain plaited fabric. It is restricted in distribution to the Legionville site, 36Bv32.

"Bolinger Striated" is a variant of "Half-Moon Cordmarked" characterized by interior roughening in parallel grooves or striations. It is restricted in distribution to the Bolinger site, 36Lr21.

"Wellsburg Simple Stamped" (Plate 120) is a very distinctive shell-tempered pottery type which occurs rarely in the Upper Ohio Valley and adjacent areas. Although Carnegie Museum's sample consists of only 48

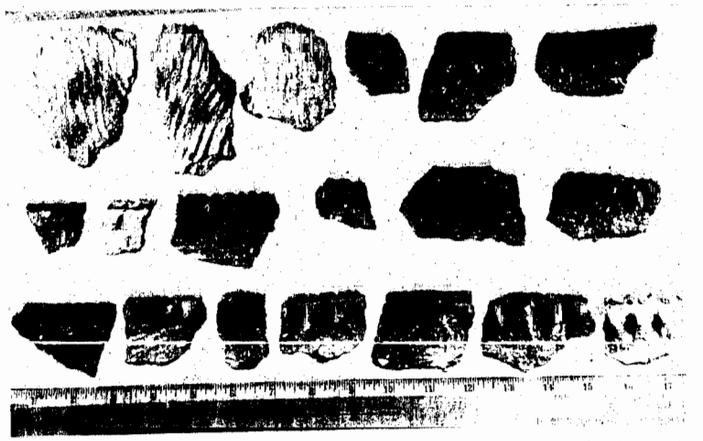


Plate 120. "Wellsburg Simple Stamped" rim and body sherds in Carnegie Museum collection

sherds, I have seen at least 150 additional sherds of this type from the area. A complete vessel of the type from the Parson's site (46Ms61) in Mason County, W. Va., is illustrated on Plate 103, "B". The site where sherds of the type occur in abundance is 46Br2 which is located on the north edge of Wellsburg, W. Va. Walter Singer of Wellsburg has a representative collection from the site, and donated rim and body sherds to Carnegie Museum. This type is also present at the McKees Rocks mound village site (36Al16)

but some of the typical rims, with pinched or filleted rimstrip added, have a cordmarked surface treatment instead of the simple stamping. Sherds which I have examined in the Ohio State Museum from several sites of the Whittlesey focus in northeastern Ohio are of this type, as are the materials from the Chautauqua County, N. Y. site mentioned above. The closest published type appears to be "Madisonville Grooved-Paddled" mentioned by Griffin (1943*a*, p. 349). The surface was roughened by paddling with a wooden paddle which had been grooved by carving, or wrapped with strips of thong. The technique was very much like cordmarking; in fact, the term "simple stamping" should logically include both media. Since cordmarking is firmly entrenched in the literature we will thus imply, by use of the term "simple stamp", only the grooved or thong-wrapped paddle method outlined above.

"McFate Incised" is a variety of the "Monyock" ware which occurs primarily in the upper Allegheny drainage and is best known from the McFate and Westfield sites. While the cordmarked, shell-tempered pottery at these sites can be described as "Monongahela Cordmarked", the incised material differs from "Monongahela Incised" in the overall surface treatment. In the latter, the design is placed on a smoothed plain surface while at McFate and Westfield the design is most often placed over a cordmarked surface. This is the primary difference between the two incised types but differences in motif are discernible, and can be demonstrated in future studies.

Interpretive summary

In the preceding sections we have presented the basic description and interpretation essential to an understanding of the present data for Upper Ohio archeology. (Similar descriptive summaries of lesser scope have been prepared as term papers by Hayes, n.d.*a* and n.d.*b*.) In this last section we draw the main threads of these data together for the entire area with emphasis on interpretation and significance of the observed facts.

EARLY HUNTER EPOCH

This first unit of time for which we have any direct evidence is the longest but least known of all. While it is entirely possible that men were living in the New World prior to the end of the latest glacial advance (Krieger, 1953) there is as yet no evidence for this from the Upper Ohio Valley.

The understanding of the archeology of this epoch in the eastern United States has been greatly advanced by the recent publication of several site reports—Byers (1954), McCary (1951), Ritchie (1953) and Witthoft (1952*a*). Although it is as yet possible to date this material only by technological and typological factors, the similarities to various definitely early units indicate that it is only a matter of time before stratigraphic, paleontological, geological or carbon-14 dates will confirm the existence of Paleo-Indian hunters in the east during the period 8000-6000 B.C. The major types of artifacts which represent this epoch in the eastern United States are shown in the summary drawings, Fig. 18. All but the fluted point are adapted from drawings by Witthoft.

Our study of this epoch has been restricted to a recording of the distribution of the fluted points. This information has been included in the present paper and will provide the basis for future studies of the Paleo-Indian in the Upper Ohio Valley. It represents the major evidence for the early hunters who were probably the first humans in the area. Fluted projectile points from the area appear to be concentrated in the Allegheny Valley but this concentration may be more apparent than real.

In conjunction with our study of distribution of fluted points, we have recorded certain sites and areas (particularly in the Mahoning and Shenango basins) which produce scrapers and lanceolate points, which are similar to late Paleo-Indian lithic complexes in the mid-west. My suggestion is that these materials correspond to what has been called "Yuma" in the west and represent, for the Upper Ohio Valley, a step between the fluted point complex and the early Archaic shell-heap units.