A FORMAL ANALYSIS OF PREHISTORIC CERAMICS FROM THE FLETCHER SITE

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JANET GAIL BRASHLER

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ABSTRACT

A FORMAL ANALYSIS OF PREHISTORIC CERAMICS
FROM THE FLETCHER SITE

By

Janet Gail Brashler

The purpose of this study is to formally describe a collection of prehistoric ceramics from the Fletcher Site (20 By 28). The Fletcher Site is located within the limits of Bay City, Michigan along the northwest bank of the Saginaw River. The Fletcher Site is a multi-component prehistoric and historic site occupied periodically over the last three thousand years. Small amounts of Early and Middle Woodland (800 B.C.-200 B.C. and 200 B.C. to A.D. 450) ceramics are analyzed and described based on extant ceramic classifications for the Saginaw Valley.

A large sample of Late Woodland (A.D. 600 to A.D. 1200) ceramics, which appears on inspection to belong to the Wayne ceramic tradition, allows explicit statistical analysis to ascertain whether formal ceramic definitions generated for the Fletcher Site replicate the formal definitions of previously defined Wayne Tradition ceramics in Southern Michigan. Replication of the original typology

would give statistical confirmation that Late Woodland inhabitants of the Saginaw Valley made Wayne Ware like other Wayne Ware making peoples.

The classificatory method used in this study is monothetic subdivision. A monothetic subdivisive classification is generated by dividing the Fletcher Site sample of Wayne Tradition ceramics into smaller and smaller units based on the presence or absence of single attributes. Since the number of calculations necessary to produce this type of classification is numerous and time consuming, a computer program is used. A small residual group of Late Woodland ceramics not belonging to the Wayne Tradition is analyzed in light of extant Late Woodland ceramic classifications.

Results of the study allow the prehistoric occupation of the Fletcher Site to be roughly dated. In addition, the results of the statistical analysis suggest that Wayne Tradition ceramics in the Saginaw Valley and Southeastern and Southwestern Michigan are quite similar. Furthermore, the results indicate more internal variability within the Wayne Tradition that was accounted for in the original definitions. A revision of Wayne Tradition ceramics is proposed which appears to account for most of the variability within a broadly defined ceramic tradition.

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Janet Gail Brashler

A THESIS

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TABLE OF CONTENTS

Chapter

LIST OF TABLES

LIST OF ILLUSTRATIONS

PART I

INTRODUCTION

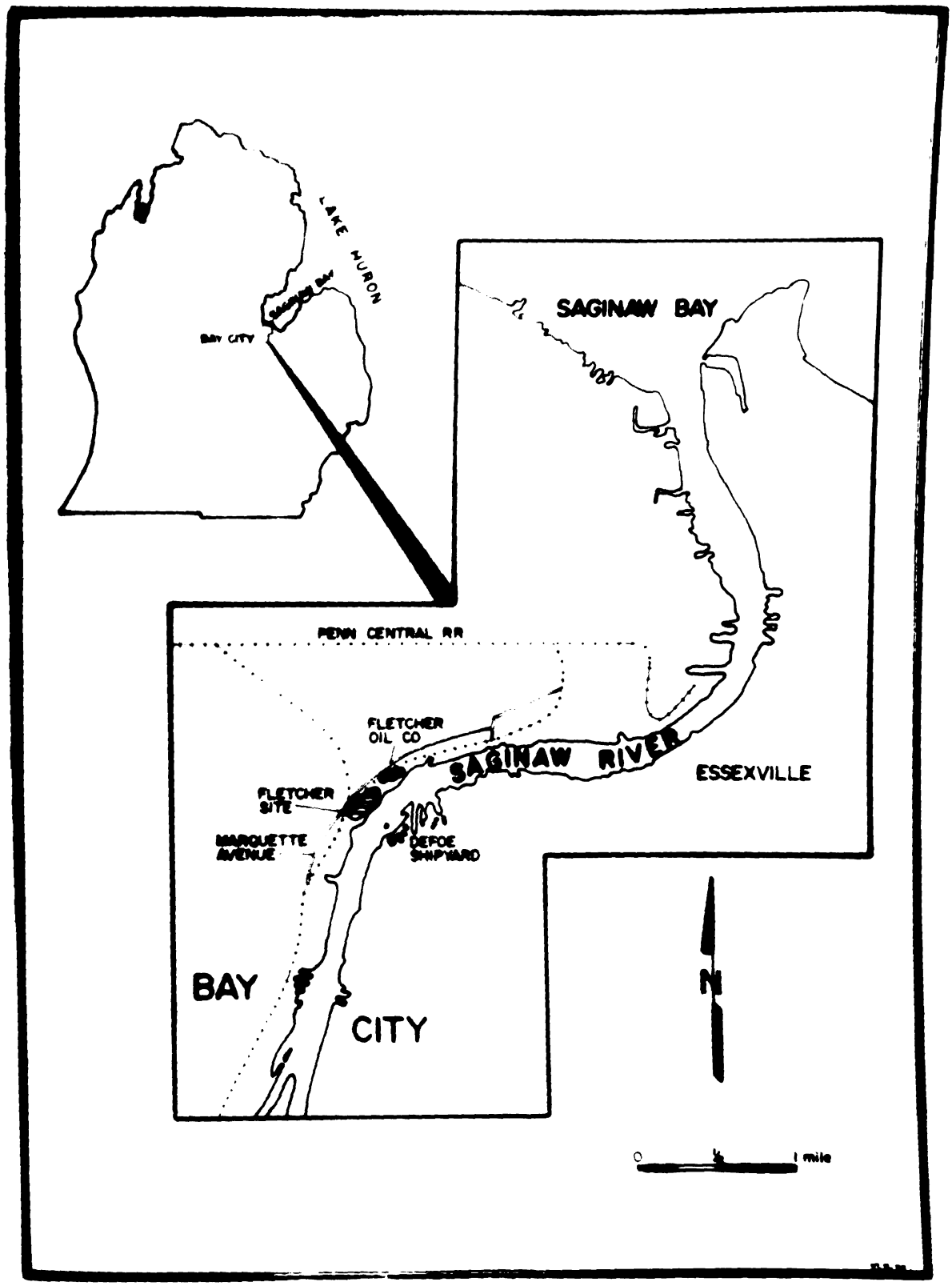
CHAPTER I

THE PROBLEM

The Fletcher Site (20 By 28) is a multi-component prehistoric and historic site located on the northwest bank of the Saginaw River in Bay City, Michigan (Figure 1). The importance of the Fletcher Site lies in the quantity of historic period burials dating from approximately 1720-1770, and the considerable quantity of prehistoric features and artifacts. The prehistoric components are composed of Early, Middle and Late Woodland materials, most of which is early Late Woodland. While considerable attention has been given to the historic material from the Fletcher Site (Maxwell, 1972; Mainfort n.d.; Sauer, Personal Communication; Tordoff, 1972) little of the prehistoric material from this site has been analyzed or described.

The purpose of this study is to classify prehistoric ceramics from the Fletcher Site into formal descriptive categories which may then be compared with ceramics of similiar temporal position from other areas of Michigan. All rims and decorated body sherds were initially sorted into three groups belonging to the Early, Middle and Late Woodland periods based on extant ceramic classifications.

Figure 1.--Location of the Fletcher Site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BAY CITY
SAGINAW BAY
PENN CENTRAL RR
FLETCHER OIL CO
SAGINAW RIVER
ESSEXVILLE
FLETCHER SITE
MARQUETTE AVENUE
DEFOE SHIPYARD
BAY CITY
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Sample size of the Early and Middle Woodland collections from the Fletcher Site was small. One rim sherd and 28 body sherds were classified as Early Woodland. Thirty-four rim sherds representing 18 minimal vessels were classified as Middle Woodland. The Late Woodland sample from the Fletcher Site was substantial. A total of 862 rims were sorted into 542 minimal vessels. One hundred-eighty-eight vessels were too fragmentary for further analysis. Thirteen were miniature vessels which are described separately. The remaining 341 vessels (657 rim sherds) had information in 25 out of 27 attribute classes and were subjected to further analysis.

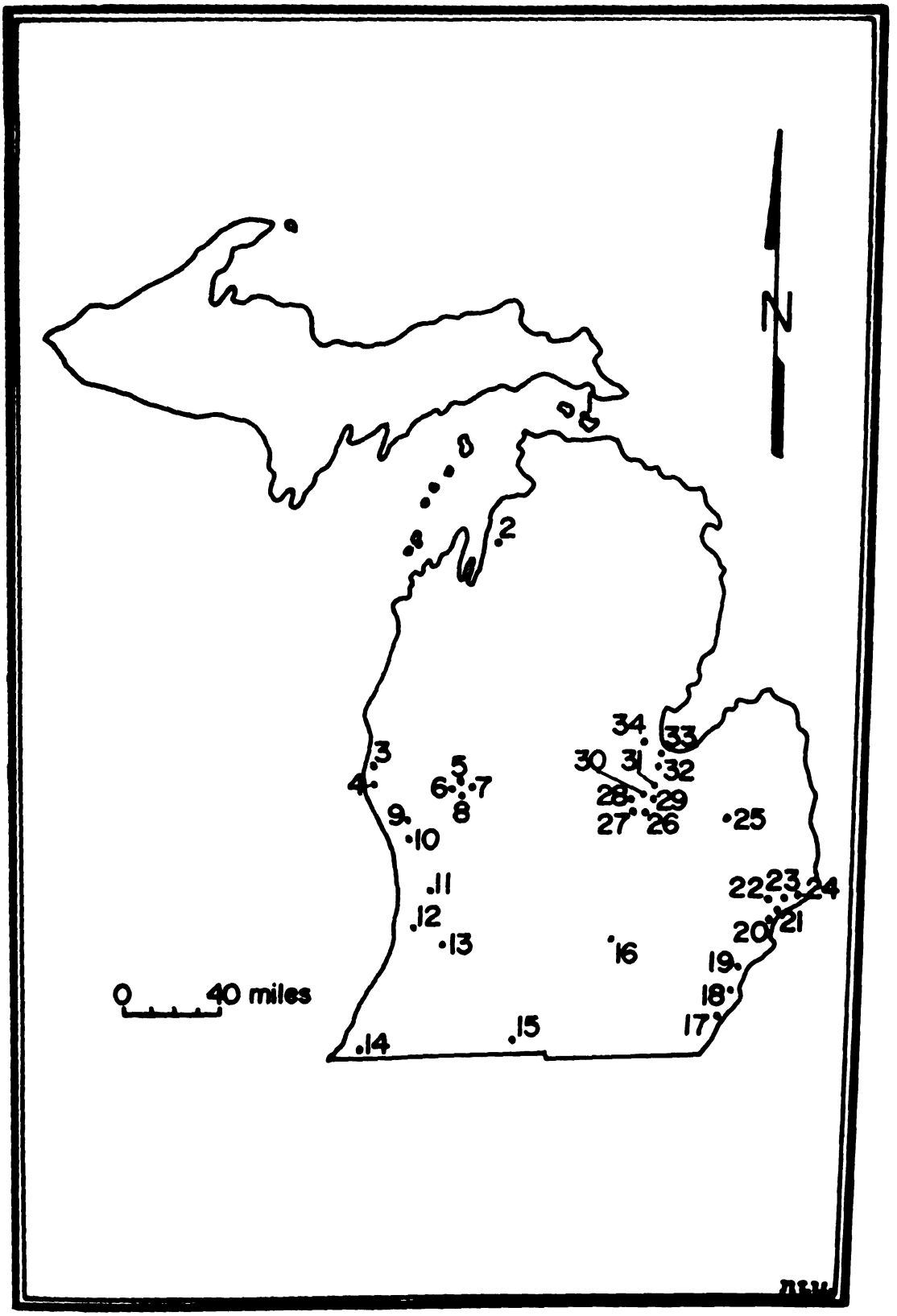
A substantial portion of the Late Woodland ceramic sample (292 of 341 vessels) is related to the early Late Woodland Wayne Wares described by Fitting (1965). These Wayne Tradition ceramics dating from A.D. 600 to A.D. 1200 were selected for statistical analysis. The remaining 49 vessels which date from other phases of the Late Woodland are described in Chapter 6, as Miscellaneous Late Woodland ceramics. Fitting (1968: 23-24; 1970: 174) argues convincingly for the internal continuity of Wayne Wares. The wide distribution of ceramics of this tradition in Southern Michigan (Fitting, 1965; Halsey, 1968; Wobst, 1968; Rogers, 1972, etc.) indicates the need for a more systematic evaluation of ceramics assigned to this ware tradition.

Late Woodland ceramic assemblages in the Saginaw Valley (Figure 2) which have been described in the literature include: Valley Sweets (Brose, 1966); Kantzler (Crumley, 1967); Bussinger (Halsey, 1967); Butterfield (Wobst, 1968); Hodges (Fitting and Sassé, 1969); Stadelmeyer, Fosters, and Mahoney (Bigony, 1970); and Schultz (Fisher, 1972). All of these assemblages are characterized by small samples of ceramic material. Consequently, most Late Woodland ceramics from the Saginaw Valley have not been analyzed in a problem oriented framework with the purpose of testing for the presence of specific ceramic types. Instead, Saginaw Valley Late Woodland ceramics have been referred to as various types of Wayne, Mackinac and Riviere Wares all of which were initially defined in other areas of Michigan. The large collection of Late Woodland Wayne Ware from the Fletcher Site makes it possible to determine, with statistical confidence, whether Late Woodland ceramics in the Saginaw Valley are part of the Wayne Tradition which was originally defined in Southeastern Michigan.

The presence of ceramics belonging to a broadly defined Wayne Tradition in the Saginaw Valley and at the Fletcher Site was assumed in this study based on extant collections and inspection of the Fletcher Site Late Woodland ceramics. The presence however, of Wayne Ware or Allegan Ware types identical to original type definitions

Figure 2.--Some Late Woodland Sites in Michigan

1. Juntunen
2. Skegemog Point
3. Silver Lake
4. Stoney Lake
5. Crystal Lake
6. Mallon
7. Carrigan
8. Brunette
9. South Flats
10. Spring Creek
11. Spoonville
12. 46th Street
13. Fennville
14. Moccasin Bluff
15. Whorley
16. Root
17. Sissung
18. Gibralter
19. Springwells (Fort Wayne Mound)
20. Verchave
21. Furton
22. Riviere au Vase
23. Fuller
24. Wolf
25. Younge
26. Hodges
27. Mahoney
28. Bussinger
29. Schultz
30. Stadelmeyer
31. Valley Sweets
32. Kantzler
33. Fletcher
34. Butterfield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was not assumed. Therefore, one purpose of this study was to ascertain, using an explicit statistical approach, whether formal ceramic definitions generated for the Fletcher Site had the same defining characteristics as the original Wayne Tradition type definitions. This was accomplished by constructing a typology for two groups of Wayne Ware. The initial grouping was based on Fitting's distinction between exterior decorated ceramics, Wayne Punctate, Wayne Corded Punctate, Wayne Crosshatched, and Wayne Cord Impressed; and ceramics lacking exterior decoration, Wayne Cordmarked and Wayne Smoothed (Fitting 1965: 158-159). The null hypothesis, that Wayne Ware and related ceramics like those described for Southeastern and Western Michigan are not present at the Fletcher Site, would be rejected by construction of a typology for Fletcher Site Late Woodland Ceramics replicating the original Wayne, Spring Creek and Allegan Ware types. Replication of the typology would give statistical confirmation that Late Woodland inhabitants of the Saginaw Valley participated in the Wayne Ceramic Tradition, as originally defined in other areas of Michigan.

CHAPTER II

THE SETTING

Geographic and Geologic Setting

The Fletcher Site is located in the southeast quarter and the southwest quarter of the southwest quarter of Section 16; Bangor Township, Bay County, Michigan; Township 14 North, Range 5 East. The site lies on the northwest bank of the Saginaw River, approximately four miles southwest of the point where the river empties into Saginaw Bay of Lake Huron (Figure 1).

The Fletcher Site is situated on elevations between 585 and 590 feet above sea level. Modern Lake Huron is 580 feet above sea level and has been stable at this elevation since approximately 1000 or 1200 B.C. Prior to that time post-glacial Lake Nippissing stood at 605 feet above sea level. The Fletcher Site was therefore under Lake Nippissing waters from approximately 5000 B.C. until the stable modern lake level was reached at approximately 1000 B. C. (Hough, 1963: 105). Fletcher was consequently, suitable for human occupation prior to 5000 B.C. and following 1000 B.C.

Radiocarbon samples of 4250 B.C. ± 150 (M-1634) and 5050 B. C. ± 170 (M-1633) from a stratigraphic unit at

the nearby Schultz Site date late pre-Nippissing times in the Saginaw Valley. This stratigraphic unit is followed by a bed of lacustrine sands. A third date from the Schultz Site of 530 B. C. ± 120 (M-1432) dates the succeeding stratum as an Early Woodland occupation (Speth, 1972: 54-61). The soil at the Fletcher Site is highly sandy. A dark brown sandy midden, high in organic content overlies clean yellow basal sands. The intensive occupation of the site and alluvium from the river are largely responsible for the high organic content of the midden.

Prehistoric Setting

Vegetation

Today the primary vegetation at the Fletcher Site is a grove of sumac and grasses. Vegetation in the past however, consisted of species commonly found in the Canadian and Carolinian Biotic provinces. Analysis of floral remains from the Fletcher Site yielded evidence of various kinds of oak, elm, basswood, ash, sassafrass, birch, cottonwood, hickory, white pine, walnut and yellow popular (Dr. Eldon A. Behr, personal communication). A map of the presettlement forest of Michigan (Veatch, 1959) shows elm, silver maple, swamp white oak, basswood, shagbark hickory, sycamore, cottonwood, burr and red oak as species common to the vicinity of the Fletcher Site. Jones and Kapp (1972: 22) indicate that the pre-settlement forest

of the Fletcher Site vicinity is the oak-ash forest type with areas of swamp river bottom.

Fauna

The location of the Fletcher Site at one of the last major bends in the Saginaw River before it empties in Lake Huron afforded inhabitants easy access to a variety of acquatic resources. Faunal analysis of the Fletcher Site has not been completed at this time. Dr. Moreau S. Maxwell (personal communication) noted however, the presence of a relatively small amount of faunal material, most of which was fish. Small quantities of fauna could be due to poor preservation conditions which often are present at sites having sandy soil such as the Fletcher Site.

Faunal analysis complete at this time indicates the presence of northern pike, bass, walleye, bowfin, whitefish, several kinds of catfish, a kind of sucker, sturgeon, muskrat, turtle, white tail deer and squirrel (Denise King, personal communication). Several unusual features were recorded including burials of eight porcupines in a single feature, a black bear burial and several dog burials. A more detailed analysis of the site stratigraphy and the fauna is necessary before specific kinds of faunal remains can be associated with the different occupations on the site.

Modern Setting

The Fletcher Site lies within the boundaries of present day Bay City, Michigan. At its location on the property of the Fletcher Oil Company, and across the Saginaw River from the Defoe Shipyard (Figure 1), the Fletcher Site has been subjected to much modern construction activity. The site formerly fronted on the Saginaw River which had a marshy foreshore. Dredging of the river channel and chopped off the shore frontage of the site. In addition, dredge from the river bottom has been deposited on and near the area of the site. Bulldozer operations by the Fletcher Oil Company, the U.S. Army Corps of Engineers, and construction of a railroad trench and dike have contributed to the disturbance of the site. The site may extend across Marquette Avenue. This area is relatively undisturbed by construction but has been extensively damaged by the activity of relic hunters.

CHAPTER III

HISTORY OF EXCAVATION

Discovered in 1964, by Victor Talaga, the Fletcher Site has been the object of limited surface collecting and excavation by both professionals and amateurs. Judge Ira Butterfield documented a small area of occupation in 1964 and 1965. Documents detailing his work are on file at the Michigan State University Museum. It was not until August of 1967, that the site became the serious concern of professional archaeologists. At this time, The U.S. Army Corps of Engineers initiated bulldozing operations to create a dike and catchment basin to receive dredge from the Saginaw River.

The dulldozing exposed a number of historic burials and a quantity of European trade goods. Mr. Talaga and members of the Saginaw Valley Chapter of the Michigan Archaeological Society brought this to the attention of Dr. James B. Griffin of the University of Michigan. At the same time the Army Corps of Engineers notified Dr. Moreau S. Maxwell of Michigan State University. Bulldozing operations were halted and Dr. Moreau S. Maxwell subsequently supervised salvage by a Michigan State University

field crew under the direction of Mr. Peter Murray. Members of the Saginaw Valley Chapter of the Michigan Archaeological Society also assisted in the three week salvage operation of 1967.

The 1967 excavations yielded 58 burials, 27 sufficiently complete for analysis. In 1968, Dr. Maxwell returned to the Fletcher Site with a team of six students and recovered 33 more burials, two of which were probably prehistoric. In addition to the burials, Maxwell also excavated a substantial amount of prehistoric material. A total of 3850 square feet were excavated during the 1967 and 1968 field seasons.

The 1967 excavation was oriented towards salvage of site area disturbed by the bulldozer operations. During the 1968 excavations, a grid was established. The site was excavated in ten by ten feet squares. Arbitrary three inch levels were used in undisturbed areas. All excavated material was sifted through one-quarter inch mesh screens, and all contents were saved. Features were totally excavated, usually by troweling and shovelling trowled material into screens. Square sheets were drawn for each level and burial, and a site map was completed.

During the summer of 1970, Dr. James A. Brown and a crew of students from Michigan State University excavated 21 more burials, one of which was prehistoric, and a large amount of prehistoric material. Ten by ten feet squares

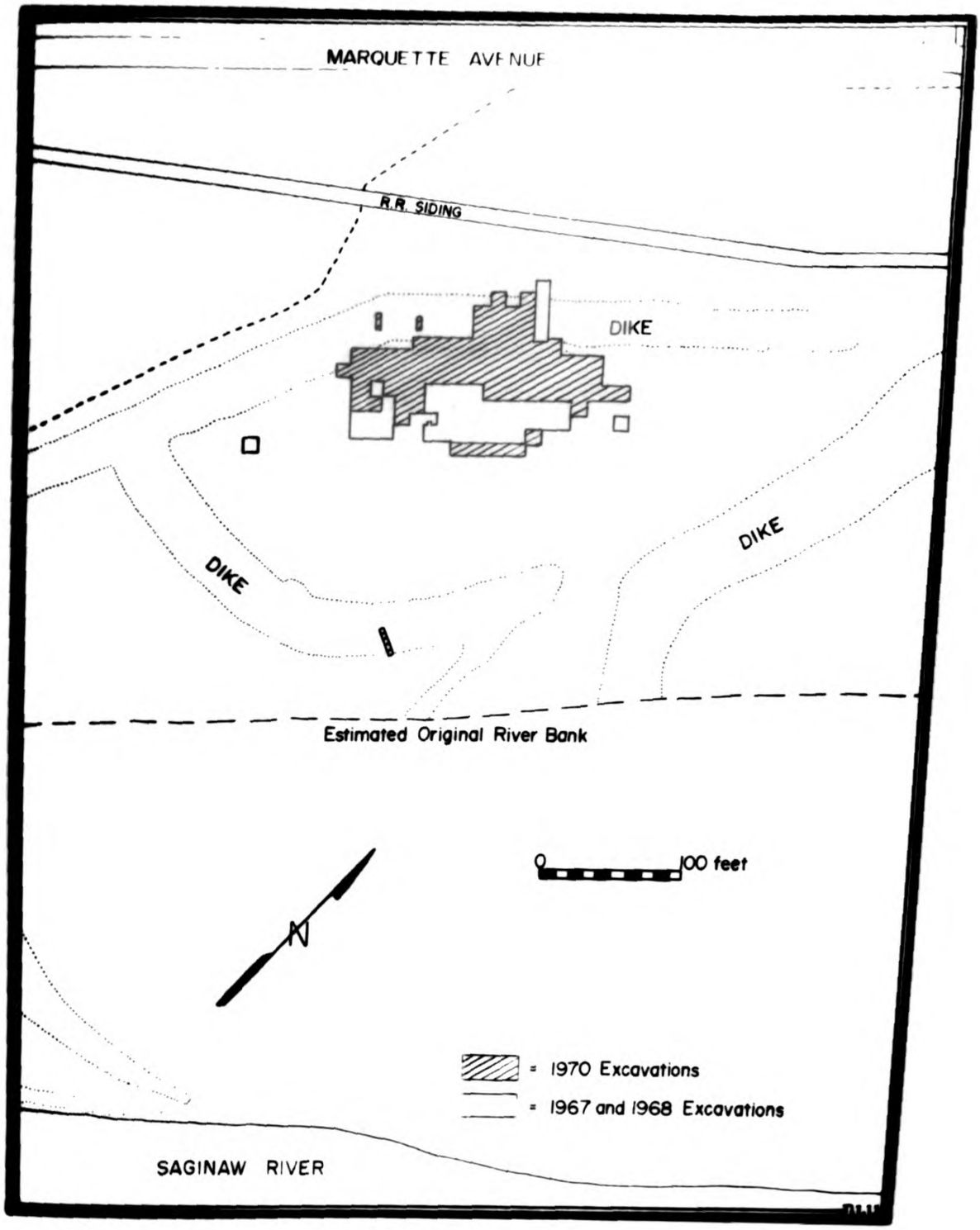
were excavated by hand and some disturbed areas were stripped by machine and features were plotted. A portion of the dike was also dug and sifted. The 1970 excavation followed the grid system established in 1968. Two bulldozer cuts, one five by ten foot and one five by five foot were also excavated away from the major portion of the excavation to discover the units of the occupation and site stratigraphy. Arbitrary three inch levels were again used. All excavated material was sifted through one-quarter inch mesh screens. Square sheets were drawn for each level and burial, as well as feature profiles. Features were excavated by profiling and sampling. Feature sampling may be reflected in the relatively small number of prehistoric vessels coming from features (25%) as opposed to excavation units (75%).

In all, approximately 10,725 square feet of the Fletcher Site have been excavated thus far (Figure 3). A large portion towards the Saginaw River remains unexcavated, however, and more occupation exists across Marquette Avenue.

Summary of Occupation

The Fletcher Site was occupied sporadically over a period of almost three thousand years. The first occupation was sometime during the Early Woodland Period, approximately 800-200 B.C. The scant Early Woodland

Figure 3.--Excavations at the Fletcher Site


MARQUETTE AVENUE
R.R. SIDING
DIKE
DIKE
DIKE
Estimated Original River Bank
100 feet
N
= 1970 Excavations
= 1967 and 1968 Excavations
SAGINAW RIVER

occupation was followed by a slightly larger Middle Woodland occupation, occurring sometime between 200 B.C. and A.D. 400. The next and largest occupation or series of occupations was during the Late Woodland Period, from A.D. 700 to A.D. 1450. The most intensive period of occupation appears to be during the early portion of this period between A.D. 600 and A.D. 1000. On some areas of the site features from this period intruded into features from the Middle Woodland period. The final occupation of the Fletcher Site occurred between 1740 and 1780. During this period, the site was used by Central Algonkin speaking people as a cemetery. The graves, often with elaborate grave goods, were frequently excavated into the midden and features of the Middle and Late Woodland Occupations. While no historic habitation area has been located within the present limits of excavation, Dr. Moreau S. Maxwell (personal communication) maintains a small historic habitation area may exist to the east of the major excavation.

All collections from the Fletcher Site are housed at the Michigan State University Museum and have been assigned Accession Number 3234.

PART II

RESEARCH DESIGN

CHAPTER IV

METHOD AND TECHNIQUE

Analysis of Early and Middle Woodland Ceramics

Early and Middle Woodland ceramics were sorted into minimal vessels (one Early Woodland and 18 Middle Woodland). The small size of the collection from the Fletcher Site and the presence of a large analyzed collection of Early and Middle Woodland ceramics from the nearby Schultz Site (Fischer, 1972) permits classification of Fletcher Site Early and Middle Woodland ceramics into defined wares and types. Moreover, the small sample size of Early and Middle Woodland ceramics did not warrant further analysis. Chapter 5 presents a formal description of Early and Middle Woodland ceramics from the Fletcher Site.

Analysis of Late Woodland Ceramics

Method

Method has been defined as "a subsystem of a larger theory which is directed toward the solution of a particular kind of problem", (Dunnell, 1971: 34). In order to test the validity of Wayne Tradition and related ceramics at the Fletcher Site and in the Saginaw Valley, a particular

method, monothetic subdivision was chosen from among a number of classificatory methods.

The two most common methods of classification are monothetic subdivision and polythetic agglomeration (Whallon, 1971: 2). Classifications are monothetic if the presence of a single attribute or configuration of attributes is both necessary and sufficient for membership in the types or classes produced. Classifications developed by dividing a population into smaller and smaller groups are subdivisive. Polythetic classifications are those in which each artifact has a large but unspecified number of attributes of its class; where each attribute occurs in high but unspecified frequency; and where no single attribute is both necessary and sufficient for membership in a class or type (Clarke, 1968: 42). Polythetic classifications are usually developed by agglomeration, including individuals in larger and larger classes until all are incorporated into one class.

A monothetic subdivisive method was selected for this study because it most closely approximated the "common typological method" which was used to derive the original definition of Southern Michigan Late Woodland ceramic types. The common typological method produces types having a cohesive repeated combination of attributes. Such types are arbitrary classes of objects within which, each object shares a patterned similarity. Types derived

using numerical monothetic techniques have more statistical confidence than types derived by the common typological method because they were derived by objective replicable means.

Three major principles which monothetic subdivision shares with the common typological method are the principle of shifting criteria, hierarchy of importance, and definability of types. The principle of shifting criteria states that specific attributes used in type definitions are free to change from one type to the next. The hierarchy of importance refers to the order in which attributes are considered in forming the classification. The hierarchy is free to change at each stage in formation of a typology. Definability of types refers to precision with which types may be characterized in using the defining attributes (Whallon, 1971: 6).

Technique

Attribute List: Sorting rims into minimal vessels was followed by construction of an attribute list. This stage of the analysis was most critical in that selection of attributes for description of and discrimination within a sample strongly affects the outcome of the analysis. Familiarity with the Fletcher Site sample and other Late Woodland ceramic attributes lists (McPherron, 1967; Lovis, 1973) from Michigan allowed initial selection of attributes

to take place within important classes of information. Additional experience with the Fletcher Site sample material expanded certain attribute classes and eliminated or reduced others.

The final working attribute coding list consisted of 95 variables related to 27 classes of information. The list is presented in Appendix A. Previous studies of Late Woodland ceramics in Michigan (Fitting, 1965; McPherron, 1967; Louis, 1973) indicated that important discriminatory classes of information include attributes related to the shape of different parts of the vessel, tool type and technique of decoration for each decorated area of a vessel, and the pattern or motif formed, for each decorated area of the vessel. A large majority of exterior decorated Late Woodland ceramics from the Fletcher Site displayed a single decorative motif. Therefore, only one set of attributes pertaining to tool and technique of application was included for exterior decoration. Several attributes were included however, to accomodate the relatively infrequent occurence of additional attributes on the exterior.

All vessels complete enough (those which exhibited at least 25 of 27 coded attribute classes were coded on 80 column computer punch cards, one attribute per column, two cards per vessel. A vessel identification number specifying provenience type was also coded on each computer card.

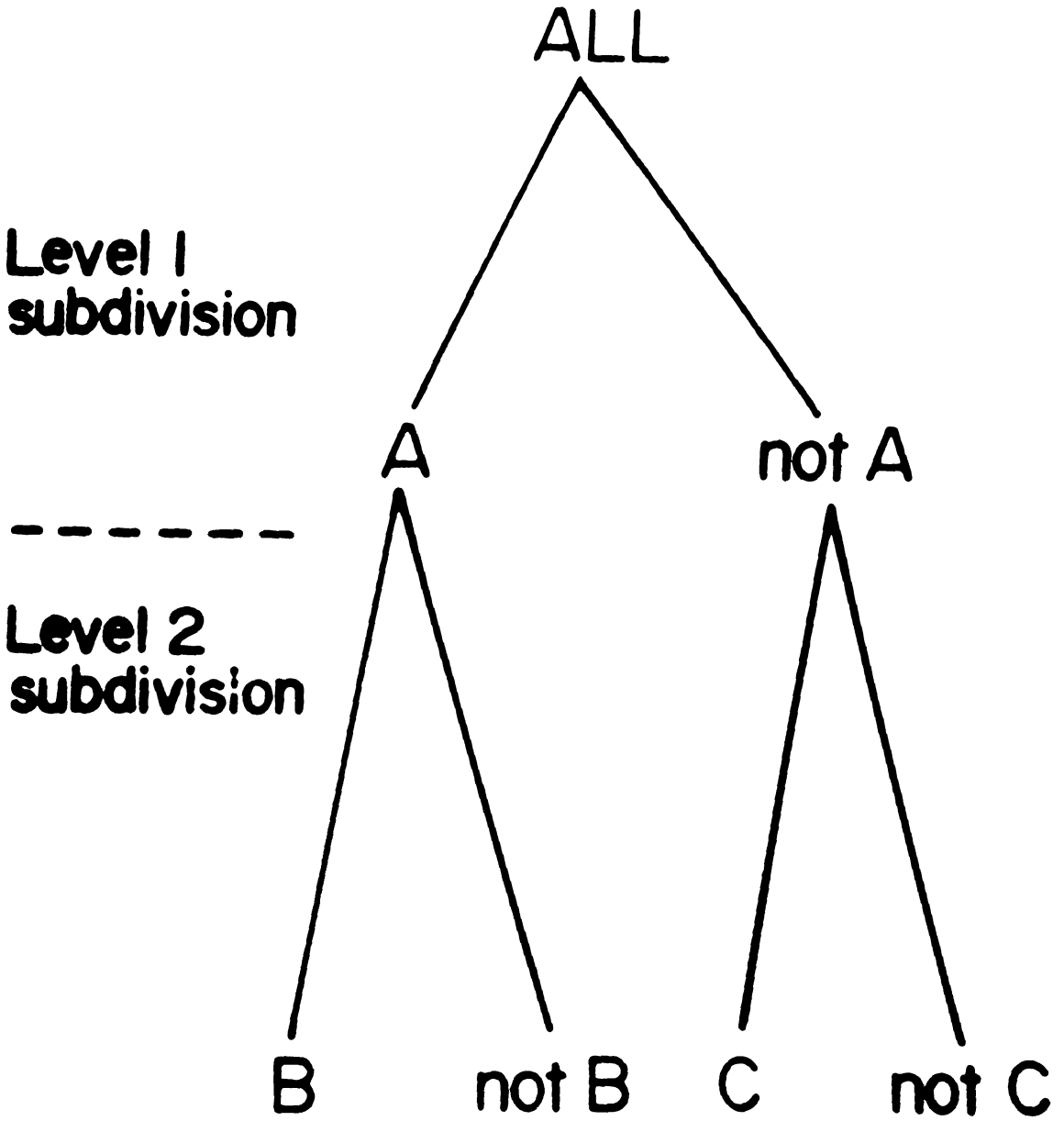
Statistical Analysis - Development of Types

All computer analyses were run on the CDC 6500 computer, at Michigan State University. Initial statistical analysis included use of two computer programs made available by the Computer Institute for Social Science Research at Michigan State University. The routine PFCOUNT required that data be input from a standardized file. DATASET, the second CISSR program, performed this operation. PFCOUNT is a routine which calculates percentages and frequencies of univariate data (for each attribute). Results of PFCOUNT are presented in Appendix A.

Program TYPE is a monothetic subdivisive classification routine developed by Robert Whallon (1971, 1972) which forms tree-type taxonomies (Figure 4). Tree-type classifications are best known from guides or classification of birds, flowers, trees and shrubs, and other natural objects. Whallon originally developed the program for purposes of analyzing New York Owasco ceramics.

TYPE uses the simple chi-square statistic as a measure of association on dichotomous (presence/absence) data. One of three options (sum of significant chi-squares, average chi-square, or maximum individual chi-square) can be used to determine the importance of attributes in formation of the hierarchic classification. At each stage of the classification, chi-squares are calculated for each attribute. The attribute having the specified significant

Figure 4.--A Tree Type Taxonomy


ALL
Level 1
subdivision
A
not A
Level 2
subdivision
B
not B
C
not C

chi-square function is chosen as the variable on which division of the sample will take place. Division of the sample occurs based on the presence or absence of that attribute (Figure 4: A or not A). Logically, the attribute used in the first or Level 1 subdivision is then eliminated from calculation of further divisions. The next step (a Level 2 division) takes all vessels having attribute A and calculates chi-squares for all remaining attributes, determines which is significant and selects that attribute for the next division (Figure 4: B, or not B). All vessels lacking attribute A are then selected for a second Level 2 division, independent of the first Level 2 division. Such independence is an application of the principle of shifting criteria which allows the attributes used in defining types to shift from type to type.

One particularly useful feature of Program TYPE is the way it accomodates mechanical redundancies within data. The program will not calculate the chi-square statistic which compares two attributes within the same attribute class. The smallest expected cell value, the size of a significant chi-squares, and the minimal size of sub-groups are features of the program specified by the user. Program TYPE continues subdividing groups until sub-group size falls below that specified by the user, or until no significant chi-squares are calculated. If neither of

these stopping rules is applied, the program terminates operation at the end of 15 subdivision stages. Limiting features of the program include restrictions on sample size (N=1000) and number of attributes which can be used (N=40).

Output from Program TYPE lists all chi-square values calculated, the chi-square function used for subdivision, the attribute on which a division will take place, and the vessels which belong in each group created by a subdivision.

Specification Used in the Fletcher Site Analysis

The chi-square function used to determine which attribute would be used for subdivision was the simple sum of significant chi-squares. For each attribute all significant chi-squares are added. The attribute with the highest sum of significant chi-squares is used for each division and eliminated from further calculations. Whallon (1971: 15) states that the simple sum of chi-squares statistic has been most satisfactory in his experiments with ceramic classification. The lowest chi-square value accepted as significant was set at 3.84, the 5 percent level of significance for a chi-square value with one degree of freedom.

The lowest expected cell value acceptable was set at three. Whallon (1971: 18) suggests that an expected

cell value of three is acceptable for typological analysis of Woodland ceramics. A larger expected cell value is regarded as too rigorous for monothetic subdivision, while an infinitely low value significantly affects results, allowing a plethora of trival subdivisions to occur (Whallon, 1971: 18-19). If minimal subgroup size is set at too small a value trivial and meaningless divisions could occur. If minimal subgroup size is set at too high a value, groups might be more heterogeneous than desirable. For the analysis of exterior decorated ceramics (N=108) minimal group size was experimentally set at 6. For the analysis of ceramics lacking exterior decoration (N=184) minimal group size was experimentally set at 12.

Since 95 attributes were originally coded for each vessel, at least 55 had to be eliminated to meet the restrictions of the program, PFCOUNT indicated those attributes which occured infrequently. Those with less than ten occurences were not used in Program TYPE. Other attributes were selected depending on the group of ceramics being analyzed.

The following attributes were used in the analysis of exterior decorated ceramics:

Lip Cross Section: flat, round, wedge, beveled

Lip Planview: flat, castellated, peaked

Rolled Rim: rolled rim

Rim Cross Section: straight, concave

Rim Thickening: rim thickening

Type of Tool (Exterior): sharp edged or pointed, curvelinear, rectalinear, cord wrapped end, cord wrapped paddle edge, cord, cord wrapped stick, broken stick.

Exterior Technique: punctated

Orientation of Exterior Decoration: transverse, longitudinal, oblique right.

Lip and rim cross section were thought to be critical based on recent discussions of variability within Southern Michigan Late Woodland ceramics (Rogers, 1972: 57). Attributes dealing with exterior decoration were thought to be critical because of their importance in the original type definitions of Wayne Ware (Fitting, 1965: 158-159).

Attributes used in the analysis of ceramic lacking exterior decoration included:

Lip Cross Section: flat, round, wedge, beveled

Lip Planview: flat, castellated, peaked

Rolled Rim: rolled rim

Lip Decoration: presence of lip decoration

Technique of Lip Decoration: incised, impressed

Type of Tool Used on Lip: cord wrapped stick greater than .6 cm., cord wrapped stick less than .6 cm., sharp edged or pointed tool, cord, cord wrapped paddle edge, broken stick, cord wrapped paddle.

Interior Decoration: presence of interior decoration

Type of Tool Used on Interior: cord wrapped stick, cord wrapped paddle edge, cord, sharpedged or pointed tool, broken stick.

Technique Used on Interior: incised, impressed

Type of Exterior Surface Preparation: cordmarked, fabric impressed smoothed over.

Attributes of lip form and decoration, interior decoration and surface preparation were chosen based on extant literature concerning Wayne Tradition ceramics and other Southern Michigan Late Woodland types (Fitting, 1965; Fitting, 1968; and Rogers, 1972).

Results of the analysis of exterior decorated ceramics and ceramics lacking exterior decoration are presented in Chapter 7.

PART III

RESULTS

CHAPTER V

EARLY AND MIDDLE WOODLAND CERAMIC TYPE DESCRIPTIONS

Introduction

The small quantity of Early and Middle Woodland ceramics from the Fletcher Site were analyzed in light of the large collection of comparable ceramics from the Schultz Site in James Township, Saginaw County. The Schultz Site lies approximately 15 miles southeast of the Fletcher Site at the juncture of the Tittabawasse and Saginaw Rivers within the limits of the city of Saginaw. Fischer (1972) gives type definitions of a large sample of Early and Middle Woodland ceramics from the Schultz Site. Schultz Site types found at the Fletcher Site include: Schultz Thick; Tittabawasse Cord Wrapped Stick Impressed; Green Point Plain; Green Point Rocker Stamped, Dentate Variety; Green Point Incised, Horizontal and Dentate Tool varieties. In addition, one Miscellaneous Middle Woodland vessel was present at the Fletcher Site.

Early Woodland Ceramic Type Description

Schultz Thick (Figure 5A-F)

The only identifiable Early Woodland ceramic at the Fletcher Site is Schultz Thick, an interior-exterior

Figure 5.--Early and Middle Woodland Ceramics

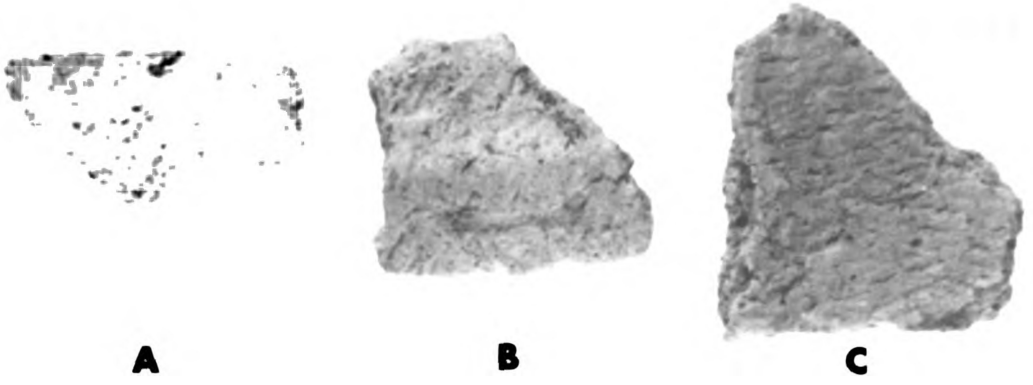
A Marion Thick Rim Sherd

B Marion Thick Basal Sherd

C-D Marion Thick Interior Cordmarked Body Sherds

E-F Marion Thick Exterior Cordmarked Body Sherds

G-H Tittabawasse Cord Wrapped Stick Impressed Rim Sherds



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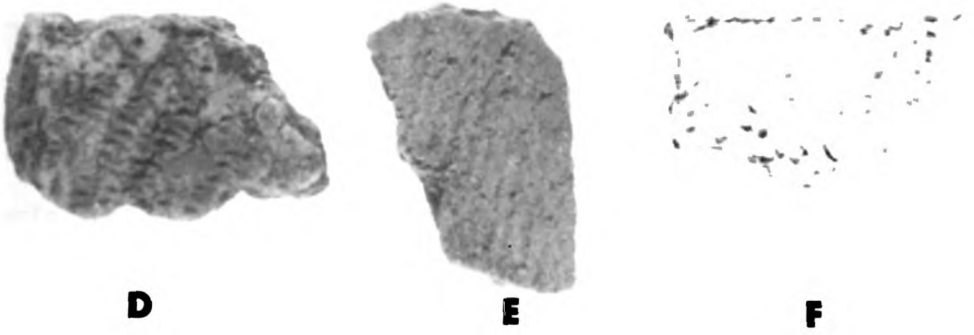

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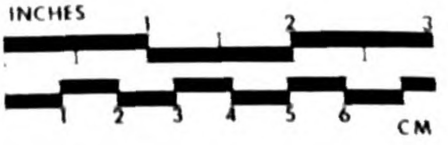


cordmarked type. Schultz Thick is known from one rim sherd, two basal sherds, and 26 body sherds. Distinctive interior-exterior cordmarking and unusual thickness of the sherds characterize this type. Body sherds range from 8 mm. to 23 mm. in thickness. Frequent coil breaks indicate coiling as the method used to manufacture these ceramics. The paste is sandy clay, mixed with a large quantity of crushed igneous rock temper. Temper particles vary from less than 1 mm. to approximately 13 mm. in size. Most, however, are between 1 mm. and 5 mm.

The lip of the single rim sherd is flat and cordmarked. Both basal sherds are cordmarked on the exterior (the interiors are exfoliated). Seven of the 26 body sherds have smoothed interiors. The remainder are cordmarked. No decoration is present other than interior-exterior cordmarking. The body-base juncture forms an angle of approximately 45 degrees. Vessel form and size are impossible to determine.

Discussion

Schultz Thick is one of the earliest, if not the earliest ceramic in Southeastern Michigan (Fischer, 1972: 142). Fischer (1972: 147) and Fitting (1970: 91) have reported the presence of Schultz Thick at several sites in Southern Michigan including Frazier, Andrews, Mahoney, Schultz, Bussinger and Kantzler in the Saginaw Valley;

and Spoonville, Norton Mound and Moccasin Bluff in Southwestern Michigan. Schultz Thick ceramics have been dated to 540 B.C. ± 130 (M-1524) from a feature at the Schultz Site.

Other ceramic types in the Northeastern United States bear a close resemblance to Schultz Thick. These include at least Marion Thick, found in Southern Illinois and Indiana; Fayette Thick found in Southern Ohio and Kentucky; and Vinette I ceramics from New York. Schultz Thick can be seen as the Michigan variant of a widespread Early Woodland ceramic tradition in the Northeastern United States (Fischer, 1972: 147).

Another Early Woodland ceramic found at the Schultz Site, Shiawassee Ware, was not observed in the collection of material from the Fletcher Site. At the Schultz Site, Shiawassee Ware appears higher in the stratigraphic sequence than Schultz Thick. Shiswassee Ware is thought to be a late or transitional Early Woodland ceramic, similar to Black Sand and Dane Incised Wares from Wisconsin and Illinois (Fischer, 1972: 151-152). The presence of Schultz Thick and the absence of Shiawasee Ware at the Fletcher Site seems to indicate that the Fletcher Site and the Schultz Sites were first occupied by Early Woodland people at about the same time. The

Fletcher Site was then abandoned during the terminal Early Woodland phase in the Saginaw Valley.

Middle Woodland Type Descriptions

General

A total of 269 body sherds and 34 rim sherds representing 18 minimal vessels were classified as Middle Woodland.

Two Middle Woodland wares are present at the Fletcher Site: Tittabawassee and Green Point, both of which have been defined by Fischer (1972). While neither ceramic appears in great abundance at the Fletcher Site, Green Point Ware is the more common.

Green Point and Tittabawasse wares are distinguished from the large quantity of Late Woodland ceramics by differences in paste and decoration. The paste of Middle Woodland ceramics at the Fletcher Site is distinctively sandy, almost gritty in texture. The decoration on Middle Woodland ceramics is also distinctive. Every rim and body sherd attributable to the Middle Woodland period (except one Tittabawasse rim) has been smoothed. By contrast only 21% of the Late Woodland ceramics have been smoothed over. Decoration on Green Point ceramics consists largely of zoned areas containing designs executed by plain and dentate rocker stamping, and incising. Rims generally exhibit design on the upper rim boardered by a

row of punctates (Green Point Ware) or nodes (Tittabawasse Ware). None of these decorative techniques is common in the Late Woodland collection.

Middle Woodland Body Sherds (Figure 6)

A number of body sherds were attributable to the Middle Woodland Period, based on the presence of Green Point decorative techniques and Middle Woodland paste and temper. A classification of body sherds by type of decorative technique is presented in Table 1.

TABLE 1.--Middle Woodland Body Sherds from the Fletcher Site

Type of Decoration	N	N
Plain Rocker Stamped		120
zoned	34	
zoning indeterminate	86	
Dentate Rocker Stamped		22
zoned denate	13	
zoning indeterminate	9	
Plain Incised		43
incised	12	
zoned incised	31	
Punctated		6
Plain Body		78
Total		269

Figure 6.--Middle Woodland Body Sherds

A-C Zoned Dentate Stamped

D-E Dentate Stamped

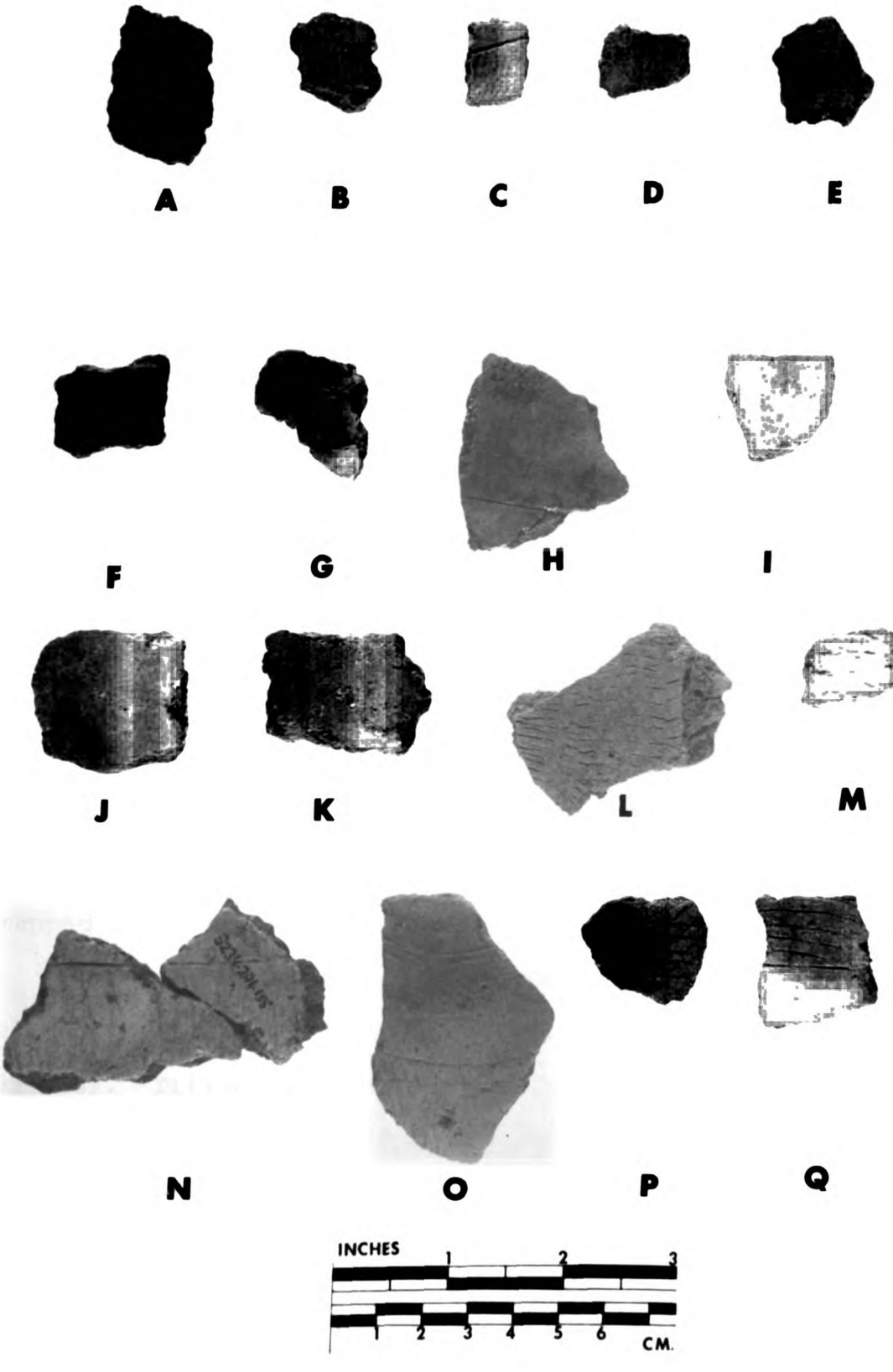
F Punctate

G-H Plain Zoned

I-K Plain Body

L-M Rocker Stamped

N-Q Zoned Rocker Stamped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Tittabawasse Cord Wrapped Stick Impressed (Figure 5, G-H)

Tittabawasse Cord Wrapped Stick Impressed is known from six rim sherds and one decorated body sherd representing two non-restorable vessels. The upper rims of these two vessels are stamped with a vertically impressed cord wrapped stick. A row of large external nodes boarders the cord wrapped stick impression on both vessels. One vessel displays an interior beveled lip. The other is flattened. Both rims are straight and unchanneled. Body form and size cannot be determined.

Ceramics similar to Tittabawasse Cord Wrapped Stick Impressed from the Fletcher Site include external noded cord wrapped stick impressed ceramics from the Moccasin Bluff Site (Bettarel and Smith, 1973: 108); Havana-like ceramics from the Jancarich Site (Prahl, 1966: 196); Tittabawasse Ware from the Kantzler and Bussinger Sites (Fitting, 1970: 124-126); and a noded cord wrapped stick vessel from the Holtz Site (Lovis, 1971: 56).

Beyond Michigan, Tittabawasse Ware is most closely related to Havana Tradition ceramics (Fischer, 1972: 159-160). Tittabawasse Ware appears to date from the Early Middle Woodland (100 B.C.-A.D. 200). A supportive radiocarbon date comes from the Norton Mounds on ceramics resembling Tittabawasse Dentate Stamped of 10 B.C. ± 120 (M-1493). The small amount of Tittabawasse Ware at the

Fletcher Site indicates a lighter early Middle Woodland occupation than the later Middle Woodland or the Late Woodland.

Green Point Ware

Green Point Plain Rocker Stamped Oblique Left Variety (Figure 7A-B)

Green Point Plain Rocker Stamped Oblique Left Variety is known from five rim sherds representing two vessels. The upper rim of both vessels has plain rocker stamping running left to right obliquely from the lip. Length of the rocker stamp on one vessel is 9 mm. and 28 mm. on the other. The rocker stamping is boardered by a single row of shallow hemiconical punctates. The shoulder of one vessel (Figure 7B) has a zoned rocker dentate stamp. The plain lips of both vessels are flattened and beveled toward the interior. One vessel has a straight rim, while the other is channeled and cambered. No body or basal sherds are attributable to either vessel, making it impossible to describe body decoration, and vessel shape and size.

Green Point Plain Rocker Stamped, Horizontal Variety (Figure 7C-D)

Green Point Plain Rocker Stamped, Horizontal Variety is known from four rim sherds representing three vessels. The upper rim of all three vessels is marked with horizontal plain rocker stamping, parallel to the

Figure 7.--Middle Woodland Rim Sherds

A-B Green Point Plain Rocker Stamped, Oblique Left Variety

C-D Green Point Plain Rocker Stamped, Horizontal Variety

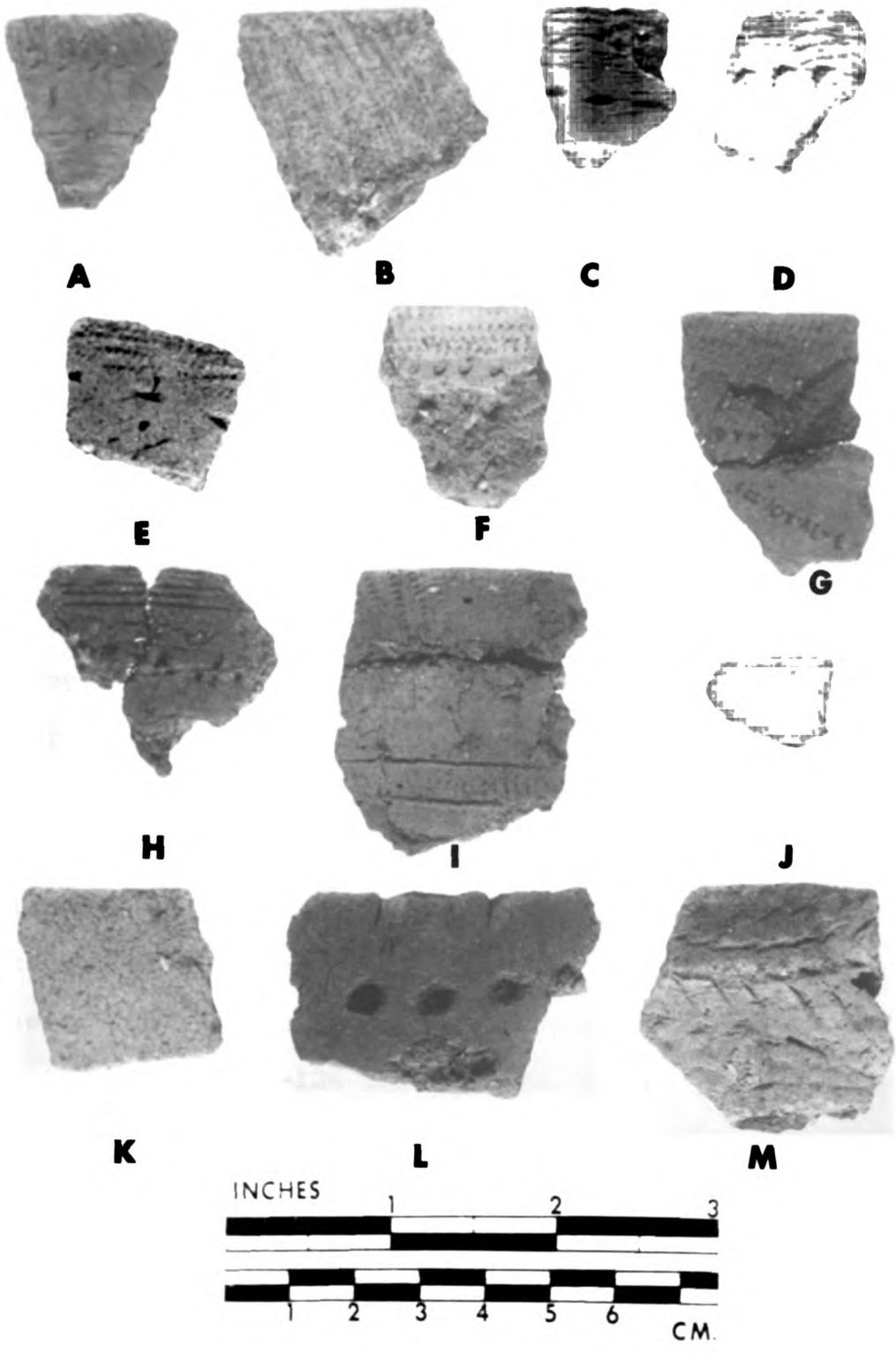
E-F Green Point Rocker Stamped, Dentate Variety

H Green Point Incised, Horizontal VAriety

I-J Green Point Incised, Dentate Variety

K Green Point Plain

L-M Miscellaneous Middle Woodland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lip of the vessel. The convex side of the rocker impressions is toward the rim. Rim sherds are too small to allow measuring the length of the rocker impressions. A single row of shallow punctates boarders the lower limit of the rocker stamped area. One vessel has elongate punctates, while the other two have punctates made with a jagged stick. The lips of all three vessels are flattened and beveled toward the interior. All rims are vertical in attitude. Two vessels are channeled and cambered. Body decoration, vessel shape and vessel size are indeterminable.

Green Point Plain Rocker Stamped (Oblique and Horizontal Varieties) ceramics from the Fletcher Site are similar to some of kinds of Sumnerville Incised vessels from the Sumnerville, Converse, Scott and Brooks Sites (Quimby, 1941a: 71-72 and Quimby, 1941b: 492); horizontal rocker stamped rims from the Moccasin Bluff Site (Bettarel and Smith, 1973: 108); Crockery Cambered Plain Rocker Rims from the Crockery Creek Site (Fischer, 1972: 173); horizontal rocker stamped rims from the Spoonville Site (Fitting, 1970: 100); Green Point Plain Rocker Stamped vessels from the Bussinger Schultz and Kantzler Sites (Fitting, 1970: 124-126 and Fischer, 1972); and a vertical plain rocker stamped vessel from the Holtz Site (Lovis, 1971: 55).

Green Point Rocker Stamped,
Dentate Variety (Figure 7E-G)

Green Point Rocker Stamped, Dentate Variety is known from six rim sherds representing three vessels. The upper rims of all three vessels are decorated with horizontal rocker dentate stamping. The convex side of the rocker is toward the lip. Rim fragments are too small to measure the length of the rocker impression. The lower limits of the rocker dentate stamping are bounded by a single row of shallow punctates. On two vessels, the punctates are circular, while on the third vessel, the punctates are elongate. Two vessels display plain flattened and interior beveled lips while the third is somewhat unusual with a wedge shaped cross-section. One vessel displays a slight amount of channeling and cambering which is lacking on the remaining two vessels. The edge of a zone line is present on one rim, but the design within the zone, if any, is not observable. No body or basal sherds are attributable to this type, preventing description of body decoration, vessel shape and vessel size.

Ceramics similar to the Green Point Rocker Stamped Dentate Variety vessels from the Fletcher Site include rocker dentate Crockery Cambered rims from the Crockery Creek Site (Fischer, 1972: 173) a zoned dentate vessel from the Toft Lake Site (Losey, 1967: 130); and Green

Point ceramics from the Schultz (Fischer 1972) Bussinger and Kantzler Sites (Fitting, 1970: 124-126).

Green Point Incised, Horizontal Variety (Figure 7H)

Green Point Incised, Horizontal Variety is known from four rim sherds representing one non-restorable vessel. The upper rim has seven horizontal incised lines. The lines were incised with a pointed tool which may also have been used to make the two rows of shallow angular punctates which boarder the lower limits of the incising. The lip is flattened and beveled toward the interior. The rim is channeled and cambered. No body sherds attributable to this vessel were recovered making it impossible to describe body decoration, vessel shape and vessel size. The presence of a large amount of char imbedded in the incised lines and punctate depressions suggest a cooking function for this vessel.

Green Point Incised ceramics from the Fletcher Site resemble some of the Sumnerville Incised vessels from the Sumnerville, Converse, Scott and Brooks Sites (Quimby, 1941a: 71-72 and 1941b: 492); Norton Incised vessels from the Norton Mound Group (Griffin, Flanders, and Titterington, 1971: 174); and Green Point Incised vessels from the Schultz Site (Fischer, 1972: 281) the Bussinger Site and the Kantzler Site (Fitting, 1970: 124-126).

Green Point Incised, Dentate Tool Variety (Figure 7I-J)

Green Point Incised, Dentate Tool Variety is known from six rim sherds assignable to two vessels. The upper rims zones are incised with a dentate tool which is dragged or pulled, leaving an effect not unlike that produced by the stab-drag technique. On both vessels, the dentate tool is held at a slightly oblique angle to the lip such that the design appears to be oblique left-to-right in orientation. On one vessel, the dentate tool was dragged for a distance of at least 12 mm., followed by a series of abrupt short incising. The lower limits of the dentate tool incised zone are bounded by a single row of shallow rounded punctates on both vessels. Following the row of punctates on one vessel is a smoothed zone interrupted by a zoned dentate band 7 mm. wide. The lips of both vessels are flattened and beveled toward the interior. One vessel is slightly cambered. The rim morphology and partial body section suggest that one vessel was a small jar.

A review of the literature on Michigan Middle Woodland ceramics suggests that ceramics using a dentated tool of incising are known only in the Saginaw Valley at the Fletcher and Schultz Sites. Either this type is a local variant or similar dentate incised vessels from other areas of Michigan have been misclassified as rocker or plain dentate stamped.

Green Point Plain (Figure 7K)

Green Point Plain is known from one rim sherd. This sherd lacks decoration of any kind. Fischer (1972: 280) however, notes that the upper rim of Green Point Plain lacks decoration except for a row of punctates. The lip of the Green Point Plain Vessel from the Fletcher Site is flattened and beveled toward the interior.

Green Point Plain is present at the Schultz and Fletcher Sites. Norton Plain is (Griffin, Flanders and Titterinton, 1971: 174) a ceramic type which resembles some of the Schultz Site Green Point Plain material but the vessel from the Fletcher does not.

Dating Green Point Wares

Radiocarbon dates from the Norton Mound Group of A.D. 100 ± 100 (M-1490) and A.D. 160 ± 120 (M-1428) and A.D. 215 ± 160 (M-1427) (Fitting, 1970: 240-241); and from Schultz of A.D. 310 ± 120 (M-1646), A.D. 380 ± 120 (M-1644) and A.D. 450 ± 200 (M-1647) (Fitting, 1970: 240-241) indicate that Green Point Ware and related ceramics date from approximately A.D. 100 to A.D. 450. A late date of A.D. 490 ± 120 (M-1756) from the Bussinger Site may extend this tentative range for the late Middle Woodland somewhat further.

Miscellaneous Middle Woodland
(Figure 7L-M)

Three abberant Middle Woodland rim sherds representing three vessels were recovered from the Fletcher Site. The paste and temper correspond to Tittabawasse and Green Point Wares from the Site. On one vessel (Figure 7L) the upper exterior lip is notched, an attribute present on Tittabawasse and some Green Point types. Beneath the notching are at least two rows of deep annular punctates. The exterior and interior surfaces are smoothed. The lip has been flattened and beveled toward the interior. A ridge of clay on the interior margin of the lip has been left unsmoothed from the flattening and beveling process. The rim cross-section is slightly convex, but the rim is not channeled or cambered.

The other two vessels both have external nodes. One of these vessels lack any other decoration on the exterior and the lip is punctated. The other vessel (Figure 7M) has four rows of horizontal interrupted incised lines and followed by a second band of horizontal interrupted incised lines. The rim is cambered and the lip is flattened and beveled toward the interior.

Middle Woodland - Discussion

Most Michigan Middle Woodland sites related to the Fletcher Site through similarities in their ceramics are located in the Southern half of Lower Michigan. These

Figure 8.--Early and Middle Woodland Cross Sections

A Schultz Thick Rim Cross Section

B Schultz Thick Vessel Base

C-D Tittabawasse Cord Wrapped Stick Impressed Rim Cross Sections

E-P Green Point Rim Cross Sections

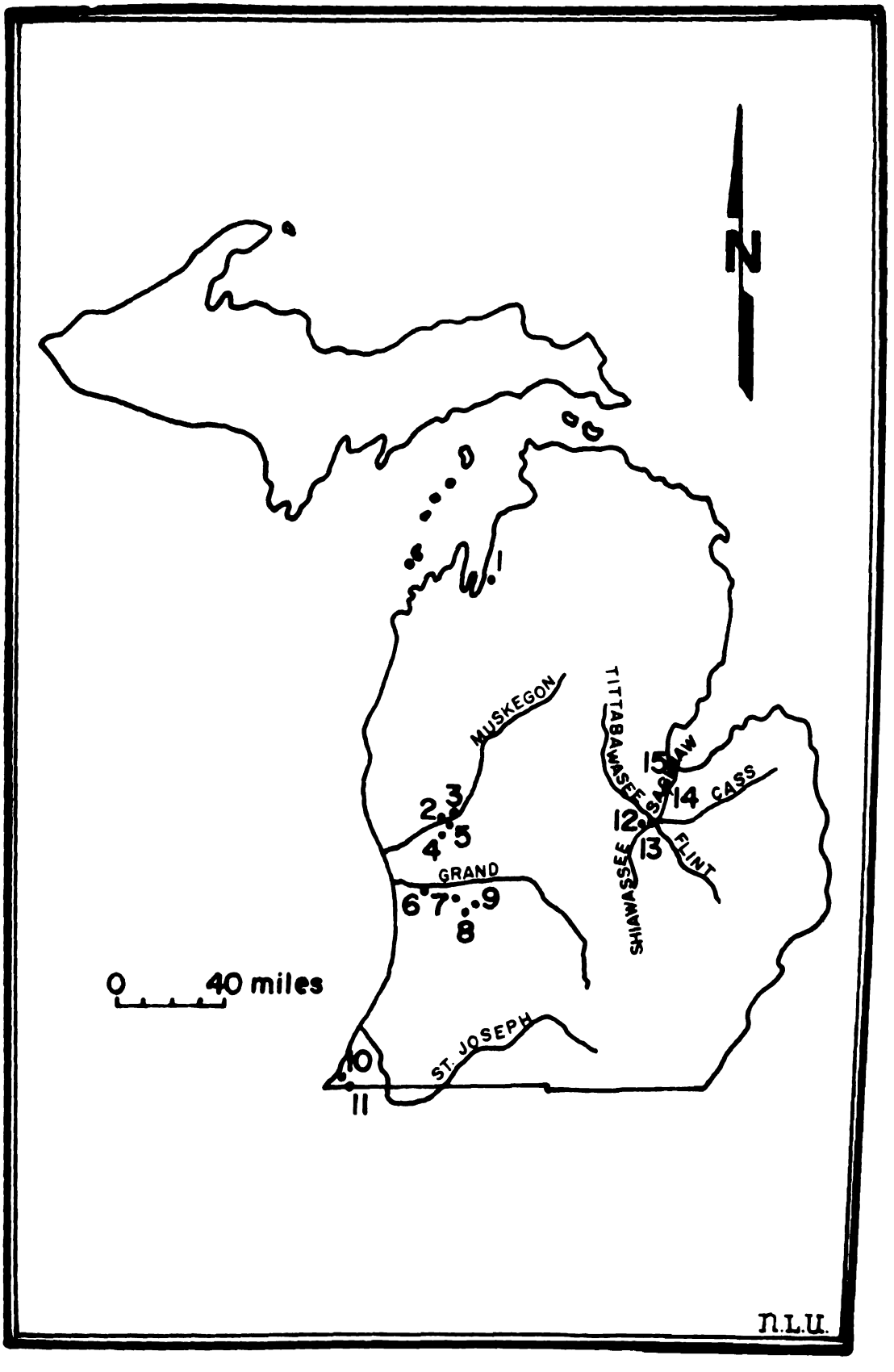
sites lie in or near the floodplains of four major river systems. The St. Joseph, Grand Muskegon Rivers are in Southwestern Michigan while the Saginaw River is in east central Michigan. Figure 9 shows Michigan Middle Woodland sites which have produced ceramics stylistically similar to those from the Fletcher Site.

Fischer (1972) details the relationship of Tittabawasse and Green Point Wares to Havana and Hopewell ceramics from the Lower Illinois Valley. Brown (1964: 122) and Prahl (1966: 199) have suggested that Havana and Hopewell-like ceramics in Western Michigan and the Saginaw Valley are different from the Havana and Hopewell ceramics from Southwestern Michigan which appear to be a Northeastern extension of the Havana Tradition.

For the Saginaw Valley Hopewell, there appear to be two major differences distinguishing it from Illinois and Southwestern Michigan Hopewell ceramics. First, Saginaw Valley Hopewell ceramics are relatively careless in execution of design compared to the Illinois and Southwestern Michigan Hopewell, ceramics as described by Brown (1964) and Quimby (1941a, 1941b). Second, Illinois and some Southwestern Michigan Hopewell ceramics are for the most part grog or limestone tempered while Saginaw Valley ceramics are uniformly grit tempered.

Figure 9.--Michigan Middle Woodland Sites Related to the Fletcher Site

1 Holtz
2 Brooks
3 Toft Lake
4 Scott
5 Jancarich
6 Spoonville
7 Crockery Creek
8 Norton
9 Converse
10 Moccasin Bluff
11 Sumnerville
12 Bussinger
13 Schultz
14 Kantzler
15 Fletcher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Thus, while Saginaw Valley Middle Woodland ceramics are generally similar to Illinois and Southwestern Michigan Havana and Hopewell materials, they represent a complex which is stylistically and technologically different.

CHAPTER VI

MISCELLANEOUS LATE WOODLAND CERAMIC DESCRIPTION

Forty-nine Late Woodland vessels were complete enough for analysis but were not included in the computer analysis of Wayne Ware because they appeared to belong to ceramic ware groups other than Wayne Ware, such as Riviere and Mackinac Ware. Twenty-nine vessels were definitely attributable to some other ware category. Eight vessels were not attributable to any known ceramic type and twelve vessels were finally regarded similar enough to Wayne Ware to be included in the type descriptions presented in Appendix B, accounting for numerical discrepancies between the results of Program TYPE and the formal type descriptions. Miniature vessels are described at the end of this chapter.

Riviere Ware

Vase Tool Impressed (Figures 10A and 11)

Nine rim sherds and eleven decorated body sherds from four vessels of Vase Tool Impressed are present in the Fletcher Site sample. All vessels have vertical cordmarking. The exterior rim, interior rim and lip of

Figure 10.--Miscellaneous Late Woodland Rim Sherds

A Vase Tool Impressed

B Bois Blanc Braced Rim

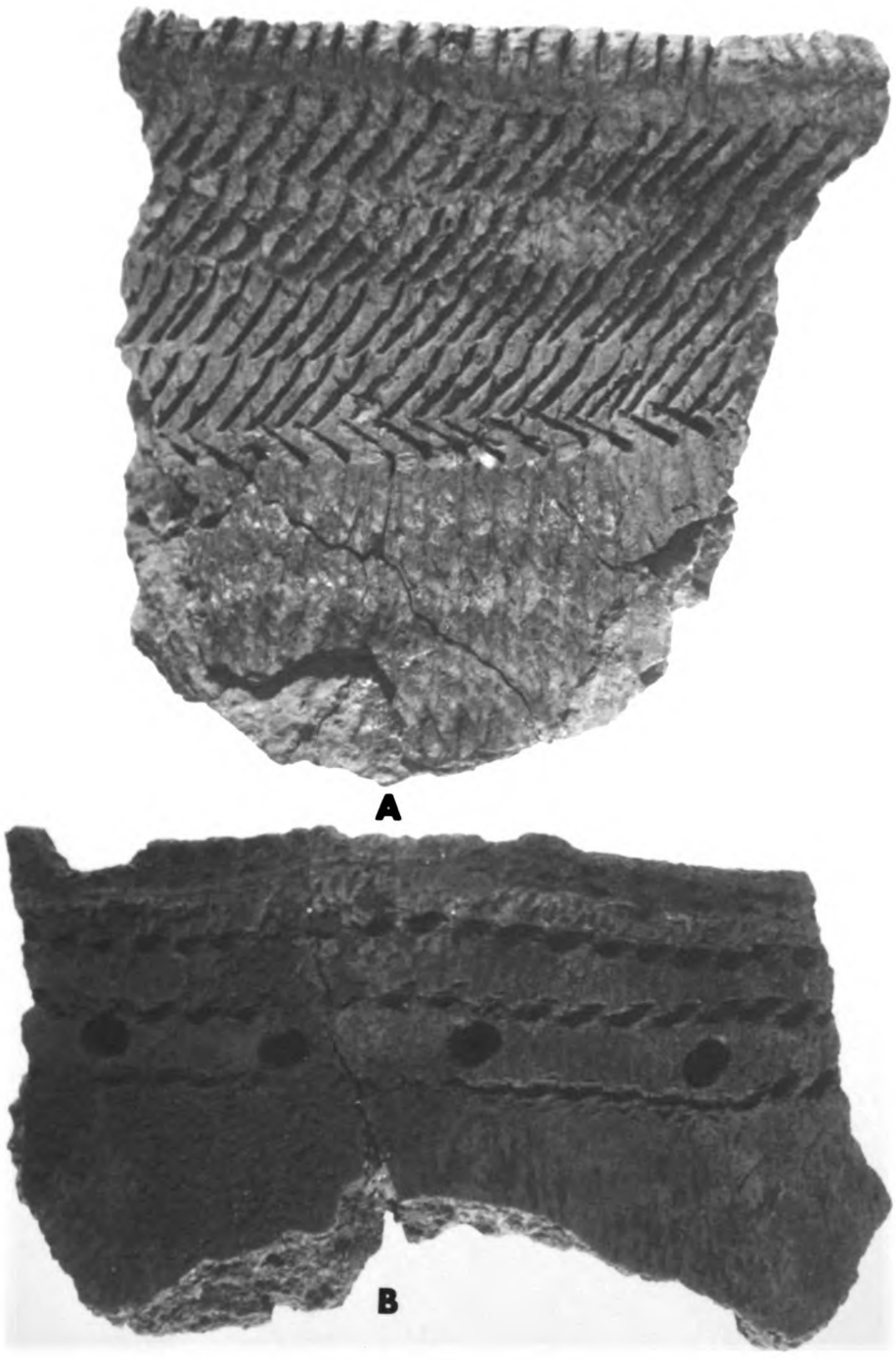
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Figure 11.--Reconstrucable Vase Tool Impressed Vessel Section


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one vessel has been stamped with a carved or notched paddle edge. A second vessel has cord wrapped paddle edge impressions on the exterior, interior and lip. The remaining two vessels have plain tool impressions on their exteriors. Exterior designs on all four vessels are applied obliquely from right to left. Three vessels have slightly everted rims; one is straight. Lips of all four vessels are flat, and lack castellations and collars. All vessels have noticeably thickened lips (Figure 17). Rim diameters of vessels large enough to measure are 38.1 cm. and 27.9 cm. One partially reconstructable vessel appears to have a slightly elongated body and a semiconoidal vase.

The type definition (Fitting, 1965: 155) gives Southeastern Michigan, Southwestern Ontario, and Northern Ohio as the geographic distribution of Vase Tool Impressed. In Michigan, Vase Tool Impressed has been found at the Riviere au Vase Site, the Fort Wayne Mound, The Younge Site and the Wolf Site (Figure 2). Bigony (1970: 130) suggest that tone rim from the Stadelmeyer Site bears an affinity to Vase Tool Impressed. The Stadelmeyer and Fletcher Site Vase Tool Impressed rims are the only known examples of this type in the Saginaw Valley, and represent the most northern and eastern extension of this type. The lack of collaring and castellations may be a Saginaw Valley variation. Fitting (1965: 155) gives the chronological position of this type as Late Woodland, belonging

to the Riviere au Vase Phase of the Younge Tradition (A.D. 600-A.D. 900). He further suggests that uncollared variants such as examples from the Fletcher Site, may be earlier in the Riviere au Vase Phase, than the collared variants.

Vase Tool Impressed has been related to a number of Southwestern Ontario and New York Late Woodland types including Krieger Incised, Owasco Herringbone, Castle Creek Beaded, Ontario Oblique, Uren Noded, ceramics from the Barrie-Uren level at the Frank Bay Sites (Fitting, 1965: 155). A northern Ohio type, Mixter Tool Impressed (Mackenzie, Blank, Murphy and Schane, 1972: 9-10) is very similar to Vase Tool Impressed.

Macomb Linear (Figures 12A-E, 13)

Macomb Linear is known from 23 rim fragments representing 14 minimal vessels. Horizontal cord impressions form the dominant decorative motif on the rim exterior of 13 Macomb Linear Corded vessels. One Macomb Interrupted Linear vessel is stab-dragged with a round ended tool. The horizontally oriented impressions of Macomb linear vessels are often bordered above and below by a row of vertical or oblique cord impressions or incisings. Oblique interrupters are also present on a few vessels. Six vessels have square (flat) lip cross section, while the remaining eight are rounded. Two

Figure 12.--Miscellaneous Late Woodland Rim Sherds

A Macomb Interrupted Linear

B-E Macomb Linear Corded

F Stafford Stamped

G Traverse Punctate

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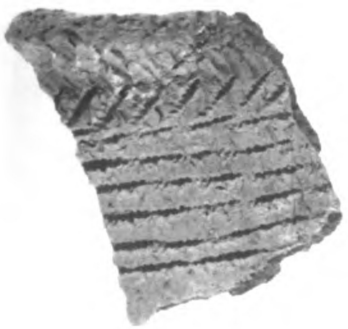

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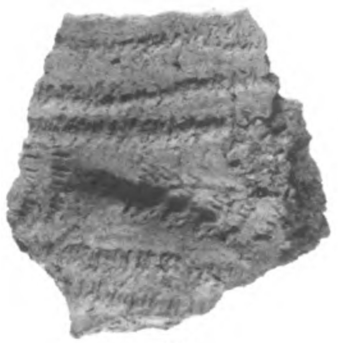

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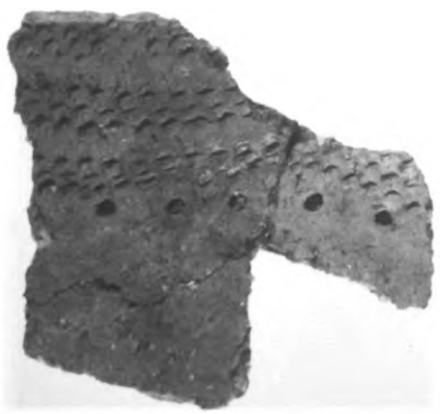

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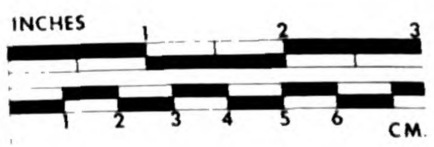
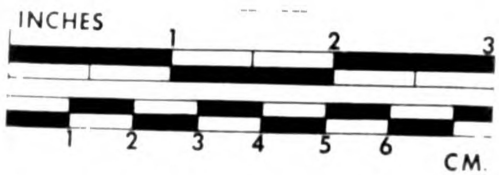


Figure 13.--Partially Reconstructable Macomb Linear Corded Vessel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vessels are collared and three vessels are castellated. One large reconstructable vessel section (Figure 13) exhibits a slightly constricted neck, an extremely elongated body and a rounded base. Seven vessels are made on a thin ceramic with rim thicknesses ranging between 0.3 and 0.6 cm. The remaining vessels are 0.7 cm. to 1.6 cm. in thickness.

Fitting (1965: 157) gives the geographical range of Macomb Linear as Southeastern Michigan and adjacent areas of Northern Lower Michigan. Macomb Linear is known from the following Southwestern Michigan Sites: Riviere au Vase, The Fort Wayne Mound, the Wolf Site, and the Younge Site. Chronologically, Macomb Linear appears to be a middle to late Late Woodland type (Fitting, 1965: 157). The variant Macomb Interrupted Linear appears to be similar to Juntunen Stab Drag, a ceramic type from the Straits area of Northern Michigan dating between A.D. 1200 and A.D. 1400. Generic similarities exist between Macomb Linear and Uren Corded, Iroquois Linear, Owasco Corded Collar and Bainbridge Linear, all of which are Southwestern Ontario or New York Late Woodland types (Fitting, 1965: 157).

Vase Corded (Figure 14A)

Vase Corded at the Fletcher Site is known from six rims representing two vessels. Both vessels are

Figure 14.--Miscellaneous Late Woodland Rim Sherds

A Vase Corded

B-C Bois Blanc Ware

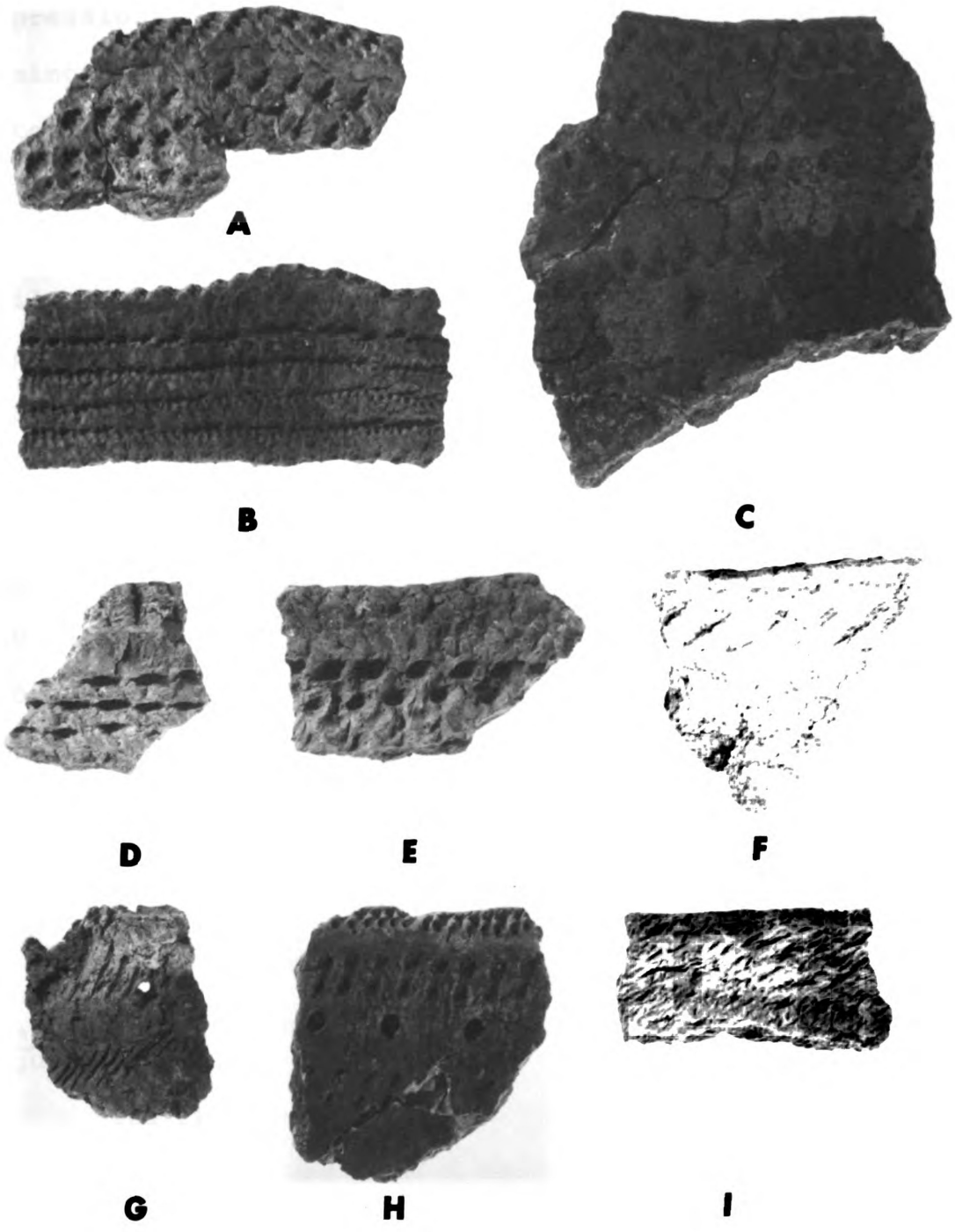
D-E Mackinac Punctate

F Miscellaneous Cord Impressed

G Miscellaneous Incised

H Miscellaneous Punctate

I Miscellaneous Undecorated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decorated with obliquely applied cord wrapped stick impressions on the rim exterior, interior and the lip. A single oblique applied row is present on the lip. Interiors of both vessels have two oblique rows and the exteriors have at least two oblique rows. Both rims are slightly everted. One vessel is collared and castellated, while the other manifests neither of these attributes. Neck, body and base morphology are unknown. Fitting (1965: 156) notes that Vase Corded has been found at the Riviere au Vase Site, the Fort Wayne Mound, the Younge Site, the Wolf Site, and the Gibralter Site. Vase Corded is a Late Woodland type belonging to the Riviere au Vase Phase of the Younge Tradition (A.D. 600-A.D. 900). Vase Corded may be related to Krieger Stamped, and Uren Corded (Fitting 1965: 156). The two vessels from the Fletcher Site are the most northern and western occurences of Vase Corded described to date.

Ontario Iroquois Glen Meyer Branch

Stafford Stamped (Figure 12F, Figure 15B-C)

Two rim sherds and six decorated body sherds from one vessel of Stafford Stamped are present in the Fletcher Site sample. Stafford Stamped is characterized by crescent stamp impressions on bands on the exterior. The Fletcher Site vessel has three transverse bands having three rows

Figure 15.--Miscellaneous Late Woodland Rim Sherds

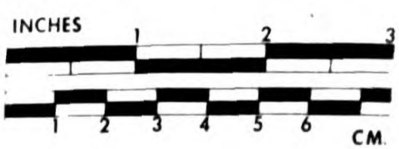
A Miscellaneous Impressed

B-C Stafford Stamped

D Bois Blanc Ware

A B C

D



each of the cresent impressions. The lip, interior, and exterior are all smoothed and the lip and interior lack decoration. The rim is slightly everted and the lip is flat and beveled to the exterior. Castellations and collaring are absent.

Two additional vessels from the Fletcher Site are stamped with horizontal rows of cresent-like impressions which are also present on the lips of both vessels and the interior of one vessel. One vessel has interior punctates which produce external nodes. The other vessel has exterior punctates immediately below the lip. Both vessels are straight rimmed with slightly thickened lips. These two vessels are most similar to the type Stafford Stamped but differ from the other Stafford Stamped vessel from the Fletcher Site in sharpness and arrangement of exterior decoration.

Stafford Stamped is defined by Wright (1966: 27, 118-119) as a Glen Meyer Branch ceramic of the Early Ontario Iroquois Tradition (A.D. 1000-A.D. 1250). Glen Meyer sites are distributed from the north central shore of Lake Erie to the northeastern shore of Lake Huron in southwestern Ontario. Wright (1966: 98) suggests that southern Michigan and southwestern Ontario received and transmitted strong influence to and from each other over a period of several hundred years. Fitting (1970: 154-155) suggests that Younge Tradition ceramics from

southeastern Michigan were influenced by Glen Meyer styles. The Stafford Stamped vessel from the Fletcher Site is the only one of its kind described in Michigan, and is similar enough to the type definition to label it an imported or trade vessel.

Bois Blanc Ware

Bois Blanc Braced Rim (Figure 10B)

A single vessel of the Bois Blanc Braced Rim type was represented by two rim sherds was recovered from the Fletcher Site. Exterior decoration consists of three rows of horizontal linear twisted cord impressions. A row of punctates is superimposed between rows two and three producing nodes on the interior. The exterior surface has vertical tightly wrapped cordmarking. The interior and upper margin of the exterior is stamped with vertical cordwrapped stick impressions. The rim is slightly everted and soft low castellations are present. Rim diameter is approximately 16.5 cm.

The Bois Blanc Braced Rim vessel described above appears to be a traded or imported vessel. The paste and temper are significantly different from other Late Woodland ceramics in the Fletcher Site sample. The Bois Blanc Braced Rim vessel from the Fletcher Site is the southern and eastern-most occurrence of Bois Blanc Ware in Michigan.

Three vessels from the Fletcher Site exhibit two of the three diagnostic characteristics (castellations and decoration with a cord wrapped object) of Bois Blanc Ware and seem to relate to this type. They lack only rim thickening (McPherron, 1967: 104).

Two vessels have been decorated with cord wrapped cord and the third with a complicated twisted or knotted cord. Two vessels (Figures 14B-C) have horizontal linear cord impressions. Decoration on the third vessel (Figure 15D) is obliquely oriented with vertical interrupters and a zoned boarder at the neck-shoulder juncture. Two vessels are cordmarked and one is smoothed. Lips and interior of all three vessels are decorated with the same type of tool used on vessel exteriors. Lips are all flat and rims are slightly everted and castellated. Rim diameter of all three vessels varies from 30 cm. to 33 cm. Bois Blanc ceramics date from A.D. 1000 to A.D. 1200 (McPherron, 1967: 4).

Mackinac Ware

Mackinac Punctate (Figure 14D-E)

Eight rim sherds representing two minimal vessels from the Fletcher Site are similar to the type Mackinac Punctate. Exterior punctates are shallow and do not raise bosses on the interior. Punctates on these vessels are produced by a wedge shaped and a rounded implement respectively. Punctates are closely spaced, placed approximately

one-quarter inch apart. The lip and interior of one vessel has shallow rounded punctates while the lip and interior of the other vessel have cord wrapped paddle edge impressions. Exterior surfaces of both vessels are cordmarked. The lip of one vessel is thickened and both vessels have everted rims.

The vessels from the Fletcher Site are not identical to the original Mackinac Punctate type descriptions (McPherron, 1967: 88-89) but appear to be more like Mackinac Punctate than other Late Woodland ceramics in Michigan. Mackinac Ware is most common in Northern Lower Michigan dating from approximately A.D. 800-A.D. 1000 (McPherron, 1967: 4). Mackinac Ware has been recovered from the Butterfield Site which lies 25 miles to the north of the Fletcher Site (Wobst, 1968: 259).

Traverse Ware

Traverse Punctate (Figure 12G)

One rim sherd of Traverse Punctate is present in the Fletcher Site collection. This vessel is characterized by a series of fingernail punctates in a band of smoothed over cordmarking on the vessel neck. The upper margin of the exterior and the shoulder of the vessel are cordmarked with a loose vertical cord wrapped paddle. The lip is flattened, slightly beveled to the exterior and smoothed with transversely oriented fingernail punctates. Rim diameter is approximately 20.5 cm.

Traverse Punctate was originally defined by Cleland (n.d.). Its primary distribution is in the Grand Traverse Bay region of Northwestern Lower Michigan. The single vessel from the Fletcher Site appears to be the southern and eastern-most example of Traverse Ware in Michigan. Traverse Ware has been dated to A.D. 1300-A.D. 1400.

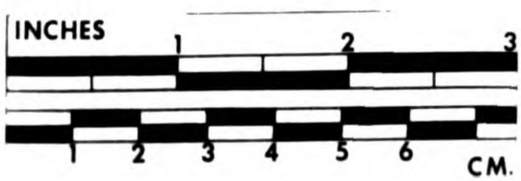
Miscellaneous Vessels

One undecorated and eight decorated vessels from the Fletcher Site were not classifiable in light of extant ceramic classifications. These are included in the following categories.

Miscellaneous Cord Impressed
(Figure 14F and 16)

Two cord impressed vessels represented by seven rim sherds are present in the Fletcher Site collection. Decoration on one vessel (Figure 16) consists of a repeated pattern of four horizontal rows three oblique right, four horizontal rows, three oblique left rows. The band of decoration is boardered at its base by short vertical twisted cord impressions. The lip and interior are smoothed and undecorated. The exterior has vertical cordmarking which was smoothed over in the decorated area. The rim is slightly everted and lacks collaring and castellations. Rim diameter is approximately 23 cm. The second vessel

Figure 16.--Partially Reconstructable Miscellaneous Cord Impressed Vessel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(Figure 14F) is represented by one rim sherd which has three rows of horizontally applied twisted cord on the exterior, boardered above, close to the lip, by a series of short obliquely applied twisted cord impressions. The interior has the same motif except that the oblique boarder is below the rows of horizontally twisted cord. The square lip has obliquely oriented twisted cord impressions. All decoration was done on smoothed surfaces. The rim cross-section is straight.

Miscellaneous Impressed (Figure 15A)

A single sherd of one vessel from the Fletcher Site has two rows of parallel obliquely oriented rows of simple stamp stick or paddle impressions. The interior is decorated with the same implement applied at an angle. The lip has been folded over to form a small collar. The paste and temper of this vessel differ from other Late Woodland ceramics from the Fletcher Site.

Miscellaneous Punctate Vessel
(Figure 14H)

A single sherd of an unclassifiable punctate vessel is present in the Fletcher Site collection. Surface preparation consists of vertical cordmarking. At least two horizontal bands consisting of two rows, each of shallow rectalinear punctates, are present on the exterior. Between the two bands is a row of deep circular

punctates. The lip and interior both have two rows of rectalinear punctates. The paste and temper of this vessel are similar to the paste and temper found in Bois Blanc ceramics from the Fletcher Site. However, the decoration is in no way similar to that found on Bois Blanc Ware.

Miscellaneous Incised Vessels
(Figure 14G)

Three miscellaneous incised vessels (11 rim sherds) were recovered from the Fletcher Site. The dominant decorative motif on the exterior of all three vessels is oblique right oriented incising produced by a sharp edged or pointed tool. One vessel (Figure 14G) has superimposed circular punctates which perforate the vessel interior. Another vessel is collared.

Miscellaneous Undercorated Vessel
(Figure 14I)

One undecorated vessel (two rim sherds) was not classifiable. The exterior surface is fabric impressed and the interior is well smoothed. The lip, the interior and exterior all lack decoration. The rim is rolled and incompletely molded to the vessel. The rim cross section is everted. The paste of the vessel is extremely hard which differentiates it from Wayne Ware and Mackinac Wares, both of which usually have fragile crumbly paste.

Miniature Vessels

Seventeen rim sherds and 31 body sherds representing 13 minimal vessels are miniature in size and may have been made by juveniles (Figure 18). Technologically the miniature vessels are poorly fabricated, uneven in thickness and symmetry. Decoration is poorly executed and occurs on seven of the vessels, including cord wrapped stick impressions, single tool impressions and incising. Rim diameter ranges from 3.8 cm. to 7.6cm., less than half that of full sized vessels. Surface preparation (cordmarking and smoothing) is similar to that found on the Late Woodland Wayne Tradition ceramics from the Fletcher Site. Temper was added to the paste on only three vessels and consists of grit. Rim cross sections are all convex. This attribute along with the small rim diameters of these vessels appears to differentiate miniature from full size vessels in the Fletcher Site collection.

Figure 17.--Miscellaneous Late Woodland Rim Cross Sections

A Macomb Interrupted Linear

B-D Macomb Linear Corded

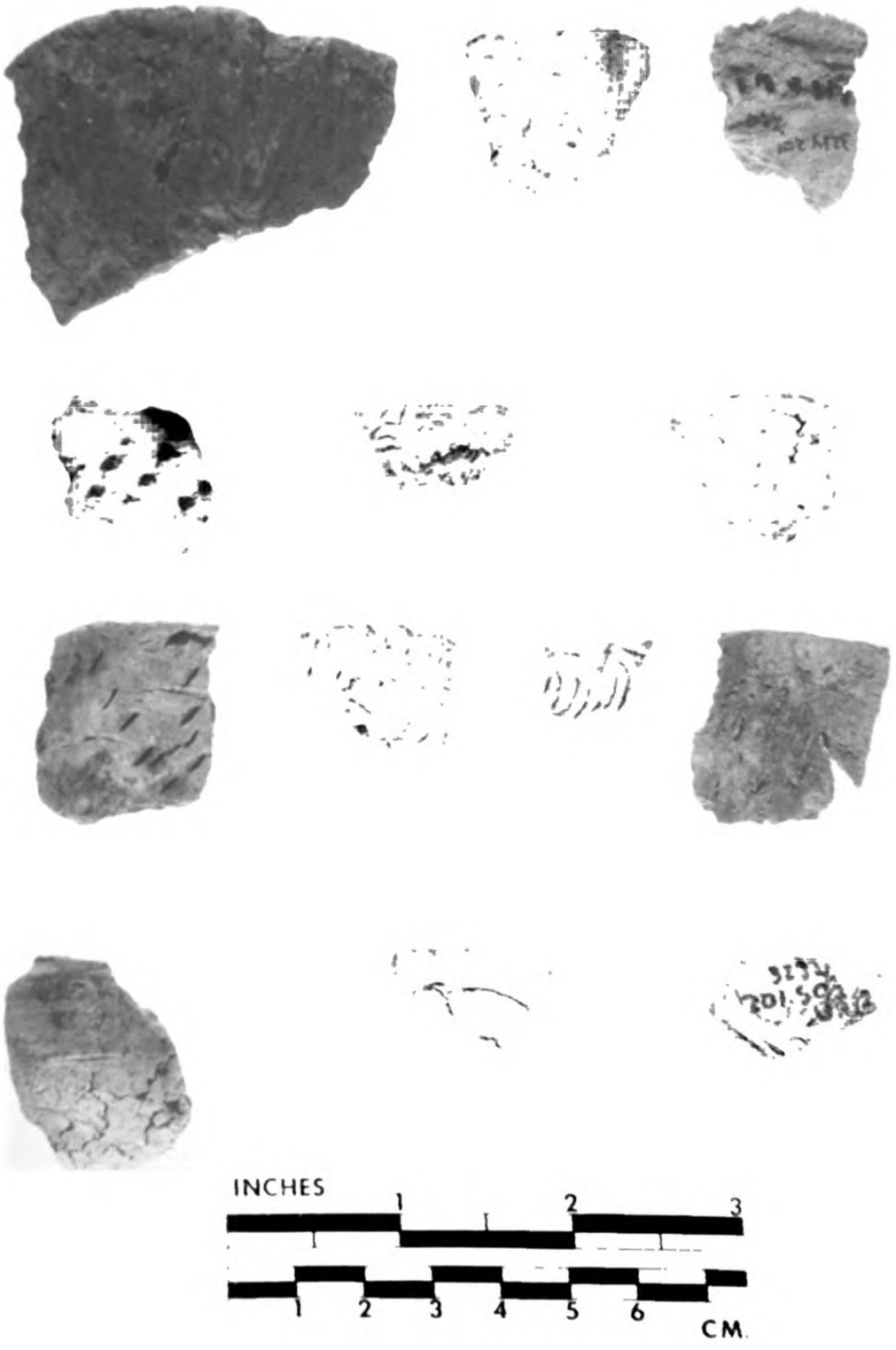
E Stafford Stamped

F Traverse Punctate

G Bois Blanc Braced Rim

H Vase Tool Impressed

Figure 18.--Miniature Vessels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CHAPTER VII

ANALYSIS OF WAYNE WARE

Program TYPE produced significant results for the hypothesis being tested. In addition, however, the results indicated that some revision of the existing classification for Wayne Tradition ceramics was necessary. The null hypothesis, that the distribution of Wayne ceramics is limited to the areas in which they were originally defined was rejected. The typology generated by Program TYPE for the Fletcher Site defined some groups of ceramics in the same manner as Wayne Tradition ceramics from other areas. The attributes, however, selected for subdividing the Fletcher Site sample and the attributes used in the original definitions of Wayne Ware variants (Fitting, 1965: 158-159) were significantly different in some cases. A discussion of the results and their implications will provide the background for the re-definition of the Wayne Tradition Ceramics.

Description and Interpretation of Results

Figures 19 and 20 present the classifications produced by Program TYPE. The structure of these two classifications is more complex than a schematic representation of the original definitions for Wayne Ware

Figure 19.--Classification Scheme for Undecorated Wayne Ware

Numbers in parentheses refer to the number of vessels at that branch. Numbers in circles refer to termini.

Attribute List:

1 Lip Cross Section: flat

2 Lip Cross Section: round

3 Lip Cross Section: wedge

4 Lip Cross Section: beveled

5 Lip Planview: flat

6 Lip Planview: castellated

7 Lip Planview: peaked

8 Rolled Rim

9 Lip Decoration

10 Lip Technique: incised

11 Lip Technique: impressed

12 Lip Tool Type: cord wrapped stick less than .6 cm.

13 Lip Tool Type: cord wrapped stick greater than .6 cm.

14 Lip Tool Type: sharp edged or pointed

15 Lip Tool Type: cord

16 Lip Tool Type: cord wrapped paddle edge

17 Interior Decoration

18 Interior Tool Type: cord wrapped stick

19 Interior Tool Type: cord wrapped paddle edge

20 Interior Tool Type: cord

21 Interior Tool Type: sharp edged or pointed

22 Interior Technique: incised

23 Interior Technique: impressed

24 Exterior Preparation: cordmarked

25 Exterior Preparation: fabric impressed

26 Exterior Preparation: smoothed

27 Interior Tool Type: broken stick

28 Lip Tool Type: broken stick

29 Cord Wrapped Paddle: flattened lip

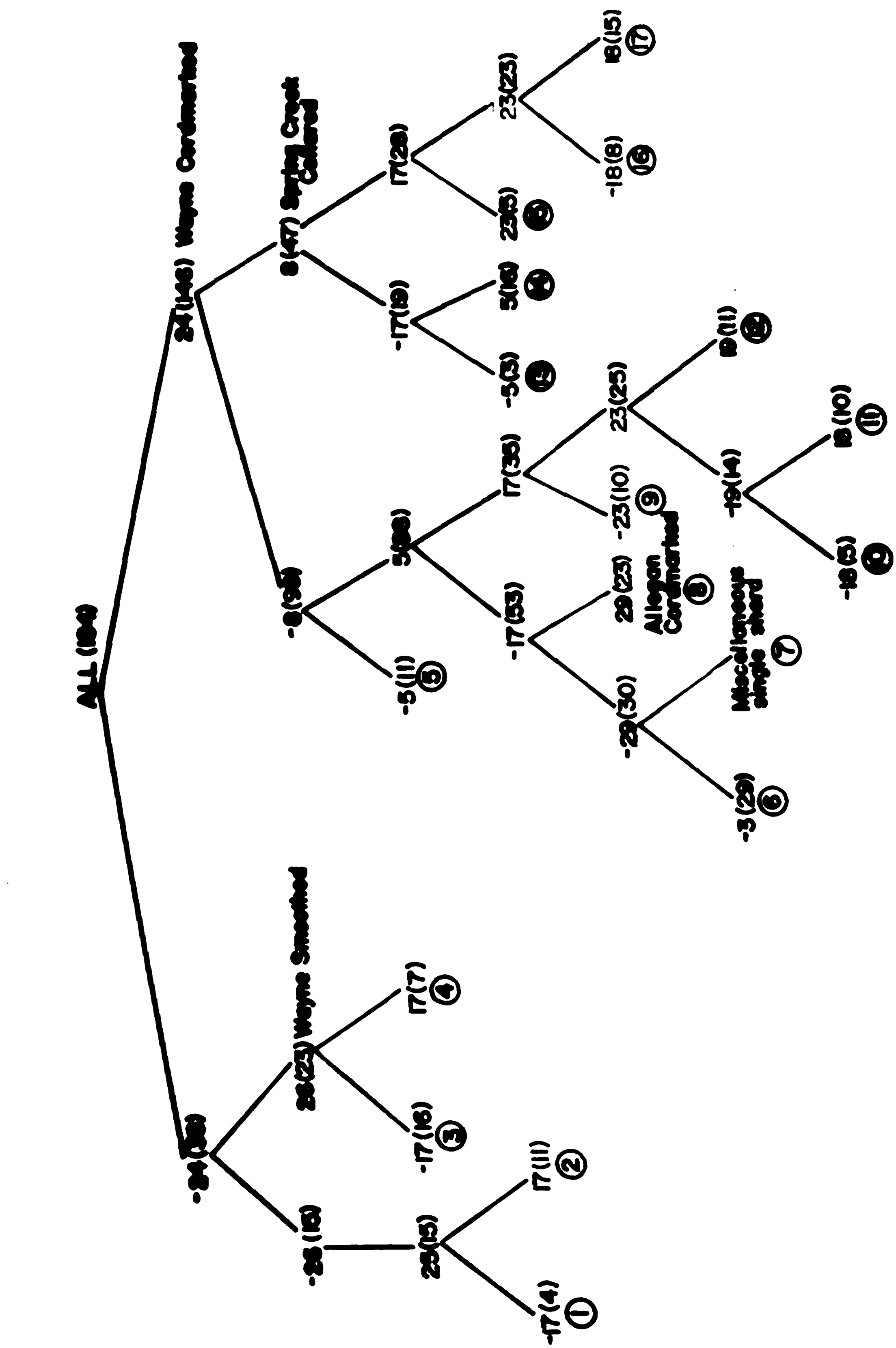

Wayne Cordmarked
Spring Creek Collared
Allegan Cordmarked
Miscellaneous single sherd
Wayne Smoothed

Figure 20.--Classification Scheme For Decorated Wayne Ware

Numbers in parentheses refer to the number of vessels at that branch. Numbers in circles refer to termini.

Attribute List:

1 Lip Cross Section: flat

2 Lip Cross Section: round

3 Lip Cross Section: wedge

4 Lip Cross Section: beveled

5 Lip Planview: flat

6 Lip Planview: castellated

7 Lip Planview: peaked

8 Rolled Rim

9 Rim Cross Section: straight

10 Rim Cross Section: concave (everted)

11 Rim Thickening

12 Exterior Tool Type: sharp edged or pointed

13 Exterior Tool Type: curvilinear

14 Exterior Tool Type: rectalinear

15 Exterior Tool Type: cord wrapped end

16 Exterior Tool Type: cord wrapped paddle edge

17 Exterior Tool Type: cord

18 Exterior Tool Type: cord wrapped stick

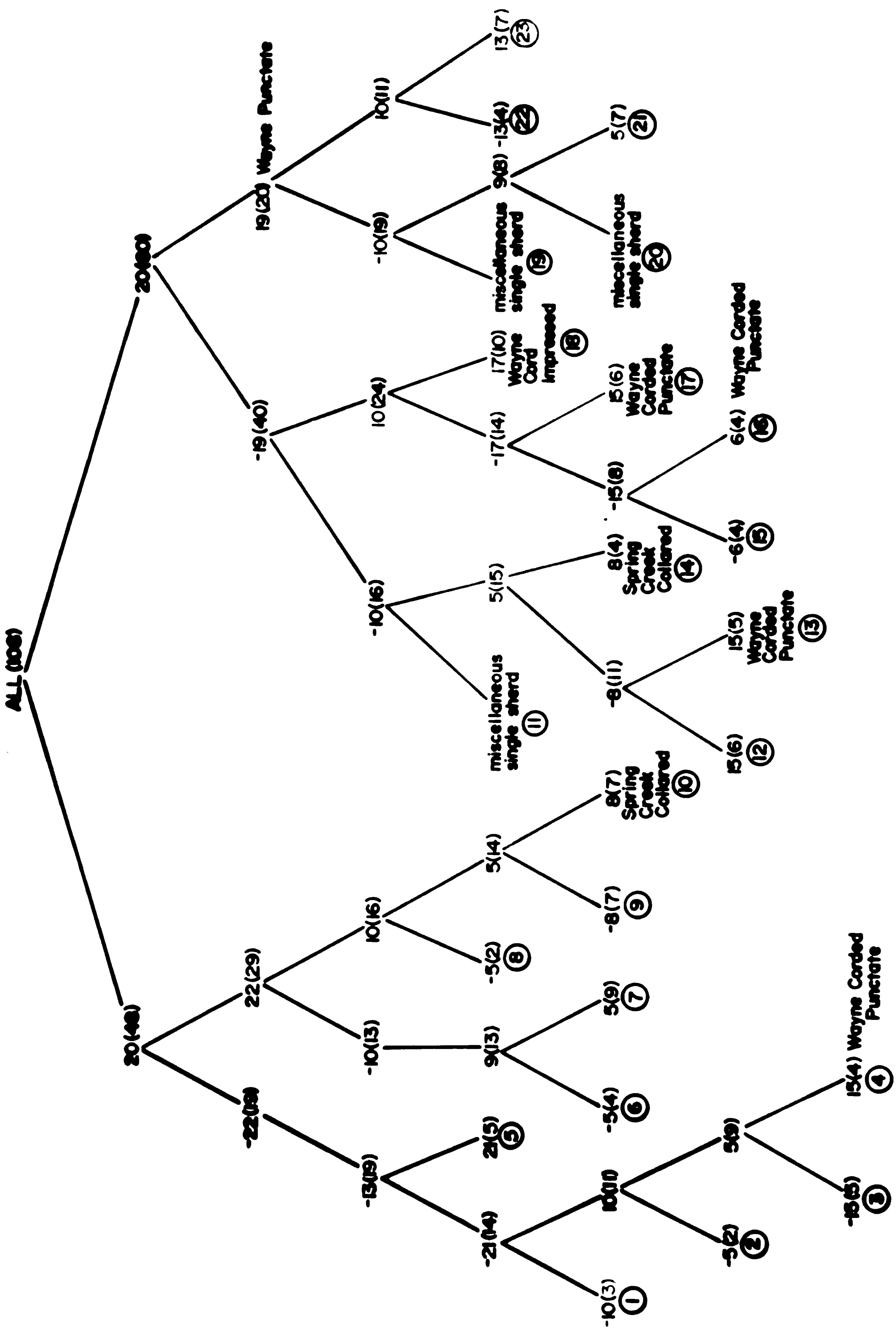
19 Exterior Technique: cord wrapped stick

20 Exterior Orientation: horizontal

21 Exterior Orientation: vertical

22 Exterior Orientation: oblique-right

23 Exterior Tool Type: broken stick

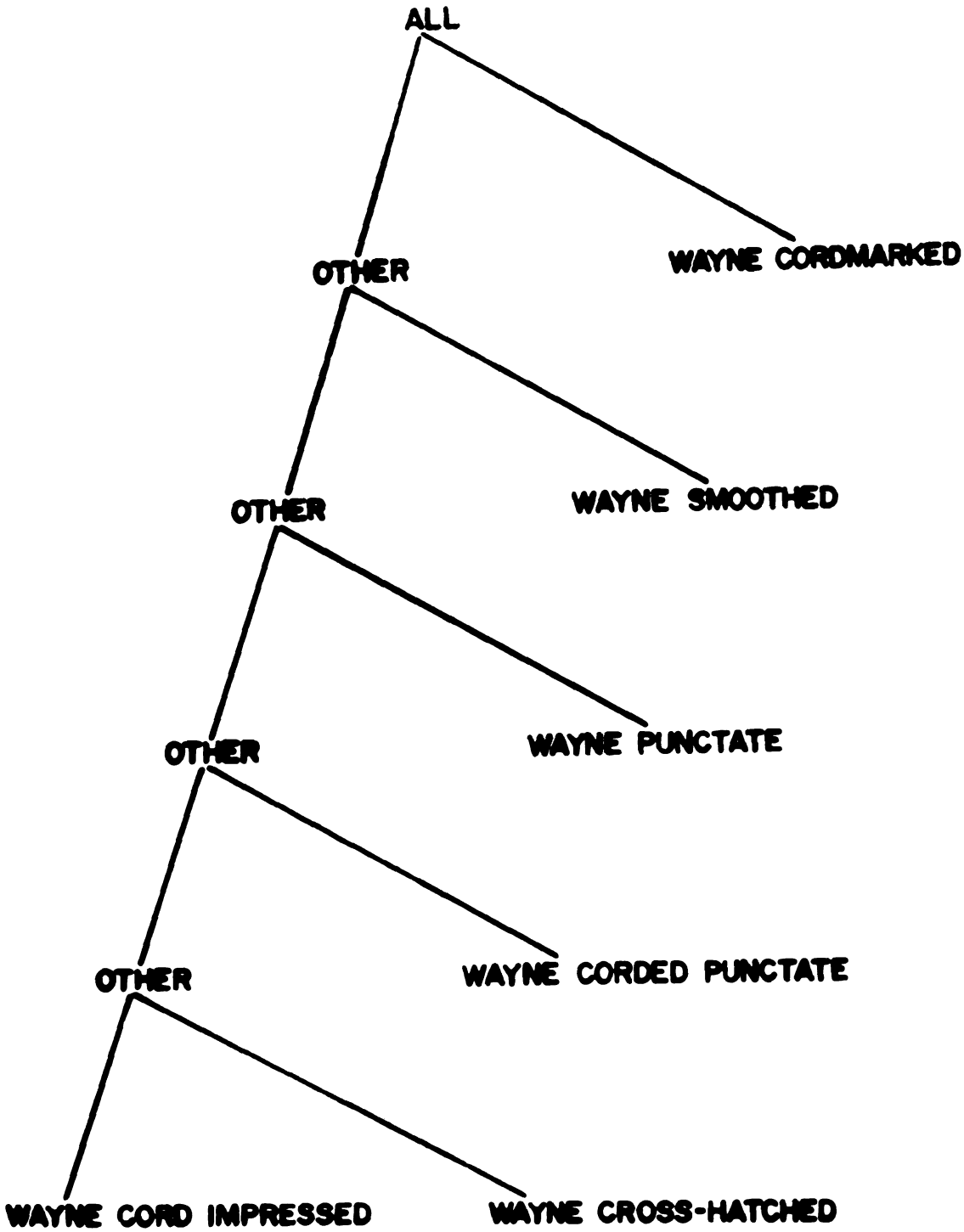

ALL (108)
Wayne Punctate
miscellaneous single sherd
Wayne Cord Impressed
Wayne Corded Punctate
Spring Creek Collared
Wayne Corded Punctate
Spring Creek Collared
miscellaneous single sherd
Wayne Corded Punctate
Wayne Corded Punctate
Wayne Corded Punctate
miscellaneous single sherd

(Figure 21). Subdivisions where branching did not occur are not included except where the presence of a specific attribute is indicated. Each group produced by Program TYPE was inspected to determine whether the individual vessels were consistent with one another. All apparent errors in the classification were traced to earlier stages of the analysis and corrected. For example in one case, Program TYPE classified three rim sherds belonging to a single vessel which had not been previously matched, in the same group.

Figure 19 shows that undecorated ceramics were initially divided into groups based on the type of exterior surface preparation. The two groups of cordmarked and smoothed ceramics are identical to the variants Wayne Cordmarked and Wayne Smoothed defined by Fitting (1965: 158) notes the presence of fabric impressed sherds within the category Wayne Cordmarked. Brose (1966: 4) also notes the presence of fabric impressed sherds in a collection of Wayne ceramics from the Valley Sweets Site in the Saginaw Valley. The results of Program TYPE definitely distinguish between fabric impressed ceramics and cordmarked and smoothed ceramics at the variety level.

The first division within cordmarked ceramics is based on the presence or absence of a rolled rim. Ceramics which have a rolled rim are most similar to some examples of Spring Creek Collared, described by

Figure 21.--Schematic Representation of Original Type Definitions of Wayne Ware


ALL
WAYNE CORDMARKED
OTHER
WAYNE SMOOTHED
OTHER
WAYNE PUNCTATE
OTHER
WAYNE CORDED PUNCTATE
OTHER
WAYNE CROSS-HATCHED
WAYNE CORD IMPRESSED

Fitting (1968: 23) and defined by Rogers (1972: 97). A variant of Allegan Ware, Allegan Cordmarked appears as a sub-group of cordmarked ceramics lacking a rolled rim. The original definition of Allegan Cordmarked (Rogers, 1972: 96) lists the presence of vertical cord wrapped paddle impressions up to the lip and frequent occurence of cord wrapped paddle impressions on the lip as defining attributes of this variant. In the present study, the presence of a cordmarked exterior and a cord wrapped paddle flattened lip planview, and the absence of a rolled rim and interior decoration are attributes which define the Allegan Cordmarked. The presence of Allegan Cordmarked as a sub-group of Cordmarked ceramics lacking a rolled rim suggests that Allegan Ware ceramics may not be a distinct from Wayne Ware.

If the attribute for cord wrapped paddle flattened lip had been selected first, or higher up in the taxonomy, the distinction between Allegan Ware and Wayne Ware would have been supported. Until a correspondingly large sample of Wayne and Allegan Ware ceramics is subjected to rigorous statistical comparison, the relationship of Allegan Ware as either a regional variant or companion series to Wayne Ware will remain unclear.

Figure 20 presents the classificatory scheme for decorated ceramics. All of the decorated variants of

Wayne Ware found in the original type definition were defined by Program TYPE except Wayne Crosshatched, which was represented by only one vessel at the Fletcher Site. The attributes used to define the decorated types differed from those used in the original type definitions. For each variant (Wayne Punctate, Wayne Corded Punctate, Wayne Cord Impressed and Spring Creek Collared) one or more attributes different from the ones used in the original definitions appeared higher in the classification dispersing variants into a number of different branches of the classification.

Attributes which occur higher up in the classification (such as orientation of decoration) have greater statistical significance than attributes found in lower parts of the classification. In the Fletcher Site sample the variant Wayne Corded Punctate is dispersed in the classification because the technique of application in this study was coded as an impression rather than a punctate, following the rationale that punctates are vertical in direction of application while impressions are oblique. In the Fletcher Site sample, ceramics decorated with cord wrapped ended tools have all been applied at an oblique angle to the surface of the vessel. If the technique used in applying the end of cord wrapped tools had been coded as a punctate, the corded punctate

groups might have been shifted to the right as sub-groups of the horizontal punctate group. The dispersal of the variant Wayne Corded Punctate suggests that this variant of Wayne Ware was not monothetically defined.

The monothetic subdivisive analysis of Fletcher Site ceramics allowed detailed definitions of variability within Wayne Tradition ceramics. In addition, the analysis also described relationships between Spring Creek Collared ceramics, Allegan Ware and Wayne Ware. Three significant results, the use of different attributes for defining decorated Wayne Ware; the more precise discriminating ability of a monothetic subdivision statistical approach; and relationships between Wayne Ware, Spring Creek Collared and Allegan Ware indicate that a re-definition of Wayne Ware and related ceramics is necessary.

A Proposed Revision of the Wayne Tradition Ceramics

The typology proposed in this study is consistent with the results produced by the monothetic subdivisive analysis performed by Program TYPE, with the exception that the initial division which forms two types, Wayne Decorated and Wayne Undecorated, was made prior to analysis. The decision to divide the sample in this fashion is based, in part on the original type definitions and a desire for consistency within levels of the typology. Varieties are composed of groups of ceramics, defined by the presence of

the most statistically significant attributes belonging to a single attribute class (Figure 22). The type Wayne Decorated consequently has the varieties Horizontal, Vertical and Oblique-right (Figures 23-28). The residual category of ceramics with exterior decoration oriented other than horizontally, vertically or oblique right, may be expanded into other varieties should the need arise. Varieties of Wayne Undecorated ceramics include Fabric Impressed, Smoothed and Cordmarked, all attributes of surface preparation (Figures 29-36).

Wayne Decorated, Horizontal Variety has been subdivided into Punctate (Figures 23D-E, 24G-J, and 26) and Impressed (Figures 25 and 27) Sub-varieties, with a residual category of ceramic which have uncommon decorative techniques on their exteriors. Wayne Decorated, Oblique-right Variety was divided into sub-varieties Plain and Castellated (Figures 24A-F), referring to the attribute class of lip planview. Wayne Undecorated Fabric Impressed Variety and Wayne Undecorated, Smoothed Variety both have Sub-varieties Plain and Decorated Interior (Figure 29). Wayne Undecorated, Cordmarked Variety has the Sub-varieties Rolled Rim (Figures 30 and 33) and Plain Rim (Figures 3, 32 and 34).

Variability exists within some of the sub-varieties set forth above. Subdividing the typology further would cause subdivision between groups which were basically the

Figure 22.--Proposed Revision of Wayne Ware

Figure 23.--Wayne Decorated Ceramics

A-C Vessels with Unusual Orientations

D-E Horizontal Variety, Punctate Sub-Variety

F-G Vertical Variety

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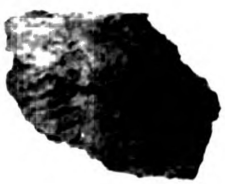

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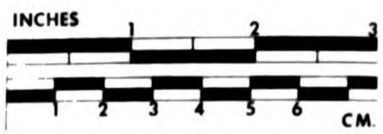

Figure 24.--Wayne Decorated Ceramics

A-F Oblique-right Variety

G-J Horizontal Variety, Punctate Sub-variety

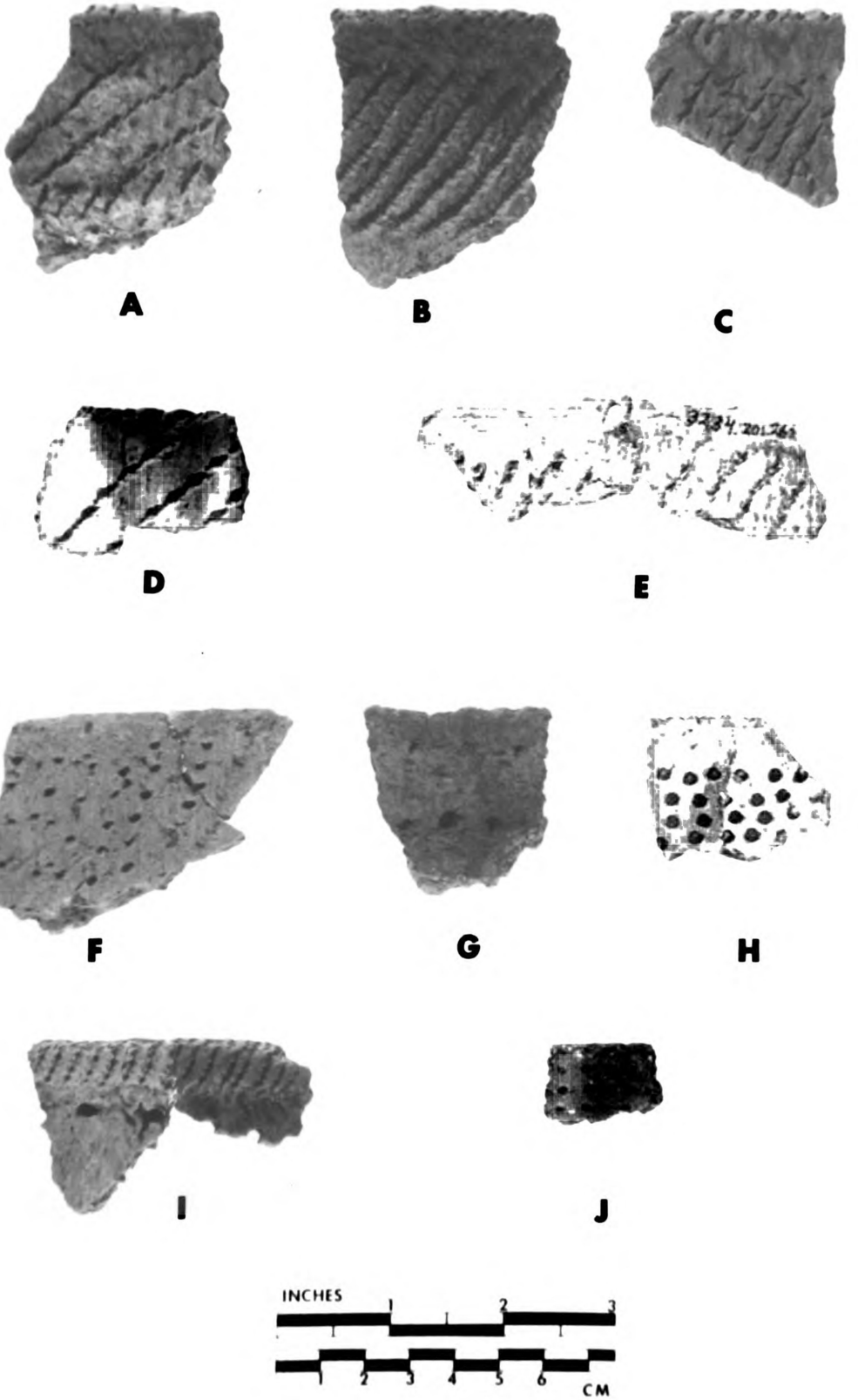
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Figure 25.--Wayne Decorated Ceramics

A-F Horizontal Variety, Impressed Sub-variety (cord wrapped tool)

G-J Horizontal Variety, Impressed Sub-variety (cord impressed)

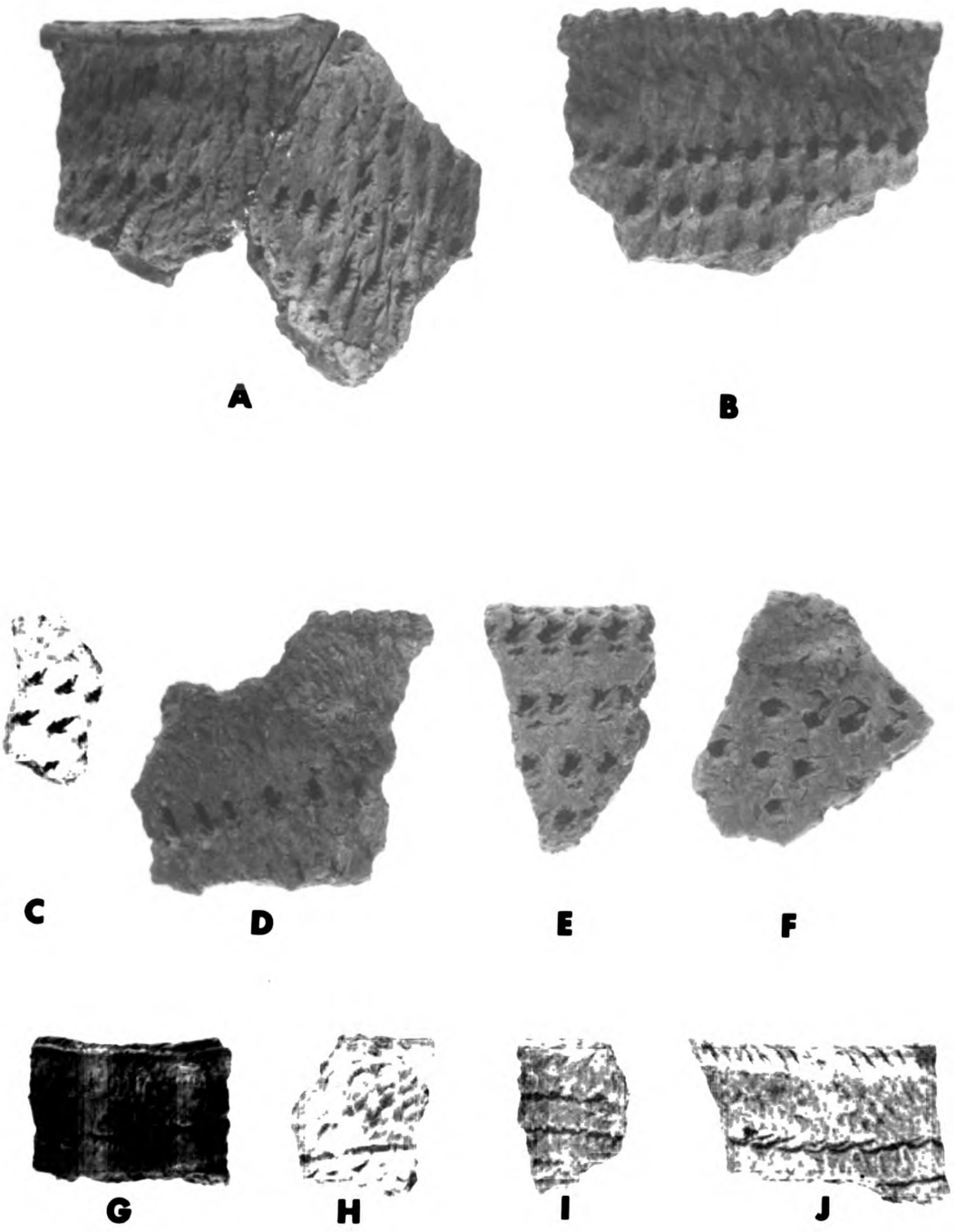
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Figure 26.--Reconstructable Vessel of Wayne Decorated, Horizontal Variety, Punctate Sub-variety


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Figure 27.--Reconstructable Vessel of Wayne Decorated, Horizontal Variety, Impressed Sub-variety (cord wrapped tool)


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Figure 28.--Wayne Decorated Rim Cross Sections

A-D Unusual Orientation

E-F Oblique-Right Variety

G-M Horizontal Variety, Impressed Sub-variety

N-S Horizontal Variety, Punctate Sub-variety

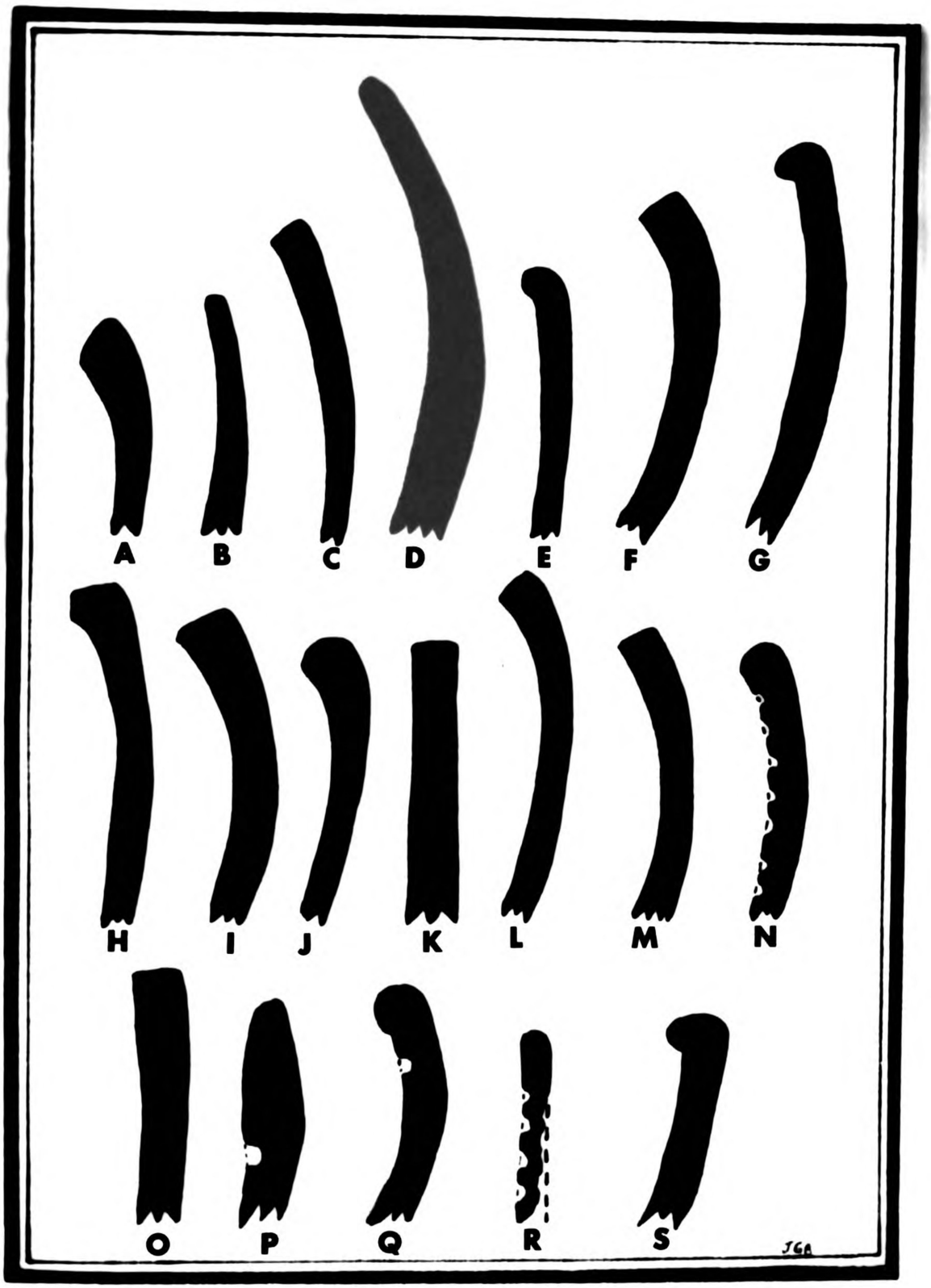
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Figure 29.--Wayne Undecorated Ceramics

A,C Fabric Impressed Variety, Plain Interior Sub-variety

B, D-E Fabric Impressed Variety, Decorated Interior Sub-variety

F-G Smoothed Variety, Decorated Interior Sub-variety

H-J Smoothed Variety, Plain Interior Sub-variety

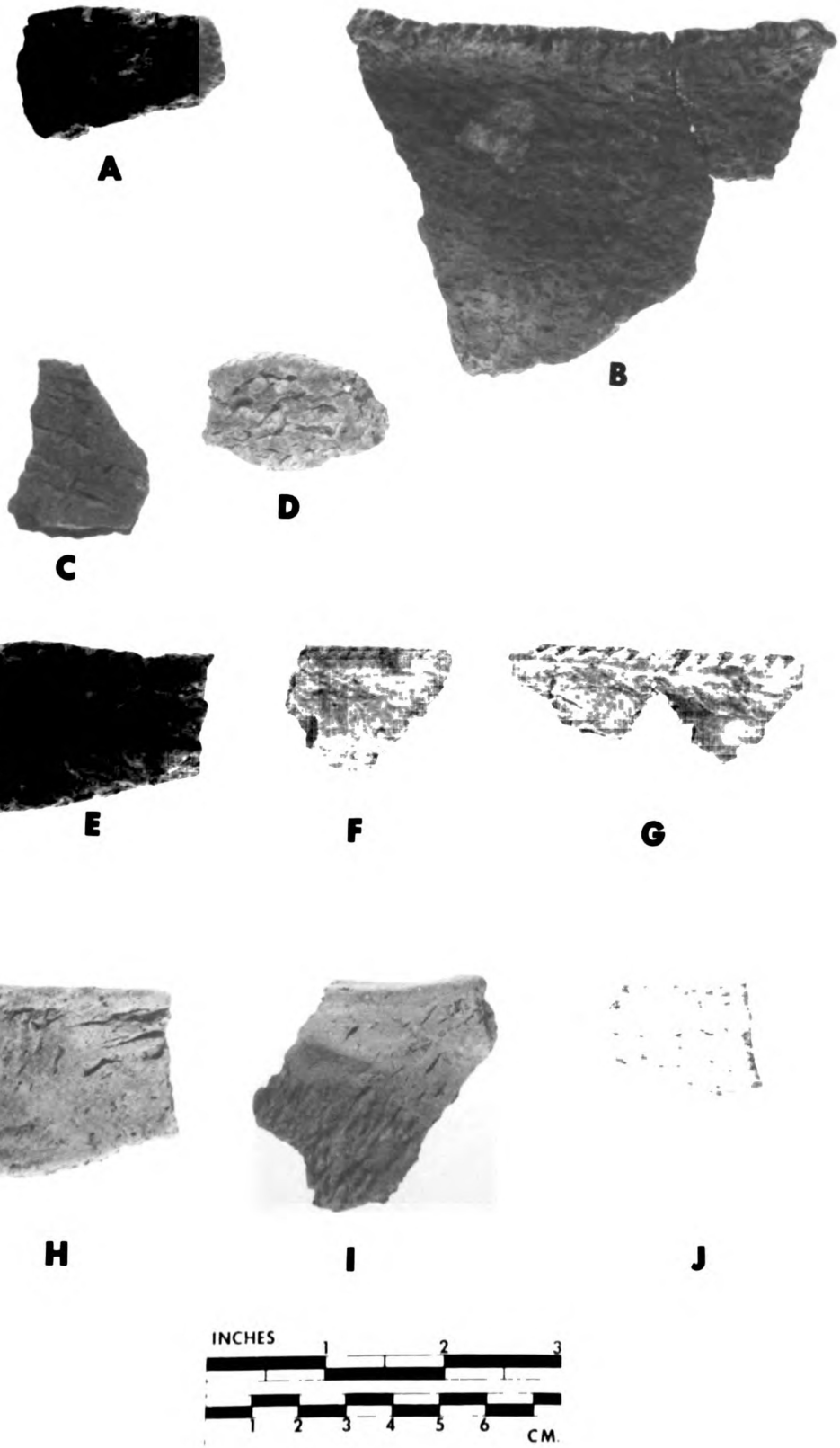
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Figure 30.--Wayne Undecorated Ceramics

A-H Cordmarked Variety, Rolled Rim Sub-variety

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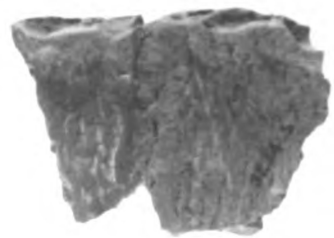

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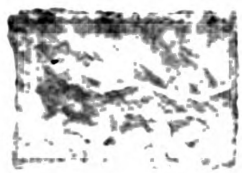

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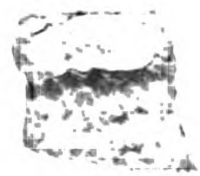

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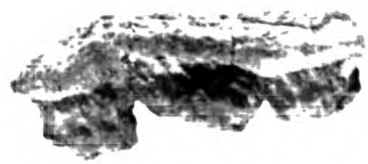

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Figure 31.--Wayne Undecorated Ceramics

A-I Cord Marked Variety, Plain Rim Sub-variety

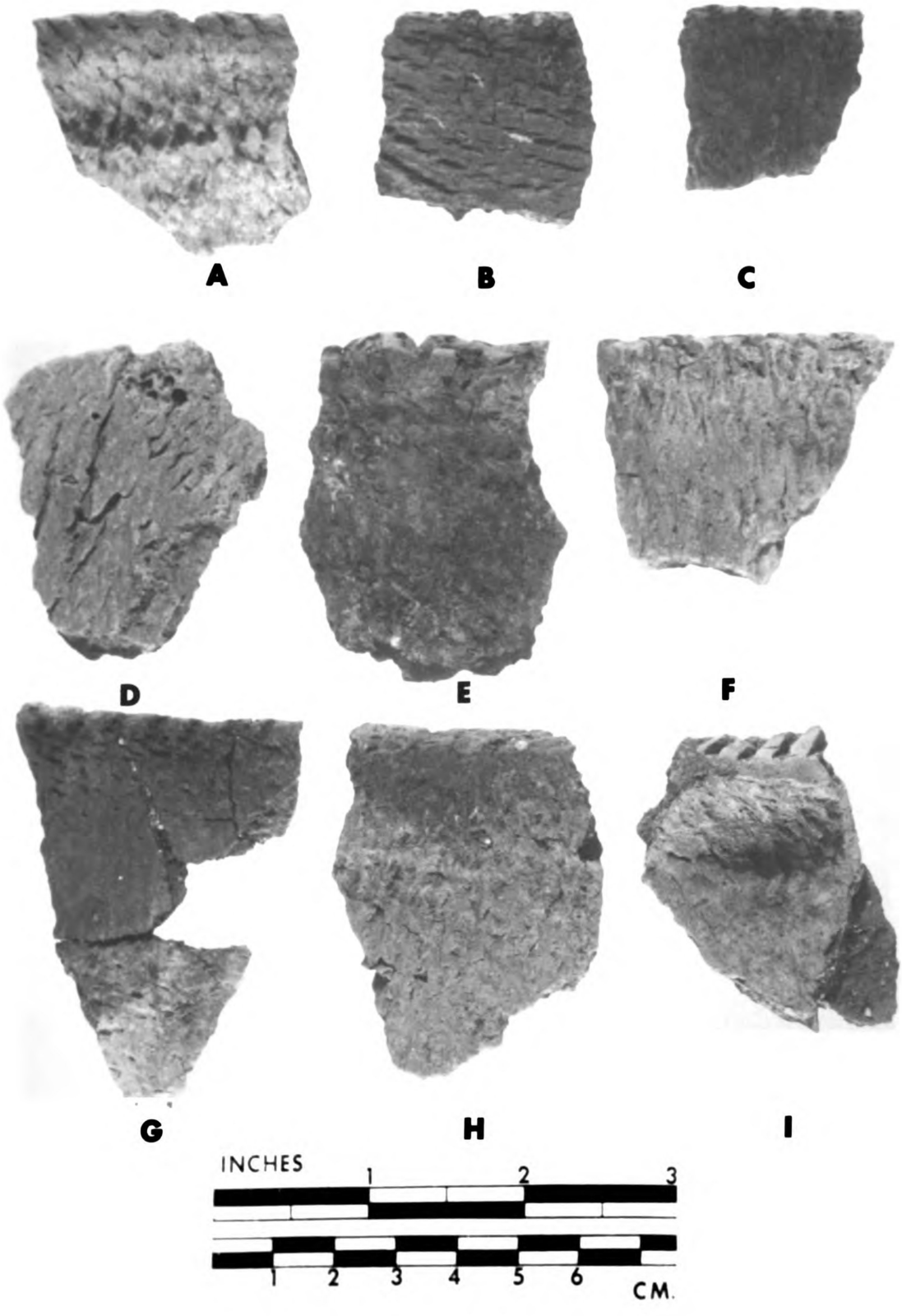
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Figure 32.--Wayne Undecorated Ceramics

A Cordmarked Variety, Plain Rim Subvariety

B-G Cordmarked Variety, Plain Rim Subvariety (Allegan Cordmarked)

A

B

C

D

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Figure 33.--Partially Reconstructable Vessel of Wayne Undecorated, Cordmarked Variety, Rolled Rim Sub-variety

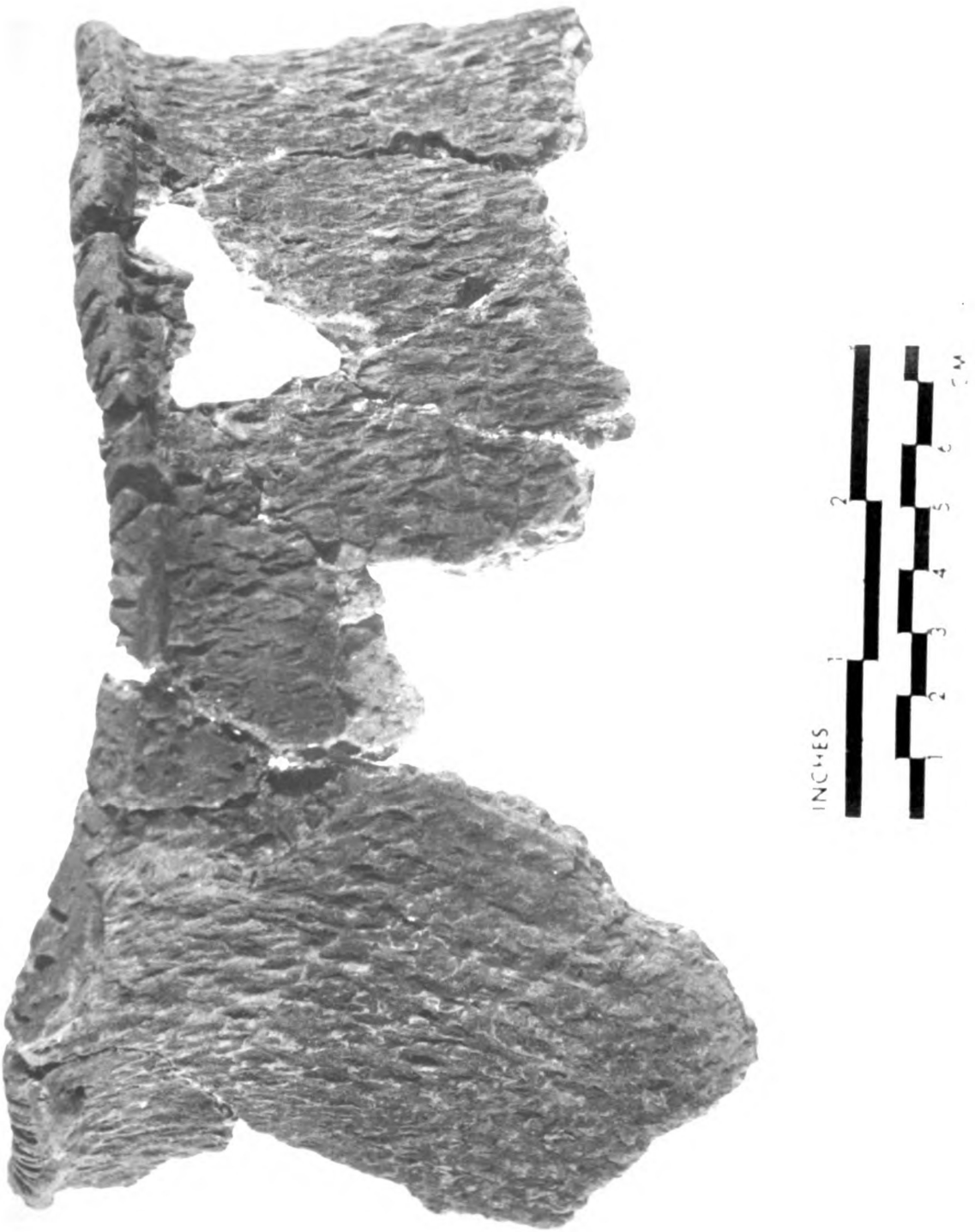
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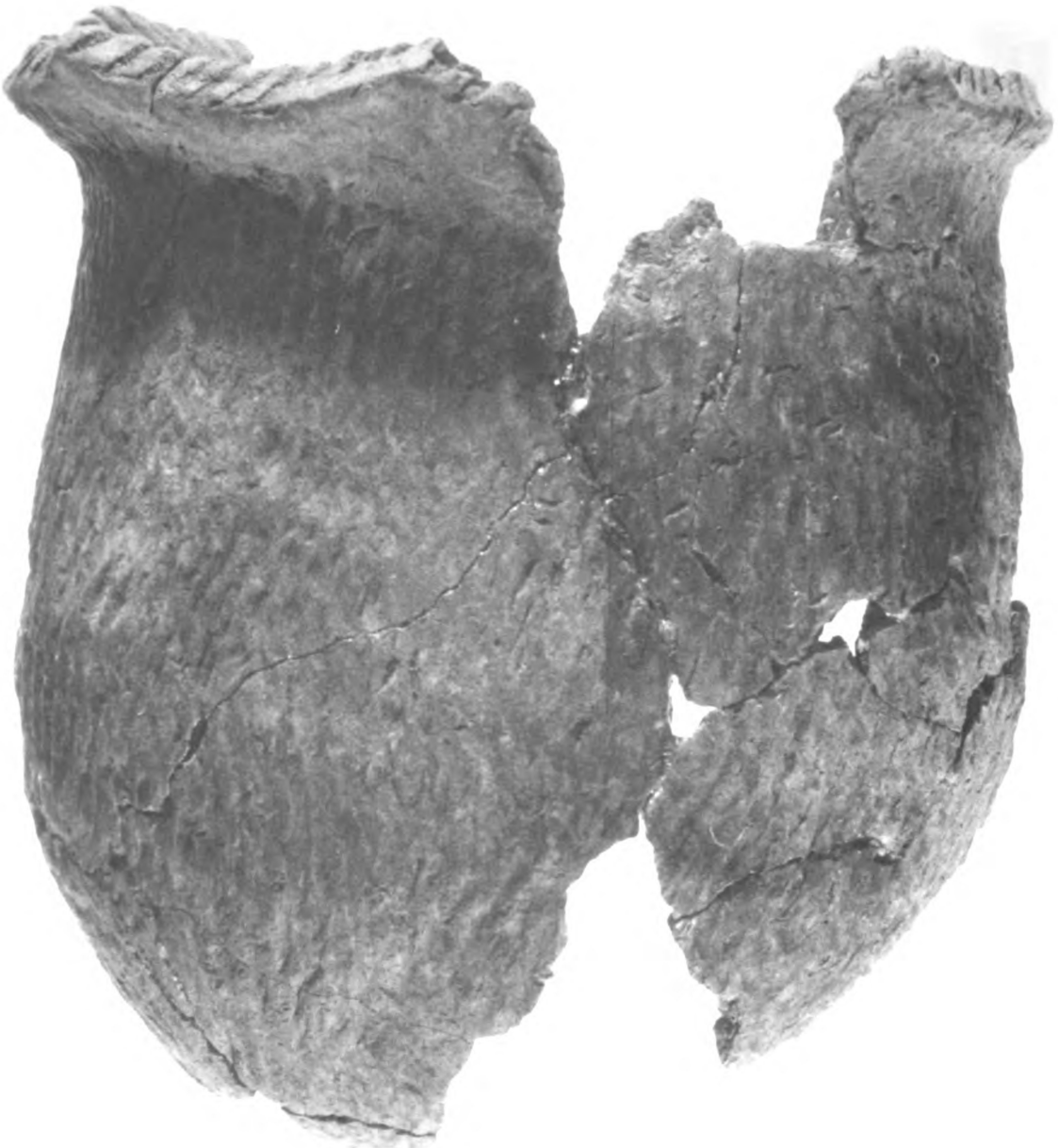
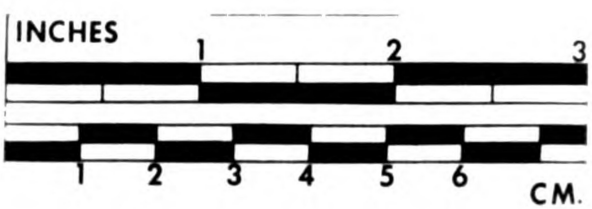
Figure 34.--Reconstructable Vessel of Wayne Undecorated, Cordmarked Variety, Plain Rim Sub-variety

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2
3
1
2
3
4
5
6
CM.

Figure 35.--Wayne Undecorated Rim Cross Sections

A-G Cordmarked Variety, Plain Rim Sub-variety

H-M Cordmarked Variety, Plain Rim Sub-variety

Figure 36.--Wayne Undecorated Rim Cross Sections

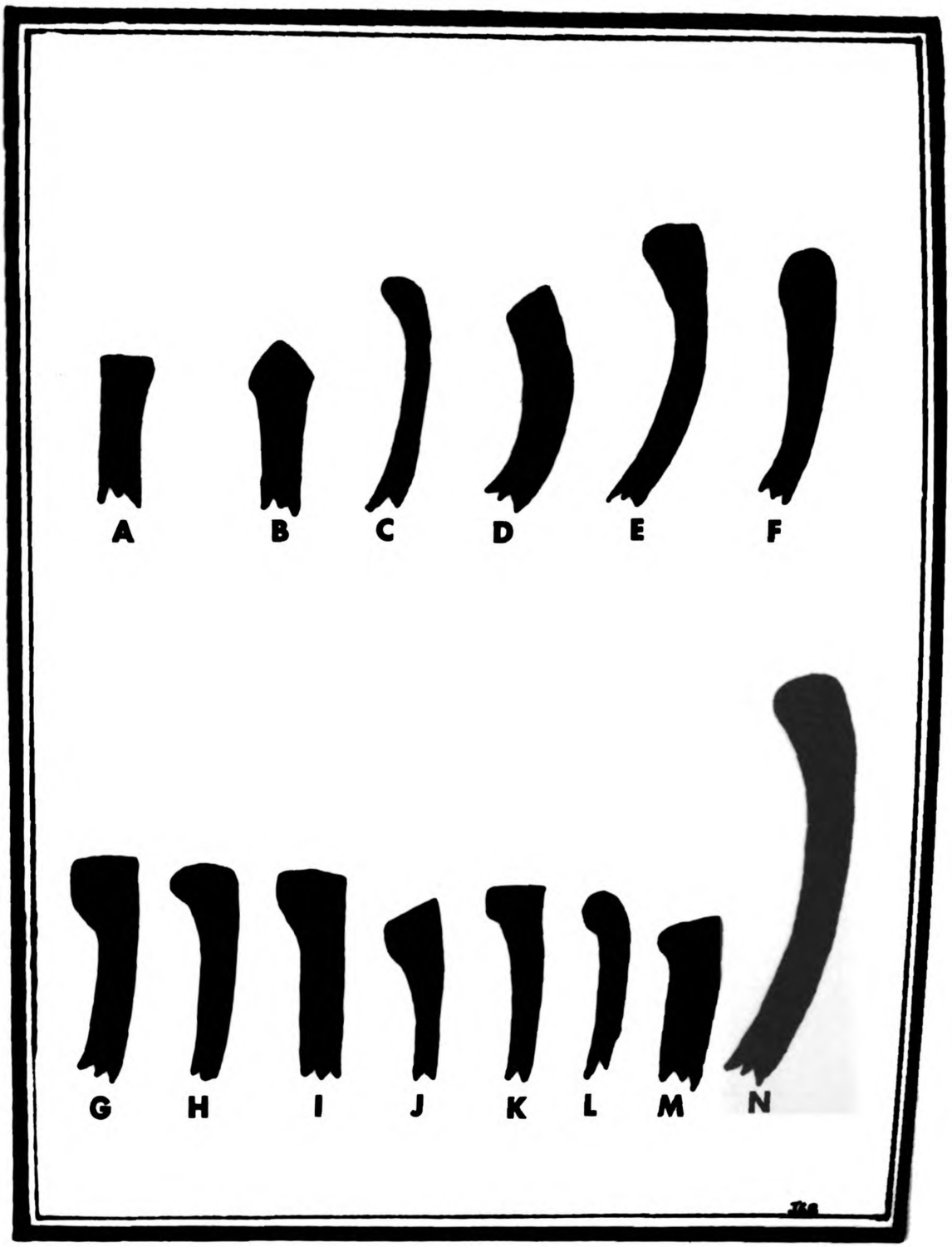
A,C Fabric Impressed Variety, Plain Interior Sub-variety

B Smoothed Variety, Decorated Interior Sub-variety

D,N Fabric Impressed Variety, Decorated Interior Sub-variety

E-F Smoothed Variety, Plain Interior Sub-variety

G-M Cordmarked Variety, Rolled Rim Sub-variety


A
B
C
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N

same and small in number. A second problem which prohibited further subdivision of the typology at this time was the inaccuracy with which an apparently significant attribute was measured. The amount of rim eversion (attributes 9 and 10 in Figure 20) seemed to be an important discriminator of Wayne Ware. It was difficult to be precise in coding this attribute which should be quantified. Ceramics with straight rims included only those which are perfectly or near perfectly straight rimmed. The variability of rim eversion within the attribute "concave" is considerable, ranging from a slight to considerable (Figure 28). Even though rim eversion may be a significant attribute for differentiating Wayne Ware ceramics it should not and will not be used in the re-definition of Wayne Ware until it can be more precisely measured and controlled.

The proposed formal re-definition of Wayne Ware is presented in Appendix B. Noticeably absent from the re-definition is a category which would include the variant Wayne Cross-hatched (Fitting, 1965: 158). The absence of this category is not an oversight but occurs because only one example of this variant is present in the Fletcher Site sample. Other collections may have significant quantities of cross-hatched Wayne Ware which would necessitate revising the typology proposed here.

Probably this could be accomplished by simply adding cross-hatched as a companion variety to the Horizontal, Oblique-right, and Vertical Varieties of Wayne Decorated.

A second category absent in the typology presented in Appendix B is the type Saginaw Thin Cordmarked (Fischer, 1972: 182). While a small number (less than 5 percent of the total sample) of Wayne Ware ceramics from the Fletcher Site appear to have been made on a thin ceramic, they did not covary sufficiently with other attributes to allow establishment as a variant of Wayne Ware on the basis of Fletcher Site data. The type Saginaw Thin Cordmarked is known from only 34 rim sherds at the Schultz Site and therefore may not be a valid type because of sampling error. Fischer (1972: 185) suggests that Saginaw Thin Cordmarked might be a northern contribution to or variant of Wayne Ware, not found in Southeastern Michigan. More specifically, however, Saginaw Thin Cordmarked might be a transitional Middle to Late Woodland or early Late Woodland type in the Saginaw Valley. There are no radiocarbon dates for Saginaw Thin Cordmarked, but its location immediately above Middle Woodland ceramic bearing strata at the Schultz Site suggests that it might be either transitional or early Late Woodland. The absence of a significant quantity of cross-hatched Wayne Ware at the Fletcher Site, a type which

Fitting (1965: 41) suggests is a transitional or early Late Woodland type, indicates that the Fletcher Site might not have been occupied during the transitional Middle to Late or early Late Woodland, which in turn might account for the lack of a significant quantity of both Saginaw Thin Cordmarked and Wayne Cross-hatched at the Fletcher Site.

PART IV

SUMMARY AND CONCLUSIONS

CHAPTER VIII

CONCLUSIONS

Primary among the results of this study is the knowledge gained concerning Wayne Ware ceramics. The presence of these ceramics is confirmed in the Saginaw Valley in addition to the area where it was first defined. Wayne Ware types within this broad geographic area are basically homogeneous. The differences between the original and revised definitions of Wayne Tradition ceramics discussed earlier in the study may be the result of regional variability within the Wayne Tradition or more likely, they may be the result of imprecision in the original descriptions which were derived by the common typological method.

In addition to indicating internal homogeneity of a ceramic tradition over a broad geographic area, this study defined possible relationships between Wayne Ware ceramics defined in Eastern Michigan and Spring Creek Collared and Allegan Ware ceramics defined in Western Michigan. Allegan Ware and Spring Creek Collared ceramics appear to be regional variants of a widespread Wayne Ceramic Tradition. Until large numbers of Wayne Tradition

ceramics from both Eastern and Western Michigan are simultaneously analyzed, these possible relationships will remain obscure.

Further results indicate that the method and technique used in this study, monothetic subdivision, is useful for the analysis of at least one group of Late Woodland ceramics in Michigan. In addition to providing a check on ceramic classifications developed using the common typological method, monothetic subdivisive methods and Program TYPE, specifically, can be used to compare the structure of ceramic classifications, thus determining whether two areas share common types within a ceramic tradition.

Finally, results of this study allow the ceramic bearing occupations at the Fletcher Site to be roughly dated. The Early Woodland occupation occured between approximately 800 B.C. and 400 B.C. The site was then abandoned for the latter part of the Early Woodland period and only sparsely inhabited during the early Middle Woodland (approximately 200 B.C. to A.D. 150). The site was occupied briefly or sparsely during the latter part of the Middle Woodland (A.D. 150-A.D. 500). The site was probably abandoned again briefly during the transitional Middle to Late Woodland periord. The final prehistoric occupation of the site probably occurred

sometime between A.D. 600 to A.D. 1200 and was relatively more intense than any other occupation especially from A.D. 800 to A.D. 1200.

While Middle and Late Woodland features are clearly separate at the Fletcher Site, the stratigraphic position of Wayne Ware and other Late Woodland types and varieties is not known at this time. Such an analysis might yield more precise information for dating within the Late Woodland occupation at the Fletcher Site. The intensity of the Late Woodland occupation and subsequent historic and modern activity, may make such an analysis difficult to achieve.

APPENDICES

APPENDIX A

FLETCHER SITE LATE WOODLAND CERAMIC
ATTRIBUTE LIST

Attribute Class	Attribute	N	%
Lip Cross Section	flat: where the lip is flattened at a ninety degree angle to the longitudinal axis of the rim.	260	71.4
	round: where the lip is rounded, and sides of upper rim are approximately parallel.	60	16.5
	splayed: where the cross section of the rim is wider at the lip than at the base.	4	1.1
	wedge: where two flat surfaces of the lip meet forming approximately a ninety degree angle.	17	4.7
	beveled: where the surface of the lip is flattened either towards or away from the interior of the vessel.	18	5.0
Lip Planview	flat: where the lip planview is uninterrupted.	306	84.1
	castellated: where the lip planview is interrupted by repeated, smooth and regular section either rounded or angular.	38	10.4

Attribute Class	Attribute	N	%
	peaked: where the lip planview is interrupted by abrupt rounded or irregular sections not necessarily in a regular fashion.	18	5.0
Rolled Rim	rolled rim: where a flap of clay has been rolled over from the lip to the exterior and insufficiently smoothed over.	97	26.7
Lip Decoration	lip decoration: presence of any modification of the lip other than smoothing or cord wrapped paddle.	276	75.2
Lip Decorative Technique	incised: where the lip is scored or slashed with a sharp implement.	50	13.7
	punctated: where the lip is "jabbed" with a sharp or pointed implement.	9	2.5
	impressed: where the lip is indented or stamped with a variety of different kinds of implements.	221	60.1
	plain: where the lip has been either smoothed over or treated with a cord wrapped paddle.	78	21.4
	cordmarked rim: where the lip has been treated with a cord wrapped paddle.	42	11.3

Attribute Class	Attribute	N	%
Lip Decoration Type of Tool	cord wrapped stick greater than .6 cm.: an implement having a hard core, not necessarily a stick, is wrapped with a cord; impression is greater than .6 cm.	21	5.8
	cord wrapped stick less than .6 cm.: same as above, impression left is less than .6 cm.	73	20.1
	sharp edged or pointed tool: an implement which has a sharp edge or end, used either for punctating or incising.	54	14.8
	cord: an implement usually having a soft core wound with a cord fiber; also includes twisted cord.	36	9.9
	cord wrapped paddle edge: an implement composed of a paddle wrapped with a cord. The edge of the paddle is impressed in soft clay.	64	17.6
	broken stick: the edge or end of a broken stick.	32	8.8
	carved paddle: an implement where the edge of a paddle has been notched or carved.	1	0.3
	other: any kind of implement used on the lip not included in the attribute list.	10	2.8

Attribute Class	Attribute	N	%
Lip Decoration: Orientation	transverse: where the direction of the decoration is at a 90 degree angle to the lip of the vessel.	90	24.7
	horizontal: where the direction of the decoration is parallel with the lip of the vessel.	28	7.7
	oblique: where the direction of the decoration is at an angle other than 90 degrees (acute or obtuse) with the lip of the vessel.	163	44.8
Rim Cross Section	straight: where the interior and exterior of the rim are parallel to the longitudinal axis of the rim.	155	55.5
	concave: where the interior and possibly the exterior of the rim deviate to the right of the longitudinal axis of the rim sherd (exterior to the right).	202	55.5
Rim Thickening	rim thickening: presence of a thickening element such as a collar.	13	3.6
Interior Decoration	interior decoration: presence of any decoration on the interior of the rim.		
Interior Decoration: Type of Tool	cord wrapped stick: see cord wrapped stick under Lip Decoration.	66	18.3
	cord wrapped paddle edge: see cord wrapped paddle edge under Lip Decoration.	56	15.4

Attribute Class	Attribute	N	%
	cord: see cord under Lip Decoration.	23	6.3
	sharp edged or pointed tool: see sharp edged or pointed tool under Lip Decoration.	38	10.4
	broken stick: see broken stick under Lip Decoration.	17	4.7
	carved paddle: see carved paddle under Lip Decoration.	2	0.6
	incised: see incised under Lip Decoration.	31	8.5
	punctated: see punctated under Lip Decoration.	12	3.3
	impressed: see impressed under Lip Decoration.	170	46.7
Interior Decoration: Orientation	vertical: where the direction of the decoration is parallel to the longitudinal axis of the vessel.	58	15.9
	horizontal: where the direction of the decoration runs approximately 90 degrees to the longitudinal axis of the vessel.	19	5.2
	oblique: where the direction of the decoration runs at an angle approaching 45 degrees to the longitudinal axis of the vessel.	137	37.6
Interior Decoration: Number of Rows	one	166	45.6
	two	31	8.5
	more than two	4	1.1

Attribute Class	Attribute	N	%
Interior Decoration: Secondary Motifs on Interior	secondary motifs: presence of additional decoration on the interior, such as boarders or punctates.	13	3.6
Exterior Surface Preparation	cordmarked: where the exterior surface of the rim has been treated with a cord wrapped paddle while shaping the vessel.	257	70.6
	fabric impressed: where the exterior surface of the rim has been impressed with woven fabric, possibly over a paddle, while shaping the vessel.	30	8.2
	smoothed over: where the exterior surface of the rim has been smoothed over while or subsequent to shaping the vessel. No cordmarking or fabric impressions visible.	77	21.2
Exterior Surface Preparation: Orientation	no pattern: where cord marking or fabric impressions lack regular pattern on the rim exterior.	91	25.0
	vertical: where the cordmarking or fabric impressions are regular and run parallel to the longitudinal axis of the vessel.	163	44.8
	oblique: where cordmarking or fabric impressions are regular and run approximately at a 45 degree angle to the longitudinal axis of the vessel.	26	7.1

Attribute Class	Attribute	N	%
	horizontal: where cord-marking or fabric impressions are regular and run approximately at a 90 degree angle to the longitudinal axis of the vessel.	3	0.8
Exterior Decoration	exterior decoration: presence of exterior decoration other than surface preparation.	175	48.1
Exterior Decoration: Type of Tool	sharp edged or pointed tool: see sharp edged or pointed tool under Lip Decoration.	30	8.2
	curvilinear: a circular or rounded implement usually used for punctates.	13	3.6
	rectalinear: a square or rectangular shaped implement usually used for punctates.	11	3.0
	finger pinched: where the soft clay is pinched usually leaving fingernail marks.	1	0.3
	cord wrapped ended tool: same as a cord wrapped stick but the end of the implement is used rather than the side.	21	5.8
	cord wrapped paddle edge: see cord wrapped paddle edge under Lip Decoration.	11	3.0
	cord: see cord under Lip Decoration.	52	14.3
	cord wrapped stick: see cord wrapped stick under Lip Decoration	16	4.4
	knotted cord: a cord that has closely spaced knots tied in it.	7	1.9

Attribute Class	Attribute	N	%
	broken stick: see broken stick under Lip Decoration	17	4.7
	carved paddle: see carved paddle under Lip Decoration.	2	0.6
Exterior Decoration: Technique	punctate, major decorative technique: see punctate under Lip Decoration.	31	8.5
	punctate, superimposed over major decorative motif: see punctate under Lip Decoration.	11	3.0
	punctate, below major decorative motif: see punctate under Lip Decoration.		
	impressed: see impressed under Lip Decoration.	118	32.4
	incised: see incised under Lip Decoration.	24	6.6
	stab-drag: (also drag-jab), where the implement is pressed into wet clay usually at an angle and is dragged for a distance before jabbing again, repeatedly.	2	0.5
	pinched: see Exterior Decoration: Type of Tool.	1	0.3
Depth of Punctates: Interior and Exterior	shallow: no boss raised on opposite side of vessel.	28	7.7
	deep: boss raised on opposite side of vessel.	20	5.5

Attribute Class	Attribute	N	%
Exterior: Number of Rows of Major Motif	one	32	8.8
	two	13	3.6
	three	16	4.4
	greater than three	22	6.0
Exterior Decoration: Orientation	horizontal: where the direction of the decoration runs at approximately a 90 degree angle to the longitudinal axis of the vessel (most often cord).	95	26.1
	vertical: where the direction of the decoration is approximately parallel to the longitudinal axis of the vessel.	11	3.0
	oblique-right: where the direction of the decoration runs at approximately a 45 degree angle to the longitudinal axis of the vessel from right to left (top to bottom).	43	11.8
	oblique-left: where the direction of the decoration runs at approximately a 45 degree angle to the longitudinal axis of the vessel from left to right (top to bottom).	7	1.9
	oblique-right-left: where the decoration is oblique (runs at a 45 degree angle) to the longitudinal axis of the vessel first from right to left, then from left to right. The juncture of the two lines of decoration is approximately a 90 degree angle.	5	1.4

Attribute Class	Attribute	N	%
	other: any other pattern not included in attribute list.	7	1.9
	pattern on exterior	4	1.0
Exterior Decoration: Additional Motifs on Exterior	border above major decorative motif	11	3.0
	border below major decorative motif	16	4.4
	interrupters or breaks in major decorative motif	3	0.8
Correspondence of Decoration Type and Technique	interior-lip: same type and technique of decoration on both.	172	47.3
	exterior-interior: same type and technique of decoration on both.	59	16.2
	exterior-lip: same type and technique of decoration on both.	64	17.6
Number of Sherds per Vessel	variable:		
	1	271	74.5
	2	46	12.6
	3	18	5.0
	4	7	1.9
	5	6	1.7
	6	2	0.6
	7	3	0.8
	9	1	0.3
	10	1	0.3
	11	3	0.8
	12	2	0.6
	14	1	0.3
	15	1	0.3
	17	1	0.3
	21	1	0.3

APPENDIX B

FORMAL TYPE DEFINITIONS

Type: Wayne Decorated (Figures 23-28)

Sample Size: 112 vessels (Fletcher Site only)

Paste: fine to medium silt

Temper: grit particles ranging from 1.0 mm. to 2.6 mm. in diameter

Texture: friable, relatively coarse. Interiors frequently exfoliate.

Color: highly variable, grey to grey brown to reddish brown, and some variation due to fireclouding.

Surface Preparation: Cord wrapped paddle impressions most common, with infrequent occurences of smoothed and fabric impressed exteriors.

Decoration: Orientation: exteriors are decorated with horizontal, vertical and oblique or combinations of obliques. Number of Rows: one to five rows located below the lip, usually stopping before the shoulder-body (neck) juncture. Technique: exterior decorated vessels are impressed or punctated with a variety of implements.

Form:

Rim: Castellations and peaking are present on approximately 8 percent of the decorated vessels. Rims are straight to everted at a 45 degree angle to the longitudinal axis of the vessel.

Lip: Approximately 10 percent of the vessels have rolled or thickened lips. Lip cross sections are usually round or flattened, a few are either beveled or wedged shaped.

Body: globular to slightly elongated, based on four partially reconstructed vessels.

Base: rounded, based on two partially reconstructed vessels.

Variety: Vertical (Figure 23F-G)

Four vessels have vertical rows of decoration consisting of cordwrapped paddle edge impressions horizontally impressed.

Variety: Oblique-right (Figure 24A-F)

Twenty nine vessels have oblique designs which run from right to left (top to bottom). Decoration includes cord wrapped paddle edge, cord wrapped cord and broken stick, all of which give an overall impression of textured designs.

Sub-Variety: Flat Lip (Figure 24A-E)

Twenty-three vessels have flat lip profiles.

Sub-Variety: Castellated (Figure 24F)

Six vessels have low castellations or peaking.

Variety: Horizontal (Figures 23D-E, 24G-J, 25, 26 and 27)

Sixty of our vessels have decoration in horizontal rows. Decorative techniques include punctates and impressions.

Sub-Variety: Punctate (Figures 23D-E, 24G-J and 26)

Twenty-one vessels have punctated rows of decoration made by circular, rectangular, pointed or broken stick implements.

Sub-Variety: Impressed (Figures 25 and 27)

Forty-three vessels have impressed rows of decoration made by either cord wrapped cord, cord wrapped stick, cord wrapped paddle edge and simple tools.

Geographical Range: Most common in Southern Michigan. Also known from adjacent areas of Southwestern Ontario and Northern Ohio. Fitting (1968: 26-27) reports the presence of some decorated Wayne Ware at the Spring Creek Site in Western Michigan and as far north as Cheboygan County (Figging, 1965: 159). Wayne decorated and undecorated ceramics are present in a collection from the Eiden Site in Northern Ohio (Mackenzie, Blank, Murphy and Shane, 1973: 14). However, statistical validation of the presence of Wayne Ware in these areas has not been confirmed.

Chronological Position: Wayne Ware is thought to be roughly contemporaneous with the Riviere Au Vase Phase of the Younge Tradition, (A.D. 600 to A.D. 900), (Fitting, 1965: 41) (Rogers, 1972: 60). The presence of rolled rims and castellations on some vessels suggests that this time span might be extended since both of these attributes are more characteristic of Later Late Woodland ceramics. A date of A.D. 960 ± 75 (M-512) for Spring Creek Collared and Wayne Ware ceramics from the Spring Creek Site and dates of A.D. 1180 ± 100 (M-2233) and 1230 ± 100 (M-2232) from the 46th Street Site on Allegan Ware (Rogers, 1972: 60) suggest that Wayne Decorated (and undecorated) ceramics might date as late as A.D. 1200. The only other relevant Wayne Ware date which comes from the Fort Wayne Mound (A.D. 750 ± 100 (M-1843) fall safely within the proposed A.D. 600-A.D. 1200 range.

Relationships: Fitting (1965: 159) relates Wayne Ware to ceramics from Northern Ohio, decorated ceramics from the Krieger Site in Ontario, Mound Intrusive ceramics in Ohio and Late Point Penninsula ceramics, all of which would relate to the early portion of the Wayne Tradition. Rogers (1972: 60) suggests Allegan Ware is a companion to Wayne Ware. Decorated Spring Creek Collared Ceramics from the Spring Creek Site in Western Michigan are related to or a variant of Wayne Ware. Some of the Wayne Decorated, Horizontal variety, Punctate sub-variety, and oblique-right-variety, ceramics (Figure 24F) resemble the Southwestern Ontario type Gossens Punctate (Wright, 1966: 162-163). Wayne Ware related to Moccasin Bluff Cordmarked from the Moccasin Bluff Site (Bettarel and Smith, 1973: 52).

Type: Wayne Undecorated (Figures 29-36)

Sample Size: 191 vessels (Fletcher Site only)

Paste: fine to medium silt

Temper: Grit particles ranging from approximately 1mm. to 2.6 mm.

Texture: relatively coarse, firable - interiors frequently exfoliate.

Color: highly variable, grey to light grey-brown and reddish brown. Some variability due to fire clouding.

Surface Preparation: cord wrapped paddle impressions most common. Fabric Impressed and smoothed surfaces are less frequent.

Decoration: Exteriors are not decorated except for surface preparation (Cordmarking, smoothing, fabric impressions) which is oriented vertically most frequently. Oblique and horizontally oriented surface preparation is quite rare.

Form:

Rim: Low castellations and peaking occurs infrequently. Rims are straight to moderately everted.

Lip: Approximately one-third of the Wayne Undecorated vessels have rolled rims or thickened lips. Lip cross sections are round or flattened.

Body: globular, based on two partially reconstructed vessels

Base: unknown

Variety: Fabric Impressed (Figure 29A-D)

Seventeen vessels Fabric Impressed undecorated vessels were recovered. Lip decoration is uncommon, while interior decoration is relatively common.

Sub-Variety: Interior Decorated (Figure 29B,D)

Eleven Wayne Undecorated Fabric Impressed Variety vessels have decoration on the interior. Implements used on the interior (along the interior margin of the lip) include cord wrapped paddle edge, simple stamp and broken stick.

Sub-Variety: Plain Interior (Figure 29A,C)

Five vessels of Wayne Undecorated, Fabric Impressed variety lack interior decoration of any kind.

Variety: Smoothed (Figure 29I-J)

Twenty-three vessels of Wayne Undecorated, have smoothed exterior upper rims. Lip and interior decoration are relatively infrequent.

Sub-Variety: Decorated Interior (Figure 29I)

Six vessels are decorated on their interiors with impressions of cord wrapped stick, simple stamp and incising.

Sub-Variety: Plain Interior (Figure 29H,J)

Seventeen vessels lack interior decoration of any kind.

Variety: Cordmarked (Figures 30-34)

One hundred fifty-one vessels have cordmarked exteriors. Cordmarking usually runs up to the lip vertically obliquely or without a pattern. Approximately 10% of these vessels have castellations or peaking.

Sub-Variety: Rolled Rim (Figures 30 and 33)

Forty-eight vessels have rolled rims, produced by folding a flap of clay over the upper exterior margin of a vessel. Of the 48 vessels, approximately two thirds have impressed interior and lip decoration while the remaining third have plain interiors and lips.

Sub-Variety: Plain Rim (Figures 31, 32 and 34)

One hundred three vessels lack a rolled rim. Variation within this category includes vessels having impressed lips and interiors, with cord wrapped paddle edge, cord wrapped stick and broken stick implements. Eleven percent of the plain rim cordmarked vessels are peaked or castellated (Figure 33). Sixty percent of the plain rimmed cordmarked ceramics lack interior decoration. Those lacking interior decoration include a group of vessels which have lips flattened with a cord wrapped paddle.

Geographical Range: Southeastern and Southwestern Michigan and adjacent areas of Ontario and Ohio.

Chronological Position: presence of low castellations on about 10 percent of Wayne Undecorated ceramics and the presence of a rolled rim on approximately 30 percent suggests that some of the Wayne Undecorated ceramics date within the later portion of the 600 A.D. 1200 period suggested for the Wayne Tradition. The A.D. 960 ± 75 (M-512) date on Spring Creek materials and the 1180 ± 100 (M-2233) and A.D. 1230 ± 100 (M-2232) dates on Allegan Ware from the 46th Street Site confirm this estimate (Rogers, 1972: 60).

Relationships: Wayne Undecorated ceramics appear to be related to Undecorated Allegan and Spring Creek Ceramics from Southwestern Michigan. In addition Undecorated Wayne may be related to types in Southwestern Ontario and Northern Ohio. Fitting (1968: 23) relates Spring Creek Collared to Dillinger Cordmarked from Illinois, Korando Cordmarked from Missouri, Albee Cordmarked from the Wabash Valley and Madison Cord Impressed from the Chicago Area. Moccasin Bluff cordmarked (Bettanel and Smith, 1973: 52) is also similar particularly to ceramics which most resemble Allegan Ware.

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