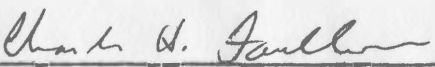
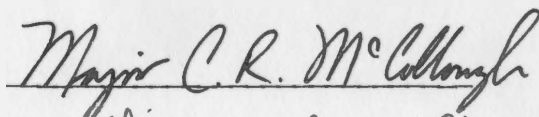
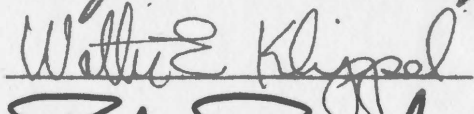
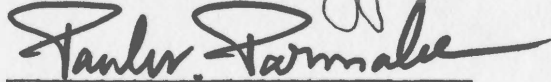


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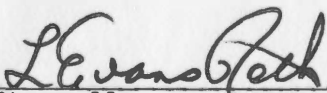
I am submitting herewith a thesis written by Lloyd Norris Chapman entitled "The Mississippian Component at the Eoff I Site, Normandy Reservoir, Coffee County, Tennessee." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Anthropology.


Charles Faulkner, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

THE MISSISSIPPIAN COMPONENT AT THE EOFF I SITE, NORMANDY
RESERVOIR, COFFEE COUNTY, TENNESSEE

A Thesis
Presented for the
Master of Arts
Degree
The University of Tennessee, Knoxville

LLOYD NORRIS CHAPMAN

DECEMBER 1978

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assist in the excavations during the latter portions of the summer field season. Dr. Keel was assisted by Mr. Steve Davis. The excavations which continued into the late fall-early winter of 1975 after a Mississippian structure was discovered were directed by Ms. Kleinhans with the assistance of Mr. Will Bacon and the Coffee County Archaeology Club. The final field drawings and recording of the semi-subterranean structure was done by Mr. DuVall and Mr. Larry Kimball. Analysis of the Eoff I Mississippian component has been supported by a contract from Interagency Archaeological Services--Atlanta, Heritage Conservation and Recreation Service, Department of the Interior. The efforts of all the individuals involved in the excavation, analysis, and administration of this segment of the Normandy Archaeological Project are gratefully acknowledged.

The final copy of the thesis was typed by Ms. Marian Harper. Ms. Terry Faulkner drew the reconstruction of the loophandle illustrated in Figure 19b. The University of Tennessee Photographic Services prepared the photographs for the thesis.

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I dedicate this thesis to my wife, Nancy Jane, to whom I express my appreciation for her patience and understanding during the months of its preparation.

ABSTRACT

Analysis of the Mississippian component features from the Eoff I site in the Normandy Reservoir, upper Duck River, Coffee County, Tennessee, has indicated that the component represents an Early Mississippian Banks phase occupation dating from between A.D. 1068 and A.D. 1170. The spatial distribution of features at the site along with the artifactual content of these features suggests that a major cluster of features was placed in consistent arrangement with each of two semi-subterranean structures. A storage zone is possibly indicated by a cluster of features with morphological characteristics usually associated with storage facilities and also by the significantly larger ceramic vessels found within this cluster.

The variety of artifactual classes present in the Mississippian features indicated that a variety of functions were undertaken during this period of occupation. Subsistence appears to have been based on a combination of agriculture, wild plant food gathering, and hunting.

The relationships between the Banks phase and Mississippian sites in the upper Caney Fork drainage area are discussed as well as the possible relationships with the Langston phase of northern Alabama. The major conclusion of these discussions is that even though there do appear to be similarities between the Mississippian occupations in the three areas, at this time it is not possible to document a firm relationship between the areas, but that research directed toward the exploration of these possible relationships should be undertaken.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
The Mississippian Tradition	2
Mississippian Sites Within the Normandy Reservoir	5
40CF5 Mississippian component	6
40CF108 Mississippian component	7
40CF111 Mississippian component	9
The Banks phase	9
Mississippian Research Problems	10
II. ENVIRONMENTAL BACKGROUND	12
Physiography	12
Geology and Lithic Resources	14
Soils	17
Climate	18
Fauna	18
Flora	20
III. SITE BACKGROUND	22
Description	22
Survey	26
1972 Test Excavations	27
1973 Excavations	28
1975 Excavation Season	30

CHAPTER	PAGE
IV. FEATURE MORPHOLOGY	33
Pits	36
Shallow circular pits (n = 2)	36
Deep circular pits (n = 3)	38
Basins	43
Deep oval basins (n = 1)	43
Shallow circular basin (n = 1)	44
Shallow oval basins (n = 9)	44
Shallow amorphous basins (n = 3)	48
Deep circular basin (n = 2)	48
Deep amorphous basins (n = 4)	49
Miscellaneous	51
V. STRUCTURAL REMAINS	53
Structures	53
Postholes	61
VI. FAUNAL REMAINS	63
Invertebrates: <u>Mollusca</u>	64
Gastropoda	64
Pelecypoda	64
Vertebrates	64
Mammals	67
Birds	67
Reptiles	73
Amphibians	73
Fish	76

CHAPTER	PAGE
Worked Bone and Shell	76
Marine shell beads (n = 3)	76
Splinter bone awls (n = 2)	82
Bone pins (n = 3)	82
Antler tine (n = 1)	83
Problematical bone tool (n = 1)	83
Turtle shell (n = 1)	84
Miscellaneous worked bone (n = 1)	84
VII. BOTANICAL REMAINS	85
VIII. CERAMICS	91
Analytical Methods	91
Body Sherds	92
Shell tempered ware	94
Limestone tempered ware	95
Chert tempered ware	97
Clay tempered ware	97
Sand tempered ware	98
Mixed tempered wares	99
Rim Sherds	100
Shell tempered rims	100
Limestone tempered rims	104
Chert tempered rims	106
Limestone-chert tempered rims	106
Shell-limestone tempered rims	106
Shell-chert tempered rims	107

CHAPTER

PAGE

Shell-clay tempered rims	108
Shell-limestone-chert tempered rims	108
Shell-chert-clay tempered rims	109
Shell-limestone-chert-clay tempered rims	109
Handles	109
Shell tempered handles	113
Chert tempered handles	113
Shell-limestone tempered handles	113
Shell-chert tempered handles	113
Limestone-chert tempered handles	115
Shell-limestone-chert tempered handles	115
Shell-chert-clay tempered handles	115
Shell-limestone-chert-clay tempered handles	115
Miscellaneous Ceramic Artifacts	116
Water bottle fragments	116
Beads	118
Pipes	120
Ear plug	120
Pottery trowel	120
Sherd disk	121
Applique	121
Lug	121
Pode	121
IX. LITHICS	122
Lithic Raw Materials	123

CHAPTER	PAGE
Primary Lithics	125
Unifacial Implements	126
Bifacial Implements	130
Projectile Points/Knives	137
Ground Stone Implements	153
X. SYNTHESIS	161
Temporal Position	161
Discussion of Technologies	167
Lithics	168
Ceramics	172
Worked bone and shell	175
Subsistence Base and Seasonality of Occupation	175
Faunal remains	175
Botanical remains	179
Seasonality of occupation	179
Spatial Organization of Site Facilities and Distribution of Classes of Artifactual Materials	181
Descriptions of clusters	181
Summary and Comparisons	196
Northern Alabama	201
Harpeth River	202
Upper Caney Fork drainage	203
REFERENCES	207
VITA	213

LIST OF TABLES

TABLE	PAGE
1. Features by Morphological Type	37
2. Gastropods and Pelecypods from 40CF32 Mississippian Features	65
3. 40CF32 Mississippian Fauna at the Class Level	66
4. Mammals Identified from the Mississippian Component, 40CF32	68
5. Mammals by Feature Provenience	70
6. Birds Identified from the Mississippian Component, 40CF32 .	71
7. Birds by Feature Provenience	72
8. Reptiles Identified from the Mississippian Component	74
9. Reptiles by Feature Provenience	75
10. Amphibians Identified from the Mississippian Component 40CF32	77
11. Amphibians by Feature Provenience	78
12. Fish Identified from the Mississippian Component 40CF32 . .	79
13. Fish by Feature Provenience	80
14. Weights and Percentages of Plant Remains by Feature	87
15. Quantification of Plant Foods by Feature	88
16. Quantification of Seeds, Fruits, and Grains by Feature . . .	89
17. Wood/Cane Charcoal Counts by Feature	90
18. Ceramic Body Sherds from Mississippian Features	93
19. Ceramic Rim Sherds from Mississippian Features	101

TABLE	PAGE
20. Ceramic Handles Listed by Feature Provenience	111
21. List of Lithic Raw Materials Recovered	124
22. Distribution of Primary Lithic Types in Features	127
23. Breakdown of Primary Lithic Types by Raw Material	128
24. Distribution of Unifacial Implement Types in Features	131
25. Breakdown of Unifacial Implement Types by Raw Material Type	132
26. Distribution of Bifacial Implement Types in Features	135
27. Breakdown of Bifacial Implement Types by Raw Material Types	136
28. Distribution of Projectile Point Types in Mississippian Features	152
29. Distribution of Ground Stone Implement Types in Features . .	154
30. Eoff I Mississippian Radiocarbon Dates	163
31. Number of Pieces, MNI, and Estimated Pounds of Meat	178
32. Summary Data on Feature Clusters and Individual Features . .	184
33. Relative Frequencies of Body Sherds and Quantification of Rim Profile and Diameter	185
34. Lithic Indices	187
35. Functional Lithic Indices	188
36. Activity Lithic Indices	189
37. Relative Frequencies of Faunal Material in Feature Clusters	193

LIST OF FIGURES

FIGURE	PAGE
1. Physiographic Map of Central Tennessee	13
2. Drainage Map of Upper Duck Valley	15
3. Geological Outline of Upper Duck Valley	16
4. Topographic Map of the Eoff I Site and General Area	23
5. Aerial Photograph of Eoff I Site	24
6. Eoff I Site Mississippian Component Plan Map	34
7. Mississippian Pits	39
8. Feature 500 North Profile	40
9. Feature 511 West Profile	42
10. Mississippian Basins	47
11. Mississippian Structures	54
12. Plan Map of Feature 75-6, Semi-Subterranean Structure . . .	55
13. Hearths Within Mississippian Structure 75-6	56
14. Plan of Feature 75-6, Illustrating Possible Interior Partitions	59
15. Plan Map of Feature 79, Possible Semi-Subterranean Structure	60
16. Bone and Shell Artifacts	81
17. Ceramic Rim Sherds	105
18. Shell-Limestone-Chert-Clay Tempered Excurvate Rim	110
19. Ceramic Handles	114

FIGURE

PAGE

20. Ceramic Water Bottle Fragments	117
21. Miscellaneous Ceramic Artifacts	119
22. Triangular Projective Point Types 43-49	138
23. Ground Stone Implements	156
24. Bar Diagram of Eoff I Mississippian Radiocarbon Dates . . .	164
25. Reworked Projectile Points	173
26. Plan Map of Eoff I Mississippian Component Illustrating Feature Clusters	182

CHAPTER I

INTRODUCTION

The Eoff I site, 40CF32, which is located in the Normandy Reservoir of the upper Duck Valley in Coffee County, Tennessee, was excavated by The University of Tennessee Department of Anthropology's Normandy Archaeological Project during the summer field season of 1975. Limited excavations by U. T. personnel and local non-professional volunteers continued into the late fall-early winter of that year. The 1975 excavations, which were the most extensive conducted at the Eoff I site, were preceded by testing and extensive hand excavations in 1972 and 1973, respectively. One of the primary objectives of the 1975 excavations at this multi-component site was the definition and investigation of a Mississippian component which had been identified there in the earlier 1972 test excavations (Faulkner and McCollough 1974: 86-94). The excavations at 40CF32 marked the close of field investigations within the proposed pool of the Normandy Reservoir before inundation of the upper Duck Valley by the Tennessee Valley Authority.

This thesis deals with the Mississippian component at the Eoff I site. It will attempt to accomplish two tasks: (1) description of the archaeological remains which constitute the Mississippian component at the site; and (2) evaluation of this component as a settlement. The descriptive chapters of the thesis will incorporate feature, structural,

lithic, ceramic, faunal, and botanical data collected at the site during the 1975 excavations. In the evaluative section of the thesis, the following areas of interest will be investigated: (1) definition of the intrasite settlement pattern of the Mississippian component; (2) determination of functional areas within the site locus; (3) evaluation of the subsistence base of the 40CF32 Mississippian component; and (4) examination of the position of the site within the Mississippian settlement system of the upper Duck Valley, and the Mississippian tradition in the Southeast.

The introductory chapter will review the definition of Mississippian; examine some of the problems within Mississippian to which the Eoff I data may be relevant; and summarize the current state of knowledge of upper Duck Valley Mississippian based on the prior research in the Normandy Reservoir.

A. The Mississippian Tradition

The term Mississippian has been used in a variety of ways in the archaeological literature. It originated with Holmes' "Middle Mississippi" geographic region which consisted of portions of the states of Alabama, Arkansas, Indiana, Illinois, Georgia, Kentucky, Mississippi, Missouri, and Tennessee (1903: 80). Mississippian has been used to refer to the temporal period from approximately A.D. 700 to A.D. 1700 during which a "particular kind of socio-economic adaptation of human society" is present over much of the Eastern United States (Morse 1977: 186). The earlier date of A.D. 700 is for the appearance of Mississippian in the central Mississippi River Valley (Morse 1977: 186), while a more

realistic date for the beginning of the Mississippian period in the Southeast is usually given as about A.D. 900 (Walthall n.d.: 256; Morse 1977: 186).

The term Mississippian has also been used to refer to a tradition. Willey and Phillips (1958: 37) define a tradition as "a (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms." Thus, the shell-tempered ceramics which are considered to be representative of the Mississippian period might be referred to as the Mississippian shell-tempered ceramic tradition; or the same thing might be done with the ceremonial system associated with Mississippian. However, tradition is frequently used in a broader sense than that defined by Willey and Phillips. They note that John Goggin made the first significant use of the tradition concept in eastern North American studies (Willey and Phillips 1958: 36). Goggin (1949: 17) defines a cultural tradition as "a distinctive way of life, reflected in various aspects of the culture; perhaps extending through some period of time and exhibiting normal internal changes, but nevertheless throughout the period showing a basic consistent unity."

Faulkner uses the term Mississippian in this latter sense of tradition stating "the author regards the Mississippian as a cultural tradition which appears in the eastern Tennessee Valley during the Mississippian period" (1975: 19). Mississippian will be used in this sense of tradition in this thesis. It should be noted that archaeological phases within this tradition are frequently referred to as "cultures," thus we might speak of the Hiawasee Island culture of the

eastern Tennessee Valley or the Middle Cumberland culture of the Nashville Basin area. Attributes of the Mississippian tradition are briefly summarized in the following paragraphs.

In summarizing the attributes of the Mississippian tradition, it is necessary to consider community pattern, technology, trade, economic basis, and social order.

Towns were often palisaded and had plazas bordered by large, flat-topped earthen mounds. Residential buildings were usually rectangular to square and of wattle and daub construction. Large towns sometimes had subsidiary villages and farming areas which stretched for miles beyond the town.

Mississippian ceramics were "prevailingly shell-tempered" (McKern 1939: 309) with clear functional differences of form and quality. Griffin (1967: 190) describes the diversity of ceramics in the Mississippian tradition:

Cooking and storage jars and simple bowls are the most common objects, but there are many polished and decorated bowls, bowls with effigy heads, plates, large pans for evaporating salt, and a wide variety of bottles, including animal and effigy forms. There is considerable use of red filming and of bichrome, polychrome, and negative painting, particularly in the central area of the Mississippi cultures, which also had such exotic forms as the stirrup-neck bottle and human-effigy-head vases.

A variety of tools, ornaments, and ceremonial items were manufactured from both stone and bone. The presence of marine shells at inland sites, as well as the use of exotic cherts and copper indicates trade relationships. The artifacts made from exotic materials appear to have served as indicators of rank and status in Mississippian society.

Although the economic basis of the Mississippian tradition appears to have been extensive agriculture, the annual cycle of subsistence activities which was based on seasonal availability involved both cultigens and wild plant foods. In addition, the Mississippian procurement system also involved the exploitation of animal populations.

A chiefdom level of socio-cultural development (Sahlins 1968: 20-28) was attained by Mississippian cultures in some areas. Two major distinguishing features of the chiefdom present in the Mississippian tradition are large centers from which economic, social, and religious activities were controlled, and hereditary rankings being a characteristic of the social organization. Analysis of mortuary practices at major Mississippian sites (Brown, ed. 1971) have shown differential treatment of the dead suggesting the hereditary ranking noted in the ethnographic accounts of early travelers in the Southeast. The large Mississippian sites such as Cahokia, Etowah, Moundville, and Spiro are considered to be the residences of chiefly elites and possess the facilities which would be considered characteristic of such centers such as temples, the chief's residence, houses of nobles and servants, and granaries.

B. Mississippian Sites Within the Normandy Reservoir

Mississippian components were excavated within the Normandy Reservoir area at sites 40CF5, 40CF108, and 40CF111 prior to the 1975 excavations at 40CF32. Brief descriptive summaries of the Mississippian occupations at these sites follow.

40CF5 Mississippian Component

The Mississippian component at 40CF5 is composed of one wall trench structure and seven features. The structure was a small (13.8 by 7.4 feet) rectangular wall trench dwelling with a centrally located hearth (Feature 171). The wall trench was continuous around the entire perimeter of the house. The other features attributable to the Mississippian component are all located in close proximity to the structure with the exception of one. Features 157, 163, 164, and 166 were clustered at distances between 9 and 20 feet from the southeast corner of the structure while Feature 184 was located 8 feet from the northwest corner. It has been suggested that Features 157, 163, and 164 served as sources of clay for the daubing for the walls of the wall trench structure and for the construction of the hearth. Feature 17 which contained a burial (Burial 2) was located between 150 and 200 feet to the southwest of the structure.

A total of 1056 sherds was recovered from the four features which produced ceramics (Features 157, 163, 164, and 166). Six temper groups were represented in the sample; these being: limestone, limestone-chert, chert, shell, grog, and quartz-sand. The relative percentages of the temper groupings varied widely among the four features with no apparent pattern. It is interesting to note, however, that Feature 163 which intruded Feature 164 contained a higher percentage of limestone-tempered sherds than shell-tempered sherds (41.5 percent vs. 35 percent). However, this can probably be attributed to sampling error as Feature 164 produced a sample of 843 sherds while the Feature 163 sample contained only 53 sherds.

Three radiocarbon dates were obtained from the Mississippian features at 40CF5. Within the cluster of features associated with the wall trench structure, Feature 184 produced a date of 1305 ± 110 radiocarbon years: B.P.: A.D. 645 (UGa-1026), and Feature 164 was dated at 1205 ± 195 radiocarbon years B.P.: A.D. 745 (UGa-1002). The mean of both of these dates appears to be too early to correctly date this component. However, the upper limit of the sigma factor for UGa-1002 would appear to be more reasonable. A date of 875 ± 50 radiocarbon years B.P.: A.D. 1075 was obtained from bone collagen from Burial 2 in Feature 17. As this feature is not in close spatial association with the Mississippian structure and the cluster of features around it, it is difficult to assess the validity of the date, except to say that it is within the acceptable range of the Banks phase occupation of the upper Duck Valley. However, ceramics in the fill of what appear to be contemporary features around Feature 17 suggest a Late Woodland association. The Mississippian component at the Parks site at present can best be interpreted as a single dwelling site representing a relatively short occupation.

40CF108 Mississippian Component

The six features which comprise the Mississippian component at 40CF108 are suggested by Faulkner and McCollough (1974: 338) to represent a single-family farmstead.

Features 1 and 31 were large shallow basins filled with burned limestone and the remains of radial log fires, but which produced very little cultural material. Samples of charcoal from Feature 1 produced

a radiocarbon date of 620 ± 60 radiocarbon years: A.D. 1330 (UGa-597), and Feature 31 produced a date of 655 ± 130 radiocarbon years: A.D. 1295 (UGa-598) suggesting, at least, near contemporaneity for the two features. It has been suggested that the two features may have functioned in the drying of food.

Features 29 and 82 which are described as a large oval basin and a large irregular basin, respectively, are termed large trash pits. The two features are interesting in that they yielded a mixture of Woodland and Mississippian ceramics; that is, limestone-tempered, chert tempered, shell-tempered as well as some mixed-temper ceramics were recovered from the features. The vessel forms represented, at least by the shell-tempered ceramics, were large, plain surfaced jars with slightly everted rims and wide loop handles. There is some question as to whether these features are related to Features 1 and 31 or whether they are representative of an earlier "Emergent Mississippian" occupation comparable to that at the Banks V site (40CF111), as ceramically, the forms on sites 40CF108 and 40CF32 are quite similar.

Little can be said about Features 12 and 41. Feature 12 was a medium sized, shallow, oval basin with moderate in-situ burning of the sides and bottom. It is classified as a hearth. Two shell-tempered sherds were recovered from the fill of the feature. Feature 41 was a medium sized, irregular basin which produced one shell-tempered plain sherd in addition to three limestone-tempered plain sherds. The relationship of these two features to the other four Mississippian features is unknown.

40CF111 Mississippian Component

Kleinhans (1978: 452-455) has suggested that the Mississippian occupation at 40CF111 represents an unpalisaded farming hamlet with an approximate 200 year occupation beginning during the early ninth century and continuing until the end of the eleventh century A.D.

Structures at the site consist of a single wall trench structure, and features are described as "numerous broadly scattered irregular basins" (Kleinhans 1978: 455). Limestone-tempered ceramics were found in association with shell-tempered and mixed-tempered types. The shell-tempered vessel forms as well as the mixed-tempered forms consist of "plain surfaced, flaring rimmed jars with riveted loop, flattened loop, or adhered strap handles" (Kleinhans 1978: 446). Subsistence has been suggested to include a dependence on hunting and gathering for significant portions of the diet. Evidence of trade and ceremonialism was minimal.

Tha Banks Phase

Faulkner and McCollough (1974: 338) originally applied the name Banks phase to the developed Mississippian component at 40CF108 which dated approximately A.D. 1300. Later, this name was applied to the earlier "emergent" Mississippian components found at other sites within the Normandy Reservoir such as 40CF111 and 40CF5 (Kleinhans 1978; Brown n.d.).

C. Mississippian Research Problems

The Mississippian data from the Eoff I site is thought to be particularly relevant to the formulation of answers to a number of problems concerning the Mississippian utilization of the upper Duck Valley, and the Mississippian tradition in general. Some of these problems will be outlined here.

One primary problem is whether the Mississippian component at 40CF32 can be subsumed within the Banks phase. This culture historical matter is of prime importance in the synthesis of upper Duck Valley prehistory, a major goal of the Normandy Archaeological Project.

The determination of the temporal position of the Mississippian component at Eoff I is critical for an understanding of the temporal span of the Banks phase, whether or not the Eoff I Mississippian component represents the Banks phase. As discussed previously, early but acceptable dates have been obtained for the Banks phase at the Banks V site (40CF111), while the dates obtained for the Banks phase occupation at the Parks Site (40CF5) are variable in their acceptability and difficult to interpret. The relatively late dates for two features at 40CF108 plus the relatively small artifactual assemblage for the Mississippian component at the site leaves some doubts as to the relationship of the component to the Banks phase and the 40CF32 Mississippian occupation.

Other problems involve the spatial distribution of the Mississippian features at 40CF32. In a report on the Normandy Field School and the 1975 field season, Faulkner (1976: 90) suggests the possibility that the semi-subterranean structure (Feature 75-6)

"represents the scattered farmstead pattern of an earlier portion of the Banks phase," while the arcs of features present at the site "represent a later shift toward nucleation of settlements." This will be examined in this thesis by intensive analysis of the material culture and use of chronometric means of dating.

The Mississippian component at the Eoff I site is pertinent to the understanding of the nature of Early Mississippian cultures. A survey of the literature would show that the majority of excavated Mississippian sites are towns or ceremonial centers. Smith (1976: 25) has discussed the problem of small Mississippian sites such as 40CF32 noting that "since the early 1960's when settlement pattern studies became popular, Mississippian archaeologists have been developing settlement systems models incorporating such small sites." He notes that few of these small sites assigned to the category of "farmsteads" or "extractive sites" have been excavated and reported, but rather have been attributed to such positions in the settlement system hierarchy on the basis of surface collections and size of the site. The analysis of the Eoff I Mississippian component offers the opportunity to examine a small Mississippian site in terms of the organization of its facilities.

This thesis also presents the opportunity to examine some of the Early Mississippian cultures outside of the upper Duck Valley which may relate to the Banks phase.

CHAPTER II

ENVIRONMENTAL BACKGROUND

A. Physiography

The upper Duck River Valley is situated in the transitional zone between the Nashville Basin and the Eastern Highland Rim physiographic sections of the Interior Low Plateaus physiographic province (Fenneman 1938). The floor of the river valley is within the Nashville Basin while the surrounding ridges are a part of the Highland Rim. The Nashville Basin averages 600 feet above sea level in elevation. Considerable relief is exhibited along the eastern margin where monadnocks and ridges stand as outliers of the Highland Rim and where the streams have cut a series of deep V-shaped valleys. The Cumberland Plateau forms the eastern boundary of the Eastern Highland Rim in the form of a pronounced escarpment with sandstone and limestone cliffs rising 800 to 1,000 feet above the low plateau surface of the Eastern Highland Rim. The topography of the Highland Rim proper is hilly to deeply dissected with an average elevation of 1,050 feet above sea level in Coffee County. The Barrens, a moderately flat to rolling area between the dissected escarpment of the Rim and the Cumberland Plateau, forms the largest section of the Highland Rim in this county (Figure 1).

Several tributaries which drain the eastern portion of the Barrens are the source of the Duck River. The Little Duck River is the major tributary of the headwaters, joining the Duck River just

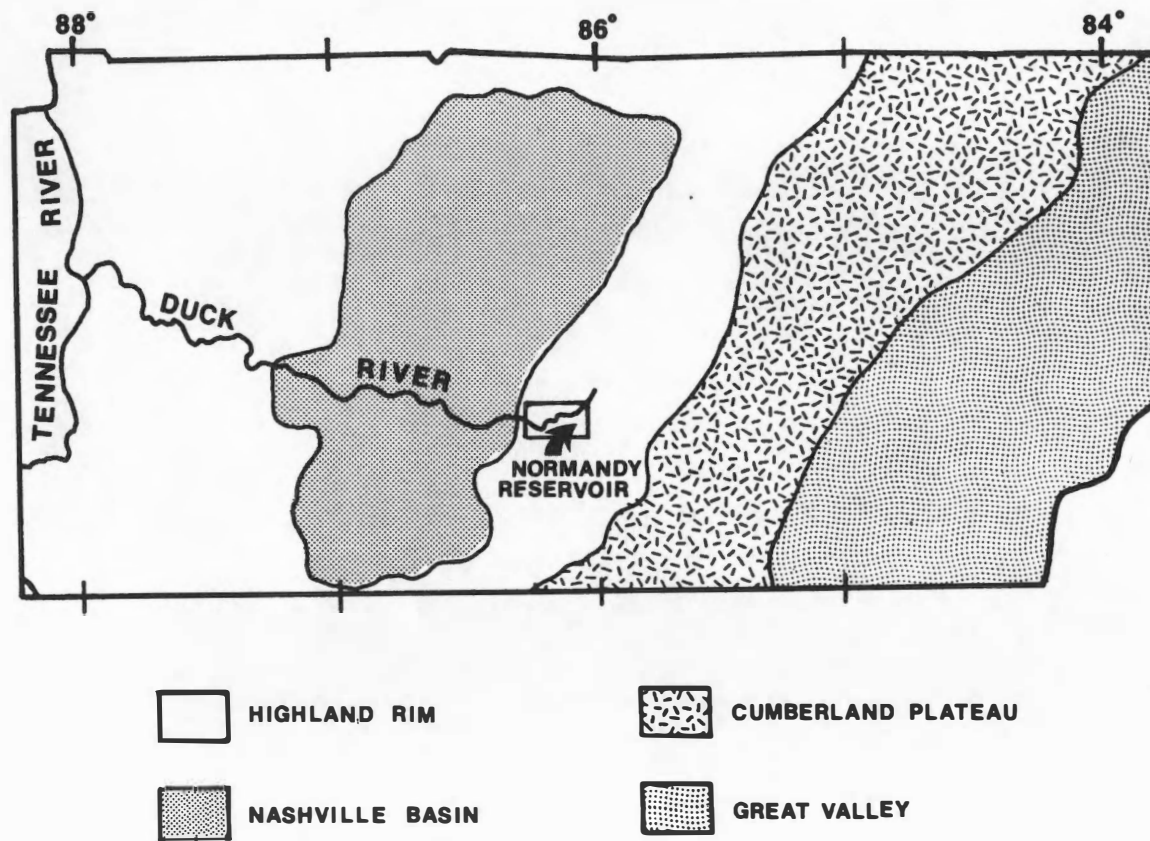


FIGURE 1. Physiographic map of central Tennessee.

west of Manchester between river miles 268 and 269. Three major creeks are located in the 19 miles of river between this confluence and the Normandy Dam axis (Figure 2). These are Crumpton and Carroll Creeks which drain the uplands to the south of the Duck Valley and Riley Creek which flows from the north. These smaller streams have well-developed dendritic drainage systems. The Duck River and its tributaries are moderate to fast moving streams with a number of rapids and riffles in the main river channel as well as waterfalls such as Ovoca and Rutledge on Carroll and Crumpton creeks, respectively. The upper portion of the reservoir area is characterized by steep-walled valleys with narrow floodplains and alluvial terraces. Below the confluence of Carroll Creek where the floodplain begins to broaden as the Duck River flows into the Nashville Basin, the valley is wider with advanced stream dissection and narrow bordering ridges.

B. Geology and Lithic Resources

Penny and McCollough (1976: 141-194) have presented the results of a lithic resource survey which will be drawn upon heavily for the following brief comments on the geology and lithic resources of the Normandy Reservoir locality. Additional information is provided in Faulkner and McCollough (1973: 2-7, 52-62).

In considering the geology of the general upper Duck River Valley area, it is useful to examine the resources present in a series of geologic "shelves" beginning in the western portion of the zone and proceeding to the east to the Cumberland Plateau (Figure 3). In the lower reservoir area which is within the Nashville Basin physiographic

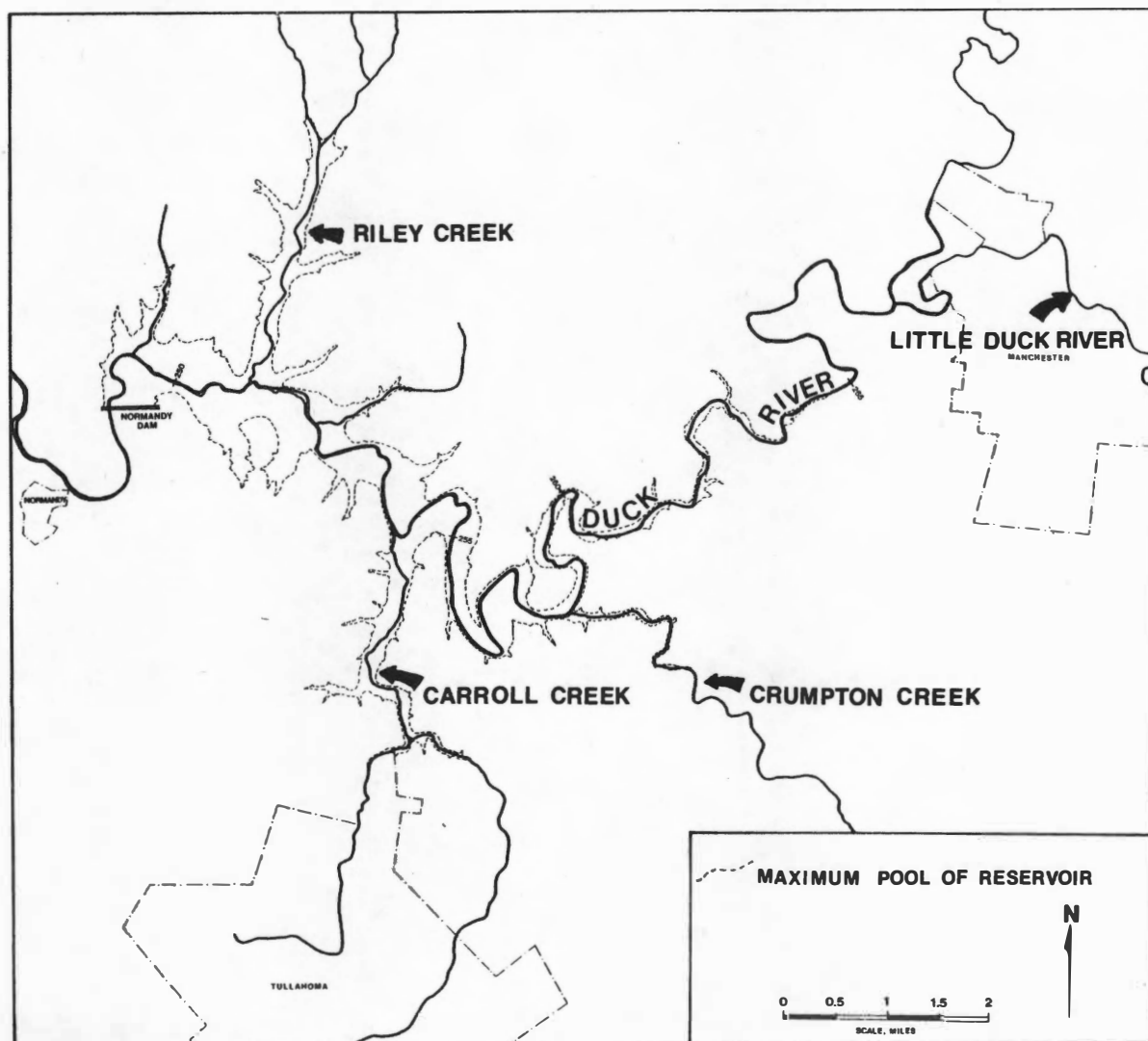


FIGURE 2. Drainage map of upper Duck Valley.

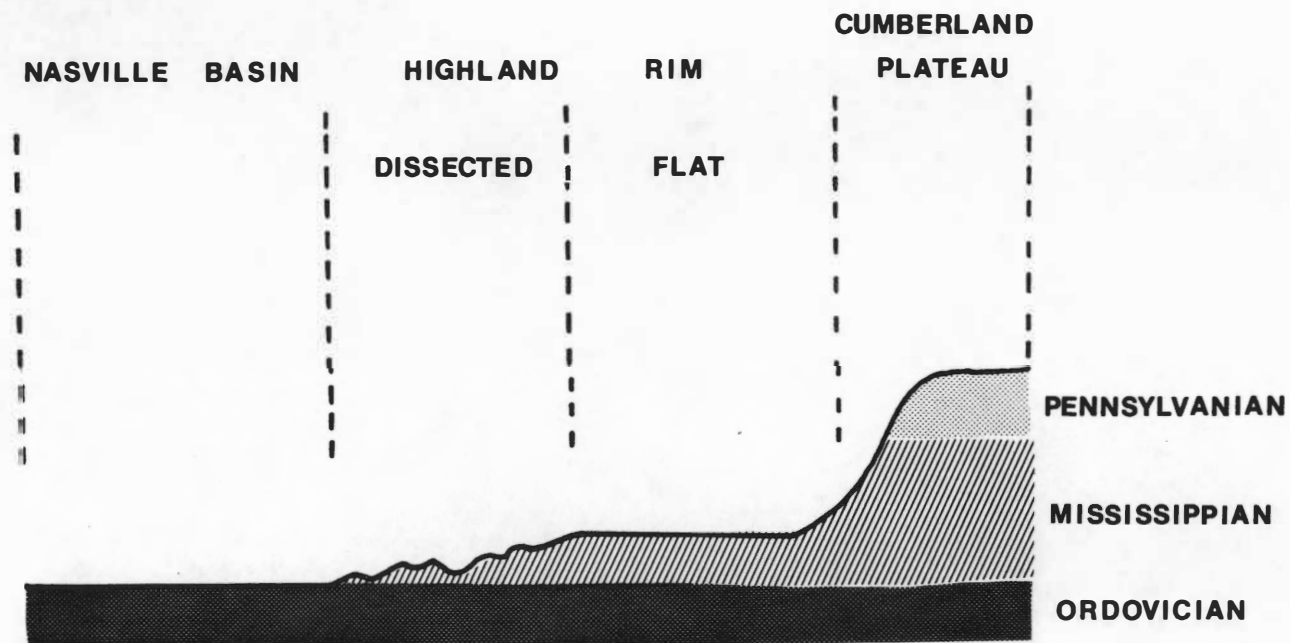


FIGURE 3. Geological outline of Upper Duck Valley.

province, Middle Ordovician limestones are exposed which contain quantities of nodular cherts. To the east of this area in the lower portion of the upper reservoir zone, the Duck River has exposed lower Mississippian formations of tabular Fort Payne chert and Chattanooga shale. On the adjacent flat Highland Rim, stream dissection has exposed upper Mississippian formation nodular chert. Further to the east on the escarpment of the Cumberland Plateau are exposed Pennsylvanian and upper Mississippian sandstones, quartz, chalcedony, and hematite.

C. Soils

Faulkner and McCollough (1973: 4-6) have discussed the various soils in the Normandy Reservoir area relying heavily upon the Coffee County, Tennessee Soil Survey (Love et al. 1959) as the primary reference. Due to this previous discussion and further comments concerning soils which will be included when considering Mississippian settlement patterns in the upper Duck River Valley, only a brief treatment will be presented here.

The floodplain is composed primarily of the Huntington soil series as well as alluvial gravel deposits which occur primarily along fast flowing stream channels or drainages. The soil type present on the first terrace is largely the Armour Silt Loam series while the second terrace is usually composed of the Etowah Silt Loam series. The soils of the ridges of the deeply dissected Highland Rim are of the Bodine series. In the upper reservoir area, the soils of the ridges adjacent to the Duck River Valley are of the Montview series while those of the more level Barrens consist of the Dickson series.

D. Climate

A humid, mesothermal, subtropical climate is present in the upper Duck River Valley (Koppen 1931). It is characterized by a seasonal rhythm in both temperature and precipitation. This mild climate has an average temperature of 59.3 degrees F. Although the seasons are well defined, there is only a 34 degree difference between the average winter and summer temperatures. The summers are considered hot with an average temperature of 76.2 degrees F. while the average winter temperature is 42.3 degrees F. The average frost-free period is 190 days. The average precipitation is 54.17 inches per year. Stream-flow is greatest in the Duck River during the first quarter of the year and least during the months of September and October due to the light summer and fall precipitation.

E. Fauna

Faulkner and McCollough (1973: 34-6) listed the fauna which may have been present in the upper Duck River area during the prehistoric period. Robison (1977: 8-17) revised this listing in his thesis which dealt with the Mississippian faunal assemblages from the Normandy Reservoir. No attempt will be made to relist the various species, but general comments will be made on the shellfish, fish, amphibians, reptiles, birds, and mammals listed as possibly being present in the area.

Fifteen gastropods are listed as being present in the Duck River and, with the additions recorded by Robison (1977: 8-9), 51 species of mussels are known to occur in the river today. One of these,

Corbiculla manilensis, is a recently introduced species. Robison notes that the listing is for the Duck River as a whole and that "the upper Duck River does not contain the total fauna that the river as a whole supports" (1977: 10). In fact, it appears that only a limited number of naiad species may have been present in the upper Duck River and that these were "small river or headwater forms that grow to only a small physical size" (1977: 11).

Faulkner and McCollough (1973: 36) note that 107 species of fish have been reported from the Duck River; Robison (1977: 11) revised this figure to 122 with another 9 species listed as possible inhabitants, 47 species of rough and game fish are considered most likely to have been utilized aboriginally.

Thirty-four species of amphibians including frogs, toads, and salamanders are listed as occurring within the upper Duck River Valley area (Robison 1977: 13-14).

Of the reptiles present in the area, 12 varieties of turtles are present and 22 species of snakes are known to occur within the area with another 5 thought to possibly occur there (Robison 1977: 15).

Faulkner and McCollough feel that only a few of the larger species of birds were regularly exploited in the area of the upper Duck River. Of the 213 species of birds which have been found in the area (T.V.A. 1972: L-13-17), Faulkner and McCollough list 34 which may have been utilized. Also to be included are two species, the passenger pigeon (Ectopistes migratorius) and the ruffed grouse (Bonasa umbellus umbellus), which although not now present in the area, may have been exploited prior to their extinction and extirpation, respectively (Robison 1977: 16-17, Faulkner and McCollough 1973: 37-40).

Of the 44 species of mammals which presently occupy the Duck River Valley, 19 are listed by Faulkner and McCollough (1973: 40-41) as potentially exploitable. In addition to these, 5 other species--the elk (Cervus canadensis), mountain lion (Felix concolor), black bear (Ursus americanus), gray wolf (Canis lupis), and the fisher (Martes pennanti), which are no longer present in the valley may have been exploited during the prehistoric period.

F. Flora

The flora of the upper Duck River Valley has been extensively reported by Faulkner and McCollough (1973: 8-34) and by Shea (1977). Due to these previous treatments of this aspect of the environment and the current preparation of a thesis on changes in prehistoric plant utilization through time in the Normandy Reservoir by Gary D. Crites, a reference which should prove invaluable on this segment of the environment, only some basic comments will be proffered here on the flora of the area.

The upper Duck River Valley is located within the Carolinian biotic province. This province is characterized by diversified deciduous forests and is divided into several forest regions. There is disagreement among botanists as to where the transition between the Western and Mixed Mesophytic forests occurs, but one view is that it occurs at the transition between the Nashville Basin and the dissected Highland Rim physiographic provinces. The significance of this is that if this interpretation is correct, the upper Duck Valley is within an ecotone. Ecotones, also referred to as edge areas, often contain both

greater numbers and densities of species than do neighboring natural areas. If number and density of species may be equated with richness of an environment for exploitation, then it would appear that the upper Duck River Valley would have had a high carrying capacity in the prehistoric period (Faulkner and McCollough 1973: 8-9).

CHAPTER III

SITE BACKGROUND

A. Description

The Eoff I site, 40CF32, was located on the first terrace of the right bank of the Duck River on the inside of a wide bend across from the mouth of Carroll Creek (Figures 4 and 5). The southern edge of the site is located approximately 400 feet to the northwest of River Mile 254 of the Duck River. Coordinates for the site are 35° 27' 22" North Latitude, 86° 11' 43" West Longitude.

The size of the site was calculated by Faulkner to be 1,500 by 1,000 feet. The site area is 801,200 square feet or 18.39 acres. The elevation of the site ranges from 835 to 848 feet AMSL.

The site is located in Armour Silt Loam soil, eroded gently sloping phase, with the eroded sloping phase being located on the fore-slope of the first terrace. The following description of the Armour soil series was taken from the Coffee County, Tennessee Soil Survey (Love et al. 1959).

The Armour series consists of well drained soils that were derived from either old general alluvium deposited on low and medium high stream terraces or from local alluvium accumulated on foot slopes. The materials have washed largely from the Mimosa and Dellrose soils, though some are from other phosphatic soils.

Armour soils have a dark-brown or brown friable silt loam surface soil and a brown or reddish brown to strongly brown friable to firm silty clay loam subsoil.

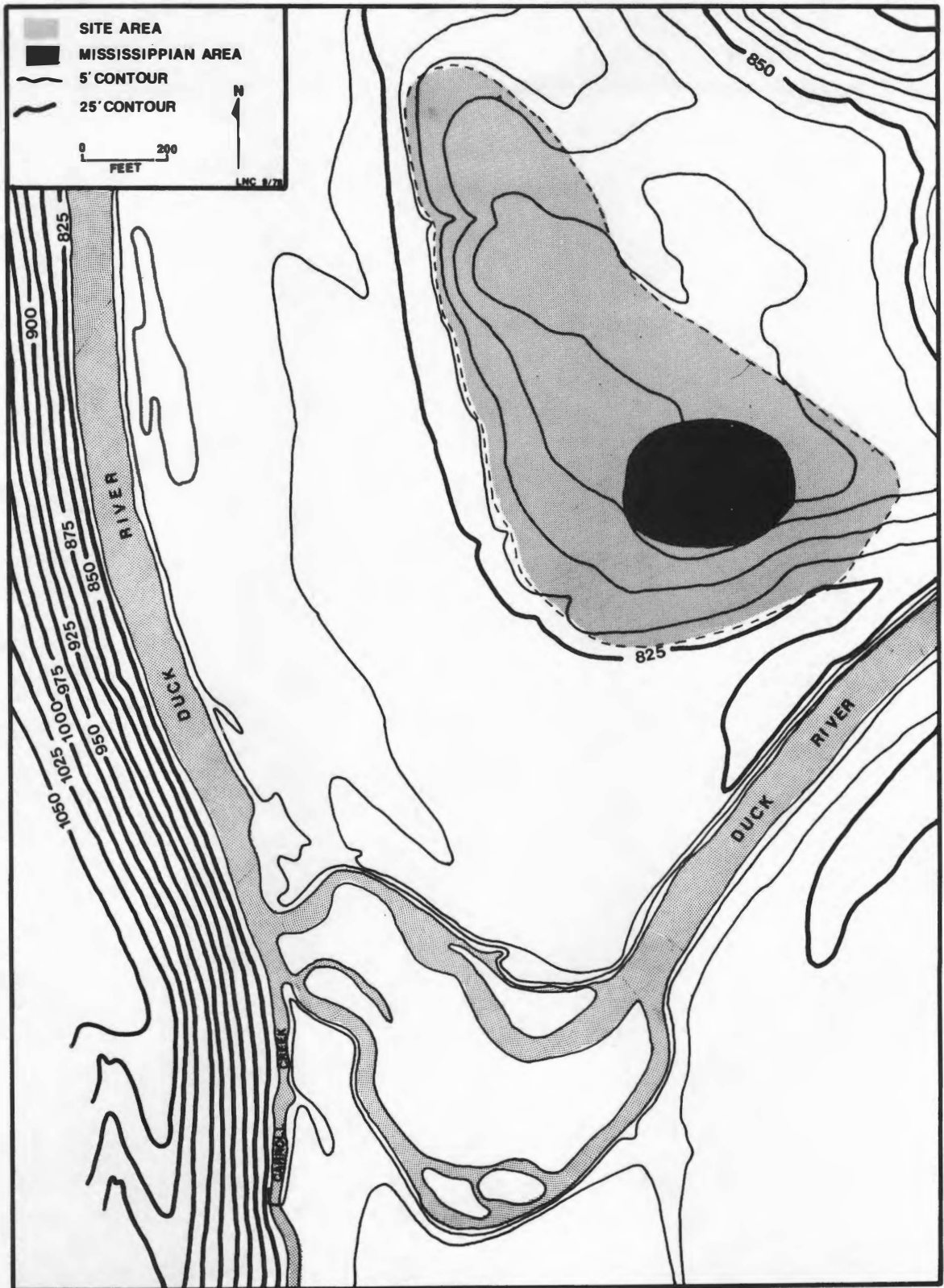


FIGURE 4. Topographic map of the Eoff I site and general area.



FIGURE 5. Aerial photograph of Eoff I Site. Taken December, 1975, after completion of excavations.

The color of the B horizon varies from brown to reddish brown on the higher and more sloping areas to strong brown through yellowish brown or dark yellowish brown on gently sloping areas, particularly those on stream terraces. The texture of the subsoil and substratum ranges from silty clay loam to silty clay. The thickness of the solum ranges from 2 to 5 feet or more. A few areas contain some chert.

The Armour soils are dominantly gently sloping to sloping, but some areas are strongly sloping. In this county, Armour Soils occur only in Soil Associations 1 and 2. They are extensive and widely distributed in Association 2. They are important agricultural soils, though their total acreage is not great.

Armour soils are associated chiefly with the Pace, Dellrose, Mimosa, Etowah, and Huntington soils. They are less cherty than the Pace and Dellrose soils, are darker colored than the Etowah soils, and have a less firm subsoil than the Mimosa soils. The Armour soils have a moderately well developed ABC profile, and the Huntington soils have a weakly developed AC profile.

The eroded gently sloping phase of the Armour Silt Loam soil series is present on approximately 0.4 percent or 1,058 acres of Coffee County. The eroded sloping phase of the soil is present on approximately 0.2 percent or 457 acres of the county (Love et al. 1959: 32). Both phases of the soil series have been assigned to the Soil Capability Unit IIe-1. The general characteristics of these soils is that they are easy to work, in most areas contain no stones, have a high to moderate amount of organic material, readily absorb and retain moisture, and are medium to strongly acid (Love et al. 1959: 10).

On the floodplain to the northwest, west, southwest, and south of the site, the primary soil types are Huntington silt loam, phosphatic phase, with some areas of alluvial gravel being located adjacent to the river. To the north of the site, Huntington silt loam, local alluvium phosphatic phase, is located in drainage areas while the upper terraces to the north and east of the site are composed of Etowah silt loam,

eroded gently sloping phosphatic phase and eroded sloping phosphatic phase, and Dellrose cherty silt loam, eroded strongly sloping phase (Love et al. 1958).

B. Survey

The Eoff I site was initially recorded on the property of Mr. J. D. Neel by Mrs. H. E. Collier of Tullahoma, Tennessee, in December of 1967. At that time the site area was listed as 2,500 by 1,000 feet and was termed a large village.

The site was resurveyed in 1971 by Faulkner. At that time, the size estimate was revised to 1,500 by 1,000 feet and it was arbitrarily divided into three areas designated A-C with these being delimited largely by areas of collection rather than by topography or distribution of cultural material. Even with this reduction of estimated area of the site, it remained one of the largest in the proposed reservoir area (Faulkner and McCollough 1973: 362-363).

As the analysis of the surface material from the three areas of the site has been extensively reported elsewhere (Faulkner and McCollough 1973: 363-367, 455-460); it will only be discussed briefly here.

Area A. This area located at the north end of the site and covering approximately 250 square feet produced a total of 1,246 lithic specimens and 23 sherds of pottery. This collection consists of 702 primary lithic pieces, 537 chipped stone implements, and 7 ground stone tools. Although occupation during most of the major cultural periods of the upper Duck River area was postulated based on the projectile point

and ceramic types present in the collection, artifacts diagnostic of the Mississippian period were absent. The most extensive occupation of this area appears to have been during the Middle to late Middle Woodland periods.

Area B. Area B which covered an area of a minimum of 600 feet along the edge of the first terrace and was approximately the same distance wide, produced a total of 682 pieces of lithic artifactual material. No ceramics were collected from the surface of this area. Although the variety of projectile point types present suggests a long range of occupation through many of the major periods of the prehistory of the upper Duck River Valley, the frequency of certain types indicated that the primary occupation of this area was during the Archaic period. Once again, no artifacts diagnostic of the Mississippian period were recovered in the surface collection from this area.

Area C. Area C consisted of an area approximately 1,000 feet long and 200 feet wide along the southern end of the site. The area produced a total of 466 pieces of lithic artifactual material and 23 pottery sherds. The most extensive occupation of this area is attributed to the Late-Terminal Archaic periods. No diagnostic Mississippian artifactual material was recovered from this area.

C. 1972 Test Excavations

Test excavations were conducted at 40CF32 during the summer field season of 1972 and were subsequently reported in Volume 2 of the Normandy Archaeological Project report series (Faulkner and McCollough 1974: 86-94). Due to the extensive nature of the reporting on these

excavations, only a brief summary of the work and results will be presented here.

The site area was initially divided into four quadrants within which 11 excavation units were placed using a random numbers table. Four of the units were in Area A, 4 were in Area B, and 1 unit was placed in Area C. Two units were placed on the east side of the site outside of the designated areas.

The excavations in Area A produced evidence of undisturbed Middle and Late Woodland components as well as indications of a Late-Terminal Archaic occupation. The units excavated in Area B produced projectile points indicative of the presence of both Archaic and Woodland components. The first evidence of the presence of a Mississippian component was recovered from Units 420L260 and 420R10 in the form of five sherds of shell-tempered ceramics, three of which had plain surfaces and two which had to be assigned to a residual plain category. Excavation of the remaining three units in Area C and along the eastern edge of the site produced one Terminal Archaic-Early Woodland projectile point.

Recommendations derived from the results of the 1972 test excavations included: (1) extensive excavations within Area A, and (2) additional testing in Areas A and C followed up by extensive mechanical stripping of the site.

D. 1973 Excavations

More extensive excavations were undertaken at 40CF32 during the summer field season of 1973 and were subsequently reported in Volume 4 of the Normandy Archaeological Project report series (Faulkner and

McCollough, eds. 1977: 65-278). Work conducted during this field season consisted of a block excavation and trenching in Area B, and continued test pitting in Area C. Results of the program as a whole were positive with substantial Middle and Late Woodland occupations being identified in Area A while the Area B excavation produced additional evidence for increasing use of this portion of the site during the Archaic period. The work in Area C located a possible late Middle Woodland Owl Hollow component represented by an earth oven type feature and a Lanceolate Spike Cluster projectile point/knife.

No additional evidence of the Mississippian component at the site was forthcoming from the excavations in Area B. Neither were any cultural materials recovered in Area A which were diagnostically referable to the Mississippian period. However, Feature 18 in Excavation Area A (Faulkner and McCollough 1977: 74) may represent a Mississippian installation. This feature was originally assigned to the Late Woodland Mason component based on the presence of a single sherd of chert-tempered pottery. However, a radiocarbon date of 795 ± 55 R.C. years (A.D. 1155) was determined from the charred material in the fill (UGa Sample 1545). The botanical remains from the feature are interesting in that 51.6 percent of the sample of 91.4 grams of plant remains recovered from the flotation sample (.33 cubic foot) were identified by Andrea Shea and Hugh Cutler as maize.

The basic recommendation coming from the results of the 1973 excavations at 40CF32 was that additional extensive excavations should be undertaken to establish the extent of the Owl Hollow, Mason, and Mississippian components at the site.

E. 1975 Excavation Season

The Summer, 1975 field season officially began at the Eoff I Site on June 12, although supervised mechanical stripping of the plowzone from a large portion of Areas B and C of the site had been accomplished just before the arrival of the crews for this season.

The initial task at the start of the field season was the re-establishment of a grid at the site. Labeled stakes from the 1973 season grid were located in both Excavation Areas A and B of the site. In the process of re-establishing the grid, the declination of the 1973 season grid was modified in order "to gain an even distance (in 50 ft. intervals) from the 1780L280 stake located near the sink" (Cobb n.d.: 3). The new grid declination was recorded as $00^{\circ} 01' 35''$. Stake 1780C/L, in the 1973 grid corresponds to the 1975 grid system 0,0 stake.

As the Eoff I site was too large for installation of a total staked grid pattern, it was decided that specific areas would be gridded in 20 by 20 foot units with their location being dependent upon clusters and concentrations of particular types of features. All stakes in the 1975 grid system were placed to the "right" (East) of the north-south centerline axis. The southwest corner stakes were used as unit designators. Areas were designated by successive numerals, but not all excavations were conducted within designated areas, as some features, postholes, etc., outside the areas were checked for integrity and content. A total of eight areas was designated at the site.

Horizontal control for the grid was established through triangulation to Bench Mark #2 of the 1973 excavation season for which Tennessee Lambert Coordinates are known. Vertical control was

established through the setting of a series of secondary benchmarks which were tied in to the above mentioned Benchmark #2 for which absolute elevation is also known.

Primary excavation procedure involved the shovel-skimming and troweling of 20 by 20 foot units with all disturbances being pinned. The dryness of the summer necessitated irrigation of areas of the site before shovel-skimming and troweling could be accomplished. Faulkner feels that the dryness of the site during the summer affected recovery, especially the definition of postholes.

All subsurface disturbances were given sequential numbers and designated as either features, postholes, root disturbances, or animal burrows. However, the use of treefalls as garbage disposal areas during the Mississippian occupation resulted in the assigning of feature numbers to a number of root disturbances. A unit photograph was taken of each excavated unit.

Feature excavation techniques involved the initial excavation of sections of features to determine if observable natural stratification was present. Features exhibiting stratigraphy were excavated by natural levels. Profiles, plans, and cross-sections were recorded, along with the location by triangulation and elevation by use of transit and stadia. All feature fill was waterscreened using 1mm by 1.5mm screen mesh. The amount of fill removed and waterscreened from features was quantified in most cases, as was the quantity of fill floated from each feature.

Postholes were treated in a similar manner with the exception that they were not profiled and in some cases the fill was discarded

rather than being waterscreened or floated if little cultural or organic material was present and the postholes did not appear to be part of a discernible pattern.

CHAPTER IV

FEATURE MORPHOLOGY

A total of 40 features attributable to the Mississippian component at 40CF32 were excavated during the 1975 field season at the site (Figure 6). Features were assigned to the Mississippian component primarily on the basis of the presence of shell-tempered ceramics in their fill. These features can be placed into three morphological types based on their plan, profile, and general configuration. These are pits, basins, and tree disturbances. A miscellaneous category must be added to include several features which cannot be subsumed under the above categories.

The definitions used by Davis (1976: 35-39) in defining the various morphological types of features are used here. Pits are characterized by the presence of a definite wall and a distinct bottom. Features are termed basins when there is a lack of distinction between the sides and bottoms. Features less than 1.0 feet in depth are termed shallow, while those with a depth of 1.0 or greater are termed deep. An additional subgrouping involves the configuration of the plan view with the categories circular, oval, and amorphous being used.

The nature of the tree disturbances warrants further discussion. During the excavations it was found that the craters resulting from falling trees were being used by the Mississippian inhabitants as trash dumps. Therefore, a number of treefalls were at least partially

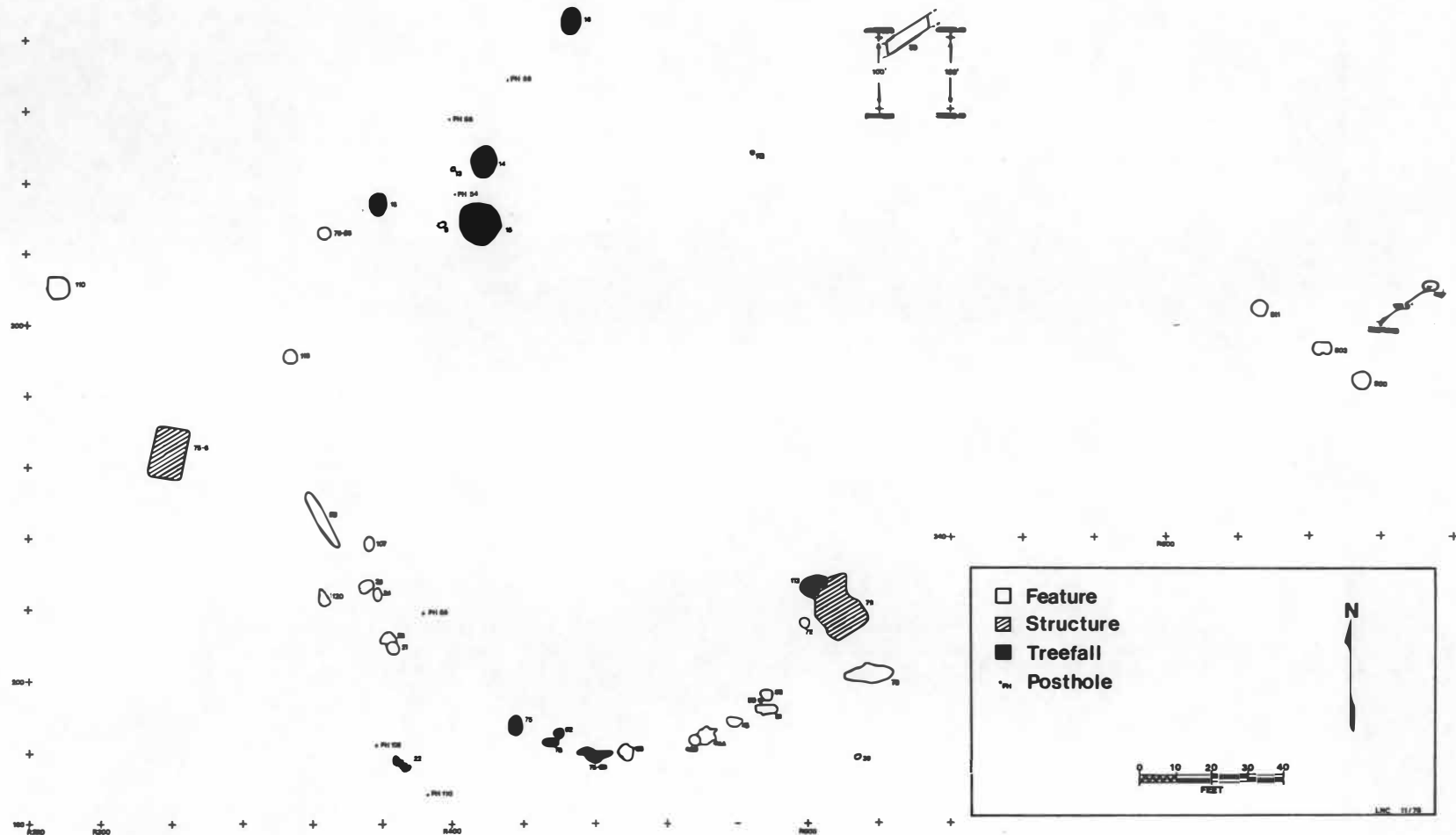


FIGURE 6. Eoff I site Mississippian component plan map.

excavated to secure a sample of the Mississippian artifactual material within them. No attempt has been made to prepare individual descriptions of the treefalls which were assigned feature numbers for several reasons. In many cases, no plan or profile drawings were prepared for the features, and when they were drawn, they include only the excavated portion of the disturbance, and not the total configuration of the treefall. Also, no quantification of the amount of fill removed from the features was made. Locations of the treefalls in relation to the other categories of features are illustrated in Figure 6.

A note of explanation is also needed on the feature numbering systems used during the 1975 field season at the Eoff I site. Initially consecutive numbers beginning with one were used to designate features. Later in the season when a crew from another site was shifted to 40CF32 to assist with the excavations there a block of feature numbers starting with 500 was assigned. During the fall of 1975 when Mr. Will Bacon was directing continued excavations at the site using the members of the Coffee County Archaeology Club, the feature designation system consisted of the number 75 designating the year followed by a hyphen and consecutive feature numbers beginning with one. Example: Feature 75-1. Another word of warning concerning the feature numbering system is also necessary. Feature and posthole numbers assigned during the 1975 field season duplicated numbers previously assigned in the 1973 excavations at the site. Therefore, the use of caution is recommended in referencing specific features from the site as the potential for confusion does exist.

Features which could be assigned to pit and basin types are listed in Table 1. Features which are listed as miscellaneous include numbers 6, 39, 112, and 75-27. Tree disturbances which were assigned feature numbers include the following: 14, 15, 16, 18, 22, 50, 62, 75, 76, 113, and 75-36. Individual feature descriptions follow, organized by morphological type rather than numerically. The maximum dimensions given consist of a long axis measurement which is the greatest horizontal extent of the feature, by the greatest width taken at a right angle to the long axis measurement. The maximum depth measurement represents the measurement taken from the point of origin of the feature, in this case the base of the plowzone of the site, down to the lowest point of excavation of the feature. Surface area of features was computed using a compensating polar planimeter on the measured field drawings. Volume of the features was computed using either data collected on the number of buckets of fill removed from the feature (3 buckets = 1 cubic foot) or by using volume formulas on features which did not have a "buckets of fill" count, and were of a regular geometric shape. Munsell color chart determinations of fill color are given when available.

A. Pits

Shallow Circular Pits (n = 2)

Feature 72. This pit was located in Unit 200R480 of Area 5. Its maximum dimensions were recorded as 3.0 by 2.5 feet with the maximum depth being 0.55 feet. The surface area covered by the feature was 5.1 square feet. The fill was medium brown in color and contained charred nut shell. Artifacts were concentrated in the top portion of

TABLE 1. Features by Morphological Type.

Shallow Circular Pits (n=2)	Deep Circular Pits (n=3)	Shallow Circular Basins (n=1)	Shallow Oval Basins (n=9)	Shallow Amorphous Basins (n=3)	Deep Circular Basins (n=2)	Deep Oval Basins (n=1)	Deep Amorphous Basins (n=4)
F. 72	F. 500	F. 46b	F. 13	F. 46a	F. 52	F. 45	F. 26
F. 118	F. 511		F. 21	F. 66	F. 110		F. 98
	F. 75-26		F. 24	F. 78			F. 107
			F. 25				F. 503
			F. 36				
			F. 51				
			F. 120				
			F. 537				
			F. 75-7				

the feature. The total volume of the feature was not recorded but has been calculated to be 3.6 cubic feet. Fill from the feature (2.66 cubic feet) was waterscreened comprising approximately a 74 percent sample. No mention is made on the feature record sheet of a flotation sample being taken.

Feature 118. This feature was located in Area 4 within Unit 279R340 (Figure 7a). The maximum dimensions were 4.0 by 3.8 feet with a depth of 0.42 feet and a surface area of 11.2 square feet. The feature fill was medium brown in color with burned clay present throughout. The 6.7 cubic feet of fill which was removed from the feature was all waterscreened. No mention of a flotation sample is made on the feature record sheet.

Deep Circular Pits (n = 3)

Feature 500. This feature was a deep circular pit located in Unit 280R640 of Area 7. The feature was 5.0 by 4.95 feet with a maximum depth of 2.71 feet. The surface area covered by the feature was calculated as 20.6 square feet. The fill of the feature was stratified into four levels (Figure 8). Stratum 1 was dark reddish brown (5YR3/2) in color with gravel in the fill. Stratum 2 was a mixture of clay and gravel and was yellowish red (5YR5/8) in color. Stratum 3 was a silty loam which was dark brown (5YR5/8) in color. Stratum 4 was a mixture of silty loam and clay. In color, it was mottled, dark brown (7.5YR3/2) and yellowish brown (10YR5/8). The feature fill was not quantified but the volume of the fill has been calculated using the volume formula for the frustum of a right circular



A



B

FIGURE 7. Mississippian pits. A. Feature 118; B. Feature 511.

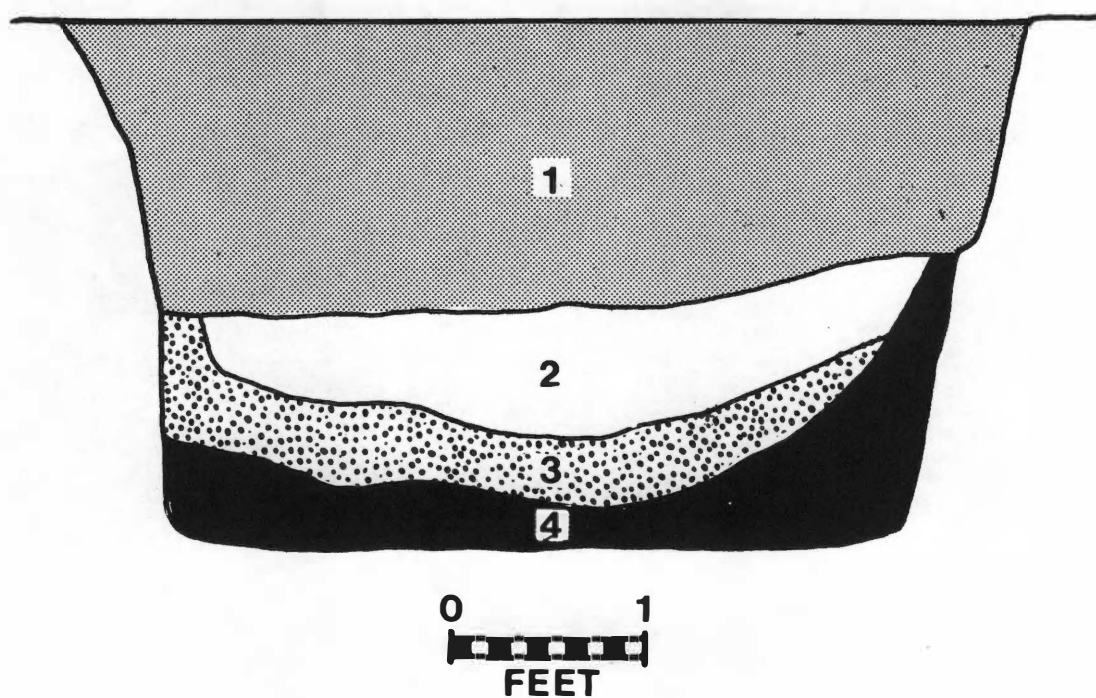


FIGURE 8. Feature 500 north profile.

cone; it is 41 cubic feet. The size of the flotation samples taken from the feature was quantified in terms of numbers of bags; however, unfortunately no note was made as to the size of the bags being used for the samples.

Feature 511. Feature 511 is a deep circular pit which was located in Unit 300R620 of Area 7 (Figure 7b). The feature measured 5.0 feet on its long axis by 4.5 feet at its greatest width, although in appearance the plan appears more circular than oval. The maximum depth of the feature was 3.31 feet. The surface area occupied by the feature was 17.5 square feet. The fill of the feature was stratified into five distinctive levels (Figure 9). Stratum 1 was a dark reddish brown (5YR3/2) homogeneous silty loam. Toward the bottom of Stratum 1, but not classified as a separate stratum was a very gravelly and loose yellow clay layer which represented a clay cap. Stratum 2 encircled the outer limits of the lower portion of Stratum 1. It was strong brown (7.5YR5/6) in color and contained quantities of gravel. This probably represents a level of cherty subsoil clay. Stratum 3 was a dark brown (7.5YR3/2) silty loam which yielded quantities of burned cane. Stratum 4 consisted of clay, brown to dark brown in color (7.5YR4/4). An area of concentrated charred cane within the strata was assigned the number 4a. Stratum 5 was a dark silty clay loam which was black (10YR2.5/1) in color and contained some large chert gravel. The fill of the feature was not quantified in the field, therefore the formula for calculating the volume of the frustum of a right circular cone was used to arrive at an approximate volume figure which is 37 cubic feet. As was the case with Feature 500, the flotation

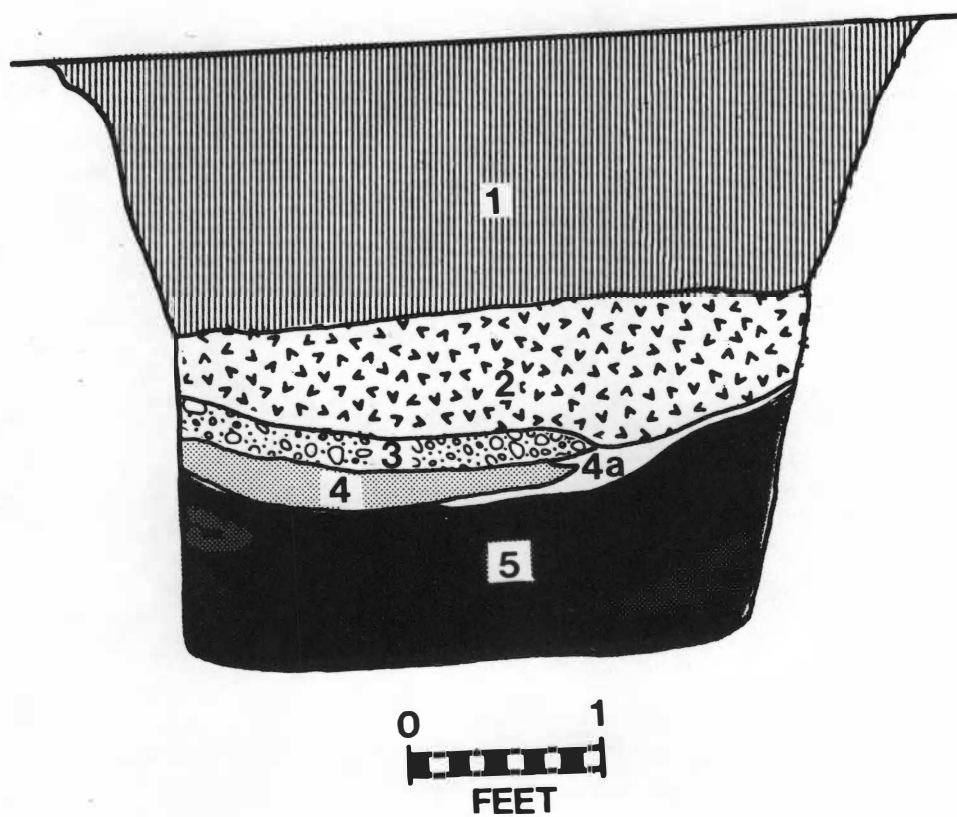


FIGURE 9. Feature 511 west profile.

samples taken from the various levels of the feature were quantified in terms of "bags" of fill with no note being made of the size of the bags being used.

Feature 75-26. This pit was located in Unit 320R360. The maximum dimensions were 3.5 by 3.8 feet with a depth of 2.15 feet. The approximate eastern half of the feature was excavated. The surface area of the feature as a whole mapped from the surface stain was 10.2 square feet. A series of five strata were observed in the feature. Stratum 1 was composed of dark brown soil with medium brown mottling. Stratum 2 is composed of orange burned clay while Stratum 3 was dark brown with orange mottling, representing a mixture of Strata 2 and 4. Stratum 4 was a dark brown, loose soil with rocks. Stratum 5 was a medium yellowish brown in color with yellow and dark brown mottling. The capacity of the feature is estimated to be approximately 22.5 cubic feet. It is calculated that approximately 45 percent or 10.1 cubic feet of fill was excavated.

B. Basins

Deep Oval Basins (n = 1)

Feature 45. This feature was located in units 180R460 and 180R480 of Area 5. The maximum dimensions of the feature were 4.4 by 3.1 feet with a depth of 1.16 feet. The area covered by the feature was 12.2 square feet. The fill was a very dark brown clay loam with abundant charcoal (nut and cane). A total of 0.33 cubic feet of fill was taken for flotation but no notation was made of the quantity of fill excavated from the feature.

Shallow Circular Basin (n = 1)

Feature 46b. This basin was located within Unit 180R460 in Area 5 of 40CF32. The feature was approximately 3.0 feet in diameter with a maximum depth of 0.47 feet. Surface area of the feature is calculated to have been 6.6 square feet. The fill from the feature was a medium brown clay loam containing some limestone and a small quantity of daub and charcoal. The feature is intruded on the east by Feature 46a, which is a shallow amorphous basin. The western side of the feature was not clearly defined due to root disturbances. A total of 7.66 cubic feet of fill was removed from the feature; all of this was waterscreened.

Shallow Oval Basins (n = 9)

Feature 13. This feature was located within Unit 340R400 of Area 2. Maximum dimensions were recorded as 1.28 and 1.0 feet. The depth was 0.4 feet. Surface area occupied by the feature was 1 square foot. No description of the fill was given with the exception that it contained charcoal as well as burned limestone. A total of 0.58 cubic feet of fill was excavated, all of which was floated.

Feature 21. This feature was located in Unit 200R380 within Area 4. It appears to be intrusive into Feature 36. Maximum dimensions of the feature were recorded as 4.56 by 4.17 feet with a depth of 0.92 feet. The area covered by the feature is 13.92 square feet. The feature fill was a medium brown mottled clay with charcoal and burned limestone. A total of 6.33 cubic feet of fill was removed from the feature

with a 0.33 cubic foot sample (5 percent) being floated. The remainder was waterscreened.

Feature 24. This basin was located within Units 220R380 and 220R360 of Area 4. The maximum dimensions of the basin were 3.94 by 2.4 feet horizontally with a maximum depth of 0.61 feet. Surface area of the feature was 7.6 square feet. The feature fill was a medium brown clay loam with some burned limestone. A total of 4.66 cubic feet of fill was excavated from this feature for waterscreening.

Feature 25. Feature 25 was located in Unit 220R360 within Area 4. Maximum dimensions of the feature were 4.6 feet by 3.8 feet. The maximum depth was 0.93 feet. Surface area (14.1 square feet) was occupied by this feature. The feature fill was dark reddish brown clay with a scattering of charcoal flecks. No record was made of the quantity of fill removed from this feature, or whether it was water-screened or floated.

Feature 36. This basin was located within Unit 160R500 of Area 5. The maximum dimensions of the feature were 1.6 by 1.35 feet with a depth of 0.17 feet. The area occupied by the feature was 1.7 square feet. The feature fill was a medium brown clay. No data on the quantity of fill removed from the feature were recorded and there is no notation dealing with whether the fill was waterscreened or floated.

Feature 51. This feature was located near the center of Unit 180R480 in Area 5. Maximum dimensions of the basin were 6.71 by 3.5 feet. The maximum depth was 0.73 feet. The surface area of the feature

was 20.4 square feet. The fill from this basin was a homogeneous medium brown clay loam with some mottling of yellow clay in the south central area of the feature. The feature produced a total of 11.33 cubic feet of fill, all of which was waterscreened.

Feature 120. This basin was located within Area 4 in Unit 220R360. The basin's maximum dimensions were 5.0 by 3.0 feet with a depth of 0.78 feet. The surface area of the feature was calculated as 11.9 square feet. The fill was dark brown in color with burned limestone and nutshell being present. A total of 7.33 cubic feet of fill was excavated from the feature. All of this was waterscreened.

Feature 537. This basin was situated in Unit 360R740 (Figure 10a). The maximum dimensions of the feature were 3.8 by 2.5 feet with a maximum depth of 0.78 feet. The surface area of the feature was 8.2 square feet. The color of the fill was dark brown (7.5YR3/2) with little charcoal being present. The fill was waterscreened and a flotation sample taken but the quantity of the fill excavated was not recorded.

Feature 75-7. This feature was the central hearth for the semi-subterranean structure (Feature 75-6). Its maximum rim to rim measurements were 1.4 by 1.18 feet. The rim of the feature was heavily fired as was the basin of the feature. Its maximum depth was 0.17 feet. The area covered by this feature was 2.4 square feet. No description of the fill of the feature was given nor was there any quantification of the amount of fill removed from the hearth and how it was processed.



A



B

FIGURE 10. Mississippian basins. A. Feature 537; B. Feature 98.

Shallow Amorphous Basins (n = 3)

Feature 46a. This feature was located in Unit 180R460 within Area 5. Its western side intrudes Feature 46b. The maximum dimensions were 5.8 by 5.3 feet with a depth of 0.46 feet. The fill of the basin is not described with the exception that the presence of charcoal and limestone is noted. A total of 12.7 cubic feet of fill was excavated from the feature, but no note was made as to how it was processed.

Feature 66. This basin was recorded in Area 4, Units 160R440 and 180R440. Its maximum dimensions were 4.8 by 4.2 feet with a depth of 0.7 feet. The feature covered 14.8 square feet. The fill was a yellowish brown clay loam with scattered charcoal and shale. A total of 10.33 cubic feet of fill was excavated from the feature. All of this was waterscreened.

Feature 78. This feature was located in Units 200R500 and 200R520 of Area 5. Its maximum dimensions were 15.5 by 6.1 feet with a maximum depth of 0.55 feet. The surface area of the feature was 35.54 square feet. The fill was a medium brown clay loam containing some gravel. A total of 12.3 cubic feet of fill was excavated from the feature, all of which was waterscreened.

Deep Circular Basin (n = 2)

Feature 52. This feature was located in Unit 180R480 within Area 5. The deep circular basin associated with the Mississippian component is intrusive into the center of a large Middle Woodland MacFarland phase (?) feature. The maximum size of the feature is 2.05

feet in diameter with a depth of 1.03 feet. The surface area covered by the feature is 3.3 square feet. The fill from the feature is dark brown (10YR3/3) and compact with charred nutshells and burned limestone. Although the quantity of fill removed from the feature was not recorded, it is calculated to be approximately 2.3 cubic feet. Of this 0.33 cubic feet, or a 14 percent sample, was floated.

Feature 110. Feature 110 was assigned to a disturbance in Unit 300R280 of Area 2. The maximum dimensions of the feature were 7.2 by 6.1 feet with a maximum depth of 1.08 feet. The surface area covered by this feature was calculated as 31.4 square feet. Approximately 18.1 square feet or 58 percent of the surface area of the feature was excavated. The fill was light brown in color and was quite compact. In the profile of the southern half of the feature a dark basin-shaped area was noted. This area of darker soil is interpreted as representing the additions of organically enriched soil and garbage to a depressed area of the feature which resulting from the settling of earlier feature fill composed primarily of colluvial wash and a small amount of trash. No data are available on the quantity of fill excavated from the northern one half of the feature.

Deep Amorphous Basins (n = 4)

Feature 26. This deep basin was situated within Area 4 in Unit 200R380. The feature is intruded by Feature 21. Maximum dimensions of the basin were 4.8 by 3.9 feet with a depth of 1.52 feet. The feature covered an area of 13.93 square feet. The fill was a medium brown clay with burned limestone, shale, and charcoal. The feature produced

14.2 cubic feet of fill. . A 0.33 cubic foot sample (2 percent) was taken for flotation with the remainder being waterscreened.

Feature 98. Feature 98 was located in Area 4 within Unit 220R340 (Figure 10b, page 47). The maximum dimensions of the feature were 16.5 by 3.45 feet with a depth of 1.08 feet. The area covered by the feature was 45.6 square feet. The fill varied from light to dark brown loam with quantities of burned limestone. Twenty-three cubic feet of fill were excavated from the feature. No mention was made of whether a flotation sample was taken.

Feature 107. This feature was excavated in Units 220R360 and 240R360 of Area 4. Its maximum dimensions were 3.7 by 3.1 feet with a depth of 1.29 feet. The area covered by the feature was 9.2 square feet. The fill was a series of clays and clay loams which ranged in color from brownish yellow (10YR6/8) to dark yellowish brown (10YR4/4) and yellowish brown (10YR5/6). The quantity of fill excavated from the feature was not noted.

Feature 503. This feature was located within Unit 280R640 in Area 7 of the site. It is intrusive into the eastern wall of Feature 509. The maximum dimensions are 4.8 by 3.5 feet with a depth of 1.0 feet. The surface area of the feature was computed to have been 14.73 square feet. The fill contained an abundance of burned limestone, sandstone, and siltstone in the eastern half with quantities of cane and nutshell charcoal being distributed throughout the basin. An ash lens was present in the bottom of the feature and extended throughout

its length. No record was made of the quantity of fill excavated or whether it was waterscreened or floated.

Miscellaneous

Feature 6. This feature which was located in Unit 320R380 of Area 2 consists of two postholes (Postholes 28 and 29) in a possible support basin. The feature resembles a triangle with rounded corners in plan with Posthole 28 located in the northwest corner. Long axis measurements (SW-NE) were 1.54 with the maximum width as a right angle to this being 1.3 feet (NW-SE), and near the western side of the feature transecting both of the postholes. Posthole 29 was located in the southern corner of the feature. The maximum depth of Feature 6 was 0.26 feet with Postholes 28 and 29 having depths of 0.92 and 0.59 feet, respectively. Diameters of the postholes were 0.85 (PH 28) and 0.34 (PH 29) feet. Surface area of the feature was 1.97 square feet. The fill of the feature was described as a medium brown clay. The fill, which was not quantified, was waterscreened.

Feature 39. Feature 39 was a natural feature, probably an erosional gully, which had been used as a trash disposal area. It was located in Units 440R500, 440R520, and 460R520, a considerable distance from other Mississippian features. Two transects were excavated across this feature. In addition to the artifactual material recovered, a quantity of daub was also recovered. The two structures identified at the site as being associated with the Mississippian component are located too far from this feature to suggest that the daub recovered from Feature 39 is connected with either of them. Therefore, this may

indicate that there was a Mississippian structure somewhere in this area of the site which was not located during the excavations for some undetermined reason.

Feature 112. This feature was located in Unit 340R480 of Area 6. It was initially assigned to a root disturbance which with further investigation turned out to be a large posthole. The posthole's maximum dimensions were 1.35 by 0.95 feet with a depth of 1.9 feet. The posthole had limestone chinking in the wall. No description of the fill was given. One cubic foot of fill was excavated and waterscreened.

Feature 75-27. This feature was a flat fired clay hearth on the floor of the semi-subterranean structure (Feature 75-9). The configuration of the feature was a nearly perfect circle 1.0 feet in diameter. A flotation sample of house pit fill was taken from immediately above the hearth. Very little charcoal was found in association with the feature. Surface area of the hearth was 0.79 square feet. This feature will be discussed further in Chapter V when the structure is described.

CHAPTER V

STRUCTURAL REMAINS

A. Structures

The one Mississippian structure identified at 40CF32 during the 1975 excavations was located in Units 240R300, 240R320, 270R300, and 260R320 (Figure 11a), and was termed Feature 75-6 as it initially appeared to be a series of superimposed features. Further investigation revealed a rectangular, semi-subterranean installation with the exterior walls constructed with a combination of single post and wall trench construction techniques (Figure 12). The structure pit measured 15.5 feet on a north-south axis and 10.2 feet on an east-west axis. The depth of the house pit ranged from 0.58 feet on the southern wall to 0.88 feet on the northern wall. The area covered by the pit was calculated to be 155 square feet (17.2 sq. m.). The area enclosed by the exterior wall posts was approximately 13.6 feet on a north-south axis and 9.12 feet on an east-west axis with the available floor area being 132 square feet (14.7 sq. m.). The entrance was located in the southeastern corner and consisted of a stepdown from the ground surface level.

Two features which represented hearths were located in the interior of the structure. Feature 75-7 (Figure 13a) as described in the previous chapter, was a shallow oval basin approximately 1.8 by 1.4 feet, with a fired clay rim and basin. This feature was centrally



A



B

FIGURE 11. Mississippian structures. A. Feature 75-6;
B. Feature 79.

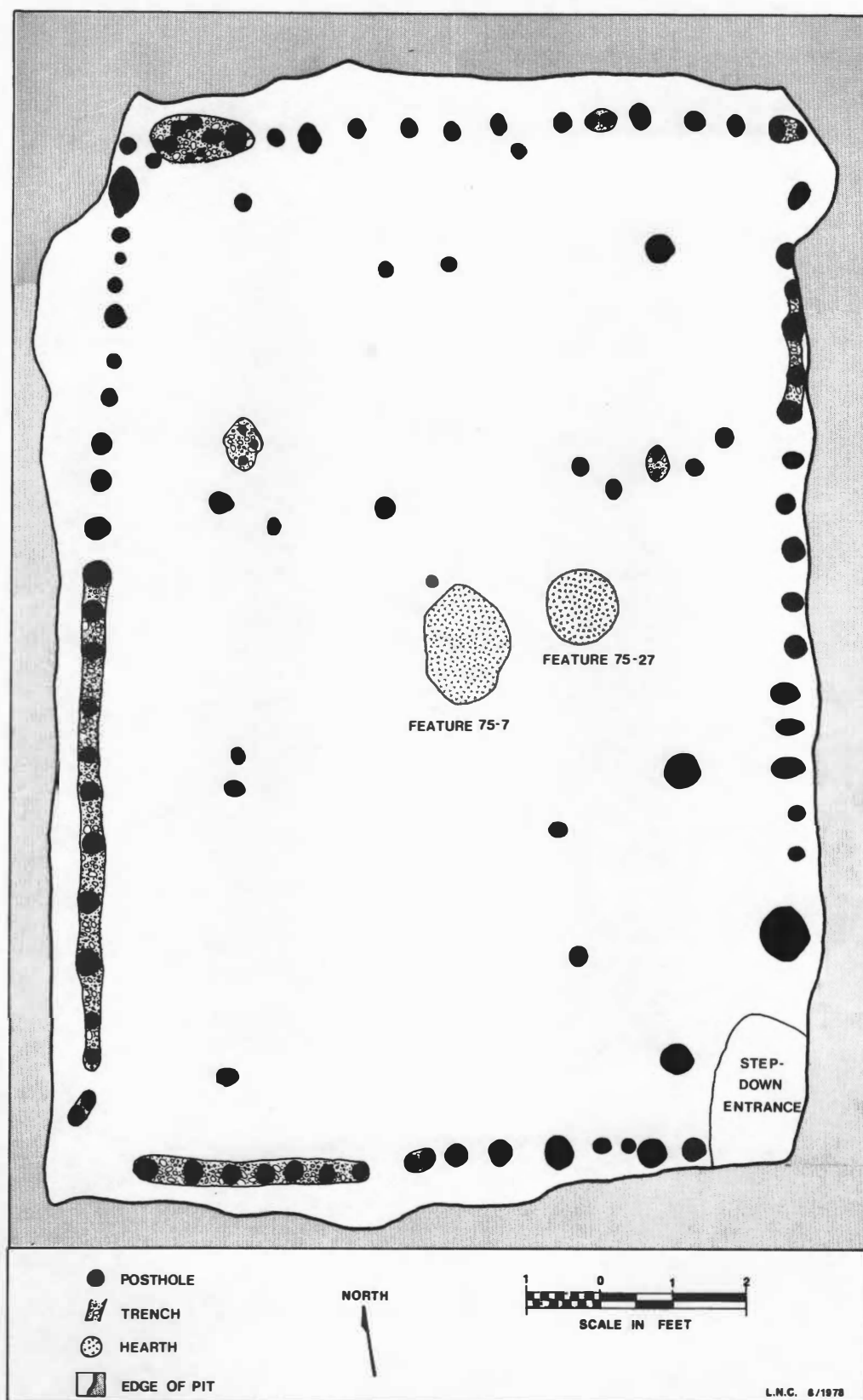


FIGURE 12. Plan map of Feature 75-6, semi-subterranean structure.



A



B

FIGURE 13. Hearths within Mississippian Structure 75-6.
A. Feature 75-7; B. Feature 75-27.

located within the structure. Feature 75-27 (Figure 13b), also described in the previous chapter, was located approximately one foot to the northeast of the central hearth. Its configuration was a flat fired area of clay approximately one foot in diameter. Archaeomagnetic samples from this hearth produced a date of A.D. 1100 $\pm$ 37 years (U0k-1277) (Dr. Robert DuBois 1978: Personal Communication).

A total of 82 postholes comprised the exterior walls of the structure. These were distributed as follows: east wall, 17 posts; west wall, 24 posts; south wall, 16 posts; and north wall, 25 posts. The average diameter of the wall posts was 0.31 feet with an average depth of 0.48 feet. A post mold within the posthole was recorded in 13 of the exterior wall postholes. The average diameter for these post-molds was 0.27 feet.

Twenty-five postholes were recorded in the interior of the structure. The location and placement of a series of these suggest a regular placement of interior support posts. These are Postholes 1060, 1075, 1078, 1097, 2004, 2019, 2020, 2021, and 2023. Their average diameter is 0.04 feet greater than the exterior wall posts, and their average depth is 0.75 feet, which is 0.27 feet deeper than the average depth of the exterior wall posts.

The positioning of other interior postholes in conjunction with several of those listed as possible interior support posts suggests that partitions may have been present within the structure. One such area is in the northern half of the structure approximately 1.5 feet to the north of the central interior hearth (Feature 75-7). On the eastern side of the structure, the possible partition is formed by Postholes

1095, 1096, 1097, 1098, and 1099. After a break of 2.5 feet directly north of the two hearths, the partition could possibly extend to the west wall, being represented here by Postholes 2000, 2022, and 1066. Some form of partition may be represented by the configuration presented by Postholes 1075, 2004, 2024, and 2025 in the southeastern quarter of the structure near the doorway. These possible interior partitions are illustrated in Figure 14.

Feature 79 (Figure 11b, page 54) was a large shallow depression located in Units 200R500 and 220R500. The possibility of this feature representing a structure placed within a pit or at least with a depressed floor was entertained in the field; however, no firm decision was made. After review of the data from the feature as well as comparison with Feature 75-6, and discussion with several individuals about the nature of Mississippian house floors, there does seem to be the possibility that the feature does represent a structure. The area of the feature had been severely eroded (Faulkner 1978: Personal Communication).

The feature can be described as roughly rectangular. On a northwest-southeast axis, the installation is approximately 12.8 feet in length while on a northeast-southwest axis, it measures 12.8 feet. The feature was intruded by a large tree disturbance (Feature 113) on the northwestern end; therefore, the northwest-southeast axis was probably the longer of the two, although the measurements here do not indicate that. The plan and profiles of the feature are included in Figure 15. The maximum depth of the feature was 0.98 feet, taken at the bottom of a central oval basin (no feature number) in the floor of the larger installation. The shallow oval basin was 3.3 feet on its long axis and

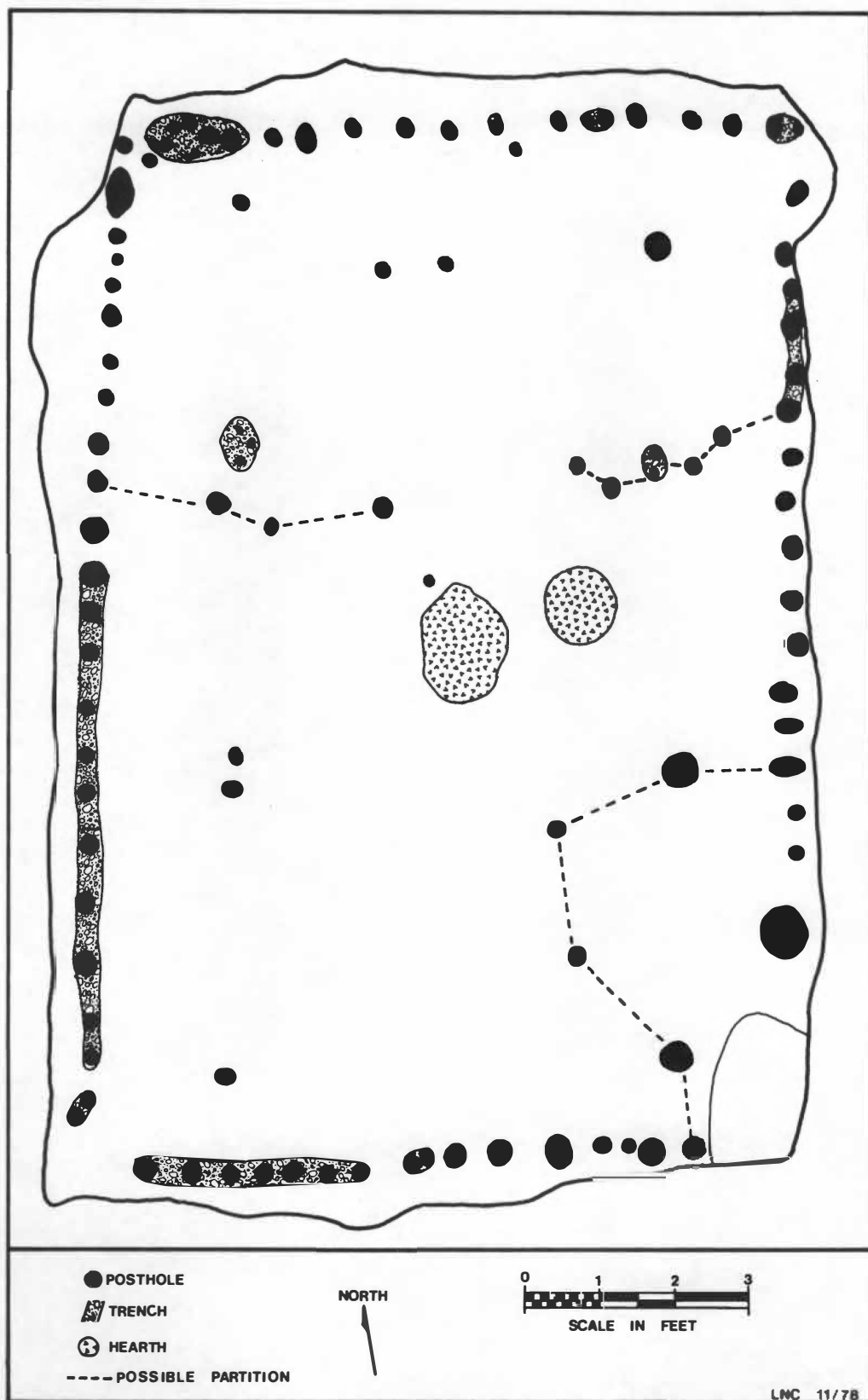


FIGURE 14. Plan of Feature 75-6, illustrating possible interior partitions.

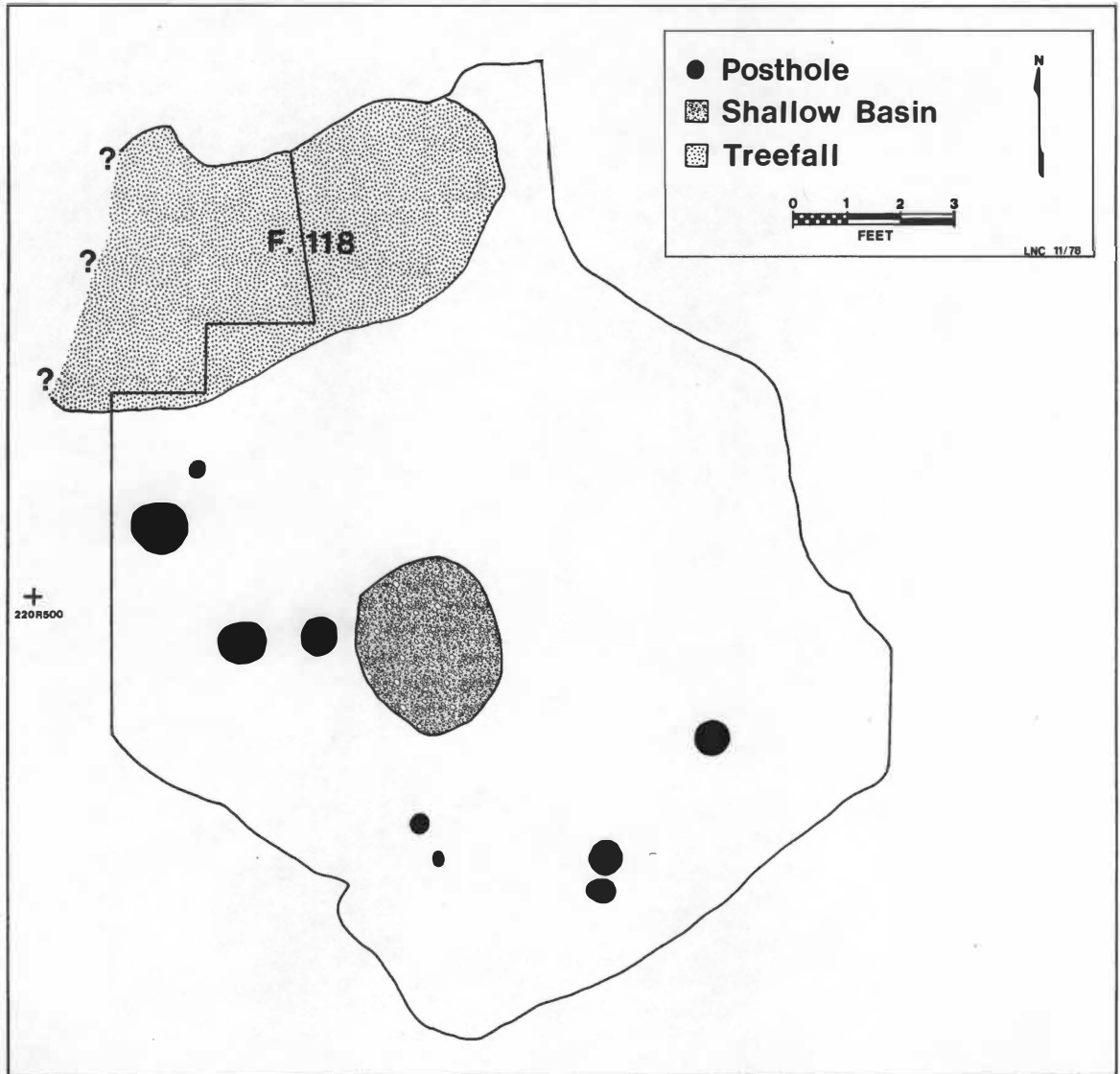


FIGURE 15. Plan map of Feature 79, possible semi-subterranean structure.

2.6 feet in width. Although no separate depth measurement was taken on this feature, it appears to be approximately 0.2 to 0.3 feet deep with some type of disturbance, possibly a root, going down to approximately 0.5 feet on the north side based on the profile drawings. No evidence of firing was noted in the comments on this feature which were included with the Feature 79 data. Feature 79 had been excavated into an area of gravel, which suggests that its function was not for the securing of clay as has been postulated for other large shallow basin-like features on the site.

Nine postholes were excavated within Feature 79. These include Postholes 220, 221, and 224 through 230. The location of these is shown on the plan drawing (Figure 15). The average diameter of these postholes is 0.58 feet with an average depth of 0.61 feet. All were reported to have good sides and bottoms.

B. Postholes

A limited number of postholes which can be associated with the Mississippian component were excavated at 40CF32. These were identified by the presence of shell-tempered ceramics in the fill. These are: Postholes 54, 56, 59, 85, 106, 110, and 157 (Figure 6, page 34). As is evident from their distribution, these postholes, which are widely dispersed over the area of Mississippian occupation at the site, present no evidence for additional structures. No further attempt at working with the distribution of postholes has been made for several reasons. These include: (1) although Mississippian postholes could contain shell-tempered ceramics, they could also contain cultural

material representative of any of the earlier components at the site, making it essentially impossible to sort them out in the absence of obvious, regular patterning in the distribution, (2) soil conditions during the 1975 field season were not conducive to posthole definition; thus distributions are potentially incomplete, complicating the definition of patterns, and (3) no obvious distributions of posts were noted in the field which might be indicative of additional Mississippian structures.

CHAPTER VI

FAUNAL REMAINS

The faunal remains recovered from the Mississippian component at 40CF32 during the 1975 excavations have been treated in a thesis by Robison (1977) entitled "A Zooarchaeological Analysis of the Mississippian Faunal Remains from the Normandy Reservoir." However, to insure completeness of the description of the data categories recovered from the site and to tie this portion of the analysis successfully into the synthesis being attempted in this thesis, the faunal analysis of the Eoff I material will be presented here. The faunal remains have been broken down by feature in this study; Robison treated the remains as a group. Also, additional pieces of bone were found after Robison had completed his thesis; this additional material has since been analyzed by him to insure comparability of results and has been included here. However, because of the relatively small numbers of specimens which had to be analyzed at a later date compared to the over 30,000 specimens in the total faunal assemblage, most percentages have not changed from those recorded in his thesis and there was no change in minimum number of individuals (MNI) counts.

Since Robison has commented extensively on specific species, their habitats, and utilization by aboriginal peoples, few additions of this nature will be included in this chapter which is intended to be purely descriptive. In later chapters, these data will be brought

into consideration in the synthesis of all the data forms present on the site.

A. Invertebrates: Mollusca

Gastropoda

Both salt and fresh water gastropods were recovered from the Mississippian features at 40CF32. The three marine Olivella cf. jaspidea shells are discussed in the section of this chapter which deals with the worked animal bone and shell. The gastropods are broken down by feature provenience in Table 2.

Pelecypoda

A total of 85 pelecypods was recovered from Mississippian features at 40CF32. None of these could be identified to species since all valves were badly crushed. The distribution of pelecypods among the Mississippian features at 40CF32 is shown in Table 2.

B. Vertebrates

A total of 34,837 pieces of bone was analyzed from the features in the Mississippian component at 40CF32. Mammals were the most numerous in the collection with 32,419 pieces; these accounted for 94.29 percent of the total vertebrate sample. In order of decreasing frequency, fish, reptile, bird and amphibian remains were also represented in the collection. Numerical data on these classes is presented in Table 3.

TABLE 2. Gastropods and Pelecypods from 40CF32 Mississippian Features.

	FEATURES							
	79	98	110	113	500	503	511	75-6
<u>Anculosa</u>	5	-	-	-	-	-	-	-
<u>Goniobasis</u>	14	-	-	-	-	-	-	-
<u>Lithasia</u>	726	-	-	-	1	0	49	1
<u>Pleurocera</u>	89	-	-	-	1	-	7	-
Interdeterminant Gastropod	2885	3	-	33	6	-	286	3
Indeterminant Pelecypod	5	14	3	-	-	4	59	-
Feature Total	3724	17	3	33	8	4	401	4

TABLE 3. 40CF32 Mississippian Fauna at the Class Level.

Vertebrate Class	Total Number of Pieces	Percent of Class Identifiable	Percent of Total Sample
Mammal	32,419	1.87	94.29
Bird	259	9.27	0.74
Reptile	298	100.00	0.86
Amphibian	29	96.67	0.09
Fish	1,382	2.85	4.02
TOTALS	34,387	-	100.00

Mammals

Fifteen mammal species were represented in the faunal assemblage from 40CF32. These included: opossum (Didelphis marsupialis), short-tailed shrew (Blarina brevicauda), black bear (Ursus americanus), raccoon (Procyon lotor), striped skunk (Mephitis mephitis), fox (Vulpes/Urocyon), domestic dog (Canis familiaris), woodchuck (Marmota monax), gray fox/squirrel (Scurius spp.), beaver (Castor canadensis), rice rat (Oryzomys palustris), meadow vole (Microtus cf. pennsylvanicus), cottontail (Sylvilagus cf. floridanus), elk (Cervus canadensis), and white-tailed deer (Odocoileus virginianus). Data on the number of identified pieces of each species, minimum number of individuals (MNI), the estimated pounds of meat represented, and the percentage of the total amount of meat in the faunal assemblage represented by each species as well as counts of unidentified pieces are included in Table 4. Table 5 presents data on the mammal remains broken down by feature contexts.

Birds

Only three species of birds were identified in the 40CF32 faunal assemblage while one group, the perching birds, could be identified only to order, the Passeriformes. The three species identified were the bobwhite (Colinus virginianus), turkey (Meleagris gallopavo), and the common crow (Corvus brachyrhynchos). Summary data for the birds are presented in Table 6, while the distribution of bird elements in features at the site is contained in Table 7.

TABLE 4. Mammals Identified from the Mississippian Component, 40CF32.

	Pieces	MNI	Percent of Total	Est Lbs. of Meat	Percent of Total Meat
Opossum, <u>Didelphis marsupialis</u>	4	2	.41	17.00	.89
Shorttail Shrew, <u>Blarina brevicauda</u>	7	3	.72	-	-
Black Bear, <u>Ursus americanus</u>	11	3	1.24	630.00	32.91
Raccoon, <u>Procyon lotor</u>	7	1	.72	17.50	.91
Striped Skunk, <u>Mephitis mephitis</u>	2	1	.21	5.00	.26
cf. Striped Skunk, <u>Mephitis mephitis</u>	1	1	.10	-	-
Fox, sp. cf. Domestic Dog <u>Canus familiaris</u>	7	1	.52	4.00	.21
Woodchuck, <u>Marmota monax</u>	1	1	.10	8.50	.44
Gray/Fox Squirrel, <u>Sciurus spp.</u>	2	1	.21	5.60	.29
Beaver, <u>Castor canadensis</u>	24	2	2.48	1.20	.06
Rice Rat, <u>Oryzomys palustris</u>	2	1	.21	38.50	2.01
Meadow Vole, <u>Microtus pennsylvanicus</u>	2	1	.21	-	-
Small Rodents, spp.	12	1	1.24	-	-
Cottontail, <u>Sylvilagus cf. floridanus</u>	8	1	.83	1.75	.09

TABLE 4. (continued)

	Pieces	MNI	Percent of Total	Est Lbs. of Meat	Percent of Total Meat
Elk, <u>Cervus canadensis</u>	1	1	.10	350.00	18.28
White-tailed Deer, <u>Odocoileus virginianus</u>	<u>513</u>	8	<u>51.78</u>	<u>800.00</u>	<u>41.79</u>
Total Identified Mammal Bone Pieces	617	29	61.18	1,879.05	98.14
Indeterminant Large Mammal Bone Pieces	1,537				
Indeterminant Small Mammal Bone Pieces	<u>30,276</u>				
Total Mammal Bone	32,419				

TABLE 5. Mammals by Feature Provenience.

	<u>Opossum</u> <u>Didelphis marsupialis</u>	<u>Shorttail Shrew</u> <u>Blarina brevicauda</u>	<u>Black Bear</u> <u>Ursus americanus</u>	<u>Raccoon</u> <u>Procyon lotor</u>	<u>Striped Skunk</u> <u>Mephitis mephitis</u>	<u>cf. Striped Skunk</u> <u>Mephitis mephitis</u>	<u>Fox sp.</u>	<u>cf. Domestic Dog</u> <u>Canis familiaris</u>	<u>Woodchuck</u> <u>Flarmota monax</u>	<u>Grey/Fox Squirrel</u> <u>Sciurus spp.</u>	<u>Beaver</u> <u>Castor canadensis</u>	<u>Rice Rat</u> <u>Oryzomys palustris</u>	<u>Meadow Vole</u> <u>Microtus cf. pennsylvanicus</u>	<u>Small Rodents, spp.</u>	<u>Cottontail</u> <u>Sylvilagus cf. floridanus</u>	<u>Elk</u> <u>Cervus canadensis</u>	<u>White-tailed Deer</u> <u>Odocoileus virginianus</u>	<u>Indeterminate Large</u> <u>Hama</u>	<u>Indeterminate Small</u> <u>Hama</u>	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	6
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	14	185
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	9	10
21	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	22	317
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	17	298
39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	5
45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	418	422
46a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	23	1350
46b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	19	213
51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	80
52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	350	367
58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
62	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	4	83	88
66	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	6	6	417
75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	24	25
76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	142
78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	275
79	3	7	-	-	-	1	5	1	1	11	1	2	1	7	5	-	134	640	15042	15861
98	-	-	-	2	-	-	-	-	1	7	-	-	-	2	-	-	41	53	1963	2069
107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6
110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	10	341	355
112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
113	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	4	47	1119	1173
118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	9	861	876
120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	94	95
500	-	-	-	-	1	-	-	-	-	1	1	-	-	-	1	-	68	174	1600	1846
503	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	18	110	989	1120
511	-	-	5	5	1	-	-	-	-	2	-	-	-	1	2	1	138	342	3512	4008
515	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	9	27	375	412
537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	109	115
551	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	10	3-6	377
75-6	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	129	189
75-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	65	66
75-27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
TOTAL	4	7	11	7	2	1	7	1	2	24	2	2	2	12	8	1	513	1538	30341	32419

TABLE 6. Birds Identified from the Mississippian Component, 40CF32.

	Pieces	MNI	Percent of Total	Est Lbs. of Meat	Percent of Total Meat
Bobwhite Quail, <u>Colinus virginianus</u>	1	1	.10	.29	.02
Turkey, <u>Meleagris gallopavo</u>	19	3	1.96	25.50	1.33
Common Crow, <u>Corvus brachyrhynchos</u>	1	1	.10	-	-
Passerine sp.	3	1	.31	-	-
Total Identified Bird Bone Pieces	24	6	2.47	25.79	1.35
Indeterminant Bird Bone Pieces	<u>235</u>				
Total Bird Bone	259				

TABLE 7. Birds by Feature Provenience.

Feature No.	<u>Bobwhite Quail</u> <u>Colinus virginianus</u>	<u>Turkey</u> <u>Meleagris gallopavo</u>	<u>Common Crow</u> <u>Corvus brachyrhynchos</u>	<u>Perching Birds</u> <u>Passerine spp.</u>	Indeterminant	Total Pieces in Feature
21	-	-	-	-	1	1
46a	-	-	-	-	2	2
51	-	-	-	-	4	4
79	1	4	1	1	93	100
98	-	1	-	-	4	5
110	-	-	-	-	2	2
113	-	-	-	-	4	4
120	-	-	-	-	1	1
500	-	1	-	-	32	33
503	-	-	-	-	12	12
511	-	12	-	2	79	93
75-6	-	1	-	-	1	2
TOTAL	1	19	1	3	235	259

Reptiles

The reptile remains recovered from the Mississippian features as 40CF32 can be divided into two major categories, turtles and snakes. Few turtle remains could be identified to the species level. Those which could included the snapping turtle (Chelydra serpentina) and box turtle (Terrapene carolina). A small number of elements were identified as map turtle (Graptemys sp.), but a larger number had to be grouped under the genera Pseudemys, Graptemys, and/or Chrysemys as these are difficult to identify even to the generic level when fragmentary (Robison 1977: 81). Also, the mud and musk turtles could be identified only to the family Kinosternidae. Data on the number of pieces for each species or grouping, the MNI, percent and number of pounds of meat represented, as well as the percent of the total amount of meat in the assemblage represented by each are included in Table 8. A breakdown of the turtle remains by feature is included in Table 9.

It was possible to identify the snake vertebrae recovered from the site only to family level, Crotalidae and Colubridae, the poisonous and non-poisonous snakes, respectively. Robison (1977: 83) discusses the problems in the identification of snake remains. Table 8 contains information quantifying the snake remains, while Table 9 illustrates distribution by feature.

Amphibians

A limited number of amphibian remains representing toads and salamanders were recovered from 40CF32 Mississippian features. Salamander remains were represented by pieces identified as either hell-bender (Cryptobranchus alleganiensis) or mudpuppy (Necturus maculosus).

TABLE 8. Reptiles Identified from the Mississippian Component.

	Pieces	MNI	Percent of Total	Est Lbs. of Meat	Percent of Total Meat
Snapping Turtle, <u>Chelydra serpentina</u>	1	1	.10	7.50	.39
Turtle: Kinosternidae	8	1	.52	-	-
Map Turtle, <u>Graptemys</u> , sp.	3	1	.31	-	-
Turtle: <u>Pseudemys</u> ,/ <u>Graptemys</u> / <u>Chrysemys</u> spp.	22	1	2.07	1.50	.08
Box Turtle, <u>Terrapene carolina</u>	19	2	1.03	.40	.02
Turtle, spp.	28	1	3.00	-	-
Snake: Crotalidae	4	1	.41	-	-
Snake: Colubridae	104	1	10.03	-	-
Snake, spp.	109	-	11.27	-	-
Total Identified Reptile Bone Pieces	298	9	28.94	9.40	.49

TABLE 9. Reptiles by Feature Provenience.

Feature No.	Snapping Turtle <u>Cheldra serpentina</u>	Turtle: Kinosternidae	Map Turtle <u>Graptemys</u> sp.	Turtle: <u>Pseudemys</u> , <u>Graptemys</u> , <u>Chrysemys</u> Gp.	Box Turtle <u>Terrapene carolina</u>	Turtle spp.	Snake: Crotalidae	Snake: Colubridae	Snake spp.	Total Pieces in Feature
52						1				1
79			1	4	3	8	2	31	27	76
98						1		5	8	14
113								1		1
118								1		1
120		2			1					5
500			1	4	1	2		3	2	13
503					9					9
511	1	6	1	13	5	14	2	63	71	176
537									1	1
75-6				1						1
TOTAL	1	8	3	22	19	28	4	104	109	298

Toads were identified as either eastern spadefoot toad (Scaphiopus holbrooki); toad, Bufo sp.; or toad, Scaphiopus/Bufo sp. Summary data on the amphibians is included in Table 10 and data on the distribution of amphibian remains in features is given in Table 11.

Fish

A large majority of the fish remains from 40CF32 could be identified only to the genus level. These include redhorse (Moxostoma sp.), catfish (Ictalurus sp.), madtom (Noturus sp.), and bass (Micropterus sp.). Only freshwater drum (Aplodinotus grunniens) elements could be identified to the species level. Specimens which could be identified only to the family level include minnow (Cyprinidae), suckers (Catostomidae), and sunfish (Centrarchidae). Table 12 contains summary information on the fish remains and Table 13 presents the distribution of the fish remains among the Mississippian features.

C. Worked Bone and Shell

Only a limited number of modified bone and shell artifacts were recovered from the Mississippian features at 40CF32. Of the five vertebrate classes represented in the faunal samples, only mammal and reptile bone were found to be altered. These will be described in the following paragraphs.

Marine Shell Beads (n = 3)

Three Olivella cf. jaspidea shells were recovered from Feature 79. All of these have had their spines ground off to facilitate stringing. They are illustrated in Figure 16a.

TABLE 10. Amphibians Identified from the Mississippian Component 40CF32.

	Pieces	MNI	Percent of Total	Est Lbs. of Meat	Percent of Total Meat
Hellbender/Mudpuppy <u>Cryptobranchus alleganiensis/</u> <u>Necturus maculosus</u>	4	1	.41	-	-
Eastern Spadefoot Toad <u>Scaphiopus holbrooki</u>	16	4	1.65	-	-
Toad, <u>Bufo</u> sp.	1	1	.21	-	-
Toad, <u>Bufo/Scaphiopus</u> spp.	7	2	.83	-	-
Total Identifiable Amphibian Bone Pieces	28	8	3.10	-	-
Indeterminant Amphibian Bone Pieces	<u>1</u>				
Total Amphibian Bone	29				

TABLE 11. Amphibians by Feature Provenience.

Feature No.	Hellbender/Mudpuppy <u>Cyptobranchus alleganiensis/</u> <u>Necturus maculosus</u>	Eastern Spadefoot Toad <u>Scaphiopus holbrooki</u>	Toad <u>Bufo</u> sp.	Toad <u>Scaphiopus/Bufo</u> spp.	Indeterminant	Total Pieces in Feature
46b	-	-	-	1	-	1
79	4	3	-	1	1	9
98	-	1	-	-	-	1
503	-	-	-	1	-	1
511	-	12	1	4	-	17
TOTAL	4	16	1	7	1	29

TABLE 12. Fish Identified from the Mississippian Component 40CF32.

	Pieces	MNI	Percent of Total	Est. Lbs. of Meat	Percent of Total Meat
Minnow spp., Cyprinidae	3	2	.31	-	-
Redhorse, <u>Moxostoma</u> sp.	2	1	.21	-	-
Sucker spp., Catostomidae	13	2	1.45	-	-
Catfish, <u>Ictalurus</u> sp.	10	2	1.03	-	-
Madtom, <u>Noturus</u> sp.	1	1	.10	-	-
Bass, <u>Micropterus</u> sp.	1	1	.10	-	-
Sunfish spp., Centrarchidae	4	2	.41	-	-
Freshwater Drum, <u>Aplodinotus grunniens</u>	5	1	.52	-	-
Total Identified Fish Bone Pieces	39	12	4.13	-	-
Indeterminant Fish Bone Pieces	<u>1,343</u>				
Total Fish Bone	1,382				

TABLE 13. Fish by Feature Provenience.

Feature No.	Minnow <u>Cypriniade</u> sp.	Redhorse <u>Moxostoma</u> sp.	Sucker spp. <u>Catostomidae</u>	Catfish <u>Ictaluris</u> sp.	Madtom <u>Noturus</u> sp.	Bass <u>Micropterus</u> sp.	Sunfish spp. <u>Centrarchidae</u>	Freshwater Drum <u>Aplodinotus grunniens</u>	Indeterminant	Fish Scales	Total Pieces in Feature
21	-	-	-	-	-	-	-	-	1	-	1
46a	-	-	-	-	-	-	-	-	3	-	3
52	-	-	-	-	-	-	-	-	5	-	5
66	-	-	-	-	-	-	-	-	4	-	4
79	2	1	5	-	1	-	2	1	527	-	539
98	-	-	1	-	-	-	-	-	245	8	254
113	-	-	-	-	-	-	-	-	1	-	1
500	-	-	1	1	-	-	-	2	54	2	60
503	-	-	-	-	-	-	-	-	5	-	5
511	1	1	6	9	-	1	2	2	498	236	756
TOTAL	3	2	13	10	1	1	4	5	1343	246	1628

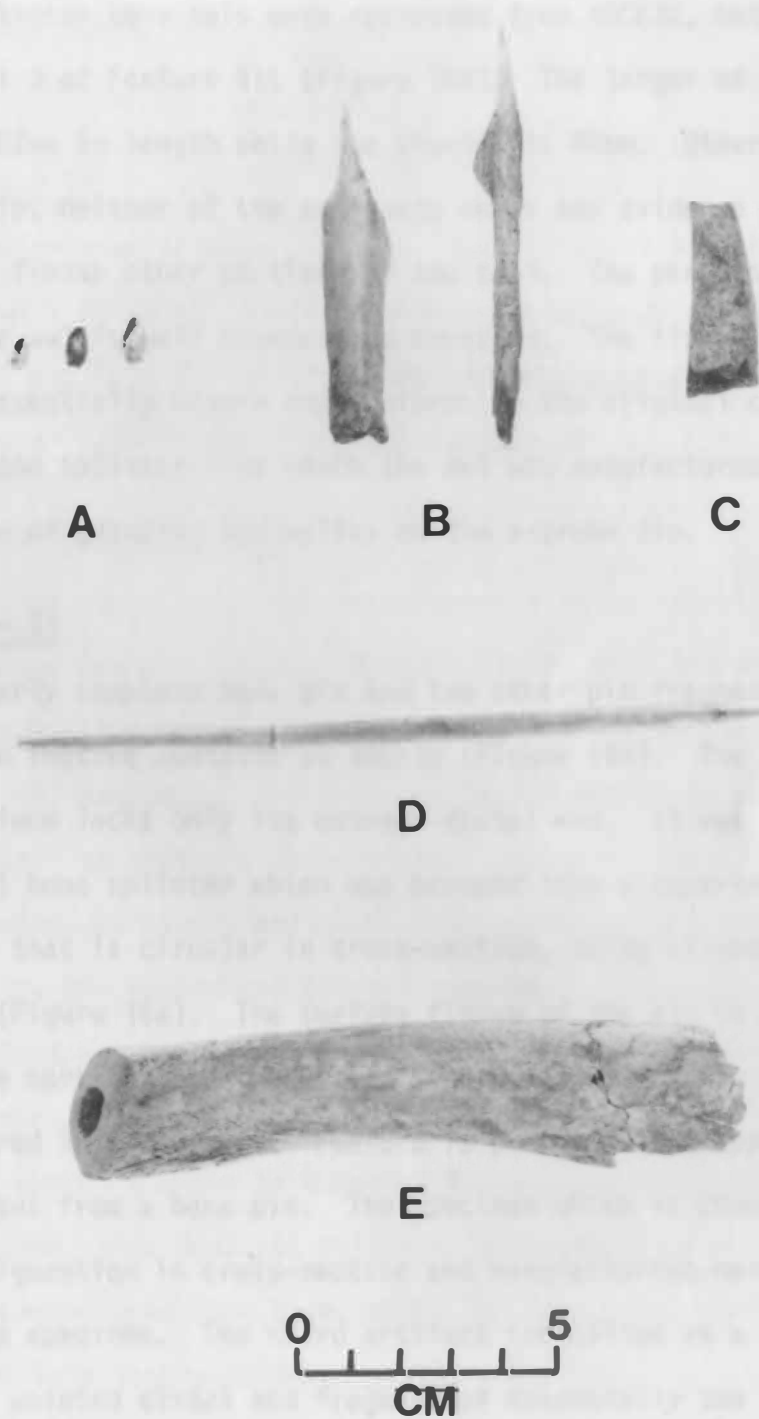


FIGURE 16. Bone and shell artifacts. A. Marine shell beads; B. Splinter bone awls; C. Antler tine; D. Bone pin; E. Problematical bone tool.

Splinter Bone Awls (n = 2)

Two splinter bone awls were recovered from 40CF32, both being found in Level 3 of Feature 511 (Figure 16b). The larger of the specimens is 82mm in length while the shorter is 65mm. Other than the perforating tip, neither of the artifacts shows any evidence of attempts to smooth and finish other portions of the tool. The perforating tip of the shorter awl is well rounded and smoothed. The tip on the other specimen is essentially square and conforms to the original configuration of the bone splinter from which the awl was manufactured except for the degree of grinding and polish on the extreme tip.

Bone Pins (n = 3)

One nearly complete bone pin and two other pin fragments were recovered from feature contexts at 40CF32 (Figure 16d). The nearly complete specimen lacks only its extreme distal end. It was made from a large mammal bone splinter which was scraped into a tapering, bi-pointed shaft that is circular in cross-section, being slightly thicker near one end (Figure 16a). The surface finish of the pin is uniform; shallow scrape marks extend the entire length (145mm) of the artifact. It was recovered in Feature 98. Feature 79 produced what appears to be a shaft fragment from a bone pin. The specimen which is 20mm long has the same configuration in cross-section and manufacturing marks as the other complete specimen. The third artifact identified as a bone pin consists of a pointed distal end fragment of essentially the same configuration as the other pin and pin fragment. The fragment is 13mm long. The tip of the artifact is pointed but shows no evidence of wear due to use. In fact, none of the specimens show wear or polish which

would indicate their former use as tools. This has led Robison (1977: 110) to suggest that these artifacts may have served as hair-pins.

Antler Tine (n = 1)

One antler tine (Figure 16a) was found in Level 4 of Feature 500. It is small (37mm in length) and was not hollowed out for socketing. It has been cut on both ends and may represent a by-product of manufacture of other tools (Figure 16c, page 81).

Problematical Bone Tool (n = 1)

Feature 98 produced a tool which appears to be made from the radius of a large mammal; however, Robison (1977: 113-114) was not able to make a determination of the species from which the artifact was made (Figure 16e, page 81). The bone has been modified by cutting the diaphysis in half at an angle (Figure 16a). This cut, which exposed the marrow cavity, is highly polished. The specimen is 130mm long with the end opposite the worked end being fragmentary. Robison suggests that the artifact may have been used as either a hide scraper or a tool handle. However, no wear is evident on the interior walls in the marrow cavity where it might be expected had a stone tool been mounted there. Of course, this does not rule out that another type of tool, such as one manufactured from bone, might not have been mounted there and would have left little evidence of its presence.

Turtle Shell (n = 1)

One piece of turtle shell which exhibits a high degree of polish on both the interior and exterior surfaces was found in Feature 503. The triangular specimen is 22mm long and 21mm wide. It is too fragmentary to determine its function.

Miscellaneous Worked Bone (n = 1)

A small cut bone fragment of unknown function was recovered from Level 4a of Feature 511. The piece, which is 35mm long and 5mm wide, is triangular in cross-section and exhibits a high degree of polish, plus fine striations which run lengthwise down the piece. Robison (1977: 114) suggests that it may be part of an awl or pin.

CHAPTER VII

BOTANICAL REMAINS

As with the preceding chapter on faunal remains, the purpose of this chapter on the botanical remains is primarily descriptive. The data presented were analyzed by Mr. Gary D. Crites, Director of the Paleobotanical Laboratory at The University of Tennessee's Department of Anthropology.

The botanical data will be presented in tabular form. The samples presented here are from two deep circular pits which probably served as storage facilities. These are discussed further in the preceding chapter on feature morphology.

The analysis of the plant remains from the Mississippian features at 40CF32 involved a series of standard procedural steps (Crites 1978: Personal Communication). The four steps involved are: (1) sample weighed, (2) sample sifted through a series of standard geological screens (4mm, 2mm, 1mm, 500 microns), (3) 4mm and 2mm screens completely sorted into various nutshell categories, seed/fruit categories, wood/cane charcoal, and contamination, and (4) screens less than 2mm examined for evidence of cultigen/wild plant seeds. After these are removed, the remaining material is labeled sample residue. One hundred percent of the plant materials available from a feature were analyzed in this manner. However, the features yielded too much wood charcoal for total analysis. Therefore, wood charcoal was sampled

in the following manner. A Riffle Sampler was used to break down the wood sample (all recovered from 2mm and 4mm screens) to manageable portions. The sample was then spread in serpentine fashion over a sheet of ruled "data pad" paper and fragments were removed from odd numbered columns until 25 pieces were identified to the genus/species level.

The tables presenting the botanical data will follow. Table 14 contains information on the weights and percentages of various categories of plant remains by feature. Table 15 is a quantification of plant foods by feature. Table 16 presents a quantification of seeds, fruits, and grains by feature. Table 17 gives wood charcoal and cane charcoal identifications and counts by feature.

TABLE 14. Weights and Percentages of Plant Remains by Feature.

	Feature 500	Feature 511	Total
<u>Total Plant Remains</u>			
g.	218.99	79.49	298.48
<u>Wood/Cane Charcoal</u>			
g.	40.12	35.20	75.32
percent	18.32	44.28	25.23
<u>Plant Foods</u>			
g.	166.57	34.98	201.55
percent	76.06	44.01	67.53
<u>Sample Residue</u>			
g.	12.30	9.31	21.61
percent	5.62	11.71	17.24

TABLE 15. Quantification of Plant Foods by Feature.

	Feature 500	Feature 511	Total
<u>Weight, Plant Foods</u>			
g.	166.57	34.98	201.55
<u>Hickory</u>			
g.	158.50	25.60	184.10
percent	95.16	73.18	91.34
<u>Acorn</u>			
g.	0	.09	.09
percent	0	.26	.04
<u>Black Walnut</u>			
g.	4.33	4.49	8.82
percent	2.60	12.84	4.38
<u>Seeds</u>			
g.	0	.50	.50
percent	0	1.43	.25
<u>Maize</u>			
g.	3.74	4.30	8.04
percent	2.24	12.29	3.99

TABLE 16. Quantification of Seeds, Fruits, and Grains by Feature.

	Feature 500	Feature 511	Total
<u>Chenopodium</u> spp.	-	2	2
<u>Phalaris Carolina</u> Walt.	-	2	2
<u>Rhus</u> spp.	-	3	3
<u>Euphobia</u> spp.	-	3	3
<u>Gledetsia triacanthos</u>	-	8	8
<u>Phytolacca americana</u>	-	1	1
Legume	-	3	3
Maize*	59	37	96

*The maize from the two features breaks down further as follows:
 Feature 500--Grains = 29, Cupules = 27, Glumes = 2, Cobs = 1; Feature
 511--Grains = 15, Cupules = 16, Glumes = 0, Cobs = 6.

TABLE 17. Wood/Cane Charcoal Counts by Feature.

	Feature 500	Feature 511	Total
<u>Carya</u> spp.	8	16	24
<u>Quercus</u> spp.	2	-	2
<u>Quercus alba</u>	2	3	5
<u>Salix nigra</u>	3	-	3
<u>Juniperus virginiana</u>	3	-	3
<u>Juglans</u> spp.	1	-	1
<u>Gleditsia triacanthos</u>	1	-	1
<u>Liriodendron tulipifera</u>	-	1	1
<u>Arundinaria</u> spp.	5	5	10

CHAPTER VIII

CERAMICS

A total of 6,258 ceramic artifacts were recovered from Mississippian component features at 40CF32. For the purposes of description, these artifacts have been divided into four categories: (1) body sherds, (2) rim sherds, (3) handles, and (4) miscellaneous (clay beads, pipe fragments, sherd disks, etc.). Prior to discussion and presentation of the ceramic data, several basic comments concerning the analytical procedures will be made.

A. Analytical Methods

The analytical methods followed in this treatment of the ceramics associated with the Mississippian component at the Eoff I site are largely traditional in nature. Basically, a quantification of empirical observations of individual ceramic specimens has been undertaken. Body sherds have been classified as to tempering agent and surface finish. Rims have been classified based on tempering agent, lip form and profile, rim form and profile, surface finish and rim diameter, when possible. Handles have been classified as to form (loop or strap), tempering agent, portion represented, and form of cross-section.

The specific techniques utilized in the analysis should also be outlined. After the ceramics had been washed, they were initially examined to determine the tempering agent. On the majority of the

sherds, this determination was facilitated by the use of a small hand lens. On the more eroded sherds, a portion had to be broken off to expose a fresh surface for examination. Also, it was found necessary to examine as much of the perimeter of the sherd as possible in the determination of the tempering agent as it was found that the distribution of tempering agents through the sherds was far from uniform. For example, in some cases a sherd would appear to be shell tempered on one edge but the examination of the opposite edge would reveal that limestone and chert temper had also been used.

A large percentage of the sherds in the collection are leached to the extent that none of the carbonate tempering (shell and/or limestone) remains. It was therefore necessary to distinguish shell from limestone by the morphology of the holes left by the leaching of the temper of the ceramics. Small circular and irregular holes are characteristic of leached limestone temper while leached shell is indicated by flat lenticular holes due to the laminar nature of the shell used as temper.

Rim diameter was determined by the use of a rim board which was constructed by drawing concentric circles at one centimeter intervals. The minimum diameter was recorded on rim sherds which would fit more than one circle.

B. Body Sherds

A total of 6,085 body sherds was recovered from the Mississippian features (Table 18). These sherds represent 13 temper groups. Further division of each group is made based on the surface finish of the sherds.

TABLE 18. Ceramic Body Sherds from Mississippian Features.

[illegible]

Shell Tempered Ware

Shell tempering formed the largest temper grouping with a total of 4,079 sherds or 67.12 percent of the body sherds having this temper. Within the shell temper grouping, five surface treatments are present plus a residual category. Sherds with a plain surface finish account for 30.3 percent of this group. This category can typologically be termed Mississippi Plain (Phillips 1970: 130-135). The sherds representing this type present a considerable range in thickness, size of temper particles, and proportion of temper to paste. The finish varies from finely smoothed surfaces to relatively rough surfaces which exhibit tool marks, especially on the shoulders of vessels. Areas of handle attachment are considerably thicker than non-handle areas of vessels.

The other four surface treatment groups within the shell tempered category each account for less than 1 percent of the shell tempered sample. Cordmarked sherds account for 0.6 percent of the sample. All of the examples from the site have been heavily smoothed to the extent that significant portions of the sherds are plain. This has been noted in the Mississippian ceramic assemblage from 40CF111 (Kleinhans 1978) in the Normandy Reservoir, and also in the Tellico Reservoir (Salo 1969: 114). Although this smoothing was not noted in the original type description, these ceramics are attributed to the type McKee Island Cordmarked (Heimlich 1952: 27-28). Three sherds (0.07 percent) of fabric impressed shell tempered vessels are present in the sample. Heimlich (1952: 26) termed this type Langston Fabric Marked in the Guntersville Basin of the Tennessee River in northern Alabama while in the Ohio Valley varieties include Kimswick Fabric Impressed

(Phillips 1970: 95-96), Kincaid Net Impressed (Cole 1951: 146), and Saline Fabric Impressed (Keslin 1964: 50). One sherd of shell tempered brushed pottery was recovered from Feature 26. This does not conform to any designated type in Tennessee. Three shell tempered sherds exhibited a stamped surface finish which was too faint for a determination of its nature. The only previously identified stamped type associated with Early Mississippian in Tennessee is Hiwassee Island Complicated Stamped (Lewis and Kneberg 1946: 104).

Residual sherds account for the largest percentage of shell tempered ceramics, comprising 69.1 percent of the shell tempered sample. The quantity of shell tempered residual is undoubtedly related in part to the extreme leaching of the temper from the ceramic sample.

Limestone Tempered Ware

Seven hundred ninety-six limestone tempered sherds were identified from the Mississippian features accounting for 17.76 percent of the entire sample of body sherds. These sherds are divided into seven surface finishes plus a residual category. Limestone tempered plain accounts for 24.7 percent of the sample with the six other surface finishes each accounting for considerably less than 1 percent of the sample for this particular temper group. In examining Table 18, page 93, it is evident that the limestone tempered plain sherds occur consistently throughout the Mississippian features while the other surface finish types are not consistent in their distributions and do not occur in significant quantities. It appears that at least some percentage of the limestone tempered plain ceramics are occurring in

primary association with the Mississippian component. This is not unexpected as the same occurrence has been documented at 40CF111 (Kleinhans 1978) and at other earlier Mississippian sites in the eastern Tennessee Valley (Salo 1969). Limestone tempered plain pottery is assigned the type name Mulberry Creek Plain (Haag 1939: 9). It is presently impossible to separate those sherds of this type which are primarily associated with Woodland components and with Mississippian components lacking of diagnostic elements such as loop handles or excurved rims, both of which are indicative of Mississippian assemblages.

One sherd of limestone tempered fabric marked pottery was recovered from Feature 98 and can be attributed to the type Long Branch Fabric Marked (Haag 1939: 11). This type is normally found in Early Woodland to early Middle Woodland contexts in the Normandy Reservoir (Faulkner and McCollough 1974: 332, 334) and is not considered to be in primary context in Feature 98.

Three sherds of limestone tempered simple stamped pottery were recovered from three features. The example from Feature 66 has a line of punctuations. These sherds represent the type Bluff Creek Simple Stamped (Haag 1939: 12). Like the preceding fabric marked type, it is not considered to be in primary association with the Mississippian features.

Six sherds of Wright Checked Stamped (Haag 1939: 13) are represented in the limestone tempered ceramic series. This is a Middle Woodland type which cannot be considered to be in primary association in the Mississippian features.

One sherd of limestone tempered curvilinear stamped pottery representing the Middle Woodland type Pickwick Complicated Stamped (Haag 1939: 14) was found in Feature 113.

Three sherds of unidentified stamped pottery with limestone tempering were recovered from the Mississippian component features. One limestone tempered sherd with a brushed surface finish which represents the type Flint River Brushed (Heimlich 1952: 20) was found.

Residual sherds account for 73.9 percent of the limestone tempered ceramic sample.

Chert Tempered Ware

A total of 183 chert tempered sherds was present in the Mississippian ceramic assemblage, accounting for 3.05 percent of the body sherds recovered from the site's Mississippian component. Three surface finishes plus a residual category were present. Chert tempered ceramics occurred in 28 (68 percent) of the 40 Mississippian features analyzed in this research. Seventy-seven sherds of chert tempered plain pottery are present representing the type Elk River Plain (Faulkner 1968: 63-65). One sherd of Elk River Check Stamped (Faulkner 1968: 68-70) was recovered from Feature 75-6 while two sherds of Elk River Knot Roughened and Net Impressed (Faulkner 1968: 65-68) are present in the assemblage. A total of 103 sherds or 56 percent of the chert tempered ceramics had to be relegated to the residual category.

Clay Tempered Ware

Feature 66 produced the single sherd of clay tempered cordmarked pottery present in the sample. The sherd may represent the type

Mulberry Creek Cordmarked (Haag 1939: 17). Walthall (N.D.: 264) notes that a sample of clay tempered plain and cordmarked ceramics was recovered from the Langston site on the Tennessee River in Jackson County, Alabama, in association with shell tempered and limestone tempered ceramics in an Early Mississippian context.

Sand Tempered Ware

Two sherds of sand tempered pottery were recovered from Mississippian feature contexts. One of these is plain while the other has been placed in the residual category. Kleinhans (1978) considered a small number of sand tempered sherds found in association with the Mississippian component at the nearby site 40CF111 to be Early Woodland, but Heimlich (1952: 36) notes "the persistent occurrence of undecorated sand tempered sherds from the earliest pottery horizon continuously through the latest horizon contemporaneous with shell tempered ware" on the Tennessee River in Northern Alabama. Also, it should be noted that sand tempered types predominate in North Georgia from Early Mississippian into Mature Mississippian (Wauchope 1966: 63-64). Therefore, it should not be surprising to find a minor percentage of sand tempered ceramics in an Early Mississippian context in south central Tennessee, but certainly care should be exercised in unequivocally attributing them to primary association with the component until their placement is consistently confirmed on a number of sites. Thus, at this time, we may say that if sand tempered ceramics are in primary association with the Mississippian component at 40CF32, they are either (1) a minority type, or (2) the result of trade.

Mixed Tempered Wares

A total of 743 body sherds which have mixed temper was recovered from Mississippian contexts at the Eoff I site. These account for 12.26 percent of the sample of body sherds from the site. Eight mixed temper groupings are present and are listed in Table 18, page 93.

A small quantity of mixed limestone-chert tempered pottery is present with 29 body sherds comprising 0.52 percent of the body sherd sample. These were obtained from a total of six features. Only plain and unidentified stamped surface finishes are present in addition to the usual residual category. Kleinhans (1978) has noted that this mixed temper grouping may possibly represent variants of the Elk River series ceramics (Faulkner 1968).

A single plain sherd tempered with a combination of clay and chert was recovered from Feature 45, and does not conform to any named type.

The remaining six mixed temper groupings all contain shell with various combinations of limestone, chert, and clay as listed in Table 18. Plain surface treatment predominates in these groupings with minor percentages of cordmarked, unidentified stamped, and incised specimens being present. Twenty-nine of the 40 features (70.73 percent) contained at least one of these mixed temper groupings. No differences are apparent between the mixed temper groupings and their purely shell tempered counterparts in the paste, surface treatment, or finish. During analysis it was noted that in many cases the tempering material is not mixed homogeneously throughout the paste. A sherd which appeared to be shell tempered on one edge might have quantities of other tempers

visible on the opposite side. It is therefore suggested that a revision of the definition of pottery types associated with Mississippian may be in order to subsume the mixed temper groupings which are being found on a number of sites in Early Mississippian context and which appear identical to the totally shell tempered types with the one exception of temper.

C. Rim Sherds

A total of 127 rim sherds representing ten temper groups were recovered from Mississippian contexts at 40CF32. Table 19 presents data on these rims in tabular form. Discussion of the rims organized by temper groups follows.

Shell Tempered Rims

Fifty-three shell tempered rims are present in the assemblage accounting for 41.7 percent of the rim sample. Of these, 23 (43.4 percent) are excurvate; 5 (9.4 percent) are incurvate; 2 (3.8 percent) are straight, and 23 (41.7 percent) are indeterminate.

It was possible to calculate rim diameters for 13 of the excurvate rims. These range from 6cm to 34cm with a mean of 25.8cm. Twenty-two plain and one residual surface treatment are present on these excurvate rims. The lip profile is rounded on 16 examples and flattened on seven rims. The lip form is rolled in seven of the excurvate rims while being plain on 16 examples.

The rim diameter could be calculated for three of the five shell tempered incurvate rims. These range from 12cm to 28cm with a mean of 22cm. A plain surface treatment was present on all of these rims while

TABLE 19. Ceramic Rim Sherds From Mississippian Features.

Feature No.	Temper	Lip Profile	Lip Form	Rim Profile	Surface Finish	Rim Diameter
13	S	F	R	I	R	-
13	S-L	F	R	I	P	-
13	S-L	F	R	E	P	-
13	S-L	F	R	Ic	P	-
13	S-L-C	R-F	P	Ic	P	22
14	S	R	P	E	P	30
21	S-L-C	F	P	I	R	-
21	S-L-C	F	R	E	P	-
21	S	R	P	E	P	-
21	S-C	R	P	E	P	14
21	S-C	R	R	E	P	2
21	S	R	P	E	P	24
21	S-L	R	P	I	R	-
21	S-L	R	R	E	P	12
22	S	F	P	E	P	-
25	S	I	I	I	R	-
25	S-L	R	P	E	P	22
26	S-C	F	P	E	P	22
26	L	R	R	Ic	R	18
26	S-L	R	P	E	P	-
26	S-L	R	P	I	R	-
26	S-L	R	P	E	P	-
26	S-L	R	P	E	P	12
39	S-C	R	P	I	R	-
39	S-C	R	P	I	R	-
39	S	R	P	E	P	-
45	S-L	R	P	Ic	P	-
45	S-L	F	P	E	P	50
45	S	R	P	I	R	-
46a	S-C	R	P	I	R	-
46a	S-C	R	P	I	R	-
46a	S-L	R	P	E	P	-
46a	S-C	R	P	E	P	-
46a	S	R	P	Ic	P	12
46a	S-C	R	P	I	R	-
46b	S-L	R	R	E	P	32
51	S	F	R	E	P	-
52	S-L-C	R	P	E	P	6
52	S	R	P	I	R	-
52	S-C	F	P	E	P	-
52	S-L-C	R	P	E	P	-
52	S-C	R	P	E	P	12
76	S	F	P	I	R	-
76	S-C	F	P	Ic	P	30

TABLE 19. (continued)

Feature No.	Temper	Lip Profile	Lip Form	Rim Profile	Surface Finish	Rim Diameter
76	S	R	P	Ic	P	28
76	S	R	P	I	P	-
76	S	R	P	I	R	-
76	S	R	R	E	P	24
78	S	F	P	E	P	18
78	S-C	F	P	E	P	-
79	S	R	P	Ic	P	-
79	S	F	P	I	R	-
79	S	F	P	I	R	-
79	S-L	R	P	Ic	P	16
98	S	R	P	E	P	-
98	S	F	P	I	R	-
98	S	R	P	I	R	-
98	S	R	R	E	P	22
98	S-L-C-C1	R	P	E	P	28
98	S	R	P	I	R	-
98	S-L	R	P	E	P	-
98	S-L-C-C1	F	P	E	P	44
98	S-L-C-C1	F	P	E	P	30
98	S-C	F	P	E	P	20
98	S-C1	R	P	E	P	12
98	S-C-L	R	P	E	P	6
98	S	F	P	E	P	-
98	S	R	R	E	P	30
98	S-L	F	R	E	P	28
98	S	R	P	E	P	-
98	S-L	F	P	E	P	-
98	S	F	P	E	R	-
110	S	R	P	I	P	-
120	S	F	P	I	R	-
120	S	F	P	I	R	-
120	S	F	P	I	R	-
120	S	I	I	I	R	-
120	S	I	I	I	R	-
120	S	I	I	I	R	-
120	S	I	I	I	R	-
120	S	I	I	I	R	-
120	S-L	F	R	E	P	-
120	S-L	F	R	Ic	P	10
120	S-L	R	P	Ic	P	6
500	S	R	P	I	P	-
500	S	R	P	E	P	30
500	L	R	P	E	R	-
503	S	R	P	Ic	P	26
511	S-C	F	P	E	P	22
511	S	F	P	E	P	30
511	S-L	R	P	E	P	-
511	S	F	P	I	R	-

TABLE 19. (continued)

Feature No.	Temper	Lip Profile	Lip Form	Rim Profile	Surface Finish	Rim Diameter
511	S	R	P	E	P	34
511	S-L	F	P	S	P	-
511	S-L	F	P	E	P	32
511	S-L	R	P	E	P	34
511	S	R	R	E	P	24
511	S	R	R	E	P	34
511	S	F	P	E	P	30
511	S	R	P	S	P	-
511	S	F	P	S	P	-
511	S-L	F	P	E	P	-
511	S-L	F	P	E	P	-
511	S-L	F	P	S	P	-
75-6	S	R	P	I	P	-
75-6	L	R	P	I	P	-
75-6	S-L	F	P	E	R	-
75-6	L	F	P	E	P	-
75-6	S	R	P	Ic	P	-
75-6	S	R	P	E	P	-
75-6	S-C1	R	R	E	P	-
75-6	S-C-C1	R	P	E	P	-
75-6	C	R	P	Ic	P	22
75-6	S	R	R	E	P	-
75-6	S-C	R	P	S	P	-
75-6	S-C-C1	R	P	E	P	16
75-6	S-L	R	P	E	P	-
75-6	S-L	R	P	E	P	-
75-6	S-L	F	E	E	I	-
75-6	L	F	P	S	P	-
75-6	C	I	N	I	R	-
75-6	S-C	R	P	W	P	-
75-6	S	R	P	W	P	6
75-6	L-C	F	P	E	P	-
75-6	L	R	P	I	P	-
75-6	S-L	R	P	I	E	-
75-6	L	R	P	W	P	32
75-6	L	R	P	Ic	P	-

KEY:

Temper: S=Shell
L=Limestone
C=Chert
C1 = Clay

Lip Form: R=Rolled
P=Plain
I=Indeterminate
N=Notched
E=Extended

Lip Profile: F=Flattened
R=Rounded
I=Indeterminate

Rim Profile: E=Excurvate
Ic=Incurvate
I=Indeterminate
S=Straight

Surface Finish: P=Plain
R=Residual
I=Incised

the lip profile was rounded and the lip form was plain on all of the examples also. An example of a shell tempered incurvate rim with plain surface treatment and rounded, plain lip is illustrated in Figure 17a. The rim which is from Feature 46a has a rim diameter of 12cm and is from a vessel with a "peaked" rim form (peak to right). Also note the drilled hole on the broken edge of the peak to the right.

The two examples of shell tempered rims with straight profiles both have plain surface finishes. It was not possible to compute rim diameters for these. The lip form is plain on both examples while the lip profile is rounded on one and flattened on the other.

It was not possible to compute rim diameters for any of the 23 shell tempered rims with indeterminate profiles. The surface treatment is plain on 2 of these and residual on the remaining 21. The lip profile is flattened on 9 of the rims, rounded on 9, and indeterminate on 5 examples. The lip form is rolled on 1 specimen, plain on 17, and indeterminate on the remaining 5.

Limestone Tempered Rims

The eight limestone tempered rim sherds present in the assemblage account for 6.3 percent of the rim sherd sample. Of these eight, two (25 percent) are excurve, three (37.5 percent) are incurvate, one (12.5 percent) is straight, and two (25 percent) are indeterminate.

A rim diameter of 18cm was calculated for one of the incurvate rims. One rim has a plain surface finish while the other is residual. The lip profile of both is rounded while one example of a rolled rim is present as is one example of a plain rim.

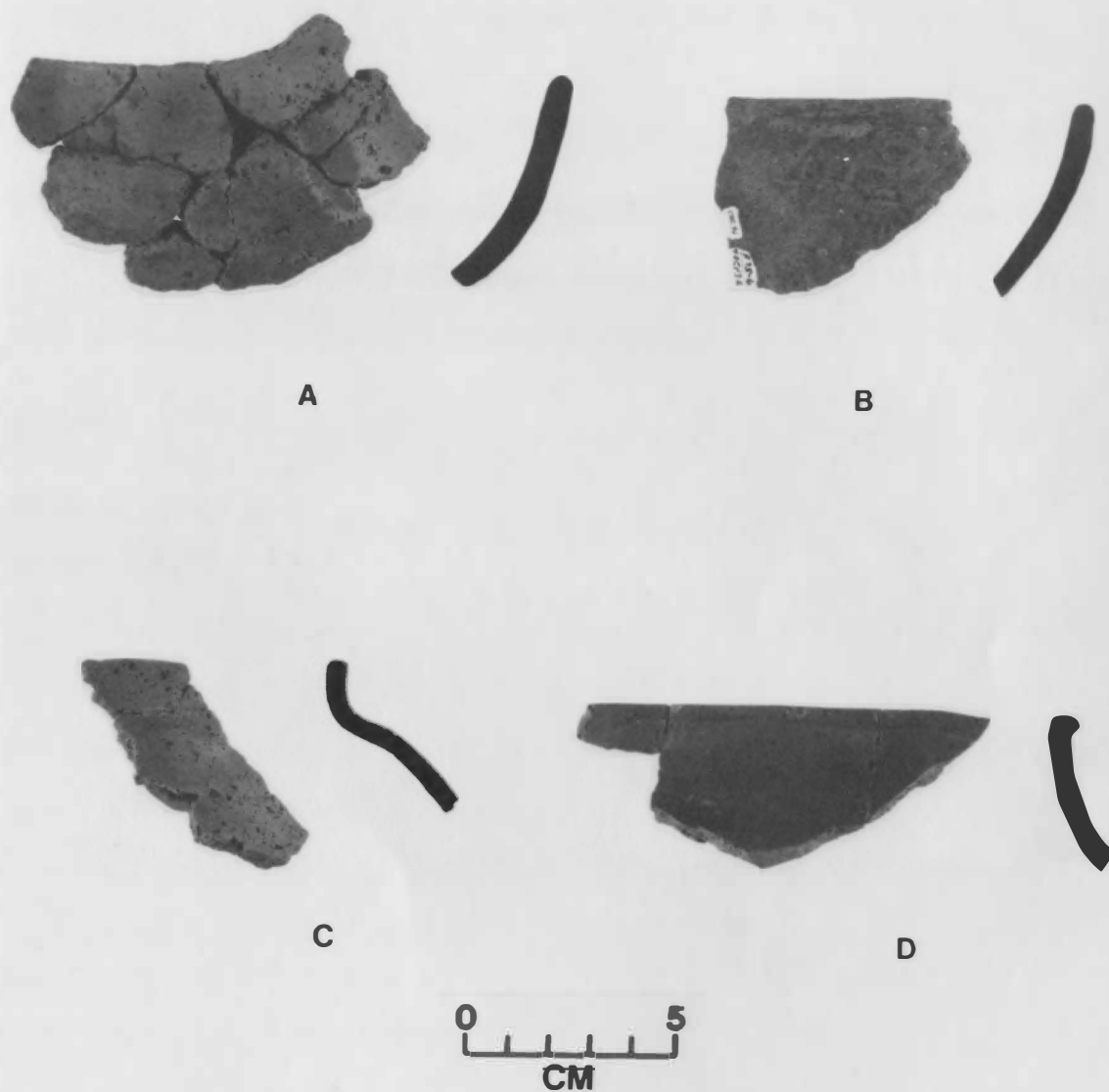


FIGURE 17. Ceramic rim sherds. A. Shell tempered incurvate rim; B. Chert tempered incurvate rim; C-D. Shell-limestone tempered excurve rims.

Rim diameter could be computed for only one of the three excurvate limestone tempered rims and was 32cm. Two plain and one residual rims comprise the surface finish composition. Lip profile is represented by two rounded and one flattened examples. Rim form is plain on two examples while the third is rolled.

The one straight limestone tempered rim in the sample has a plain surface finish with a flattened lip profile and a plain rim form. The rim diameter could not be determined.

The two limestone tempered rims with indeterminate profiles have a plain surface treatment with rounded lips and plain rim forms.

Chert Tempered Rims

Two examples of chert tempered rims are present in the assemblage. One of these is an incurvate rim with a plain surface treatment and a rim diameter of 22cm. The lip is rounded and the rim form is plain. This rim is illustrated in Figure 17b. The other example is of indeterminate profile with a residual surface. The lip profile is indeterminate, but the rim form is notched.

Limestone-Chert Tempered Rims

One example of a rim tempered with a combination of limestone and chert was recovered. It is excurvate in profile with a plain surface treatment. The lip is flattened and the rim form is plain. Rim diameter could not be calculated.

Shell-Limestone Tempered Rims

The 32 rims tempered with a combination of shell and limestone account for 25.2 percent of the rim sample from the 40CF32 Mississippian

component. Twenty (62.5 percent) of these are excurve while six (18.8 percent) are incurvate, two (6.3 percent) are straight and four (12.5 percent) are indeterminate.

Rim diameter was calculated on 7 of the 20 excurve rims. These range from 12cm to 50cm with a mean of 27.1cm. Nineteen of the rims have a plain surface treatment and one is incised. The lip profile is rounded on 11 of the rims and flattened on 9. The rim form is plain on 14, rolled on 4, and extended on 2. Excurve rims with a combination of shell and limestone tempering are illustrated in Figure 17c and 17d, page 105.

The rim diameter was computed on five of the six incurvate rims. These range from 6cm to 32cm with a mean of 18.4cm. The surface treatment is plain on all of the rims. The lip profiles are equally divided between three rounded and three flattened. The rim form is plain on four of the rims and rolled on two.

The two straight shell-limestone tempered rims both have plain surface treatments with flattened lip profiles and plain rim forms. Rim diameters could not be taken on either of these rims.

Three of the indeterminate rims in this temper grouping have a residual surface while one has a plain surface treatment. Rim diameter could not be calculated on any of the rims. Lip profile is rounded on three of the rims and is flattened on one. The rim form is divided between one rolled and three plain treatments.

Shell-Chert Tempered Rims

Shell-chert tempered rims are represented by 18 examples which comprise 14.2 percent of the total rim sample. Twelve (66.7 percent)

of these are excurve with one (5.6 percent) incurvate example, and five (27.8 percent) indeterminate forms.

Rim diameter was calculated on seven of the excurve rims. These diameters range from 2cm to 32cm with an average of 17.7cm. The surface finish on all of the examples is plain. The lip profile is rounded on seven of the rims and flattened on five. The rim form is plain on ten of the rims and rolled on two.

The one incurvate example is plain in surface treatment with a rim diameter of 30cm. The lip profile is flattened with the rim form being plain.

All five of the rims with indeterminate profiles have residual surfaces, rounded lip profiles and plain rim forms.

Shell-Clay Tempered Rims

The two examples of this tempered grouping are excurve with plain surface finishes. The rim diameter could be determined for one of the rims and is 12cm. The lip profile on both rims is rounded while the rim form is plain on one and rolled on the other.

Shell-Limestone-Chert Tempered Rims

The six rims tempered with a combination of shell, limestone, and chert comprise 4.7 percent of the rim sample. Four (66.7 percent) of these are excurve while incurvate and indeterminate forms are represented by one (16.7 percent) example each.

Two of the excurve rims have rim diameters of 6cm; the other four are not measurable. The surface finish on the four rims is plain. The lip profile of three of these rims is rounded and one is flattened. The rim form is plain on three of the rims and rolled on one.

The one incurvate example has a plain surface finish and a rim diameter of 22cm. The lip profile is a combination of rounded and flattened, and the rim form is plain.

The one rim with an indeterminate rim curvature has a residual surface with a flattened lip profile and a plain rim form.

Shell-Chert-Clay Tempered Rims

The two rims with shell-chert and clay temper are excurve with plain surface finish, rounded lips and plain rim form. A rim diameter of 16cm was obtained for one of the rims.

Shell-Limestone-Chert-Clay Tempered Rims

Three rims representing this temper grouping are present in the collection. All of the rims are excurve with a plain surface finish. Rim diameter could be determined for each of the three rims and ranged from 28cm to 44cm with a mean of 34cm. The lip profile is flattened on two of the rims and rounded on the other. All three have plain rim forms. Figure 18 illustrates a shell-limestone-chert-clay tempered excurve rim from Feature 98.

D. Handles

A total of 31 ceramic handles was recovered from Mississippian features at 40CF32. Thirty of these are loop handles and one is a strap handle. Data on the handles are presented in Table 20 organized by feature provenience. In the discussion which follows, temper groups are used as the basis for organization of the presentation of the handles.

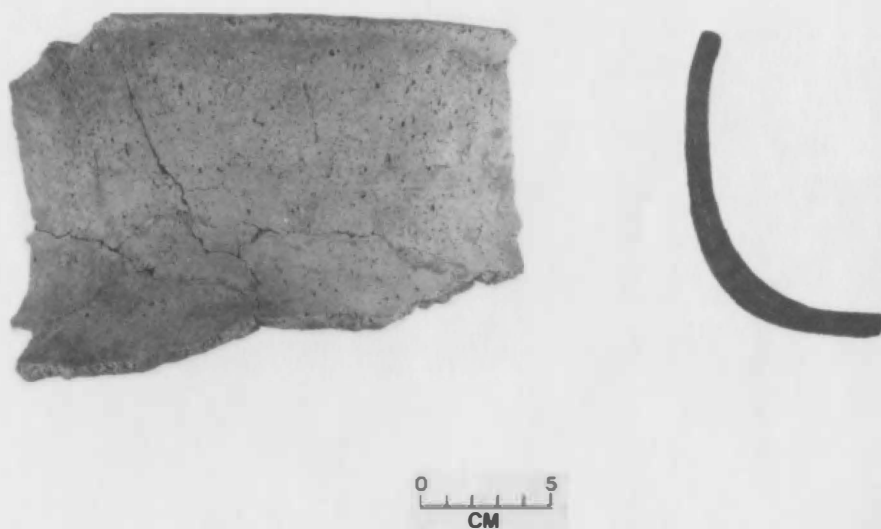


FIGURE 18. Shell-limestone-chert-clay tempered excurvate rim.
Rim profile at right.

TABLE 20. Ceramic Handles Listed by Feature Provenience.

Feature No.	Form	Temper	Description	Cross-Section	Comments
25	Loop	Shell-Limestone-Chert	Complete	Oval	
46b	Loop	Shell-Limestone	Mid-Section Fragment	Oval w/Flattened Interior	
46b	Loop	Shell-Limestone	Mid-Section Fragment	Oval	
46b	Loop	Shell	Riveted End	-	
51	Loop	Shell-Limestone	Mid-Section w/ Riveted End	Oval	
52	Loop	Shell-Limestone	Mid-Section Fragment	Oval	
76	Loop	Shell-Chert	Mid-Section Fragment	Oval	
78	Loop	Chert	Mid-Section Fragment	Oval w/ Flattened Interior	
79	Loop	Shell	Luted End	Circular	
79	Loop	Shell-Limestone-Chert	Mid-Section Fragment	-	
79	Loop	Shell-Limestone-Chert	Mid-Section Fragment	-	
79	Loop	Shell-Limestone	Mid-Section Fragment	Flattened Oval	
79	Loop	Shell-Chert-Clay	Mid-Section Fragment	Circular	
79	Loop	Shell-Limestone	Riveted End	Oval	
79	Loop	Limestone-Chert	Luted End	Oval	Node on Loop
98	Loop	Shell-Limestone	Luted End	Oval	
98	Loop	Shell-Limestone-Chert	Luted End	Flattened Oval	Bifurcated Loop

TABLE 20. (continued)

Feature					
No.	Form	Temper	Description	Cross-Section	Comments
98	Loop	Shell-Limestone	Mid-Section Fragment	Flattened Oval	
112	Loop	Shell-Limestone-Chert	Mid-Section Fragment	Rectangular	
120	Loop	Shell-Limestone	Riveted End	-	
120	Loop	Shell-Limestone	Luted End	Flattened Oval	
500	Loop	Shell-Limestone-Chert	Mid-Section Fragment	Oval w/ Flattened Exterior	
500	Loop	Shell-Chert	Mid-Section Fragment	Oval	
503	Loop	Shell	Luted End	Oval	
511	Loop	Shell	Mid-Section Fragment	Oval	
511	Loop	Shell-Limestone-Chert	Mid-Section Fragment	Rectangular	Fluted Loop
75-6	Loop	Shell	Luted End	Flattened Oval	
75-6	Loop	Shell-Limestone-Chert-Clay	Complete	Flattened Oval	
75-6	Loop	Shell-Chert	Complete		Twisted Coils
75-6	Loop	Shell-Chert-Clay	Residual Mid-Section Fragment		
75-6	Strap	Shell-Limestone	Mid-Section Fragment	Oval	

Shell Tempered Handles

Five loop handles with shell tempering were recovered. One riveted end and three luted ends are present. One mid-section fragment is also present. Cross-sections ranged from circular to oval to flattened oval.

Chert Tempered Handles

One mid-section fragment of a loop handle was found in Feature 78. The fragment is oval in cross-section with a flattened interior.

Shell-Limestone Tempered Handles

Ten loop handles and one strap handle were found which are tempered with a combination of shell and limestone. Five of the loops are mid-section fragments. Three are riveted ends, and two are luted ends. Cross-sections of the loop handles ranged from oval to flattened oval and oval with flattened interior forms. The one strap handle in the assemblage was recovered from Feature 75-6. It consisted of a central fragment.

Shell-Chert Tempered Handles

Three examples of loop handles tempered with a combination of shell and chert are present in the assemblage. These consist of two mid-section fragments with oval cross-sections as one complete loop handle which came from Feature 75-6. The complete loop (Figure 19a) consists of two coils which have been crossed leaving a longitudinal groove at its lower point of attachment and an opening at the rim where the two coils attach. Both attachments appear to probably be luted rather than riveted.

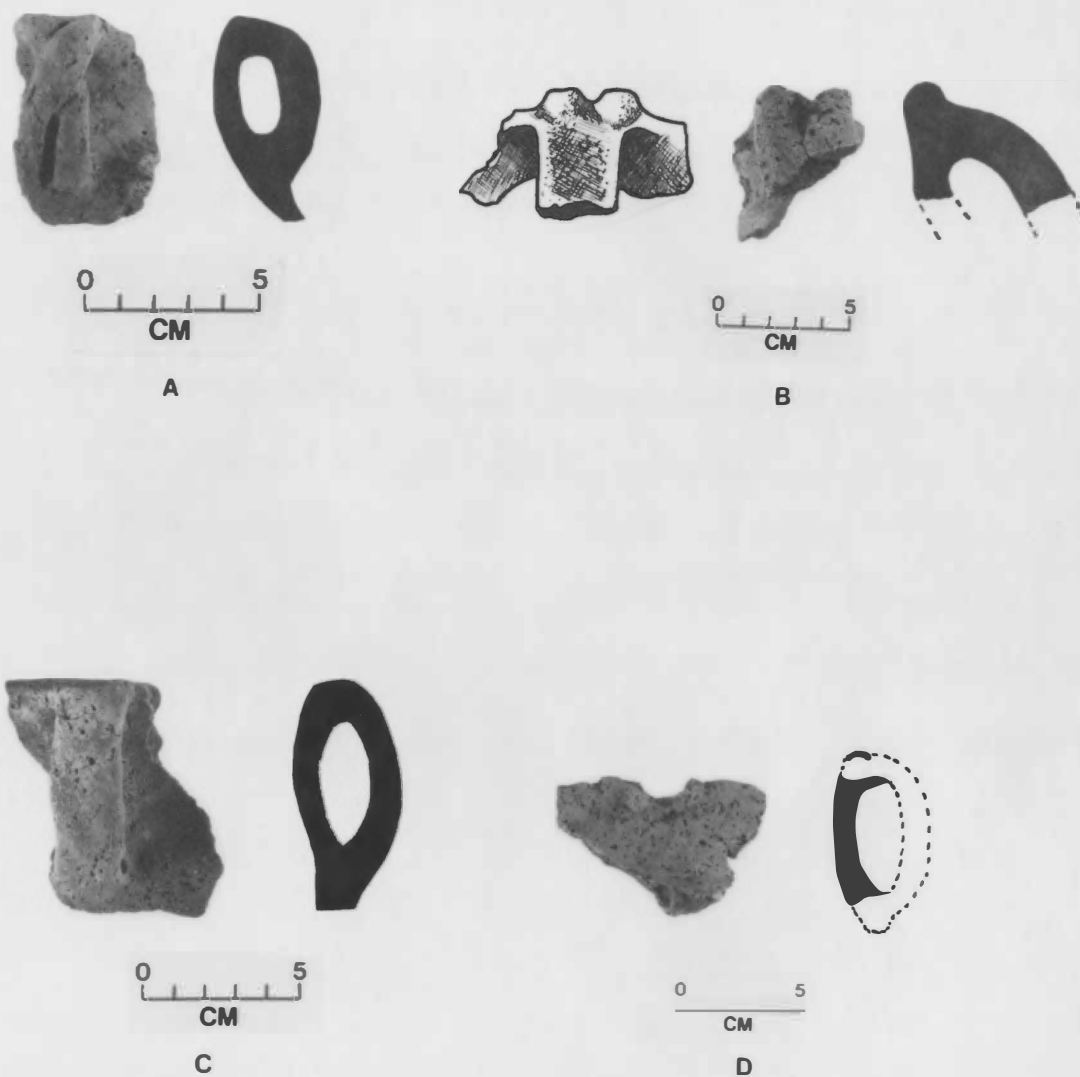


FIGURE 19. Ceramic handles. A. Shell-chert tempered loop handle; B. Shell-limestone-chert tempered loop handle (reconstruction to left); C-D. Shell-limestone-chert-clay tempered handles. Profiles at right.

Limestone-Chert Tempered Handles

One example of a loop handle with a combination of limestone and chert temper was recovered from Feature 79. It consists of a luted end with oval cross-section and a single node located on the exterior of the loop.

Shell-Limestone-Chert Tempered Handles

Seven loop handles with shell-limestone and chert temper occur in the sample. These consist of a complete example from Feature 25 which has an oval cross-section, a luted top attachment and an undetermined form of attachment at the lower point. A fragmentary piece with a luted end and two nodes which are placed on top of the loop attachment at the rim (Figure 19b) was found in Feature 98. In cross-section it is a flattened oval. This conforms to the type of handle termed Bifurcated Loop by Hood (1977: 63). The other five examples are all mid-section fragments. One example from Feature 511 is rectangular in cross-section with slight fluting.

Shell-Chert-Clay Tempered Handles

Two examples of loop handles of this temper grouping were recovered. One is a mid-section fragment with a circular cross-section. The other is a residual mid-section fragment.

Shell-Limestone-Chert-Clay Tempered Handles

One loop handle of this temper group occurred in Feature 75-6 (Figure 19c). The specimen is complete with the cross-section being a flattened oval and the top attachment being luted. The bottom attachment is riveted. Figure 19d illustrates a shell-limestone-clay

tempered sherd which has had a handle riveted at both points of attachment. Only a small portion of the excurved rim with flattened lip is present but illustrates how the top of the handle was situated partially above the rim of the vessel.

E. Miscellaneous Ceramic Artifacts

The purpose of this section is to facilitate the presentation of data on a number of miscellaneous ceramic artifacts which do not readily fit into the previous three descriptive categories. Descriptions of water bottle fragments, beads, pipes, ear plugs, pottery trowels, sherd disks, lugs, and podes follow.

Water Bottle Fragments

Four fragments of water bottles were recovered from Mississippian features at 40CF32. These shall be described individually in the following paragraphs by feature context.

Feature 79 (Figure 20a). This water bottle fragment which appears to be a portion of the head of a hooded water bottle has a fine paste tempered with finely ground shell. It also contains a relatively large piece of chert (2.5mm) which may be a fortuitous inclusion. The sherd averages 6mm in thickness. A node on the sherd appears to represent an ear and suggests that the sherd came from the left side of the head of the vessel.

Feature 113 (Figure 20b). The consistency of the paste of this sherd is comparable to that of the other shell tempered ceramics on the site. In addition to shell, the temper also contains a small quantity of finely ground chert. The sherd varies in thickness from 7mm to 11mm.



FIGURE 20. Ceramic water bottle fragments. A. Head fragment from Feature 79; B. Head-neck fragment from Feature 113; C. Head-neck fragment from Feature 511; D. Head fragment from Feature 75-6.

It appears to have been derived from the neck-head region of the bottle and exhibits an area on the head portion where a slightly raised line has been used to delimit a decoration area. It is possible that this line delimits an appliqued area which has since broken away and has been subsequently smoothed.

Feature 511 (Figure 20c). This sherd also represents a section of the neck-lower head portion of a hooded water bottle. The paste is similar to the example from Feature 113, but it is entirely shell tempered. No design elements are present on the sherd. The thickness ranges from 7.5 to 11mm.

Feature 75-6 (Figure 20d). This fragment represents slightly over one-fourth of the head of a hooded water bottle. The paste of the specimen is shell tempered. A ridge down the side of the sherd probably represents a hair style while a roughly circular raised area possibly represents an ear. No other stylistic elements are present on the sherd which is quite leached and eroded.

Beads

Two ceramic beads were recovered from feature contexts at 40CF32. Feature 72 produced a cylindrical bead, 19.3mm in length and 12.7mm in diameter with a perforation 5.5mm in diameter (Figure 21a). The temper appears to be finely ground shell and perhaps limestone. The second bead was recovered from Feature 511. It is roughly circular and flattened with a minimal central perforation of approximately 1mm (Figure 21b). It appears to be made from an untempered clay.

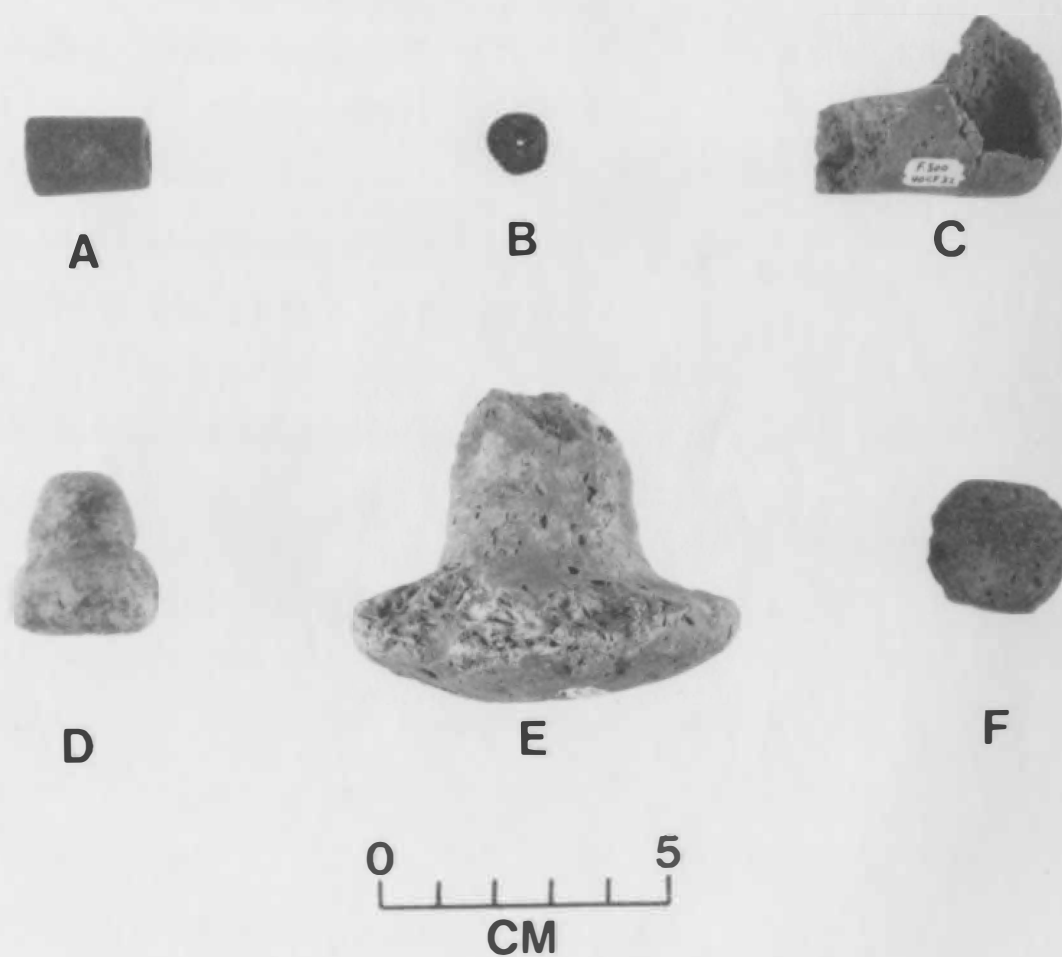


FIGURE 21. Miscellaneous ceramic artifacts. A. Cylindrical bead; B. Flattened bead; C. Elbow pipe fragment; D. Ear plug; E. Pottery trowel; F. Sherd disk.

Pipes

Three pipe fragments were recovered in Mississippian features.

A fragment of an elbow pipe (Figure 21c) was found in Feature 500. It is manufactured from a fine shell tempered paste. A portion of the bowl and the stem is represented. No measurements are possible due to the fragmented nature of the artifact.

Feature 120 produced the proximal end of the stem of a ceramic pipe tempered with shell. One side of the stem (the top?) is fluted longitudinally. The hole in the stem is 4mm in diameter. In cross-section the stem is roughly rectangular.

Feature 511 produced a small fragment of a ceramic pipe stem similar to the one recovered from Feature 120. The paste is shell tempered.

Ear Plug

One probable ear plug (Figure 21d) was found in Feature 79. The artifact is manufactured from a dense, untempered clay. It resembles a mushroom in shape as one lobe is considerably larger than the other (24.5mm vs. 15.7mm). The specimen exhibits a shallow groove between the two lobes.

Pottery Trowel

One fragmented pottery trowel (Figure 21c) was recovered from Feature 500. It is essentially an inverted "mushroom" in shape; however, it is not possible to determine the configuration of the handle area due to a break. The working edge of the artifact is 62mm in diameter. The trowel is manufactured from a shell tempered paste.

Sherd Disk

One small sherd disk (Figure 21f, page 119) with a diameter of 25mm was recovered from Feature 511. The disk was manufactured from a plain shell-limestone-chert tempered sherd. The edges of the artifact are slightly ground.

Applique

Feature 26 produced one small piece of shell tempered pottery which is probably an applique of some unrecognizable form.

Lug

One small shell tempered lug was found in Feature 18.

Pode

Feature 110 produced a single limestone tempered pode. This artifact probably originated in one of the earlier Woodland components of the site.

CHAPTER IX

LITHICS

Lithic material comprised the largest category of cultural material recovered from the Mississippian component features at 40CF32, accounting for a total of 42,108 pieces. The material was initially analyzed in the Normandy Archaeological Project laboratories by a number of individuals, and was later selectively re-examined for the purposes of this thesis with specific categories of artifacts such as projectile points being emphasized in this process.

The lithic material from the Eoff I site was analyzed utilizing a typology developed for the Normandy Archaeological Project (Faulkner and McCollough 1973: 63-327), which is based on morphological attribute clusters and intuitive implement-type groupings. The lithic types were grouped into five major morpho/technological classes which will guide the organization of this presentation. These are: (1) primary lithic debris, (2) unifacial implements, (3) bifacial implements, (4) projectile points/knives, and (5) ground stone implements. Types within these classes are assigned unique type numbers which facilitate the presentation of the data in tabular form and also in discussion. The lithic material was also classified as to the raw material from which it was manufactured.

In this descriptive treatment of the lithics, an explanatory section will be presented first which lists the raw materials represented

in the assemblage. The five morpho/technological classes of lithic types will then be presented with brief descriptions and discussions of the various types represented being given. Data for the distribution of types among features will be presented in tabular form for each class of artifacts. A second table for each class will contain a breakdown of artifact types by raw material type.

A. Lithic Raw Materials

The upper Duck River Valley is an area of varied lithic resources due to the exposure of a series of lithological shelves of different geologic periods from west to east. An understanding of the availability, distributions, and usage patterns of the lithic resources of the area has been one of the major goals of the Normandy Archaeological Project since its inception. A lithic raw material typology was presented in the first volume of the Normandy publication series which was based on the analysis of the initial survey material (surface collections) from the reservoir precinct, and limited field survey during the 1972 field seasons of the project (Faulkner and McCollough 1973: 52-62). This initial survey was supplemented by a more intensive survey which deals "in detail with the identification of significant raw material classes, and their geologic context, forms, quantities, quality, and spatial distribution in natural occurrence" (Penny and McCollough 1976: 140-194).

Analysis of the lithics recovered from the Mississippian features at 40CF32 resulted in the documentation of the use of 19 raw material types. These types and their alphabetical designators are listed in Table 21.

TABLE 21. List of Lithic Raw Materials Recovered.*

Designator	Type
A	Blue-Gray and Tan Chert
B	Pink Chert
C	Gray Banded Chert
D	Fossiliferous Chert
F	Blue-Green Nodular Chert
G	Dover Chert
I	Vein Quartz
J	Quartzite
K	Chalcedony
L	Horse Mountain Agate
M	Unidentified Gray Chert
N	Mat Brown (Cobb and Faulkner 1978: 76)
O	Limestone
P	Chattanooga Shale
Q	Mudstone, Siltstone
R	Fine Grained Sandstone
S	Medium to Fine-grained Sandstone or Conglomerate Sandstone
T	Black Hematite
V	Green Shale

*Unless otherwise noted the primary references for these types are: Faulkner and McCollough 1973: 52-62 and Penny and McCollough 1976: 140-194).

B. Primary Lithics

The primary lithics sub-assemblage at 40CF32 from the Mississippian component features is composed of 41,714 pieces representing 10 types in the Normandy Lithic Typology. Basic descriptions of these 10 types which follow are extracted from Faulkner and McCollough (1973: 80-81).

1. Hammerstone (N = 9)

This type represents a spherical, subspherical, or polyhedral chunk with wear attributable to battering.

2a. Crude Subconical Core (n = 8)

This type refers to a chert or other nucleus from which flakes have been detached. This particular subtype will stand on its platform and the angle between the flake removal surface and the platform is greater than 45°.

2b. Flat Core (n = 2)

On this type of core the angle between the striking platform and the flake removal surface is less than 45°.

2c. Discoidal Core (n = 1)

Discoidal cores are those cores which have flake removals converging to the center on one or both faces, are discoidal in outline, and which are biconvex or planoconvex in section.

2d. Amorphous Core (n = 120)

This type refers to cores which do not fit the criteria of the above listed categories and on which the flake forms are amorphous.

3. Core Trimming Flake (n = 11,966)

This type includes unaltered decortication flakes, core rejuvenation flakes, and core fragments.

4. Flat Flake (n = 29,678)

These are flakes removed by direct percussion which have no cortex.

5. Bifacial Thinning Flakes (n = 353)

This flake type exhibits scars of previous bifacial removals on the dorsal surface and retains evidence of removal from a bifacial blank on the platform.

6. Utilized Flake (n = 551)

This type includes flakes which exhibit irregular or localized retouch, small irregular edge removals, and/or edge wear.

7. Miscellaneous Retouched Flake (n = 26)

This type describes flakes which exhibit regular intentional retouch on one or more margins but which do not correspond to any of the morphological categories of unifacial implements.

The distribution of these 10 primary lithic types among the Mississippian feature at 40CF32 is given in Table 22. A breakdown of these types by raw material type is given in Table 23.

C. Unifacial Implements

The unifacial implement sub-assembly at 40CF32 is represented by 66 artifacts. Ten types are represented. The following description of these types is taken from Faulkner and McCollough (1973: 81-83).

8. End Scraper on Flake (n = 4)

This tool is a flake which exhibits one or more convex working edges on the distal or proximal end formed by a continuous line of relatively steep retouch.

TABLE 22. Distribution of Primary Lithic Types in Features.

Feature Number	PRIMARY LITHIC TYPES										Total	%
	1	2a	2b	2c	2d	3	4	5	6	7		
13						9	26	1			36	0.09
14					2	80	64	3	11		160	0.4
15						23	17	2	1		43	0.1
16					3	342	451	5	9		810	1.9
18						4	5		1		10	0.02
21					3	434	519	8	5		969	2.3
22						20	19	1	1		41	0.1
24					2	75	110	3	1		191	0.5
25					5	339	524	6	8		882	2.1
26	1				6	202	373	5	16		603	1.4
36						14	10				24	0.06
39					2	140	244	2	7		395	0.9
45					2	233	271	1	12		519	1.2
46a					2	186	674		3		865	2
46b						116	344	2	7		469	1.1
50						25	33				58	0.1
51						22	14		2		38	0.09
52						22	38				60	0.1
62						104	179				283	0.7
66					1	446	1802	1	3		2253	5.4
72						61	266	2	10		339	0.8
75					2	263	306	50	21		642	1.5
76					3	435	636	8	19		1101	2.6
78						235	812		3		1050	2.5
79			1	1	20	1175	3419	2	116	3	4737	11.4
98	3	1			14	1573	5478	33	69		7171	17.2
107	1				1	47	59	14	6		128	0.3
110					1	99	145	39	10	1	295	0.7
112						45	61		1		107	0.3
113					1	309	2068	2	32		2412	5.8
118						24	20	4	1		49	0.1
120					12	282	1265		14		1573	3.8
500	1	2			7	1812	3423	30	41		5316	12.7
503					3	191	319	11	11		535	1.3
511	1	3			13	1622	3642	52	56		5389	12.9
537						87	316	5	4		412	1.0
75-6	2	2	1		14	763	624	61	28	20	1515	3.6
75-26						90	88		22		200	0.5
75-27							5				5	0.01
75-36					1	17	9			2	29	0.07
TOTAL	9	8	2	1	120	11966	28678	353	551	26	41714	99.6
PERCENT	0.02	0.02	0.005	0.002	0.3	28.7	68.7	0.8	1.3	0.06	99.9	

TABLE 23. Breakdown of Primary Lithic Types by Raw Material.

Raw Material Types	PRIMARY LITHIC TYPES										Total	%
	1	2a	2b	2c	2d	3	4	5	6	7		
A	6	5	1	1	102	7988	19702	215	358	18	28296	67.8
B	2		1		9	3279	6436	85	85	3	9900	23.8
C		2			6	573	2382	42	92	5	3102	7.5
D					1	30	10				41	0.1
F		1			2	71	110	8	10		202	0.5
G								1	4		5	0.01
I	1					4	11				16	0.04
J						3	2	1			6	0.01
K						2	6				8	0.02
L							1		1		2	0.005
M						15	18	1	1		35	0.08
N						1					1	0.002
Total	9	8	2	1	120	11966	28678	353	551	26	41714	100
Percent	0.02	0.02	.005	.002	0.3	28.8	68.9	0.6	1.3	0.06	100	

10. Side Scraper on Flake (n = 19)

This type describes a flake which exhibits one or more convex, straight, or long, shallow concave working edges formed by a continuous line of relatively steep retouch on the lateral margin(s) of the flake.

13. Truncated Flake (n = 2)

This type is a flake with a retouched truncation of any form at any location.

14. Notched Flake (n = 12)

Type 14 refers to flakes which exhibit one or more multiple blow notches which are deep relative to their width at the edge of the piece.

15. Spokeshave (n = 7)

This unifacial tool type is a flake with an intentional semicircular multiple-blow notch which is broad and deep.

16. Denticulate Flake (n = 9)

This type refers to a flake with a regular series of adjacent single- or multiple-blow notches, intentionally producing a jagged or serrated edge.

17. Perforator (n = 3)

Faulkner and McCollough describe this type as a flake with a short narrowed and pointed projection formed by marginal retouch on both sides of the projection, converging to a point.

18. Graver (n = 8)

This is a flake with one or more tiny sharp pointed projections, formed by localized retouch, which is sometimes alternate.

19. End and Side Scraper (n = 1)

This type refers to a combination tool, exhibiting two well defined morphological implement types (Types 8 and 10).

23. Miscellaneous Unifacial Implements (n = 1)

The one tool assigned to this type has three working edges which were prepared on extremely large bulb of percussion from a flake. The platform portion of the flake has steep retouch as does one side of the flake, both of which are probably related to scraping functions. The distal portion of the flake exhibits fine unifacial flaking which forms an acute edge suitable for cutting.

Table 24 presents the distribution of the unifacial implements in the features at 40CF32. The breakdown of these implement types by raw material type is included in Table 25.

D. Bifacial Implements

A total of 121 bifacial implements representing 11 types were recovered from the Mississippian features at 40CF32. Brief descriptions of these types taken from Faulkner and McCollough (1973: 83-86) follow.

24. Miscellaneous Thick Biface: Amorphous Form (n = 38)

This type includes bifaces in early stages of manufacture and also fragments of amorphous pieces which when unbroken might have been classifiable into other types of bifacial implements.

25. Thick Biface: Blank, Roughout (n = 30)

This type is described as symmetrical thick bifaces, most lanceolate, which were broken or discarded in an advanced stage of thinning. This type may also contain some broken projectile points/knives.

26. Knife, Including Asymmetrical Knife (n = 15)

The Type 26 knife includes lanceolate bifaces and biface fragments which have asymmetrical blades and/or a finished cutting edge on only one blade margin.

TABLE 24. Distribution of Unifacial Implement Types in Features.

Feature Number	UNIFACIAL IMPLEMENT TYPES										Total	%
	8	10	13	14	15	16	17	18	19	23		
14		1									1	1.5
16					1						1	1.5
21	1										1	1.5
24		1									1	1.5
25		3				1					4	6.1
26		1									1	1.5
45		1		1							2	3
46b				1							1	1.5
62				2							2	3
72		1	1					1			3	4.5
75		1		2						1	4	6.1
76		1		1		1	1				4	6.1
79	1	3		1	1		1	3			10	15.2
98		1	1	1		1					4	6.1
107		1									1	1.5
110	2	1		1							4	6.1
113					2						2	3
118								2			2	3
120					1			1			2	3
500		1		1	1	1	1				5	7.6
503		1			1						2	3
511						5		1			6	9.1
75-6		1		1					1		3	4.5
TOTAL	4	19	2	12	7	9	3	8	1	1	66	99.9
PERCENT	6.1	28.8	3	18.9	10.6	13.6	4.5	12.1	1.5	1.5	100.6	

TABLE 25. Breakdown of Unifacial Implement Types by Raw Material Type.

Raw Material Types	UNIFACIAL IMPLEMENT TYPES										Total	%
	8	10	13	14	15	16	17	18	19	23		
A	3	15	1	11	6	6	3	6		1	52	78.8
B						3		2			5	7.6
C	1	3	1	1							6	9.1
F					1						1	1.5
K									1		1	1.5
M		1									1	1.5
TOTAL	4	19	2	12	7	9	3	8	1	1	66	100
PERCENT	6.1	28.8	3.0	18.2	10.6	13.6	4.5	12.1	1.5	1.5	99.1	

27. Preform: Knife (n = 9)

This type consists of lanceolate bifaces and fragments which are fully thinned and edge retouched. Faulkner and McCollough have noted that by stemming or notching only, complete specimens of this type could be converted to projectile point/knife types, and that many fragmentary artifacts assigned to this type were, when unbroken, stemmed or notched projectile points/knives.

28. Core Scraper (n = 2)

The core scraper type refers to a core of any form on which heavy marginal retouch has been applied to a significant portion of the striking platform.

29. Chopping Tool (n = 7)

This type consists of a core of nucleiform piece which has a sharp cutting edge produced by bifacial removals on a segment of their perimeter producing a working tool edge of 30 to 45°. Heavy wear or battering is characteristic of this type.

31. Chisel (n = 1)

This type is a thick elongate biface with a utilized straight to convex working edge at one end of the long axis. No modification for hafting is present.

32. Side Scraper (n = 1)

Faulkner and McCollough define this type as a biface which exhibits one or more convex, straight, or long concave working edges formed by a continuous line of relatively steep retouch on one side of the artifact. The working edge is placed parallel to the long axis of the tool.

34. Notched Biface (n = 1)

This type includes those bifaces which exhibit one or more multiple blow notches which are relatively deep compared to their widths. The notches on examples exhibiting multiple notches are widely spaced and not to be confused with denticulates.

35. Denticulate (n = 2)

In the Normandy lithic typology this type is defined as a biface which exhibits a regular series of adjacent single- or multiple-blow notches which produce a serrated edge.

36a. Drill (n = 11)

Drills are defined as bifaces with long rod-like blades, narrow and thick, diamond-quadrilateral in cross-section. The blade is produced by bifacial removals. The blade section tapers uniformly to a blunt distal point. One specimen recovered from Feature 98 is of microtool proportions being 14mm in length and 2mm in thickness.

36b. Perforator (n = 4)

Perforators are bifaces with short narrowed and pointed projections formed by lines of unidirectional marginal retouch on both sides of the projection which converges to a point. Included in the sample of perforators is one microtool example which was recovered from Feature 503. The tool is 16mm in length, 7.8mm wide at the proximal end and 1.5mm in thickness.

The distribution of bifacial implements in the Mississippian features is given in Table 26. The types are broken down by raw material type in Table 27.

TABLE 26. Distribution of Bifacial Implement Types in Features.

Feature Number	BIFACIAL IMPLEMENT TYPES												Total	%
	24	25	26	27	28	29	31	32	34	35	36a	36b		
14		1											1	0.8
21	2	2				1							5	4.1
25	1	1	2		1								5	4.1
26	2		1										3	2.5
45			1										1	0.8
46a	3	1											4	3.3
46b			1										1	0.8
51			1										1	0.8
66	1												1	0.8
72				1		1	1						3	2.5
75		1											1	0.8
76	3	1	1										5	4.1
78	2												2	1.7
79	7	6	1	2		2		1					19	15.7
98	2	4							1		6	2	15	12.4
110			3	1							1		5	4.1
113	1		1										2	1.7
118				1									1	0.8
120			1										1	0.8
500	3	3		1		1					2		10	8.3
503	2				1							1	4	3.3
511		5		1		2					1	1	10	8.3
75-6	8	3	1	2							1		15	12.4
75-26		2	1							2			5	4.1
75-36	1												1	0.8
TOTAL	38	30	15	9	2	7	1	1	1	2	11	4	121	99.8
PERCENT	31.4	24.8	12.4	7.4	1.7	5.8	0.8	0.8	0.8	1.7	9.1	3.3	100	

TABLE 27. Breakdown of Bifacial Implement Types by Raw Material Types.

Raw Material Types	BIFACIAL IMPLEMENT TYPES												Total	%
	24	25	26	27	28	29	31	32	34	35	36a	36b		
A	23	20	13	7	1	7	1	1	1	2	8	1	85	70.2
B	7	8		1	1						1		18	14.9
C	8	1	1									3	13	10.7
F		1	1	1							1		4	3.3
M											1		1	0.8
TOTAL	38	30	15	9	2	7	1	1	1	2		4	121	100
PERCENT	31.4	24.8	12.4	7.4	1.7	5.8	0.8	0.8	0.8	1.7	9.1	3.3	100	

E. Projectile Points/Knives

A total of 187 projectile points/knives was recovered from the Mississippian component features at 40CF32. Eighty artifacts of this total (42.8 percent) can be assigned to 40 types established in the Normandy Archaeological Project lithic typology (Faulkner and McCollough 1973) and subsequent additions. The remaining artifacts were assigned to Types 58, 111, and 138 which encompass the following descriptive categories, respectively: Unidentifiable Broken Triangular, Unidentifiable Broken Stemmed and Notched, and Unidentifiable Distal Ends.

Only 8 of the 40 types represented in the assemblage are directly referable to the Mississippian component; these are Types 43-49. The 32 other types present in the assemblage were probably introduced into Mississippian contexts either by collection by the Mississippian inhabitants of the site, or by natural means such as slumping of older midden into a Mississippian feature. These processes will be discussed more fully in a later section.

In the type descriptions which follow, primary emphasis will be placed on those types which are directly referable to the Mississippian component. Other types will be discussed briefly with references being given for additional information.

43. Small Triangular, Thin Narrow Excurvate Blade (n = 1) (Figure 22a)
(Faulkner and McCollough 1973: 89-90)

One of these elongate isosceles triangular projectile points was recovered from Feature 25. The blade edges are slightly symmetrical and excurvate. The base is minimally incurvate. The cross-section is

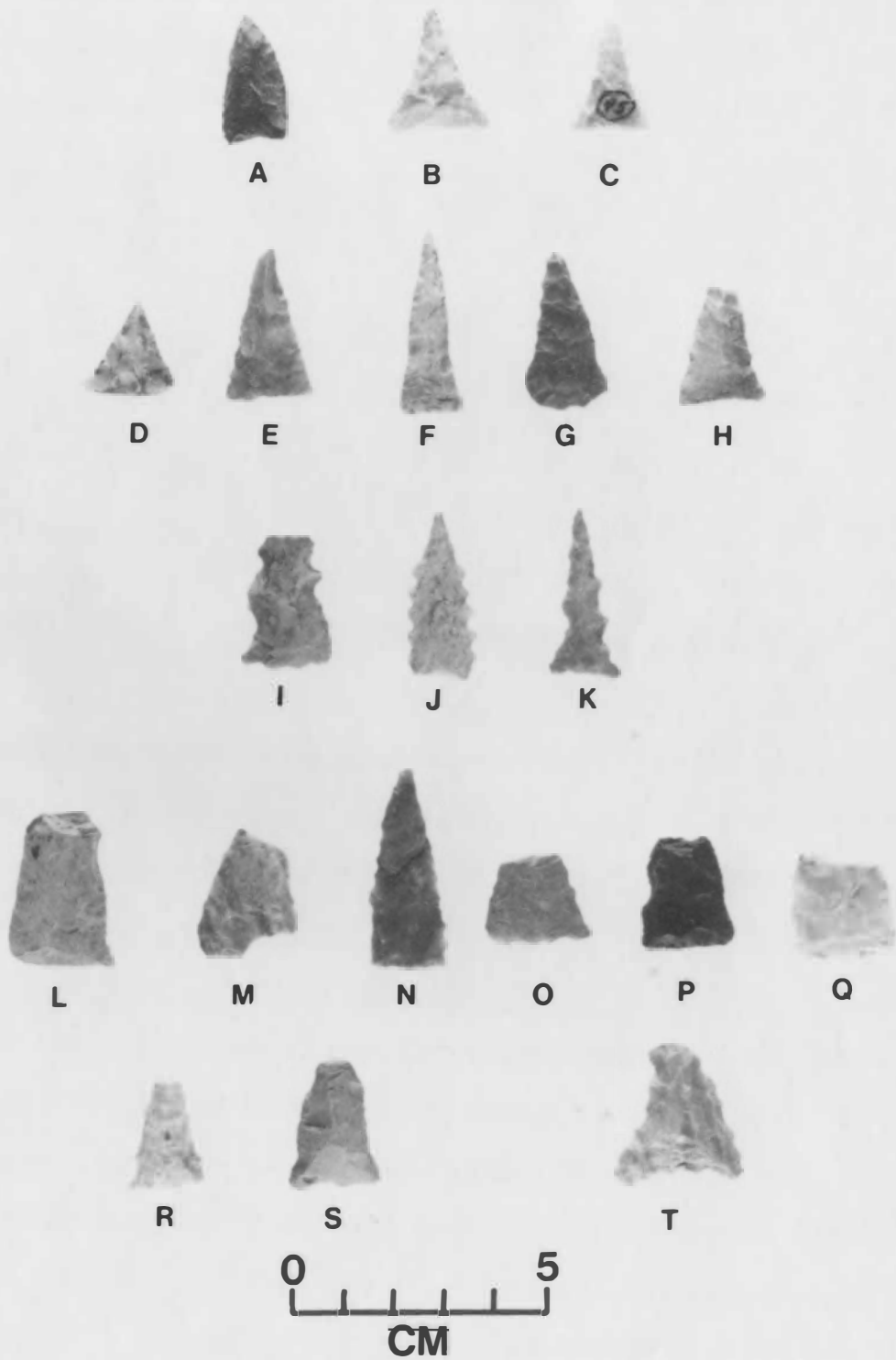


FIGURE 22. Triangular projective point types 43-49. A. Type 43; B. Type 44; C. Type 45; D-H. Type 46; I-K. Type 46a; R-S. Type 47; I-Q. Type 48; T. Type 49.

bi-convex. The artifact is 24.6mm in length, 12.7mm in width, and 4.2mm in thickness.

44. Small Triangular, Thin Narrow Incurvate Blade (n = 1) (Figure 22b)
(Faulkner and McCollough 1973: 90)

Feature 79 produced one example of this triangular projectile point type. The blade is a slightly elongated isosceles triangle with incurvate blade edges and a straight base. In cross-section, the artifact has a median ridge. The length of the projectile point is 23.3mm; the width is 20.3mm, and the thickness is 6.8mm.

45. Small Triangular, Thin Narrow Incurvate Blade (n = 1) (Figure 22c)
(Faulkner and McCollough 1973: 90)

This small triangular projectile point type was found only in Feature 79 where one example was recovered. The blade is an isosceles triangle with incurvate blade edges and a slightly incurvate base. The artifact is flattened in cross-section. The length of the point is 22.2mm while the width is 15.9mm, and the thickness is 3.7mm.

46. Small Triangular, Thin Narrow Straight Blade (n = 5) (Figure 22d, e, f, g, h)
(Faulkner and McCollough 1973: 91)

The four artifacts representing this projectile point type were recovered from five features at 40CF32 (Feature 45, 76, 79, and 98).

The example from Feature 45 (Figure 22h) has an isosceles triangular blade with essentially straight edges. The base is only slightly incurvate with the cross-section being bi-convex. The extreme distal end is fractured but the length of the artifact is estimated to have been approximately 30mm. The width is 17.5mm and the thickness is 5.2mm.

The Type 46 projectile point from Feature 76 (Figure 22e, page 138) has an isosceles triangular blade with straight blade edges and base. In cross-section the artifact is bi-convex. The length is approximately 31mm, estimated due to an impact fracture on the extreme distal end. The width is 17.4mm and the thickness is 5mm.

Feature 79 produced one Type 46 projectile point (Figure 22f). The specimen has an extremely elongated isosceles triangular blade with recurvate blade edges which apparently resulted from the resharpening of the blade. The base is straight and the cross-section is bi-convex. The length of the artifact is 36.3mm while the width is 12.3mm and the thickness is 4.4mm.

Two examples of Type 46 projectile points were retrieved from Feature 98. One of these (Figure 22d) has an equilateral triangular blade with straight blade edges and base. The cross-section of the artifact exhibits a distinct median ridge. The length of the point is 18.1mm with the width being 18.2mm. The thickness is 6.1mm. The other example of this type from Feature 98 (Figure 22g) appears not to have been finished due to problems in the removal of an area of cortex from one side of the artifact. However, it is entirely possible that the artifact could have been used in its state of manufacture. The blade shape is isosceles triangular with one incurvate and one excurvate blade. The base is rounded; thinning of the blade does not appear to have continued to this area after the problems with the cortex were encountered. The length of the projectile point is 31mm with a width of 15.7mm and a thickness of 5.6mm.

46a. Small Triangular, Thin Narrow Straight Serrated Blade (n = 3)
(Figure 22i,j,k, page 138) (Faulkner and McCollough 1974: 218)

This subtype was originally defined based on examples recovered from the Banks I site (40CF34). The Mississippian association of the type was later strengthened by the recovery of several examples from Mississippian features at 40CF111 (Kleinhans 1978). The 40CF32 sample of this type consists of three examples in varying degrees of completeness.

Feature 21 produced the one complete example (Figure 22k) which has an elongated isosceles triangular blade with essentially straight blade edges and deep serrations. The base is slightly incurvate and the cross-section is bi-convex. The length of the artifact is 33mm, the width is 14.4mm and the thickness is 4.5mm.

Feature 118 produced a good example (Figure 22j) of the serrated blades found on this type, but the base was broken on this artifact. The blade is an elongated isosceles triangle with excurve blade edges which are deeply and symmetrically serrated. The last 10mm of the blade at the distal end of the artifact is not serrated. The cross-section is flattened and the thinness of the proximal end of the blade relative to the thickness at the distal end suggests that the base had been thinned. No measurements were taken on this artifact due to its fragmentary nature.

The third example of Type 46a was found in Feature 500 (Figure 22i). The distal end is broken but enough of the blade area is present to indicate that it is isosceles triangular in shape and the blade edges are straight with deep serrations. The base is straight and 17.8mm in width. The cross-section is bi-convex and 16.2mm in thickness..

47. Small Triangular, Thick Narrow Straight Blade (n = 2) (Figure 22r,s)
(Faulkner and McCollough 1973: 91-92)

Two examples of this projectile point/knife type were recovered from Feature 75-6, the semi-subterranean house. Both examples exhibit broken distal ends. The smaller artifact (Figure 22r, page 138) has an isosceles triangular blade with straight blade edges and base. The blade exhibits little, if any, pressure retouch. The extreme distal end is broken, but the length can be approximated to be 26mm. The width is 15mm and the thickness is 5.7mm. The second artifact (Figure 22s) is somewhat longer with irregular recurvate blade edges and a straight base forming an isosceles triangular shaped blade. The artifact appears to have been largely manufactured by direct percussion. Battering on the edges of the broken distal end suggests that the artifact may have been used as a wedge. No length measurement or approximation is possible but the width of the base is 18mm and the maximum thickness which occurs at the broken distal end is 7.8mm.

48. Medium Triangular, Thin Straight Blade (n = 6) (Figure 22l,m,n,o,p,q)
(Faulkner and McCollough 1973: 92)

Type 48 is represented by six examples from the Mississippian features at 40CF32. Feature 21 produced the only complete specimen (Figure 22n) while Feature 79 produced one basal section (Figure 22m), Feature 500 produced one basal section (Figure 22o) and Feature 511 produced three basal sections (Figure 22l,p,q).

The Feature 21 example has a thin, narrow isosceles triangular blade with straight to slightly excurvate blade edges and a straight base. The length of the artifact is 39.2mm while the width is 14.9mm and the thickness is 5.2mm.

The fragmentary example from Feature 79 appears to have had a straight blade and base. No measurements were possible on this artifact.

The one Type 48 projectile point from Feature 500 is fractured at approximate mid-point of the blade. The blade edges and base appear to have been straight. The width of the artifact at the base is 21.1mm, and the thickness of the blade is 4.4mm.

The three examples from Feature 511 are also all fractured at approximately the mid-point of the blade. The smaller example (Figure 22p, page 38) which has straight blade edges and base exhibits battering on the broken distal end suggesting reuse as a wedge or chisel. The width of the artifact at the base is 18.9mm and the maximum thickness which is near the distal end is 4.9mm. The second example from Feature 511 (Figure 22q) has an isosceles triangular blade with straight to slightly excurvate blade edges and base. The basal width is 20.2mm and the minimum thickness is 5.9mm. The break at mid-blade shows no evidence of retouch or use. The third example from Feature 511 (Figure 22l) also has an isosceles triangular blade with straight blade edges and base. A burin scar runs 11mm down blade edge from the break. The width of the artifact at the base is 22.4mm. The maximum thickness is 7mm.

Type 49. Medium Triangular, Thick Straight Blade (n = 1) (Figure 22t)
(Faulkner and McCollough 1973: 92-93)

One artifact from Feature 79 has been assigned to Type 49. The example is somewhat crude and does not strictly conform to the type description. The blade is an isosceles triangle in outline with one

excurvate and one incurvate blade. The base is incurvate. The extreme distal end is absent. Flaking on the artifact appears to have been totally executed by direct percussion, and the blade and basal sections are rather rough. The incurvate blade edge may have either been resharpened or the artifact may represent a projectile point/knife in some stage of manufacture prior to completion. The basal width of the artifact is 26mm and the thickness is 8.8mm. No length measurement was possible.

51. Medium Triangular, Thick Excurvate Blade (n = 2) (Faulkner and McCollough 1973: 93-94)

Two examples of this projectile point/knife type were recovered from Mississippian features at 40CF32; one from Feature 75 and the other from Feature 75-26. This type in primary context is associated with the early Middle Woodland McFarland phase and may be a smaller variant of Type 53. Faulkner and McCollough's comments that the type may have functioned as an ovate knife is supported by the asymmetrical blade of the example from Feature 75-28, and the thickness of the example from Feature 75.

52. Large Triangular, Thick Excurvate Blade (n = 2)

The two examples of this type were recovered from Feature 66, and Feature 75-6. It has been suggested that specimens of this type may have served as a cutting implement as well as a projectile point and is related to Type 51.

52/140. Large Triangular, Thick Excurvate Blade Worked into Perforator (n = 1)

One example of a Type 52 projectile point/knife which had been reworked into a perforator on the distal end was found in Feature 45.

53. Medium-Large Triangular, Straight-Excurvate Blade (n = 2)
(Faulkner and McCollough 1973: 94-95)

This type is diagnostic of the early Middle Woodland McFarland phase and is termed the McFarland Triangular. Two examples were recovered from Mississippian contexts; one from Feature 78 and one from Feature 503.

54. Medium-Large Triangular, Thick-Straight Excurvate Blade (n = 1)
(Faulkner and McCollough 1973: 95-96)

One example of this type was recovered from Feature 500. Faulkner and McCollough have suggested that this type may be related to the Type 53 McFarland Triangular projectile point/knife.

55. Medium-Large Triangular, Straight Elongate Blade (n = 3) (Faulkner and McCollough 1973: 96)

Three basal sections of this early Middle Woodland McFarland phase type were recovered from Feature 500 (2 examples) and Feature 75 (1 example).

56. Medium-Large Triangular, Recurvate Elongate Blade (n = 3) (Faulkner and McCollough 1973: 96-97)

Three examples of this projectile point/knife type were recovered from Mississippian feature contexts at 40CF32. Features 14, 98, and 75-6 each produced one basal section of this type. It is an early Middle Woodland type and is part of the McFarland cluster of projectile points/knives.

57. Medium-Large Triangular, Thick Straight Elongate Blade (n = 1)
(Faulkner and McCollough 1973: 97-98)

Feature 120 produced one example of this type. Although this projectile point type was originally thought to be related to the

Middle Woodland series of medium-large triangular projectile points, it is now thought that this type may be dated from the Early Archaic period (Charles H. Faulkner, Personal Communication).

58. Unidentifiable Broken Triangular (n = 7) (Faulkner and McCollough 1973: 98)

This category includes projectile points/knives which are broken but which can be identified as stemless triangular types.

60. Narrow Thick Lanceolate Stemmed (n = 8) (Faulkner and McCollough 1973: 99)

Eight examples of this projectile point/knife type were recovered from Mississippian feature contexts. This type is diagnostic of the late Middle Woodland Owl Hollow phase of the upper Duck and Elk River valleys. It is a variant of the Bradley Spike and Flint River Spike types of the central Tennessee Valley.

61. Narrow Thick Lanceolate Expanded Stemmed (n = 1) (Faulkner and McCollough 1973: 99-100)

One example of this projectile point/knife type was recovered from Feature 22. The type dates to the late Middle Woodland Owl Hollow phase and is similar to the Bakers Creek projectile point type which is associated with the Copena complex (DeJarnette, Kurjack, and Cambron 1962: 47).

62. Narrow Thick Lanceolate Side Notched (n = 5) (Faulkner and McCollough 1973: 100)

Five examples of this Middle Woodland projectile point/knife type were recovered from Mississippian features at the Eoff I Site.

63. Medium Straight Stemmed, Weak Shouldered, Narrow Blade (n = 1)
(Faulkner and McCollough 1973: 101)

Feature 78 produced one example of this projectile point/knife type. The type has been placed in the Lanceolate Expanded Stemmed cluster which would indicate a Woodland association for the type.

65. Medium Expanded Stemmed, Weak Shouldered, Narrow Blade (n = 1)
(Faulkner and McCollough 1973: 101-102)

This Middle Woodland projectile point/knife type is represented in the Mississippian features by one example from Feature 75-6. It has been suggested that the type may be related to the Bakers Creek type of northern Alabama (DeJarnette, Kurjack, and Cambron 1962).

68. Medium Large Shallow Side Notched, Asymmetrical Blade (n = 1)
(Faulkner and McCollough 1973: 103-104)

One example of a Type 68 projectile point was recovered from Feature 511. It has been suggested that this may be a Woodland type. The asymmetrical blade has been considered to be indicative of the use of the type as a knife.

71. Undifferentiated Side Notched (n = 1) (Faulkner and McCollough
1973: 104-105)

This type which is probably of Woodland origin was recovered from Feature 75-6. The distal end of the artifact is broken, exhibiting the same type of battering exhibited in the Type 48 projectile point described earlier.

78. Small-Medium Short Straight Stemmed (n = 2) (Faulkner and
McCollough 1973: 108)

Features 79 and 75-6 produced single examples of this type which is considered to be Woodland in origin. The example from Feature 79,

which is made from a heat treated dark red fine grained chert with faint gray bands, is fractured approximately 13mm above the stem and this edge exhibits extreme battering suggesting the reuse of this point as a wedge or chisel.

81. Medium Straight-Expanded Stemmed, Barbed, Wide Blade (n = 1)
(Faulkner and McCollough 1973: 109-110)

A single example of this projectile point/knife type was recovered from Feature 511. This type is similar to the Wade type (Cambron and Hulse 1960), and is representative of Terminal Archaic and Early Woodland phases.

84. Medium Undifferentiated Expanded Stemmed, Narrow Blade (n = 2)
(Faulkner and McCollough 1973: 111)

Type 84 is represented by two artifacts that were recovered from Features 16 and 500. Faulkner and McCollough note that this type does not resemble any other named type in the Southeast but suggest that it represents either a Late Archaic or Woodland type.

92. Medium Contracting-Rounded-Long Stemmed, Narrow Blade (n = 2)
(Faulkner and McCollough 1973: 115-116)

Features 75 and 500 each produced one example of this Late Archaic-Early Woodland Rounded Base cluster projectile point/knife type.

93. Medium Contracting-Rounded Stemmed, Wide Blade (n = 3)
(Faulkner and McCollough 1973: 116-117)

Three examples of this Late Archaic-Early Woodland type were recovered from two features at 40CF32. Feature 79 produced two examples while Feature 500 produced one specimen of this type which had been reworked into an end scraper.

97. Medium-Large Short Stemmed, Beveled Base (n = 1) (Faulkner and McCollough 1973: 118)

This type, which is analogous to the Benton Stemmed type (Kneberg 1956), is represented by a basal section which was found in Feature 500.

100. Medium Short Straight Stemmed, Narrow Blade (n = 1) (Faulkner and McCollough 1973: 120)

Feature 75-26 produced one example of this type. It is similar to Cambron's Flint Creek type (1958) and is a Terminal Archaic-Early Woodland type in the upper Duck River Valley.

101. Medium Straight Stemmed, Narrow Blade, Strong Shouldered (n = 1) (Faulkner and McCollough 1973: 120-121)

One example of this Late Archaic type was recovered from Feature 26.

102. Medium-Large Straight Stemmed, Narrow-Wide Recurve Blade, Strong Shouldered (n = 2) (Faulkner and McCollough 1973: 121)

Feature 26 and 98 each produced one example of this point type. It is also known as the Late Archaic Pickwick point type (DeJarnette, Kurjack, and Cambron 1962).

104. Medium-Large Straight-Expanded Stemmed Strong Shouldered, Wide Blade (n = 3) (Faulkner and McCollough 1973: 122-123)

Three examples of this Late Archaic-Early Woodland type were present in Mississippian features at 40CF32. Features 16, 21, and 75 each produced one example.

111. Unidentified Broken Stemmed and Notched (n = 21)

(Faulkner and McCollough 1973: 126)

These artifacts are broken to such an extent that they can be identified only as broken stemmed or notched pieces. One example needs further discussion, however. Feature 500 produced one small point fragment which was relegated to this category because of several fractures in the basal area. However, it is quite similar in its blade form to types representative of the Early Archaic period such as the Kirk and Palmer types (Coe 1964).

112. Medium-Large Corner Removed, Wide Blade (n = 2) (Faulkner and

McCollough 1973: 127)

Two examples of this type which has been attributed to the Early and Middle Archaic periods were recovered from Feature 75-6.

114. Small-Medium Corner Removed (n = 2) (Faulkner and McCollough

1973: 128-129)

Type 114 is represented by two examples from the Mississippian features at 40CF32, one from Feature 46b and one from Feature 98. A Middle to Late Archaic association has been suggested for this point type by Faulkner and McCollough.

121. Large Corner Notched, Asymmetrical Blade (n = 1) (Faulkner and

McCollough 1973: 132)

One example of this Early Archaic type was recovered from Feature 15. The artifact has been reworked diagonally across the blade; however, it is not possible to determine if this reworking was done by the original makers of the point or by the later Mississippian occupants of the site.

133. Small-Medium Shallow Side Notched (n = 2) (Faulkner and McCollough 1973: 139)

Features 52 and 72 produced single examples of this Archaic type. Both artifacts are broken at mid-blade and exhibit the battering which has been discussed previously on several other projectile points in this assemblage.

134. Small-Medium Side Notched (n = 2) (Faulkner and McCollough 1973: 139-140)

Two examples of this type were recovered from Feature 75-6. Faulkner and McCollough consider this type to be representative of the Early Archaic period in the upper Duck River Valley.

135. Lanceolate, Narrow Blade, Tapered Base (n = 1) (Faulkner and McCollough 1973: 140-141)

Feature 79 produced one example of this type. Although noting that the type could be early, Faulkner and McCollough suggest that it probably belongs in a later Archaic or Woodland horizon.

138. Unidentifiable Broken Distal Ends (n = 79) (Faulkner and McCollough 1973: 142)

These are unidentifiable distal ends of projectile points which cannot be associated with any of the other types previously described.

The distribution of the projectile point types in the Mississippian features is summarized in Table 28.

As the primary concern of this thesis is the Mississippian component at the Eoff I site, only the raw material types of the projectile point types directly referable to the Mississippian component will be discussed in this section. Fifteen (75 percent) of the 20

TABLE 28. Distribution of Projectile Point Types in Mississippian Features.

[illegible]

Mississippian projectile points/knives were manufactured from Blue-Gray and Tan Fort Payne chert. Two projectile points (10 percent) were manufactured from heat treated varieties of the Fort Payne chert. One of these is a Type 48 point which was recovered from Feature 500 and is made from the pink variety of the Fort Payne chert. One Type 46 point from Feature 98 is made from a heat treated Fort Payne chert which is dark red with gray bands. Gray banded chert was used in the fabrication of two (10 percent) Type 48 projectile points which were found in Features 21 and 511. One (5 percent) Type 43 point made from unidentified gray chert was recovered from Feature 25.

F. Ground Stone Implements

A total of 21 ground stone implements representing 9 types in the Normandy Lithic Typology were recovered from the Mississippian features at 40CF32. Descriptions of these types follow. Table 29 shows the distribution of ground stone implement types in features. Raw material type is included in parentheses.

144. Pitted Cobbles (n = 1) (Faulkner and McCollough 1973: 156)

This type refers to sandstone cobbles which have a single pecked depression or pit on both faces or flat surfaces. The edges are also modified by battering and pitting. One artifact of this type was recovered from Feature 46b.

148. Pitted Cobbles (n = 1) (Faulkner and McCollough 1973: 157)

This type consists of broken pieces of pitted hammerstones. One example made from sandstone was recovered from Feature 52.

TABLE 29. Distribution of Ground Stone Implement Types in Features.

Feature Number	GROUND STONE IMPLEMENT TYPES								
	144	148	151	153	154	155	156	159	165
21								1(V)	1
26						2(P)			2
46b	1(S)								1
52		1(S)							1
76				1(Q)					1
78				1(Q)				1(V)	2
79								1(V)	1(Q) 2
98						1(P)	1(V)		2
113				1(Q)					1
500			1(Q)		1(Z)				2
508						1(P)			1
511			2(P)						2
75-6						2(P)		1(V)	3
TOTAL	1	1	3	3	1	6	1	4	1 21

151. Abrader (n = 3) (Faulkner and McCollough 1973: 158)

This type consists of pieces of stone which show grooving or ground abraded surfaces. Three abrading stones, all made from a low-density siltstone, were recovered from Mississippian feature contexts at 40CF32. Each of the artifacts exhibits a somewhat different type of wear which is important to a determination of their function.

The largest abrader which is from Feature 500 is 97mm in length, 78mm in width, and 35mm in thickness (Figure 23e). Grooves resulting from the use of the stone run generally parallel to the long axis of the stone on both sides. The deeper abrasions in the stone range from 35 to 75mm in length and have sharp edges. The grooves range up to 3.5mm in depth and are up to 2mm in width. They are V-shaped in cross-section. This configuration would suggest the sharpening of some small objects, perhaps bones for use as awls and/or needles.

A second abrader of siltstone was located in Feature 79 (Figure 23f). The tool is oblong and rounded, 80mm in length and 42mm in thickness. As was the case with the abrader from Feature 500, the grooves resulting from the use of the stone run generally parallel to the long axis of the artifact and are located around the entire diameter. However, one difference is in the configuration of the grooves; they are wide, ranging from 7.5 to 8mm and are not V-shaped in cross-section but rather are convex with slightly deeper wear along the edges of the groove, resulting in a semi-lunate configuration. They range from 22.5 to 40mm in length. This configuration suggests the smoothing of some material of a regular size such as strips of cane which might be used either in the making of baskets or mats.

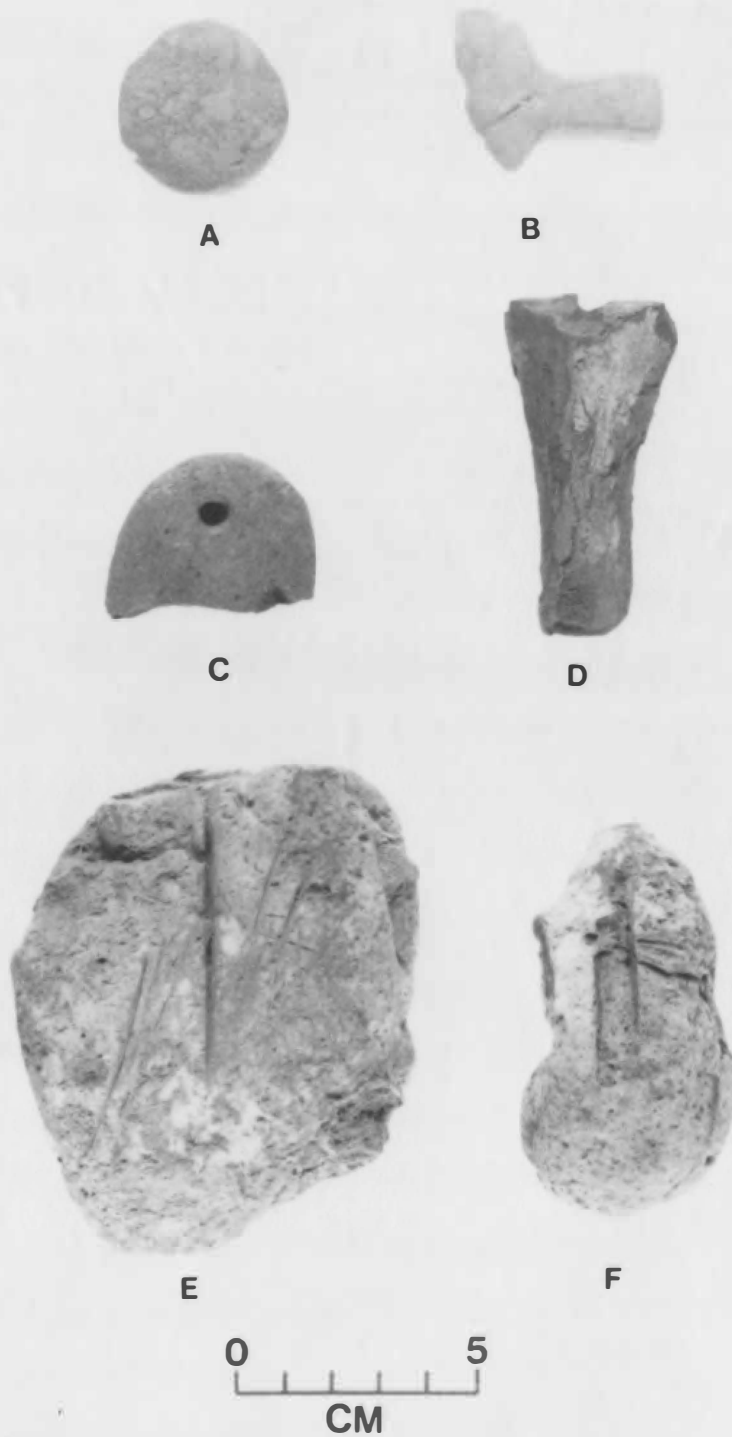


FIGURE 23. Ground stone implements. A. Siltstone disk; B. Problematical siltstone artifact; C. Drilled siltstone pebble; D. Gorget fragment; E-F. Abraders.

The third abrader was recovered from Feature 511. It consists of a blocky piece of siltstone 58mm in length, 45mm in width, and 30mm in thickness which exhibits evidence of use on one side only. The grooves resulting from the utilization of this artifact are similar to those observed on the abrader from Feature 500 with the exception that on the specimen from Feature 511, the groove has a distinct edge on one side only with the other side spreading out to the natural contour of the stone. This would also suggest sharpening but for a wider implement than the one for which the Feature 500 abrader was used.

153. Worked Siltstone (n = 3) (Faulkner and McCollough 1973: 158)

This type was originally established to cover siltstone pebbles which showed various degrees of modification. Here, this type category is used to cover a series of artifacts of specific forms which are manufactured from siltstone. Individual descriptions of these three artifacts follow.

One siltstone disk (Figure 23a) was recovered from Feature 113. It is 35mm in diameter with a thickness of 12mm. The edges are flattened and manufacture striations are present on both faces of the artifact.

A partially drilled siltstone pebble was recovered from Feature 76 (Figure 23c). The holes of this otherwise unmodified artifact were started from both sides of the pebble but not exactly from opposing sides. Each of the drilled holes is 5mm in depth and 6.9mm in diameter. The conical shape of the holes plus striations on the edges of the holes suggest that a stone drill was used in the drilling.

The artifact of problematical function was recovered from Feature 78. The configuration of this ground piece of siltstone

(Figure 23b, page 156) is not associated with any functional class of artifact or any recognizable ornament type. The larger curved end of the artifact has the bitted bi-convex appearance of a celt. One end of this portion is fractured, while a finished, rectangular shaped arm extends opposite the "bitted" end. A shallow groove has been cut across both sides of the "bitted" portion. The maximum length of the artifact is 41.5mm from the "bitted" end to the end of the rectangular arm. The "bitted" portion is 34.5mm in length with a maximum thickness of 10.3mm. The arm which is roughly rectangular in cross-section with rounded edges measures 15 by 11mm and is 24.8mm in length.

154. Ground and Faceted Hematite (n = 1) (Faulkner and McCollough 1973: 158)

One ground piece of hematite which was recovered from Feature 500 is 63.5mm in length by 47mm in width, and is ground on all of its exterior edges; however, no grinding is present on either side of the tabular piece.

155. Worked Black Shale (n = 6) (Faulkner and McCollough 1973: 158)

Six pieces of Chattanooga shale which show evidence of working were recovered from Mississippian feature contexts at 40CF32. One of these is a gorget fragment while the other five pieces are rectangular pieces which may have functioned as digging implements.

The gorget fragment (Figure 23d) was recovered from Feature 508 and consists of slightly less than one half of an expanded center bar gorget. The artifact is broken across a drill hole. At this point the gorget is 35mm in width while the opposite end measures 18.5mm. The diameter of the drilled hole is approximately 4.5mm. The maximum

thickness is 9.5mm. The surface is exfoliated, removing any evidence of manufacturing techniques. This is probably a McFarland phase artifact.

Features 98 and 75-6 produced the most complete examples of the chipped shale tools which are probably digging implements. The example from Feature 98 is rectangular with rounded ends. The maximum length is 103mm with a width of 43.7mm and a thickness of 10.7mm. The artifact exhibits chipping along the edges. The example from Feature 75-6 is similar in configuration to the Feature 98 example with the exception that it is wider and thicker. The maximum length is 104.5mm with a maximum width of 66.3mm and a thickness of 15.5mm. Flaking is limited to the edges of the artifact. The other four examples from the site are too fragmentary to offer any benefit from description, but appear to be of the same general configuration as the two artifacts described above.

156. Green Slate (Greenstone) Celts (n = 1) (Faulkner and McCollough 1973: 158)

One piece of green slate was recovered from Feature 98 which was probably originally a celt based on its cross-section. After initial breakage of the celt on both the bit and poll ends, it was subsequently reused as a hammerstone as is exhibited by wear on several edges (battering and crushing).

159. Worked Green Slate Fragments (n = 4) (Faulkner and McCollough 1973: 159)

This type refers to pieces of worked green slate which are probably fragments of celts. Four such fragments were recovered from features at 40CF32.

165. Sandstone Palette (n = 1) (Kleinhans 1978)

Three articulating sections of a sandstone palette of unknown configuration were recovered from Feature 79. One edge, although somewhat irregular, does show some evidence of smoothing. One side of the artifact has been ground extremely smooth while the opposite side has been left rough suggesting that only one side was used. Although not relevant to the actual size of the artifact, the following measurements are given: Length--87.5mm, Width--68.5mm, and Thickness--7.2mm.

CHAPTER X

SYNTHESIS

In this synthesis of the data recovered from the facilities representing the Mississippian component at the Eoff I site, four topics of major interest will be discussed. The first concern will be the temporal position of the site as documented by radiocarbon and archaeomagnetic dating techniques. In the second section, a discussion of the three technologies--ceramic, lithic, and bone--will be presented. The third section of this chapter will deal with the subsistence basis of the site and the inferences that these data provide for the determination and documentation of the seasonality of occupation. The fourth section will discuss the spatial organization of the site facilities and the distribution of the various classes of artifactual material among the facilities. The concluding section of the chapter will summarize the Mississippian component at the Eoff I site and compare it with other Mississippian sites within and outside the Normandy Reservoir.

A. Temporal Position

The temporal position of the 40CF32 Mississippian component has been documented through a series of six radiocarbon dates and one archaeomagnetic date. Five of the radiocarbon dates were processed by the University of Georgia Center for Applied Isotope Studies and are designated by a UGa series of sample numbers. One radiocarbon sample

was processed by Geochron Laboratories and bears a Gx sample number. The dates are calculated using the 5568 ± 30 years half life for carbon-14. The standard deviations are calculated at the one sigma level meaning that there is approximately a 67 percent chance that the actual date of the sample falls within the range established by the standard deviation. In order that the radiocarbon dates and the archaeomagnetic date be comparable, a correction factor has been applied to the radiocarbon dates to convert them from radiocarbon years to calendar years (Damon et al. 1974: 350-366).

The six radiocarbon dates are listed in Table 30 and individual descriptions of the samples follow. A graphic display of the corrected dates is presented in Figure 24.

UGa-1304. The Feature 98 sample which produced a corrected date of 1414 ± 256 years (A.D. 536) was taken from the bottom fill of the feature and was composed of unidentified charcoal. As will be discussed later in this section, this date is too early to date the context of this feature.

UGa-1306. This sample from Feature 511 consisted of charred cane matting, corn cobs and stalks from Level IV-a.

Gx-4333. This sample is from the same contexts as UGa-1306, consisting of portions of the same sample. The discrepancy between the two dates will be discussed later in this section.

UGa-2021. The Feature 45 sample was composed of charred cane (Arundinaria gigantea), hickory (wood) (Carya spp.), red oak (wood) (Quercus rubra), hickory nuts and butternut.

TABLE 30. Eoff I Mississippian Radiocarbon Dates.

Sample Number	Feature Number	Uncorrected	Corrected
UGa 2021	45	840 $\pm$ 110 B.P. (A.D. 1110)	839 $\pm$ 114 (A.D. 1111)
UGa 2022	500	820 $\pm$ 70 B.P. (A.D. 1130)	821 $\pm$ 76 (A.D. 1129)
UGa 2155	21	675 $\pm$ 60 B.P. (A.D. 1275)	687 $\pm$ 67 (A.D. 1263)
UGa 1306	511	970 $\pm$ 100 B.P. (A.D. 980)	957 $\pm$ 105 (A.D. 993)
Gx 4333	511	585 $\pm$ 130 B.P. (A.D. 1365)	606 $\pm$ 134 (A.D. 1344)
UGa 1304	98	1435 $\pm$ 255 B.P. (A.D. 515)	1414 $\pm$ 256 (A.D. 536)

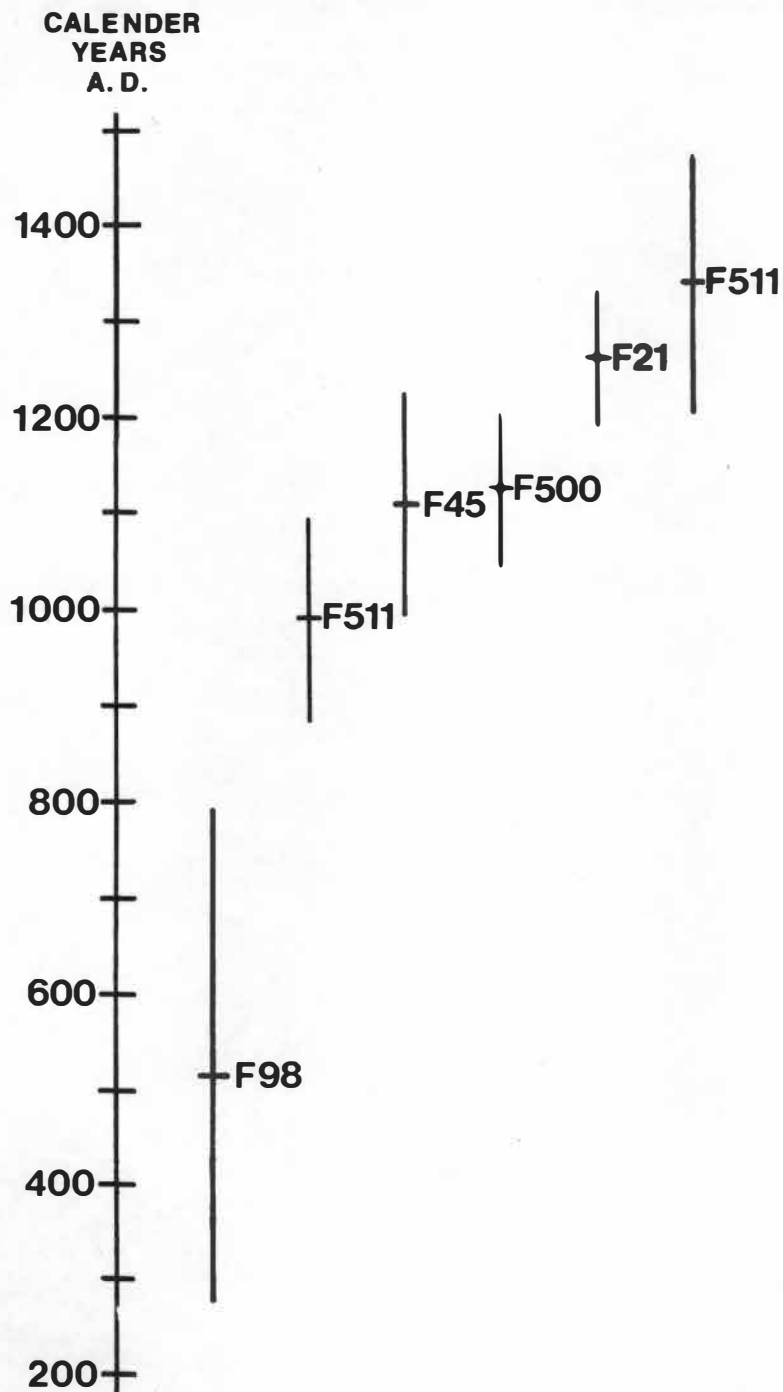


FIGURE 24. Bar diagram of Eoff I Mississippian radiocarbon dates.

UGa-2022. The sample from Feature 500 consisted of wood charcoal composed of hickory (Carya spp.), and red oak (Quercus rubra) from Level III.

UGa-2155. The Feature 21 sample consisted of cane (Arundinaria gigantea) and unidentified maple (Acer spp.).

The single archaeomagnetic date was processed by Dr. Robert L. DuBois of the Earth Sciences Observatory at the University of Oklahoma.

It is desirable to consider the statistical validity of the six dates with the initial primary untested assumption being that the component identified represents a relatively short period of continuous occupation. As is frequently noted in radiocarbon dates, there are several seemingly anomalous dates in the series; specifically, UGa-1304 appears to be too early and there is a discrepancy between the two Feature 511 dates (UGa-1306 and Gx-4333) run on a single split sample. Long and Rippeteau (1974: 205-215) have presented a series of techniques for pragmatically interpreting arrays of radiocarbon dates which will be used here.

In assessing the statistical validity of the series of dates using Chauvenet's rejection criterion, a weighted average of the six dates is first computed using the following formula (Long and Rippeteau 1974: 208):

$$\bar{N}_w = \frac{(C_1 \times W_1) + (C_2 \times W_2) + \dots (C_n \times W_n)}{W_1 + W_2 + \dots W_n}$$

where C equals the mean date of a particular sample, W is the weighting factor based on the relative precision of the sigma factors of the samples, and $\bar{N}_w$ is the weighted average of the dates.

The average sigma is calculated by the following formula (Long and Rippeteau 1974: 209):

$$\bar{\sigma} = \frac{1}{\frac{1}{\sigma_1^2} + \frac{1}{\sigma_2^2} + \dots + \frac{1}{\sigma_n^2}}$$

Using these formulas the weighted average for the six dates is 819 ± 40 years. Using Chauvenet's criterion of rejection, dates which fall outside a 1.71σ of the average may be rejected as not being statistically valid. Therefore, any of the six dates which have a standard deviation outside the range of 751 to 887 years may be rejected (arrived at by $40 \times 1.71 = 68$, $819 - 68 = 751$, $819 + 68 = 887$). Based on this, the Gx-4333 date of 606 ± 134 years and the UGa date of 1414 ± 256 years may be rejected.

However, a case may be made for the statistical validity of using a weighted average of the UGa-1306 and the Gx-4333 dates. It is appropriate in this case because (1) the two samples are effectively portions of the same sample, and (2) the material dated (cane, and corn cobs and stalks) is of a relatively short life span; thus, there is no reason for having to consider that the difference in the dates might be the result of dating two pieces of woods which could be of considerable difference in age. Using the same formulas as given above for obtaining weighted averages, UGa-1306 and Gx-4333 give a date of 840 ± 86 years.

This date is then reaveraged with the other four with the result being a mean of 822 years with a sigma of 40 years. Thus, dates within the range 756 to 888 years are acceptable using a rejection criterion of dates outside a 1.65 sigma range (66 years) of the averaged series.

Using this rejection parameter, sample UGa-2155 and UGa-1304 are rejected, leaving three dates of 821 ± 76 years, 839 ± 114 years, and 840 ± 86 years.

It is once again necessary to average the three accepted dates in order to remove the two rejected dates from the average. This results in a weighted average of 831 ± 51 years for the three acceptable dates. Thus, if our initial assumption of the component representing a single relatively short term occupation is correct, there is a 67 percent chance that the dates of this occupation fall between 780 and 882 years B.P. or between A.D. 1068 and A.D. 1170. The validity of this initial assumption will be examined in the portion of this chapter which deals with the spatial distribution of the facilities and cultural material at the site.

One archaeomagnetic date of A.D. 1100 ± 37 years was obtained from Feature 75-27, a flat fired hearth area within the structure represented by Feature 75-6. It is both interesting and significant to note the similarity between this date and the weighted average date for Features 45, 500, and 511.

B. Discussion of Technologies

In this section, general discussions of the lithics, ceramics and bone tools will be presented.

Lithics

A total of 42,108 pieces of lithic material was recovered from the 40CF32 Mississippian features. In the previous descriptive chapter the organization was based on a series of five major technological classes which are (1) primary lithic debris, (2) unifacial implements, (3) bifacial implements, (4) projectile points/knives, and (5) ground stone implements. This will be the basic organizational framework for this discussion also with the exception that raw material utilization will be discussed initially. Distributions of types of implements over the site will be discussed more thoroughly in the final portion of this chapter.

Raw material utilization. A total of 19 raw material types are represented in the lithic assemblage. Referring to Table 22, page 127, we find that Types A, B, and C represent 99.1 percent of the primary lithics from the site. Thus, Fort Payne chert comprises 91.1 percent of the sample while gray-banded makes up 8 percent of the sample. The remaining 0.9 percent is composed of 9 additional types. Only five examples of Dover chert or 0.01 percent of the sample are present in the collection. A similar distribution is noted in unifacial implement types (Table 25, page 132) where 86.4 percent of the tool types are made from Fort Payne chert and 9.1 percent are made from gray-banded. Three other types are represented comprising 4.5 percent of the sample. Table 27, page 136, indicates that 85.1 percent of the bifacial implements are made from Fort Payne chert while gray-banded comprises 10.7 percent, and two other types account for 4.1 percent. Raw material type has not been considered for those projectile point/knife types which are

not primarily referable to the Mississippian component. The small triangular types which are associated with the Mississippian component are made primarily from Fort Payne (85 percent) with two or 10 percent being made from gray-banded and one from an unidentified gray variety. In summary, Fort Payne chert accounts for 85 percent or more of each of the morpho/technological classes of lithics while gray-banded comprises the next major category. Other raw material types are represented by only minor percentages in the assemblage. One striking difference between the lithic raw material utilization patterns in the 40CF32 Mississippian component and the 40CF111 Mississippian component is the greater representation of gray-banded chert at 40CF111. However, Fort Payne chert does occur in significantly large percentages at 40CF111 and represents the major lithic raw material type with 72.9, 47.74, and 61.31 percent of primary, unifacial, and bifacial lithic categories, respectively (Kleinhans 1978: 395). These differences can probably be accounted for primarily by the locations of the two sites relative to the source areas of the two cherts. Gray-banded is available only in the extreme lower reservoir area and along Riley Creek while Fort Payne is more readily available in the upper reservoir area. 40CF32 is located at the boundary of the upper and lower reservoir zones where Fort Payne would have been much more readily obtainable than gray-banded.

Primary lithics. Core trimming flakes and flat flakes account for 97.4 percent of the 41,714 primary lithics recovered. The 131 cores which are largely amorphous forms account for 0.33 percent of the primary lithic assemblage. Bifacial thinning flakes, utilized flakes and miscellaneous retouched flakes each represent minor types in the

assemblage (Table 22, page 127). It is notable that their frequency is much lower than at 40CF111 where these types account for over 10 percent of the lithic assemblage (Kleinhans 1978: 394).

Unifacial Implements. Unifacial implements comprise a minor portion of the lithic assemblage representing 0.15 percent of the total lithic sample and 16.5 percent of the non-primary lithic tool type categories. As examination of Table 24, page 131, will demonstrate, the four types representing side scrapers on flakes, notched flakes, denticulates, and graters dominate the unifacial implement assemblage numerically accounting for 48 specimens or 74 percent of the unifacial tools.

Bifacial Implements. The 12 bifacial implement types represented in the Mississippian component (Table 26, page 135) account for 30.7 percent of the non-primary lithic tool type categories. The majority of these (92 specimens or 76 percent) are Types 24-27 which represent two thick biface types and two knife and preform types. Bifacial drills are also relatively high in their frequency with 11 examples being present representing a percentage composition within this category of 9.1 percent.

Projectile Points/Knives. The 187 projectile points/knives from the component represent 47.5 percent of the total non-primary lithic tool types. Of this total, 107 or 52.2 percent have been placed in the unidentifiable type categories 58, 111, and 138 because of fragmentary condition. The remaining projectile points/knives (n = 80) have been classified into 38 type categories of the Normandy Lithic Typology.

Types 43-49, which represent the small triangular forms, can be considered to be in primary association with the Mississippian component at 40CF32. Several of these types are similar to named types in the Southeast. The Type 43 is similar to the East Tennessee Dallas Triangular (Lewis and Kneberg 1946: Figure 24) and the Guntersville type which occurs in northern Alabama (Cambron and Hulse 1964: A-59). The Type 45 is similar to the Hamilton projectile point type (Kneberg 1956: 24). The Type 46 triangular point is similar to the Madison type (Scully 1951), while the serrated Type 46a version appears to be related to Cambron and Hulse's (1964: A-119) Sand Mountain type.

Several of the types have been previously identified in Late Woodland Mason phase contexts in the Normandy Reservoir. For example, Type 45 has been reported from a Mason context at 40CF81 as has been Type 46. Essentially the same types of triangular projectile points appear to be occurring in both the Late Woodland Mason phase and in Mississippian contexts within the upper Duck Valley.

The occurrence of non-Mississippian projectile points in Mississippian contexts is also interesting and worthy of note. This is not a phenomenon which has been noted in the Normandy area alone; Kline (Personal Communication, 1978) has reported the occurrence of significant numbers of non-Mississippian projectile points at the Mississippian Ducks Nest site near McMinnville in Warren County, Tennessee. Klippel (Personal Communication, 1978) has also noted the occurrence of non-Mississippian projectile points at the Middle Cumberland Averbuch Site in Davidson County, Tennessee.

It is hypothesized that the collection of earlier projectile points is being facilitated by the intensive cultivation characteristic of the Mississippian period. There is some suggestions in the 40CF32 lithic assemblage that at least a portion of these collected projectile points were being reused. As mentioned in the discussion of the individual projectile point types in the assemblage, five points were observed to have a very characteristic form of battering on the distal ends. These include one Type 48 projectile point from Feature 511 (Figure 25a), one Type 71 Woodland projectile point from Feature 75-6 (Figure 25b), one Type 78 Woodland projectile point from Feature 79 (Figure 25c), and two examples of Type 133 Archaic projectile points from Features 52 and 72 (Figure 25d,e). In order to further test this hypothesis, wear pattern analysis will be necessary to compare the wear patterns on earlier types found in Mississippian contexts and with the same types in their primary contexts.

Ceramics

In the previous descriptive chapter on the ceramics, body sherds, rim sherds and handles were described and attributed to established types when possible. The purpose of this section is to describe the vessel forms present at the site. Originally, a minimum numbers of vessels approach was planned but this proved not to be feasible due to the relatively small size of the majority of the rims, morphological variation observed within single rim sherds, heterogeneous mixing of temper in the ceramic paste, and in general, the eroded, leached condition of the sample. In this section, we will be concerned with the

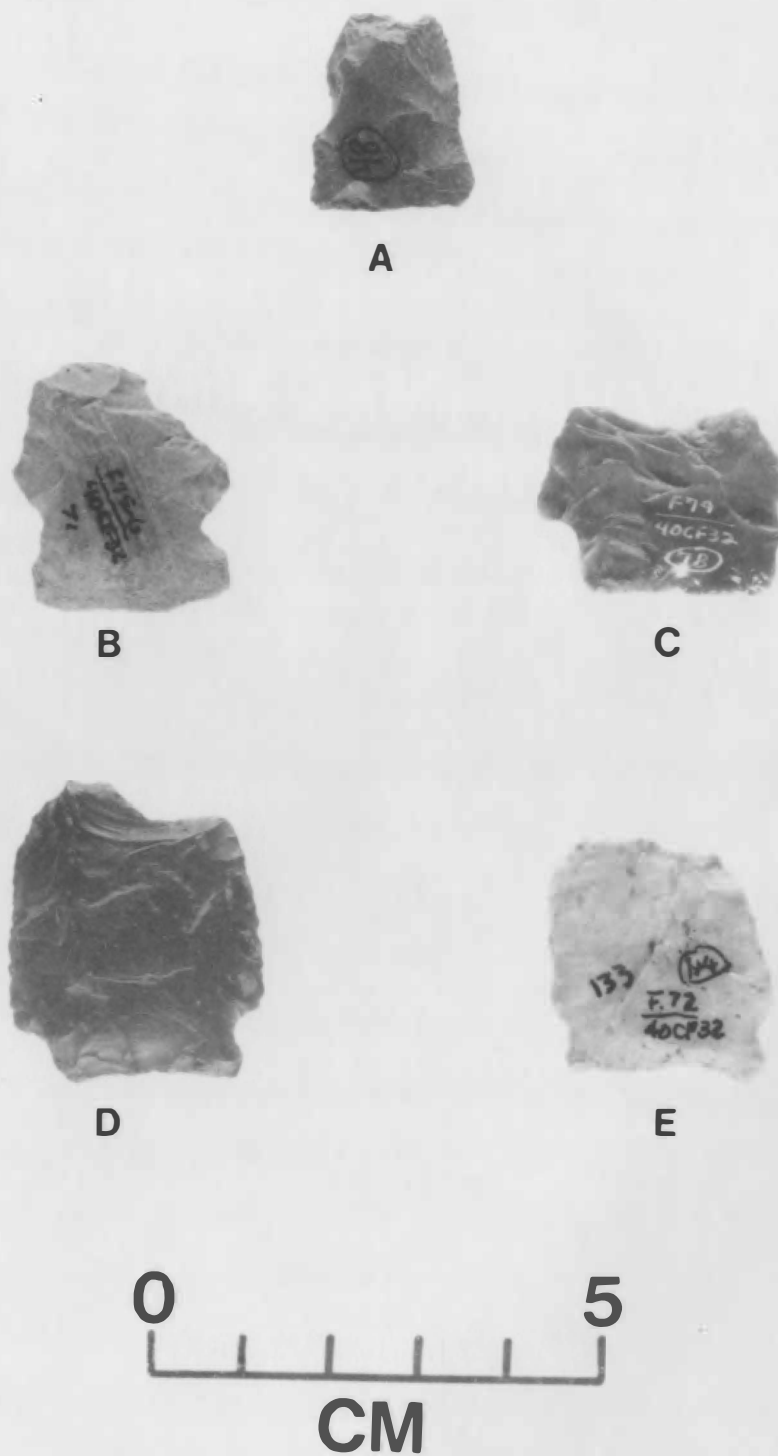


FIGURE 25. Reworked projectile points. A. Type 48; B. Type 71; C. Type 78; D-E. Type 133.

morphology of the ceramics as a whole; in the final section of this chapter, the distribution of the vessel forms over the site will be presented.

The relative frequencies of the various rim profiles is a reliable indicator of vessel form. Of the 127 rim sherds in the sample, 69 (54.3 percent) have excurve profiles, 17 (13.4 percent) have incurvate rim profiles, and 5 (3.9 percent) are straight in profile. The remaining 36 (28.3 percent) rims are indeterminate as to rim profile. The mean rim diameter for the excurve rims is 23.5cm while the mean rim diameter for the incurvate rims is 19.8cm. Excurve rims ranged from 2 to 50cm in rim diameter while incurvate rims ranged from 6cm to 32cm.

Based on these data as well as information from the previous descriptive chapter on the ceramics, it appears that plain jars with flaring excurve rims occurred most frequently on the site, with a wide range of sizes of vessels being represented. Handle forms associated with these jars are primarily loop handles. Several forms are present, such as the twisted coil loop, fluted loop, and bifurcated loop. The handles were attached to the vessels by both riveting and luting techniques. A minor percentage of the handles are decorated with nodes. Incurvate plain bowls were also represented at the site but in smaller quantities than the jar form previously discussed. Sizes for these bowls ranged in rim diameter from 6cm to 32cm with a mean diameter of 19.8cm. Both plain and peaked rim forms were present. Cordmarked, fabric impressed, incised, and stamped surface finishes were also present in the assemblage but were not represented in large enough

numbers to be attributed to specific vessel forms. Other vessel forms represented at the site include a minimum of four hooded water bottles.

Worked Bone and Shell

Due to the small number of bone implements present in the 40CF32 Mississippian component, few interpretations are possible. Only two artifacts, the two bone awls from Feature 511, and possibly the problematical artifact from Feature 98 can be attributed to functions other than decorative. The three marine shell beads are significant in that they probably represent trade relationships. Ornamental items present in the assemblage include the beads and bone pins. 40CF32 is similar to the other two extensively excavated Mississippian components in the Normandy Reservoir, 40CF5 (Brown, in preparation) and 40CF111 (Kleinhans 1978) in the small quantity of worked bone represented in the collection. It is not clear whether this represents the relative unimportance of worked bone or whether it is the result of poor preservation, although the latter interpretation is not supported by the excellent condition of the bone tools recovered.

C. Subsistence Base and Seasonality of Occupation

Faunal Remains

Robison (1977, 1978), in his summary of the Normandy Reservoir Mississippian faunal material, discusses the occurrence of freshwater mussels and snails, mammals, birds, reptiles, amphibians, and fish, at the three sites having Mississippian components: 40CF5, 40CF32, and 40CF111. Freshwater mussels and snails are seen as having been relatively unimportant in upper Duck Valley subsistence due to the

limited meat yield available from the small headwater forms present in the upper Duck River. It is suggested that mussels were most likely gathered during the summer when the river level would be the lowest.

Mammals appear to have contributed the largest amount of meat to the Mississippian diet. The importance of the white-tailed deer is stressed by Robison but it is noted that it was not hunted to the exclusion of other smaller animals. The most surprising thing about the Mississippian faunal remains was the limited number of bird remains. Turkey was the only bird represented at 40CF32 in any appreciable number and even then the MNI was three with an estimated 25.5 pounds of meat representing only 1.33 percent of the total meat yield calculated for the faunal assemblage. Migratory waterfowl are totally absent from the sample. Robison (1978: 552) considers turtles and snakes as being dietary supplements which would have been primarily exploitable during the warmer months of the year. Amphibians, although present, are not seen as having been of any significance in the faunal assemblage. Robison sees fish as an important dietary supplement with the rough fish such as suckers being especially significant due to their potential availability in the spring during the spawning period.

When considering the Mississippian faunal assemblage from the site, it is necessary to consider the data quantitatively as well as qualitatively. In this evaluation, the primary interest is the relative importance of various species and/or animal groups to the diet. The technique used by Robison in determination of MNI is the minimum distinction method (Grayson 1973: 433-434). These MNI figures are then combined with data on the processed meat weights of animals to obtain an

estimated pounds of meat for each species. Table 31 is a compilation of information from Tables 4, 6, and 8, pages 68, 71, and 74, respectively, which lists species, number of identifiable pieces, MNI, and estimated pounds of meat for each of the species considered a food source and for which data were available for calculating pounds of meat.

In examining this table it is immediately apparent that there is a problem in comparing meat yields of various species and thus the relative importance of each in the diet. As stated by Grayson (1978: 54), the problem is that "taxa represented by smaller bone samples contribute proportionately greater minimum numbers of individuals (MNI) than do taxa represented by large bone samples." For example, the one elk bone in the sample is assigned a MNI value of one and the estimated pounds of meat is figured at 350 pounds, while a total of 513 identifiable white-tailed deer elements were calculated to represent an MNI of eight with an estimated 800 pounds of meat. There is no doubt that an occasional bear was an important contribution to the diet, but the small number of elements in the collection as well as the lack of consistent occurrence of bear remains in features indicates that they were not of primary importance to the diet. Also, with the exception of deer, elk, and bear, a total of only 134.24 pounds of meat from a total of 19 individuals is represented in the faunal assemblage.

In addition, it is possible to question Robison's (1978: 556) statements concerning the importance of fish in the subsistence of the Mississippian component at 40CF32. Based on the number of identifiable pieces and the MNI (Table 11, page 79), only 12 individuals were

TABLE 31. Number of Pieces, MNI, and Estimated Pounds of Meat.

Species	Pieces	MNI	Estimated Pounds of Meat
Opposum	4	2	17.00
Black Bear	11	3	630.00
Raccoon	7	1	17.50
Striped Skunk	2	1	5.00
Fox	7	1	4.00
Domestic Dog	1	1	8.50
Woodchuck	2	1	5.60
Squirrel	24	2	1.20
Beaver	2	1	38.50
Rabbit	8	1	1.75
Elk	1	1	350.00
White-Tailed Deer	513	8	800.00
Bob White Quail	1	1	0.29
Turkey	19	3	25.50
Snapping Turtle	1	1	7.50
Turtle: Pseudemys/ Graptemys, Chrysemys	22	1	1.50
Box Turtle	19	2	.40
TOTAL POUNDS			1914.24

identified, and although no estimated meat yield is given for these, it would certainly not be expected to be large.

Botanical Remains

The small number of botanical samples analyzed from Mississippian contexts at 40CF32 greatly limits the interpretation which is possible. All of the species of wood represented in Table 17, page 90, with the exception of Liriodendron tulipifera were probably available in the immediate area of the site. The Chenopodium spp., Phalaris carolina, Euphorbia spp., Gleditsia tricanthos, Phytolacca americana, and legume listed in Table 16, page 89, could have been growing naturally on the site and have been included in the feature fill by chance. With the small number of these represented in Feature 511, it is not possible to interpret their absence in Feature 500 beyond that their absence could be the result of sampling error. The occurrence of maize in both of the features is to be expected.

Seasonality of Occupation

The faunal and botanical samples are useful in determining the seasonality of the occupation at 40CF32. Robison (1977: 71-74) has discussed the use of deer mandibles and antlers in the determination of seasonality. One mandible from 40CF32 was aged at 17 months which suggests that the deer was killed in November or December. An occupation between August and February is suggested by the presence of two nearly complete left antlers which are attached to frontal bone fragments as well as by a section of frontal bone with a small piece of antler attached. One shed antler was recovered from Feature 511 which

could have been picked up anytime but this probably would have been done soon after shedding as shed antlers are quickly softened by rain and chewed by rodents for the mineral content. Based on the antlers and mandible from the site, a late summer through winter occupation is suggested for the site. Some indications of seasonality may be present in the fish remains as redhorses and suckers are most accessible for procurement during the spring spawning "when they migrate by the thousands to the shallow waters of tributary streams and river headwaters to spawn" (Robison 1977: 91). However, Klippel (1978, Personal Communication) has noted the presence of quantities of fish, including rough fish, in land-locked pools of water in creekbeds during the dry, late summer in Middle Tennessee, suggesting that late summer-early fall may have been an opportune time for the procurement of fish, also. Botanical remains are also important in the determination of site seasonality, but the limited amount of analysis of the 40CF32 samples limits the possibilities here. The plant foods present in the two features are all potentially storable forms. The possibility for chance inclusion of some of the seeds has been noted earlier. However, if we can assume that the maize present at the site was grown there we can infer that the site would have to have been occupied during the growing period of the maize to protect it from animals. This would cover the period from late spring to early fall.

Therefore, based on several types of data from the faunal and floral samples, it appears plausible to suggest a year round occupation of the site as would be expected for a site exhibiting the types of facilities and variety of artifacts present at 40CF32.

D. Spatial Organization of Site Facilities and Distribution of Classes of Artifactual Materials

The purpose of this section is to consider the distribution of the various types of features and classes of artifacts which represent the Mississippian component at 40CF32.

An examination of the site plan map (Figure 26) reveals four distinct clusters of features in addition to the two structures. Five features (39, 112, 537, 118, and 110) are located too far away from any of the clusters for inclusion within them; these are considered individually. Additionally two clusters of tree falls and four individual tree disturbances are definable. As the excavation of these tree falls was not systematic, they are not as important in this analysis. However, it is interesting to note the relative positions of the treefalls which produced Mississippian cultural material and the various clusters of features. The relationship between the treefalls and the Mississippian occupation is not known, but there appears to be at least three distinct possibilities to explain it. The first is that a storm blew down the trees opening up the first terrace and making it more conducive as a habitation site. The second is that the trees were girdled, and when they fell, were utilized as trash dumps. The third possibility is that the trees fell naturally during the Mississippian occupation and were subsequently used as trash dumps.

Descriptions of Clusters

Features at 40CF32 were arranged such that techniques of spatial analysis such as Nearest Neighbor Analysis (Pinder and Witherick 1972:

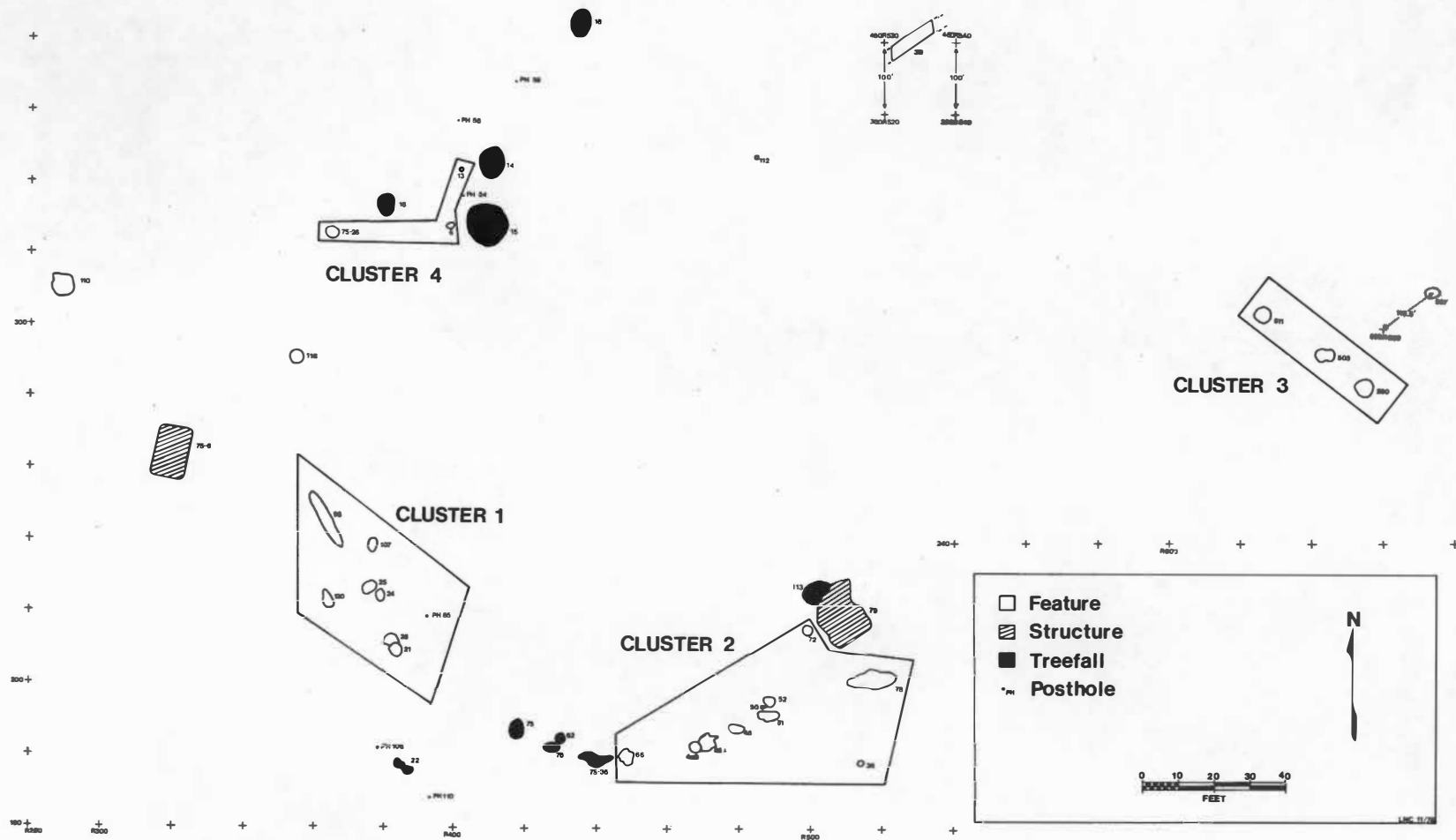


FIGURE 26. Plan map of Eoff I Mississippian component illustrating feature clusters.

277-288) were not needed either for the definition or classification of the pattern of spatial organization of the features. Table 32 presents summary data on the nature of the features which comprise each cluster.

In order to compare the artifactual contents of the clusters and single features, a series of tables have been prepared which summarize the cultural material recovered from each cluster. Table 33 gives percentages for the primary temper groups of body sherds within clusters. Distributions of excurve and incurvate rims along with mean rim diameter data are presented in Table 33.

A series of standardized indices (Faulkner and McCollough 1973: 67-71) have been calculated for use in comparing the lithic material from various portions of the site. It is realized that there are problems involved in the use of such indices in the determination of activity areas when functional labels have been attributed to certain tool types in the absence of wear pattern analysis. It is also realized that in several of the indices a single tool type is used in the calculation of several indices each of which has a different functional implication. This is not seen as a major problem for what the indices are being used for here, the definition of broad similarities or differences within the compositions of the lithic assemblages from different portions of the site. It is hoped that the use of the indices here will stimulate further research to better ascertain the meaning of the distribution of certain classes of artifacts by the definition of patterns which will suggest hypotheses to be tested.

TABLE 32. Summary Data on Feature Clusters and Individual Features.

Description		Square Footage	Year
<u>Cluster 1</u>			
F.21	Shallow oval basin	13.92	A.D. 1263
F.24	Shallow oval basin	7.6	
F.25	Shallow oval basin	14.1	A.D. 536
F.26	Deep amorphous basin	13.93	
F.98	Deep amorphous basin	45.6	
F.107	Deep amorphous basin	9.2	
F.120	Shallow oval basin	11.9	
TOTAL		116.25	
<u>Cluster 2</u>			
F.36	Shallow oval basin	1.7	A.D. 1111
F.45	Deep oval basin	12.2	
F.46a	Shallow amorphous basin	20.9	
F.46b	Shallow circular basin	6.6	
F.51	Shallow oval basin	20.4	
F.52	Deep circular basin	3.3	
F.66	Shallow amorphous basin	14.8	
F.72	Shallow circular pit	5.1	
F.78	Shallow amorphous basin	35.54	
TOTAL		120.54	
<u>Cluster 3</u>			
F.500	Deep circular pit	20.6	A.D. 1129
F.503	Deep amorphous basin	14.7	A.D. 1110
511	Deep circular pit	17.75	
TOTAL		53.05	
<u>Cluster 4</u>			
F.6	Support basin w/postholes	1.20	A.D. 1100
F.13	Shallow oval basin	1.0	
F.75-26	Deep circular pit	10.2	
TOTAL		13.2	
F.75-6	Semi-subterranean structure	155	
F.79	Semi-subterranean structure	168.3	
F.39	Gully	n/a	
F.110	Deep circular basin	31.4	
F.112	Large posthole	n/a	
F.118	Shallow circular pit	11.2	
F.537	Shallow oval basin	8.2	

TABLE 33. Relative Frequencies of Body Sherds and Quantification of Rim Profile and Diameter.

	Body Sherds					Rims			
	Shell Temper	Limestone Temper	Chert Temper	Mixed w/Shell	Mixed w/o Shell	Excurv.	Rim Diameter	Incurv.	Rim Diameter
Cluster 1	69.3	20.6	2.0	7.9	0.3	21	20.5cm	2	8cm
Cluster 2	63.3	23.0	3.3	9.3	1.0	11	16cm	2	-
Cluster 3	76.0	7.6	1.6	14.6	0.2	14	30cm	1	-
Cluster 4	92.6	1.2	1.2	5.0	0	1	-	2	25cm
F.75-6	36.6	23.3	7.4	31.4	1.3	14	18cm	3	22cm
F.79	70.0	18.3	2.2	9.8	0	0	-	2	16cm
F.39	79.7	12.5	4.7	3.1	0				
F.110	51.3	32.9	10.5	5.3	0				
F.112	61.8	26.5	8.8	2.9	0				
F.118	100	0	0	0	0				
F.537	40	40	20	0	0				

The formulas for the indices which have been computed follow. All are taken from Faulkner and McCollough (1973: 67-71). Table 34 contains the indices relating to stage of manufacture of lithic artifacts as well as indices relating to unifacial implements, bifacial implements, projectile points/knives, and ground stone implements. Table 35 contains indices relating to functional considerations of certain tool types while Table 36 lists indices relating to specific activities.

Piercing Implement Index

$$(PI) : = (PPK)$$

Cutting Implement Index

$$(CI) : \frac{*(n, TT\ 6-7+29+31+33+38-40+43-140+156-158)}{N, \text{ collection or assemblage}} \times 100$$

Scraping Implement Index

$$(SI) : \frac{(n, TT\ 8-15+19-22+28+30+32+34+39+139)}{N, \text{ collection or assemblage}} \times 100$$

Perforating Implement Index

$$(PERI) : \frac{(n, TT\ 17-18+20-22+36-37+40+140)}{N, \text{ collection or assemblage}} \times 100$$

Drilling Implement Index

$$(DI) : \frac{(n, TT\ 36a+140)}{N, \text{ collection or assemblage}} \times 100$$

Sawing/Shredding Implement Index

$$(SSI) : \frac{(n, TT\ 16+35)}{N, \text{ collection or assemblage}} \times 100$$

TABLE 34. Lithic Indices.

	PL	FI	UI	BI	PPK	GS
Cluster 1	99.35	0.65	0.12	0.64	0.42	0.04
Cluster 2	99.48	0.51	0.11	0.57	0.39	0.07
Cluster 3	99.35	0.65	0.11	0.62	0.42	0.03
Cluster 4	97.55	2.45	0	3.67	2.04	0
Feature 75-6	98.45	1.61	0.19	1.93	1.16	0.19
Feature 79	99.31	0.69	0.21	0.73	0.40	.04
Feature 39	99.50	0.50	0	0.51	0.50	0
Feature 110	97.07	2.93	1.30	2.61	2.28	0
Feature 112	98.17	1.83	0	1.83	1.83	0
Feature 118	90.74	9.26	3.70	5.55	5.55	0
Feature 537	100.0	0	0	0	0	0

TABLE 35. Functional Lithic Indices.

	PI	CI	SI	PERI	DI	SSI	HPI	GSI
Cluster 1	0.42	1.43	0.11	0.08	0.05	0.02	0.04	0
Cluster 2	0.39	0.88	0.11	0.02	0	0	0.04	0.02
Cluster 3	0.42	1.39	0.05	0.06	0.03	0.05	0.02	0.04
Cluster 4	2.04	10.61	0	0	0	0.82	0	0
Feature 75-6	1.16	4.06	0.19	0.06	0.06	0	0.13	0
Feature 79	0.40	2.86	0.14	0.08	0	0	0	0
Feature 39	0.50	2.27	0	0	0	0	0	0
Feature 110	2.28	4.56	1.30	0.33	0.33	0	0	0
Feature 112	1.83	2.75	0	0	0	0	0	0
Feature 118	5.55	5.55	0	3.70	0	0	0	0
Feature 537	0	0.97	0	0	0	0	0	0

TABLE 36. Activity Lithic Indices.

	HI	BII	WWI	HWI	BWI	PPI	PFW
Cluster 1	0.39	1.08	1.13	0.11	1.08	1.13	99.35
Cluster 2	0.32	0.77	0.80	0.07	0.81	0.80	99.48
Cluster 3	0.41	1.05	1.07	0.06	1.08	1.07	99.35
Cluster 4	1.63	10.20	9.80	0	9.80	9.80	97.55
Feature 75-6	0.97	3.29	3.35	0.13	3.16	3.42	98.45
Feature 79	0.33	2.55	2.61	0.19	2.59	2.59	99.31
Feature 39	0.50	1.79	1.76	0	1.76	1.76	99.50
Feature 110	0.98	4.89	3.91	0.98	3.91	4.89	97.07
Feature 112	1.79	0.92	0.92	0	0.92	0.92	98.17
Feature 118	3.70	3.70	1.85	3.70	5.55	1.92	90.74
Feature 537	0	0.97	0.97	0	0.97	0.97	100.00

Hammering/Pounding Implement Index

$$(HPI) : \frac{(n, TT 1+141-150)}{N, \text{collection or assemblage}} \times 100$$

Grinding/Sharpening Implement Index

$$(GSI) : \frac{* (n, TT 141-151+153-154)}{N, \text{collection or assemblage}} \times 100$$

Primary Lithic Index

$$(PL) : \frac{(n, \text{Tool Types } 1-7+24-26+141-150)}{N, \text{collection or assemblage}} \times 100$$

Finished Implement Index

$$(FI) : \frac{(n, \text{all other Tool Types})}{N, \text{collection or assemblage}} \times 100$$

Unifacial Implement Index

$$(UI) : \frac{(n, \text{Tool Types } 8-23)}{N, \text{collection or assemblage}} \times 100$$

Bifacial Implement Index

$$(BI) : \frac{(n, TT 24-140)}{N, \text{collection or assemblage}} \times 100$$

PROJECTILE POINT/KNIFE

Projectile Point/Knife Index

$$(PPK) : \frac{(n, TT 26-27+43-140)}{N, \text{collection or assemblage}} \times 100$$

GROUND STONE

Ground Stone Implement Index

$$(GS) : \frac{(n, TT 141-162)}{N, \text{collection or assemblage}} \times 100$$

Hunting Implement Index

$$(HI) : \frac{(n, TT 43-140+161)}{N, \text{collection or assemblage}} \times 100$$

Butchering Implement Index

$$(BII) : \frac{*(n, TT 6-7+16+26-27+29+35)}{N, \text{collection or assemblage}} \times 100$$

Woodworking Implement Index

$$(WWI) : \frac{*(n, TT 6-7+14-16+22+28-29+31+34-35+41+155-160)}{N, \text{collection or assemblage}} \times 100$$

Hide Working Implement Index

$$(HWI) : \frac{*(n, TT 6-13+17-22+28+30+32+36b+37+39-40)}{N, \text{collection or assemblage}} \times 100$$

Bone Working Implement Index

$$(BWI) : \frac{*(n, TT 6-7+14-16+18+21-22+34-35+37-41+151+153-154)}{N, \text{collection or assemblage}} \times 100$$

Plant Food Processing Implement Index

$$(PPI) : \frac{*(n, TT 1+6-7+16+26-27+29+35+141-150+153)}{N, \text{collection or assemblage}} \times 100$$

Primary Flint Working Index

$$(PFW) : = (PL)$$

The distribution of faunal material between the clusters of features also needs to be considered. This will not be attempted on the species level, but rather by relative frequencies of the various classes of faunal material, gastropods and pelecypods, mammals, birds, reptiles, amphibians, and birds. These data are presented in Table 37.

In examining the eleven units which represent either clusters of features or individual features which were spatially separated from others it is initially important to visualize the relative locations of these units. Clusters 1, 2, and 3 plus Features 75-6 and 79 should be given primary consideration as it was from these that a large proportion of all classes of cultural material from the Mississippian component were recovered. As noted in Table 32, page 184, radiocarbon dates are available from Features in Clusters 1, 2, and 3. Feature 75-6 is dated by the archaeomagnetic method. As discussed in an earlier portion of this chapter, the dates from Features 45, 500, 511, and 75-6 are considered acceptable while the Feature 21 and 98 dates can be conditionally rejected.

In terms of spatial configuration of Clusters 1 and 2 are interesting in that they are both arranged linearly. This may be related to the occurrence of a band of desirable clay along this portion of the terrace as the large amorphous basins have been hypothesized to be clay borrow pits (Faulkner 1978: Personal Communication). The relation of the semi-subterranean structure, Feature 75-6 to Cluster 1, and the relationship of Feature 79, the possible semi-subterranean structure, to Cluster 2 is essentially the same. Cluster 1 facilities are located essentially straight outside the structure door. There is

TABLE 37. Relative Frequencies of Faunal Material in Feature Clusters.

	PERCENT					
	Gastropods and Pelecypods	Mammals	Birds	Reptiles	Amphibians	Fish
Cluster 1	0.2	95.1	0.1	0.3	0.02	4.2
Cluster 2	0	99.4	0.2	0.03	0.03	0.3
Cluster 3	4.8	81.5	1.6	2.3	0.2	9.6
Cluster 4	0	100	0	0	0	0
Feature 75-6	2	96.4	1	0.5	0	0
Feature 79	18.3	78.1	0.5	0.3	0.04	2.7

also a striking similarity between the two clusters in the area covered by the facilities. As Table 32, page 184, indicates, Cluster 1 has a total of 116.3 square feet of facilities while Cluster 2 has a total of 120.5 square feet. Similarity between the two clusters does not stop here. A review of the frequencies of body sherds from the two clusters reveals a close similarity in both the number of sherds present and the relative frequencies of types. The various lithic indices are also quite similar for the two clusters. The two groups of features also have essentially identical distributions of faunal material. Based on all of these similarities, it would appear that Clusters 1 and 2 probably represent essentially the same temporal period and represent accumulations of trash from the same types of activities.

Cluster 3 was composed of two deep circular pits and one deep amorphous basin. The lithic indices for this cluster are not radically different from Clusters 1 and 2. However, the relative frequencies of the various ceramic temper groupings are somewhat different. The frequency of shell tempered sherds is higher with limestone temper being lower and the mixed temper with shell group being higher. The mean rim diameter for the excurve rims recovered from this cluster is higher than observed in either Cluster 1 or 2. This is 30cm as compared with 20.5 and 16cm, respectively. This could possibly represent functional considerations, as deep circular pits are traditionally associated with storage as are large jar forms. The difference of the relative frequencies of faunal classes between Cluster 3 and Clusters 1 and 2 is related primarily to the addition of significant quantities of the gastropod and pelecypod group and the fish group to essentially the

same faunal group represented in Clusters 1 and 2. This may represent seasonal considerations for the filling of at least a portion of the features in this cluster. Both the gastropod and pelecypod group and the fish group are usually attributed to summer or warm weather procurement activities.

Cluster 4 contributes minor percentages of all classes of artifactual material to the assemblage and because of this, is of little interpretive value. The lithic indices do indicate a higher frequency of the types associated with cutting, butchering, and woodworking. The finished implement index is relatively high as is the bifacial implement index. The small quantity of faunal material represented is all mammal.

Feature 75-6, the semi-subterranean structure, when compared to Cluster 1 to which it is closest, exhibits higher lithic indices related to finished implements, bifacial implements, and the activities of butchering, woodworking, and bone working as well as plant food processing. It should be noted that the indices relating to these last three activities are made up of much the same tool types. In terms of the relative composition of the ceramic assemblage the frequency of mixed tempered types with shell is higher than in Clusters 1 or 2. The meaning of this is not known, but it could be functional or possibly could be representative of stylistic variation between potters. Considering its relatively small size, the composition of the faunal assemblage is probably not much different from that of the other major clusters.

Feature 79, the possible semi-subterranean structure, like the other structure, has relatively higher lithic indices reflecting butchering, woodworking, bone-working, and plant food processing. The

composition of the ceramic assemblage is quite similar to both Clusters 1 and 2. The relative composition of the faunal assemblage for the feature is different in the gastropod and pelecypod group and the mammal group because of the quantity of shell present in the sample from this feature. As was noted for Cluster 3, this may indicate the season of the filling of the structure pit.

Generally, the composition of the various other single features and tree disturbances are quite variable, and the small sample sizes are of little interpretive value.

E. Summary and Comparisons

The Mississippian component at 40CF32 represents a late Early Mississippian settlement dating from between A.D. 1068 and A.D. 1170. A minimum of two houses, both semi-subterranean installations, were present at the site. Features, primarily pits and basins, were both clustered and placed singularly over the site. The pits may have functioned as storage facilities while some of the large, shallow amorphous shaped basins may have served as sources of clay for house daub. Two clusters of features were in consistent placement relative to the two structures suggesting association of one cluster with each structure. The two clusters of features proved to have essentially identical artifactual compositions and spatial attributes, suggesting contemporaneity. The ceramic assemblage is composed of shell-tempered, limestone-tempered, chert-tempered, clay-tempered, and mixed-tempered ceramics. The mixed-tempered ceramics which contain shell appear to be identical in methods of manufacture and form to the shell tempered

plain ceramics from the site. The primary vessel forms include flaring rimmed jars with loop handles, ranging in size from a two centimeter rim diameter to as large as a 50cm rim diameter. There appears to be a differential distribution of the larger vessels indicating that one feature cluster area may have been a storage zone. Interestingly, this cluster contains two of the large, deep, circular pits thought to be storage facilities. Incurvate plain bowls and hooded water bottles were also present at the site. Small triangular projectile points usually associated with the Mississippian tradition were present but a large number of earlier stemmed and notched types suggest that these were being collected. Similar wear patterns on several types representative of different cultural periods suggests the reuse of at least a portion of the collected points. A limited number of bone artifacts were recovered representing both tools and ornaments. Analysis of the composition of the faunal assemblage suggests a heavy dependence on the white-tailed deer as the major source of meat. The differential distribution of certain types of faunal material over the site such as freshwater mussels and snails and fish is interpreted as representing seasonality in the filling of features. The limited quantity of botanical material analyzed exhibited a limited range of plant foods including maize. Seasonality based on both the faunal and floral remains suggests a year-round occupation of the site. Trade connections are suggested by the presence of marine shell beads, and the limited quantity of Dover Chert.

One of the research problems outlined in the initial chapter of this thesis concerned the relationship of the Eoff I Mississippian

component to the Banks phase. Based on the analysis of the 40CF32 Mississippian artifactual assemblage present here, it appears that it is quite similar to the other Banks phase sites in the Normandy Reservoir. The lithic types considered diagnostic for the Banks phase such as the serrated triangular projectile points and sandstone palettes are present at Eoff I. In ceramics, there is considerable similarity in temper groups and vessel forms. Each of the three main Mississippian sites in Normandy produced a somewhat different structure form, but each relatively intact example which has been had some use of wall trenches in its construction. The floral material reported from the Mississippian component at Eoff I is somewhat limited in its variety. This has been suggested to be the result of the limited sample which was analyzed, but another possibility should also be considered. The differences between the 40CF111 and 40CF32 Mississippian floral materials could indicate a change in subsistence pattern from an earlier Banks phase as represented at 40CF111 to the somewhat later 40CF32 occupation in the relative reliance on agriculture over wild plant food gathering. This hypothesis is readily testable through the continued analysis of the botanical samples from the 40CF32 Mississippian features. In summary, it appears that there are more similarities than differences between the Mississippian component at the Eoff I site and the other Banks phase sites in the Normandy Reservoir. Therefore, the Mississippian component at 40CF32 can be correctly subsumed under the Banks phase designation.

The temporal placement of the Banks phase component at Eoff I is significant in that it demonstrates that the phase continued into the twelfth century A.D. The terminal date of the phase cannot be

demonstrated in the Normandy data; therefore, this should be a concern for future research. The continuation of the phase with little cultural change from as early as the ninth century A.D. as documented at the Banks V site (40CF111) until the twelfth century at Eoff I demonstrates the conservative nature of small Mississippian sites in the headwaters of major drainages.

Mixed tempered ceramics as well as the occurrence of limestone tempered types with Mississippian vessel forms have been considered to be diagnostic of "emergent" Mississippian cultures. Although this is true in the earlier portions of the Banks phase as represented at 40CF111, the ceramic data at 40CF32 indicates that such ceramics are not limited to "emergent" Mississippian cultures in the Eastern Highland Rim but which have to be considered as at least a developed Early Mississippian trait in this area. I would suggest that much of the variation in ceramic tempers occurring at the smaller Mississippian sites such as Eoff I representative of later time periods can be accounted for by stylistic variation among potters. For example, in the temper groupings at the Parks site, 40CF5, there are no mixed temper ceramics which contain shell in the Mississippian component (Brown n.d.). Although the Banks phase component at this site is not securely dated, there are enough similarities in the data to suggest that it certainly fits somewhere within the Mississippian continuum in the upper Duck Valley. The matter of temper distributions certainly should be the focus of further investigations in this area.

In terms of settlement pattern, the limited sample of four excavated Mississippian sites in the Normandy Reservoir are all located

on or near the edges of first terraces on or adjacent to silt loam soils which would have been conducive to agriculture. No major functional distinctions appear to differentiate between the sites and no one activity appears to dominate the function of any of the sites. In terms of subsistence, hunting, gathering, and agriculture are represented at each of the sites. It is not clear from the Normandy data whether this is the entire settlement system, whether each small site was a separate equal entity or whether these sites were tied into a larger system. There is an absence of large Mississippian sites within the Normandy Reservoir and no pyramidal mounds are known. However, there is one possible substructure mound located on the Duck River in Manchester, Tennessee. As essentially nothing is known about this site, it is possible only to state that there may be a relationship between the Banks phase sites in Normandy and this mound site, and that this possibility should be investigated, especially in light of the results of the State Division of Archaeology's survey of the upper Caney Fork drainage (Jolley 1978) which will be discussed later in this section.

Although it is not possible to derive the Banks phase from any other geographical area or delimit its geographical extent outside of the Normandy Reservoir area at present, it is worthwhile to compare it with several similar and dissimilar manifestations in other areas. Brief descriptions of Early Mississippian cultures in Northern Alabama, the Harpeth River valley of Central Tennessee, and the upper Caney Fork drainage of Middle Tennessee will be presented.

Northern Alabama

Certain similarities are present between the Banks phase and the Langston phase of northeastern Alabama (Walthall n.d.: 262-267). The Langston phase has been defined from a series of sites excavated in the Guntersville Basin of the Tennessee River (Webb and Wilder 1951). There is evidence for the emergence of this phase internally from a Late Woodland base, presumably the Flint River culture, whose spatial distribution is overlapped by the Langston phase sites.

The two major Langston phase sites in the Guntersville Basin are the Langston site and the Gunter's Landing site. Both of these sites contained substructure mounds, and the Gunters Landing site was stockaded. As only the mound was excavated at Langston, it is not known whether this site was fortified. Walthall (n.d.: 263) in summarizing the ceramics representative of this phase states that they "are largely confined to plain shell tempered bowls, globular pots at times with added loop or narrow strap handles, and fabric impressed salt pans." In examining the Langston site assemblage specifically, it is found that the mound produced one blank faced effigy bottle and plain shell tempered globular jars with flaring rims and paired loop or narrow strap handles. Eighty percent of the sherds recovered from the site were shell tempered with plain and fabric impressed types being represented. Walthall (n.d.: 264) notes that "the remaining 20 percent of this sample was largely plain limestone tempered sherds and a small amount of clay tempered plain and cordmarked pottery." Other artifactual material recovered from this site includes pottery and stone discoidals, greenstone celts, small triangular projectile points, and a mushroom-shape ceramic

trowel. The artifactual assemblage from the Gunter's Landing site is quite similar as described by Walthall.

In comparing the Banks phase with the Langston phase, it is essential to realize that with each phase, we may be viewing different segments of the settlement system. The nature of the archaeological program in the Gunter'sville Basin as well as the research priorities of the time predicated the investigation of larger sites such as Langston and Gunter's Landing in the Gunter'sville Basin, while in the Normandy locality, the absence of large Mississippian sites within the reservoir precinct focused attention on the smaller sites such as Banks V and Eoff I. With this in mind as well as the relative locations of the two phases, drainage-wise, it is possible to note the similarities in the ceramics such as the occurrence of both shell and limestone tempered ceramics together as well as similarities in vessel forms, and the minor percentages of clay tempered types present. No mention of mixed tempered ceramics is made for the Langston phase. However, this may possibly be viewed as a development occurring in tributary and headwater areas. There is no definite relationship between the Banks and Langston phases known at present; however, there are similarities between the two phases which are worthy of further investigation.

Harpeth River

The Mound Bottom site located on the Harpeth River near Nashville, Tennessee, is the subject of a recent dissertation by O'Brien (1977) in which he examines the site for evidence of the existence of a chiefdom level of socio-cultural integration. The site is significant to the discussion here in that it is a large Mississippian ceremonial

center which was established as early as the ninth century A.D. The material culture at the site is "full-blown" Mississippian with no transitional Late Woodland-Early Mississippian elements. Although the site is not located a great number of miles to the northwest of Normandy, there does not appear to be any relationship between it and the Mississippian manifestation in Normandy.

Upper Caney Fork Drainage

Two recent investigations in the upper portions of the Caney Fork River drainage have produced evidence of Mississippian occupations which may relate to those investigated in the Normandy locality. The first of these is a series of Mississippian sites which were located by a survey conducted by the Tennessee Division of Archaeology (Jolley 1978). The second investigation is that conducted at the Ducks Nest Site (40Wr4) on the Barren Fork River near McMinnville by the Department of Anthropology, The University of Tennessee for the Tennessee Department of Transportation (Kline, Personal Communication).

Jolley's survey of the upper Caney Fork drainage included portions of both the Collins and Calfkiller rivers and recorded 12 sites with Mississippian components. A dispersed settlement pattern of small habitation sites such as observed in the upper Duck River Valley is suggested by Jolley (1978: 38), and the presence of an Early Mississippian phase in the region is postulated based on the ubiquity of mixed shell-limestone tempered ceramics on a number of the sites.

Important aspects of the results of the survey concerning the Mississippian occupation in this area include the location of a series of platform mounds, several of which can, at least, be tentatively

related to the Early Mississippian phase postulated for the region by Jolley (1978: 31), and the location of all of the open Mississippian sites recorded by the survey with the exception of one in upland or cove areas (1978: 32), locations which are certainly atypical when traditional Mississippian settlement models are considered. In fact, one of the sites, the Cardwell Mountain Mound, as the name suggests, is located on "the flat plateau of one arm of Cardwell Mountain at an elevation of 300 feet above the surrounding area (Jolley 1978: 36).

As neither testing nor extensive excavations were conducted during the State survey, the utility of the data for formulation of absolute statements concerning temporal perspectives, settlement patterns, and cultural affiliations is limited. However, it is important in that it suggests that the dispersed settlement pattern observed in the Banks phase in the upper Duck River Valley may also be present in the upper Caney Fork drainage to the north of the Normandy locality with the significant addition of ceremonial centers with platform mounds. Further similarities include the presence of mixed tempered ceramics. It would be premature at this point to attempt to extend the geographical range of the Banks phase to the Upper Caney Fork drainage, but it is possible to state that a similar adaptation and development of Mississippian culture may be taking place in the headwaters of the two major drainage systems.

Excavations at the Ducks Nest site in Warren County, Tennessee, on the Barren Fork, a tributary of the Caney Fork, revealed two superimposed wall trench structures considerably larger than the houses found at the Normandy Banks phase sites. Temporally, the site dates within

the first four decades of the twelfth century A.D. This position is based upon six radiocarbon determinations.

The ceramic assemblage from the site is somewhat unusual as shell tempered types only represent 4.9 percent of the total sample with limestone tempered types comprising 67.2 percent, mixed tempered types 13.4 percent and chert tempered types 13.9 percent. The lithic assemblage from the site is quite similar to the Banks phase lithic assemblages. In addition to other triangular types, serrated triangular projectile points were recovered from the site. A variety of floral remains were recovered from flotation samples, but essentially no faunal remains were preserved at the site. Kline's analysis of the site suggests that a trophically self-sufficient settlement occupied on a seasonal basis over a limited number of years by a small social group (Personal Communication).

In conclusion, based on the data collected during the four years of the Normandy archaeological project, it appears that the Banks phase was established in the upper Duck Valley in the ninth century A.D. and continued with little cultural change until at least the twelfth century A.D. Sites of the phase are small units consisting of a limited number of domestic structures. The sites in the Normandy locality appear to be multi-function settlements which were occupied year round, and depended primarily upon local resources. No large Mississippian sites were located in the Normandy research, and the relationship of the Banks phase sites to a larger settlement system is unknown. However, the presence of a possible substructure mound in Manchester, Tennessee, immediately upriver from the Normandy Reservoir, and Jolley's findings

of several Mississippian mounds in the upper Caney Fork drainage suggests that a larger, more complex settlement system than that observed in the Normandy Reservoir may have been operative in the area during the Early Mississippian period. This should certainly be the major focus of any additional Mississippian research in the area. The similarities between the Banks phase and the Langston phase of northern Alabama suggest a relationship and should also be pursued further when possible.

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