This document contains information on Native American burials. Images considered to be culturally insensitive, including images and drawings of burials, Ancestors, funerary objects, and other NAGPRA material have been redacted.

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A RE-ANALYSIS OF THE MANDEVILLE SITE, 9CLA1, FOCUSING ON ITS INTERNAL HISTORY AND EXTERNAL RELATIONS

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Athens

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by

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October 3, 1975
Date

To the Memory

of

JOSEPH R. CALDWELL
(1916-1973)

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Caldwell, under whom I received most of my training and to whom this volume is dedicated.

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CHAPTER 1

INTRODUCTION

> /The concern of archaeology is with/ ...the debris of ancient societies, an imperfectly preserved and non-random sample of material culture. The once living cultures are dead and we are left with their residual exoskelton, the constellation of artifacts that once sheathed and still outline the behavior patterns of particular cultures (Clarke 1971: 19).

The broad outline of eastern North American prehistory was established by archaeological excavations during the two decades preceeding World War II. The emphasis at that time, and until the early 1960's, was upon chronology and description; detailed regional and areal sequences, chronologically ordered and compared by means of trait lists, was the accepted standard. After this initial stage of discovery and definition, a new period began in eastern North American prehistory. The "new archaeology" is concerned with cultural process (Caldwell 1966) or, rather, with archaeology as anthropology (Binford 1962).

The aim of anthropology, according to Binford (Ibid.: 217), is to "...explicate and explain the total range of physical and cultural similarities and differences characteristic of the entire spatial-temporal span of man's

existence." Continuing, he felt that archaeology had made a valuable contribution to anthropology in terms of description (explication); however, "although this contribution is "admirable" and necessary...archaeology has made essentially no contribution in the realm of explanation...."

It is with cultural process and explanation, then, that archaeology has concerned itself during the past fifteen years. Two aspects of cultural process which are the prime focus of this dissertation are cultural affiliation and interaction.

Among the specific problems in southeastern prehistory for which explanation is being sought are the questions of the relationship between Deptford and Swift Creek ceramics and the nature of the Hopewellian interaction sphere in the South.

Deptford ceramics are characterized by simple linear designs: Deptford Check Stamped exhibits a pattern of raised lands intersecting at right angles; Deptford Simple Stamped, a pattern of regularly-spaced, parallel grooves and lands. Early Swift Creek Complicated Stamped pottery is characterized by complex curvilinear design motifs. Deptford is chronologically earlier than Swift Creek although there is some temporal overlap and Late Deptford has been defined as that time when complicated-stamped pottery (i.e., Early Swift Creek) was added to the Deptford ceramic complex (Smith 1972: 48-49).

Early Swift Creek Complicated Stamped pottery is one of

the ceramic types of the Santa Rosa-Swift Creek Complex of northwest Florida. Certain other traits of the Santa Rosa-Swift Creek Complex are Hopewellian; that is, identical to artifacts diagnostic of the Ohio Hopewell mortuary complex. Hopewellian items have been found throughout a large portion of the eastern woodlands; however, the mechanisms by which Hopewell spread are largely unknown. Earlier views alternately favored explanations based upon ideas of a "Hopewell Culture" or a religious-based "death cult." Caldwell (1964), addressing himself to the problem, coined the term "Hopewellian interaction sphere." Caldwell, with his background in Old World as well as New World prehistory and being strongly influenced by Redfield's Big Tradition-Little Tradition dichotomy, was really more concerned with questions beyond Hopewell and so did not define explicitly what he meant by this term. He apparently saw the Hopewellian interaction sphere as a mortuary-ceremonial or religious-based interaction sphere. More recent views by Struever and others emphasize trade and redistribution while playing down the mortuary-religious aspects of Hopewell.

Flannery (1974) has offered a model for inter-regional interaction between the Olmec and the Valley of Oaxaca which may have some utility in explaining Hopewell in the South. Using ethnographic data, he hypothesizes

> ...the mechanism which facilitated this inter-regional flow of goods should have been one which linked

> the highest-ranking lineages of the Oaxaca peoples to one or more of the higher-ranking Olmec lineages. One would also predict that the highland Oaxaca elite would begin to emulate the religion of the Olmec elite, insofar as it would enhance their own status among their own people (Flannery 1974: 79-80).

It is apparent that some of the occupants of certain Santa Rosa-Swift Creek sites had direct access to certain Hopewellian diagnostic artifacts. The usages to which these items were put and their quantity, however, seem to be only a pale reflection of these items in Ohio as if the southern participants in the Hopewellian interaction sphere were imitators rather than innovators. Flannery's model will be among those reviewed in chapter nine where the Hopewell question is considered in some detail.

The Mandeville site, 9 Cla 1, in southwest Georgia is relevant to both the problem of the relationship between Deptford and Swift Creek ceramics and the problem of Hopewell in the South. Located in Clay County, the site consisted of two mounds and a village area. Mound A was a flat-topped ceremonial or domiciliary mound; Mound B, a conical burial mound.

Archaeological work at Mandeville was conducted from 1959-1962 by the University of Georgia under the direction of Dr. A. R. Kelly. A summary article describing these archaeological investigations appeared in American Antiquity in 1962 (Kellar, Kelly, and McMichael 1962a). In 1962, a "final report" was also submitted to the National Park

Service. The authors of this report (Kellar, Kelly, and McMichael 1962b) recognized that it was final only in the sense that it was submitted to the National Park Service in fulfillment of contract obligations. It was essentially a report of the 1959 work on Mound A and the 1960 excavation of Mound B. None of the Mound A data recovered after 1959, with the exception of Feature 25, the primary mound discovered in 1960, was described.

Because of the perceived importance of Mandeville to two unresolved problems in the interpretation of southeastern prehistory and because a detailed analysis of the site was lacking, it was deemed desirable and necessary that a re-analysis of the site be undertaken. This project, begun more than ten years after the site was excavated, has profited from a series of new radiocarbon dates from the site and from comparative data not available to the original researchers. These two sources of data, coupled with the study of additional artifactual material not analyzed before, have resulted in some interpretations at variance with those in previously published reports on the site.

Several methods were used for gathering and analyzing the data. Field notes and profiles were used in working out details of mound construction and stratigraphy. Artifacts were analyzed quantitatively and qualitatively. Survey of the available literature and personal communication with other researchers aided in the comparative

analysis of Mandeville and related sites.

The largest artifact category was ceramic. A quantitative and qualitative study of types and assemblages is presented in chapter three. This ceramic analysis was of prime importance in ascertaining the relationship between Deptford and Swift Creek. Ceramic information was also used for making comparisons with other sites, especially the Santa Rosa-Swift Creek sites. Finally, certain ceramic traits were sometimes used to determine relative chronology for many of the sites mentioned in the text.

Analysis of the non-pottery material, particularly the mica, figurines, copper artifacts, and burials, was important in the consideration of Mandeville's participation in the Hopewellian interaction sphere.

Before beginning a detailed discussion of the Mandeville site and its implications for southeastern prehistory, it might be well to pause and outline definitions of some of the more important concepts that were used in the course of research and writing. It is unfortunate that many of the terms used in anthropology and archaeology have come to have different meanings for different people. A set of definitions, then, will aid the reader in understanding what meaning these terms have here.

Culture is a concept which is basic to anthropology. It is generally defined as learned, shared patterns of behavior within a single society.

> The archaeologist's curious use of the concept of culture is a matter of convenience. He has found some use in ignoring its central reference, that is, learned behavior within a single society, in favor of some of its principal derivatives: the proclivity of cultures to occupy space, and the fact that the material elements representing one culture will differ distinctly from the material elements of another culture (Caldwell 1966: 337-338).

This attitude toward the concept of culture frequently led to its misuse by archaeologists, particularly before the advent of the new archaeology. For example, the distribution of Hopewellian items from New York to Kansas City, from Michigan to Florida was at one time ascribed to a single Hopewell Culture.

The new archaeologists have attempted to avoid the misuse of the term by adopting the following definition: culture is "...an extrasomatic adaptive system that is employed in the interaction of a society with its environment and with other sociocultural systems" (Binford 1965: 205). This definition reflects two of the concerns of the new archaeology: culture as a system and cultural ecology. Cultural ecology is concerned with "...the adjustment of human societies to their environments..." (Steward 1973: 327).

Society is defined as "a territorially bounded and autonomous population of animals of a single species (e. g., men) maintaining ties of association and interdependence"

(Lenski 1973: 501). Thus, society refers to a group of people and culture, to their patterns of behavior as they adapt themselves to their environment.

Culture area is "...a geographic space within which the people share a number of traits at a given point in time" (Olien 1973: 2). Culture area is an artificial construct for ordering data. It was conceived when it was realized that individual cultures situated in a single geographic region often exhibit similar cultural traits. Part of this sharing of traits is the result of adaptation to a similar environment; part is due to the interaction which occurs between groups in relatively close proximity to one another. The term culture area is not widely used by archaeologists although the concept itself is accepted. Archaeologists generally substitute the word tradition, or regional tradition, in place of culture area.

> American archaeology still leans heavily on the idea of areally based cultures and probably always will. We have even improved the utility of this view by the concept of tradition--a culture area having depth in that it is allowed to shift its boundaries through time (Caldwell 1966: 336).

As was previously indicated, cultures within a single culture area generally share a number of traits in common. Cultures from differing culture areas may also exhibit cultural similarities. Interaction sphere is

> ...an area within which contact and communication between peoples take place facilitating

> the exchange of ideas and artifacts. However, there are regional and local variations as local groups each have unique problems of adaptation to particular environmental niches, population pressures, levels of sociopolitical integration, and so on (Olien 1973: 5).

Almost the entire eastern United States was one such interaction sphere in the prehistoric past.

The Hopewellian interaction sphere was a network in which artifacts and ideas pertaining to the mortuary-ceremonial aspect of the cultures so involved were exchanged (Caldwell 1964). This concept will be dealt with in more detail in chapter nine.

The preceeding definitions have been drawn largely from cultural anthropology. The following set of definitions pertain to archaeological concepts.

A component is "...the distinguishable evidence of a discrete occupation or use of that site by a group of people" (Deetz 1967: 12). Two criteria for distinguishing two or more components at a single site are "...contrast between the excavation units assigned to one component and those assigned to other components, and uniformity within the units assigned to one component" (Rouse 1972: 43).

A phase is

> ...an archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived, whether of the same or other cultures or civilizations, spatially limited to the order of magnitude of the

> locality or region and chronologically limited to a relatively brief interval of time (Willey and Phillips 1965: 22).

Similar components from several sites within a restricted geographic region generally constitute a phase; rarely does a phase consist of only one component.

A type is "a pattern of attributes that distinguishes a group of artifacts and defines it as a class" (Rouse 1972: 300). A variety, on the other hand, is "a pattern of attributes that distinguishes a division of an artifact class and defines it as a subclass" (Ibid.: 297).

> There is no question that two or more types can be, and usually are, made by the same community--even by the same individuals--at a given time. Varieties, on the other hand, are (hopefully) formulated to reflect specific areal and temporal variations in the norms of the type (Phillips 1970: 24-25).

Modes are "...attributes or attribute combinations that can be usefully employed in investigating cultural and historical relationships" (Ibid.: 28). For example, notched and scalloped lips are a defining mode of Early Swift Creek Complicated Stamped pottery; folded rims are the characteristic mode of Late Swift Creek Complicated Stamped pottery.

A ceramic assemblage is the "...sum total of types, varieties, and modes associated together in an archaeological context" whereas a ceramic complex is "...the sum total of types, varieties, and modes of an archaeological phase"

(Ibid.: 30). The ceramic assemblage from a particular component does not necessarily contain all of the attributes of the ceramic complex of which it is a part. A suggested Early Swift Creek ceramic complex will be defined in chapter seven.

In addition to the problems of the relationship between Deptford and Swift Creek ceramics and of the nature of Hopewell in the South, other matters pertaining to Mandeville will also be discussed. The relationship between Mandeville and the Santa Rosa-Swift Creek Complex will be examined. Other topics to be considered included Sears' division of Santa Rosa-Swift Creek into the Yent and Green Point complexes, McMichael's ideas concerning Mesoamerican influences on Hopewell, and chronology and cultural ecology at Mandeville.

A major portion of this dissertation, chapters two through six, records the results of the re-analysis of the Mandeville site. This site report, in turn, serves as the base from which the problems just mentioned are discussed (chapters seven through nine). An attempt has been made to include only descriptive material in the first six chapters, confining the interpretations to the later chapters, but this has not always been possible.

CHAPTER 2

MANDEVILLE: CULTURAL ECOLOGY

The concept of cultural ecology is based upon the realization that although man, like all living organisms, must adapt to his environment, man's adaptation is primarily by means of his culture rather than by means of his physical being. Culture has, in fact, been defined as "...an extrasomatic adaptive system...." (Binford 1965: 5). Steward (1973: 329-330) outlined three fundamental procedures of cultural ecology. These are an analysis of the relationship between technology and environment, analysis of the behavior patterns associated with the exploitation of an area by a particular technology, and determination of the affect of these behavior patterns on other aspects of culture. The archaeologist is generally unable to adequately cover all of these areas due to the fragmentary nature of the data with which he is working. Nevertheless, the role of environment in man's cultural development is sufficiently important to warrant the inclusion of a section on cultural ecology in any site report.

This chapter describes the environment in which the occupants of Mandeville found themselves. The various plants and animals that may have been available are

discussed as are subsistence techniques that may have been used.

The Mandeville site was located about a quarter mile east of the Chattahoochee River in Clay County, Georgia (31°40' N Lat, 85°05' W Long). It was on a low bluff (the third terrace formation east of the river) overlooking the junction of Sandy Creek and Sandy Branch (Map 1). The deeply-cut creek beds made it appear that the southeastern portion of the site was high above the river; in reality, it was only a few feet above the floodplain.

Topography and Climate

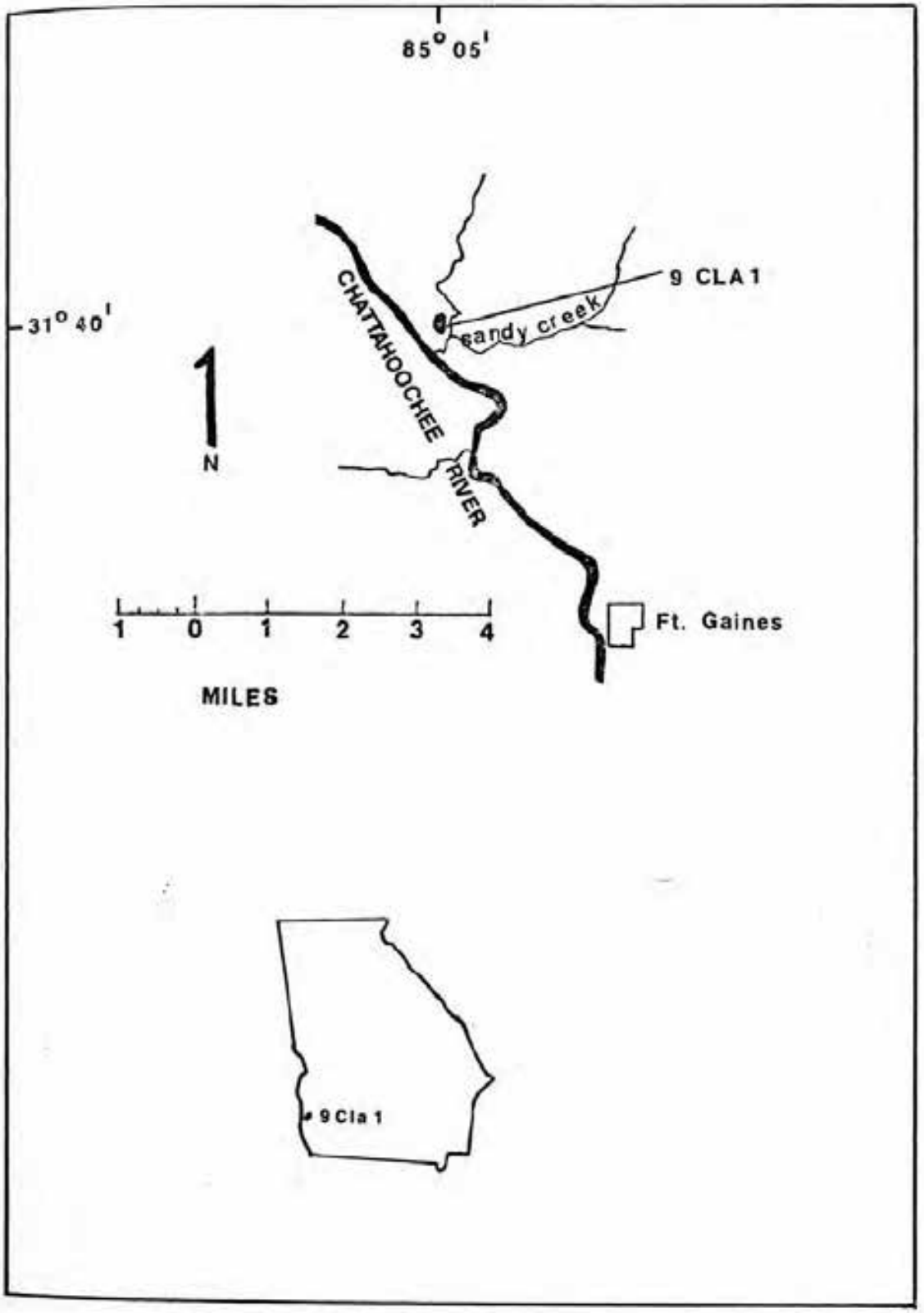
Clay County lies within the Fall Line Hills, a topographic division of the Coastal Plain. This portion of the Fall Line Hills is "...a level to rolling plateau cut by deep, steep-sided valleys and gullies" (McCallie 1925: 43).

Climatically, Clay County lies within the warm temperate zone with a mean annual temperature of 65.4 degrees Fahrenheit. Long, hot summers and mild winters are the rule. The mean annual precipitation (at Fort Gaines) is 50.78 inches (Smith and Kirk 1914: 921-922).

Soil Types and Vegetation: Clay County, Georgia and Henry County, Alabama

The Chattahoochee River forms a boundary between Georgia and Alabama. In the following discussion of soil types and vegetation, those portions of Henry County, Alabama, nearest Mandeville are also included since the

MAP 1: Location of the Mandeville Site, 9 Cla 1


85° 05'
31° 40'
9 CLA 1
sandy creek
CHATTAHOOCHEE
RIVER
N
1 0 1 2 3 4
MILES
Ft. Gaines
9 Cla 1

river probably did not preclude the use of resources on the Alabama side as well as those on the Georgia side of the river.

The following soil type descriptions are from the soil surveys of Clay County (Smith and Kirk 1914) and of Henry County (Jones 1908). Soil type terminology is that used in these two publications.

The soils of Clay and Henry counties fall into three major categories: stream-bottom soils, stream-terrace soils, and upland soils. Figure 1 diagrams the distribution of these categories.

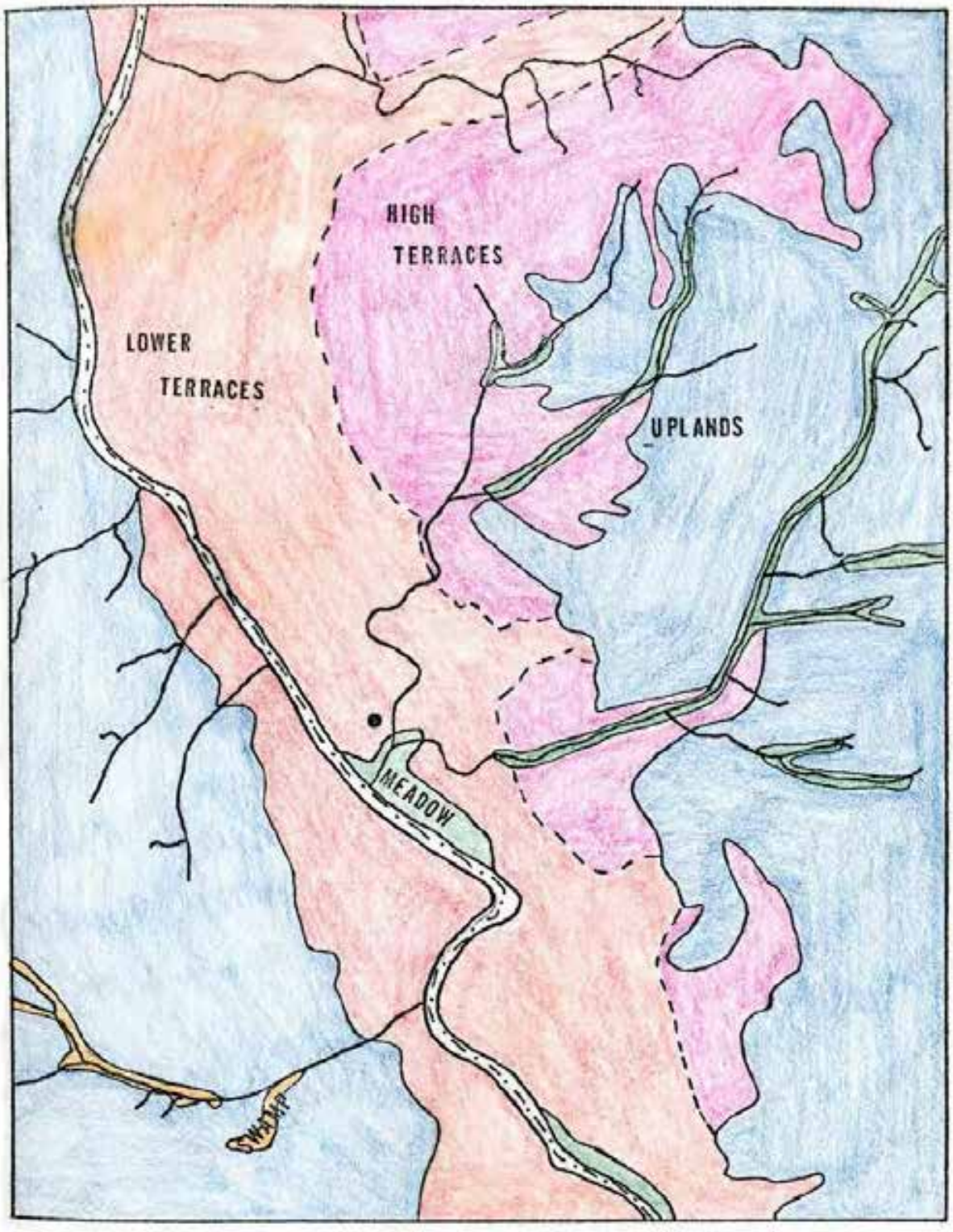
Stream-bottom soils are classified as Meadow in Clay County and as Swamp in Henry County. Meadow soils are variable in both texture and color. They are generally poorly drained and frequently flooded. Native growth includes white oak, water oak, shortleaf pine, sweet and black gum, bay, magnolia, tupelo, poplar, hackberry, beech, sycamore, cypress, shrubs, swamp grasses, and switch cane (Smith and Kirk 1914: 958). Swamp soils are low-lying strips along stream channels. Native vegetation includes short-leaf pine, bay, magnolia, beech, water oak, ash, cypress, cane, briers, and vines (Jones 1908: 511).

The predominate soil series found on the stream terraces are the Cahaba series and the Kalmia series. The Cahaba soils, located on the lower terraces, are brown to reddish brown with yellowish red and reddish brown subsoil. The soils at the Mandeville site itself are Cahaba fine

Figure 1: Distribution of Stream-bottom, Stream-terrace, and Upland Soils in Henry County, Alabama, and Clay County, Georgia

*The Mandeville Site, 9 Cla 1

Scale: 1 in. = 1 mi.


HIGH
TERRACES
LOWER
TERRACES
UPLANDS
MEADOW
SWAMP

sandy loam and Cahaba clay loam, both of which are noticeably micaceous. Native growth includes white oak, shortleaf pine, sweet and black gum, tupelo, poplar, hackberry, beech, bay, and sycamore (Smith and Kirk 1914: 950-952).

The Kalmia series soils are located on the high terraces. Surface soils are gray to grayish yellow; the subsoils are mottled gray and yellow. Forest growth is similar to that on the Cahaba soils (Ibid.: 947).

The upland soils are the Norfolk series in Clay County and the Orangeburg series in Henry County. Small patches of Norfolk soils are found in Henry County and small areas of Orangeburg soils are found in Clay County. The Norfolk soils are gray to grayish yellow on the surface with yellow subsoils (Ibid.: 938). Native growth includes longleaf and shortleaf pine, white oak, blackjack oak, sweetgum, and hickory (Jones 1908: 499-502).

The Orangeburg soils are predominately gray to reddish brown with a bright red subsoil (Smith and Kirk 1914: 935). They were originally forested in longleaf pine, oak, sweetgum, and hickory (Jones 1908: 495-498).

In addition to the above major soil series, patches of other soils occur. These are indicated on a more detailed soil distribution map (Figure 2).

Flora and Fauna

Earlier, the soils of Clay and Henry counties were divided into three categories: stream-bottom soils,

Figure 2: Distribution of Soil Types in Clay County, Georgia and Henry County, Alabama

Meadow

Swamp

Cahaba fine sandy loam

Cahaba clay loam

Cahaba fine sand

Chattahoochee fine sandy loam

Grady silty clay loam

Leaf fine sandy loam

Kalmia fine sandy loam

Kalmia fine sand

Kalmia sand

Norfolk fine sand

Norfolk sand

Norfolk fine sandy loam

Norfolk sandy loam

Ruston fine sandy loam

Susquehanna clay

Orangeburg loamy sand

Orangeburg sandy loam

Amite loamy sand

*Mandeville, 9 Cla 1

stream-terrace soils, and upland soils. These three divisions may also be used to differentiate three vegetation zones although there is considerable overlap of some plant types. Table 1 is a list by zone of the plants found in Clay and Henry counties as recorded in Smith and Kirk (1914) and Jones (1908). In addition to these plants, there are other species recorded for neighboring counties by Justice (1939). This list probably does not exhaust the list of plants found in this area but the author has included only those of which she found mention in the available literature. Table 2 describes these plants in terms of edible portion (if any), when available, and wood characteristics. This table is based upon Smith and Kirk (1914), Jones (1908), Medsger (1945), Justice (1939), and Mattoon (1923).

Finally, Table 3 lists the faunal remains from Mandeville (as identified by Parmalee) and those mammals reported for Clay and neighboring counties by Golley (1962). The preferred habitats are also indicated. The plants and animals listed on these tables were not necessarily used by the inhabitants of Mandeville but they were apparently available to be used if technological capability and cultural norms so allowed.

Swanton (1946: 244-253) described the use of many of these plants and animals by Indians of the Southeast during historic times. The following examples from Swanton are given as an indication of the range of potential uses of these plants and animals.

TABLE 1

DISTRIBUTION OF NATIVE PLANTS

	Name	Meadow	Swamp	Second Bottoms	Uplands	Neighboring Counties
1.	White oak	x	-	x	x	
2.	Water oak	x	x	-	-	
3.	Sweet gum	x	-	x	x	
4.	Black gum	x	-	x	-	
5.	Tupelo gum	x	-	x	-	
6.	Bay	x	x	x	-	
7.	Magnolia	x	x	-	-	
8.	Poplar	x	-	x	-	
9.	Hackberry	x	-	x	-	
10.	Beech	x	x	x	-	
11.	Sycamore	x	-	x	-	
12.	Cypress	x	x	-	-	
13.	Short leaf pine	x	x	x	x	
14.	Ash	-	x	-	-	
15.	Shrubs, swamp grass, switch cane briers, vines	x	x	-	-	
16.	Long leaf pine	-	-	-	x	
17.	Pignut hickory	-	-	-	x	
18.	Shag-bark hickory	-	-	-	x	
19.	Blackjack oak	-	-	-	x	
20.	Wild black cherry					x
21.	Persimmon					x
22.	Blackberry					x

TABLE 1 (continued)

	Name	Meadow	Swamp	Second Bottoms	Uplands	Neighboring Counties
23.	Elderberry					x
24.	Calamus root					x
25.	Bamboo green brier					x
26.	Poke weed					x
27.	Sassafras					x
28.	Sweet goldenrod					x
29.	Smooth sumac					x

TABLE 2

DESCRIPTION OF PLANTS FOUND IN THE VICINITY OF MANDEVILLE

Name	edible portion	when available	wood characteristics
1. White oak (*Quercus alba* L.)	acorn	Sept.-Dec.	strong, durable
2. Water oak (*Quercus nigra* L.)	acorn		heavy, hard
3. Sweet gum (*Liquidambar styraciflua* L.)	gum	Summer	heavy, hard, not durable
4. Black gum (*Nyssa sylvatica* Marsh.)	fruit	Autumn	tough, warps easily
5. Tupelo gum (*Nyssa aquatica* Marsh.)	fruit	Autumn	light, soft
6. Bay (sweet bay) (*Magnolia virginiana* L.)	beverage	Summer	
7. Magnolia (*Magnolia grandiflora* L.)			heavy, hard
8. Poplar (Tulip tree) (*Liriodendron tulipifera* L.)			light, soft, easily worked
9. Hackberry (*Celtis occidentalis* L.)	berry	Autumn and Winter	soft, decays easily
10. Beech (*Fagus grandifolia* Ehrh)	nut	Sept.-Nov.	hard, strong

TABLE 2 (continued)

Name	edible portion	when available	wood characteristics
11. Sycamore (Plantanus occidentalis L.)			hard, decays rapidly
12. Cypress (Taxodium distichum Rich.)			light, soft, easily worked
13. Short leaf pine (Pinus echinata Mill.)			heavy, hard
14. Ash			
15. Shrubs, swamp grasses, switch cane, briers, vines			
16. Longleaf pine (Pinus palustris Mill.)			heavy, hard, strong, tough, durable
17. Pignut hickory (Carya glabra Mill.)	nut	Sept.-Dec.	
18. Shag-bark hickory (Carya ovata Mill.)	nut	Sept.-Dec.	heavy, hard
19. Blackjack oak (Quercus marilandica Muench)			heavy, hard, strong
20. Wild black cherry (Prunus serotina Ehrh)	fruit	Aug.-Sept.	
21. Persimmon (Diospyros virginiana L.)	fruit	Autumn-Winter	hard, dense, heavy, strong
22. Blackberry (Rubus species)	berry	June-Aug.	

TABLE 2 (continued)

Name	edible portion	when available	wood characteristics
23. Elderberry (*Sambucus canadensis* L.)	berry	Aug.-Dec.	
24. Calamus root (*Acorus calamus*)	root	All seasons	
25. Bamboo green brier (*Smilax Bona-nox* L.)	root	Spring and Summer	
26. Pokeweed (*Phytolacca decandra* L.)	salad plant	Spring	
27. Sassafras (*Sassafras variifolium* L.)	beverage	All seasons	light, soft, weak, brittle, durable in soil
28. Sweet goldenrod (*Solidago odero* Ait.)	beverage	Late Summer	
29. Smooth sumac (*Rhus glabra* L.)	beverage	Summer and Autumn	

TABLE 3

LIST OF ANIMALS FOUND AT MANDEVILLE AND IN NEIGHBORING AREAS

Name	Mandeville	Reported in Clay County	Neighboring Counties	Meadow	Swamp	Terraces	Uplands
1. White-tailed deer (*Odocoilieus virginianus*)	x		x	x	x	x	x
2. Black bear (*Ursus americanus*)	x			x	x	x	
3. Opossum (*Didelphis marsupialis*)	x	x	x	x	x	x	
4. Fox squirrel (*Sciurus niger*)	x	x				x	x
5. Gray squirrel (*Sciurus carolinensis*)		x	x			x	
6. Cottontail rabbit (*Sylvilagus floridanus*)		x	x				x
7. Swamp rabbit (*Sylvilagus aquaticus*)			x	x	x		
8. Marsh rabbit (*Sylvilagus palustris*)			x				
9. Beaver (*Caster canadensis*)	x	x	x	x	x	x	

TABLE 3 (continued

Name	Mandeville	Reported in Clay County	Neighboring Counties	Meadow	Swamp	Terraces	Uplands
10. Gray fox (*Urocyon cinerev-vargenteus*)		x					x
11. Raccoon (*Procyon loter*)		x		x	x	x	
12. Long-tailed weasel (*Mustela frenata*)			x				x
13. Mink (*Mustela vison*)		x		x	x		
14. Pole cat (*Spilogale putorius*)			x				x
15. River otter (*Lutra canadensis*)		x		x	x	x	
16. Bobcat (*Lynx rufus*)		x	x	x	x	x	
17. Chipmunk (*Tamias striatus*)		x	x				x
18. Turkey (*Meleagris gallopavo*)	x						

TABLE 3 (continued)

Name	Mandeville	Reported in Clay County	Neighboring Counties	Meadow	Swamp	Terraces	Uplands
19. Box turtle land (*Terrapene carolina*)	x					x x	x
20. Soft-shelled turtle aquatic (*Trionyx* cf. *ferox*)	x			x	x		
21. Terrapin aquatic (*Pseudemys* sp.)	x			x	x		
22. Map turtle (*Graptemys* sp.)	x			x	x		
23. Snapping turtle (*Chelydra serpentina*)	x			x	x		
24. Gar (*Lepisosteus* sp.)	x						
25. *Canis* sp.	x						
26. Fresh water mussel	x						
27. Shark tooth (1)	x						

Wild foods listed by Swanton include blackberries, black gum berries, cane seeds, cherries, hickory nuts, acorns, persimmons, deer, bear, beaver, otter, raccoon, squirrel, rabbit, turkey, fish, and shellfish.

Cane and hackberry were used in making baskets. Cane was also used for mats, spears, drills, and medicine tubes, to list only a few of the usages mentioned by Swanton. Black gum and tupelo gum were made into dishes and spoons. Spoons were also made from poplar and sycamore. Mortars were made from beech. Poplar was used for making stools and canoes. Canoes were also made from cypress and pine. White oak was used in backing wattle walls and the bark was used for covering houses. Bows were made from sassafras and pine; arrow shafts, from hickory. A yellow dye was made from sassafras.

A variety of uses were also made of animal parts. Deer heads were frequently used as decoys in deer hunting. String was made from sinews, skin, or entrails of deer and bear. Drums were covered with deer skin. Bear skins were made into robes, bed coverings, and moccasins. Beaver, otter, raccoon, squirrel, and rabbit skins were used for clothing. Ornaments were made of animal teeth, feathers, bone, and shell.

A large quantity of animal bone, mostly deer, was recovered from the midden layers of Mound A. A sample of these faunal remains was sent to Paul Parmalee for identification after the 1960 field season. Among this sample,

parmalee (personal communication) found remains of the following: deer, bear, dog, opossum, fox squirrel, turkey, several varieties of turtle, and gar. In addition to these remains, a moderate amount of fresh-water mussel shell, a few charred hickory nut shell fragments, a beaver incisor, and a fragment of a shark's tooth were recovered from Mound A. None of the Mound A material was screened and so undoubtedly much of the smaller pieces of plant and animal material were not recovered. However, the plant and animal remains that were recovered indicate that the occupants of Mandeville were using all three vegetation zones near their village. All three zones are within two miles of the site.

No evidence for horticulture was found at Mandeville, nor has any concrete evidence been found for Santa Rosa-Swift Creek sites in Florida. Penton (1974: 8-9) reported the identification of a squash seed from a coprolite from the Refuge Tower site (8 Wa 41) and finds of a possible maize cob fragment from the Bird Hammock site (8 Wa 30) and of possible beans from the Hartsfield site (8 Le 120a) (see Map 10). Maize and squash in small quantities and other cultigens have been reported for Hopewellian sites elsewhere (see Struever and Vickery 1973: 1197-1220 for the most recent summary of cultivated plants found on Hopewellian sites) but, as Caldwell (1965: 68-69) has pointed out,

> ...it is distinctly possible that some of the large Hopewellian sites in broad bottom land may have made food production...of considerable importance to their

> economy.... But it would be an errant assumption to suppose that all economies during a given archaeological period were identical.

Subsistence Pattern

Caldwell (1958) originated the concept of primary forest efficiency to describe the adaptation of Late Archaic populations to the eastern woodlands. Struever, as a result of extensive investigation of the Woodland period settlement-subsistence patterns in the lower Illinois Valley, visualized a progression from primary forest efficiency to intensive harvest collecting, "...an adaptation centering on exploitation of selected, high-yielding natural food resources characteristic of certain biomes..." (Struever 1968b: 305).

Intensive harvest collecting is possible in those areas in which food resources requiring little labor to secure and process are available in large supply which is renewed regularly. Struever (Ibid.) identified five possible resources in the lower Illinois Valley which meet these requirements: nuts and acorns; seeds of plants like Iva, Polygonum, and Chenopodium; white-tail deer; migratory waterfowl; and certain species of fish.

Examination of the subsistence pattern of the Early Swift Creek component at Mandeville must remain superficial. The identification of many of the above-mentioned food resources on lower Illinois Valley sites was made possible

by the special flotation methods utilized by Struever whereby microbotanical and microzoological remains were recovered. No such effort was made at Mandeville; the midden from Mound A was not even screened. Despite this shortcoming, Struever's model may be applicable to Mandeville. The site was situated so that the inhabitants had access to resources from three micro-environmental zones. Among the floral and faunal remains that were recovered from Mandeville were at least two of the categories listed by Struever: white-tail deer and nuts and acorns. By far the most numerous class of faunal remains identified by Parmalee was white-tail deer, numbering over 1400 bone fragments. In addition, over 5300 bone fragments were classified "unidentifiable large mammal bone fragments, most probably deer." Evidence for the exploitation of nuts and acorns is slight with only a few charred hickory nut shell fragments being recovered; however, more careful excavation techniques would most certainly have allowed the recovery of greater quantities of these items since oak-hickory forests did surround the site. Using Struever's model and the available evidence from Mandeville, it might be hypothesized that the Middle Woodland period occupants of the site were intensively harvesting the deer and nut and acorn resources which were within easy access to them. The abundance of these resources probably allowed the site to be occupied for a major portion of the year as a base settlement (Ibid.: 307).

This brief sketch of the environmental setting and probable subsistence pattern of the Middle Woodland component provides a background for the description and analysis of the cultural remains from the Mandeville site which will be presented in the following chapters.

CHAPTER 3

MOUND A

Map 2 illustrates the layout of the Mandeville site. Mound A, the flat-topped mound, was located at the southern edge of the site, overlooking Sandy Creek. Mound B, the burial mound, was about 900 feet northwest of Mound A.

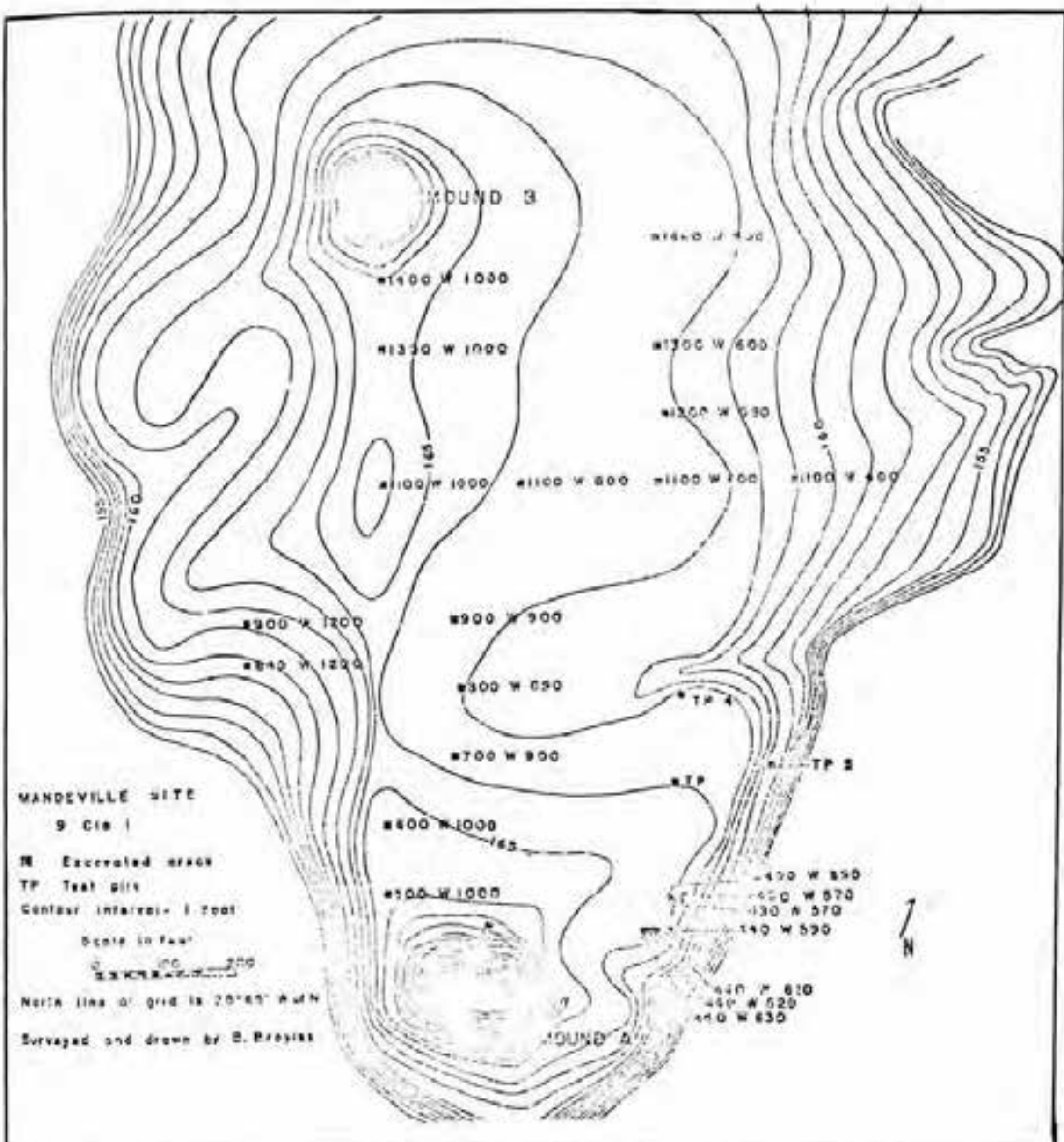
The first recorded visit to the Mandeville site was that of C. B. Moore. He tested both Mound A and Mound B (indicating that Mound B had been partially excavated prior to his work) but found nothing of interest to himself in either mound (Moore 1907: 447). A University of Georgia field party made a surface collection and several tests in 1950. Full-scale excavation began in 1959 when it became evident that the site would be inundated upon completion of dam construction. The Mandeville site now lies in about forty feet of water in the Walter F. George reservoir.

This chapter provides a description of Mound A and an analysis of the artifacts recovered therein. Succeeding chapters will deal with Mound B and the villages. Mound A will be described in terms of excavation procedures, stratigraphy, and artifact analysis.

Mound A, also known as Standley Mound, measured about

Map 2: The Mandeville Site, 9 Cla 1: Site Layout

(reduced from a map on file in the Department of Anthropology, University of Georgia)


MANDEVILLE SITE
9 Cle 1
TP Test pits
Scale in feet
1400 W 1000
1300 W 1000
1100 W 1000
1100 W 800
1100 W 400
900 W 1200
900 W 900
700 W 900
600 W 1000
500 W 1000
TP 4
TP
N

240 feet long and 170 feet wide at the base (Plate 1). It was approximately 14 feet high and the summit measured 140 feet long and 80 feet wide. The upper four feet of the mound (Layer V) was a Mississippian cap that was added to the mound several hundred years after the final Early Swift Creek occupation. Layer V will not be discussed since it is not related to the period with which this work is concerned.

EXCAVATION PROCEDURE

Excavation procedures for the years 1959 and 1960 are concisely described by Kellar, Kelly, and McMichael (1962a: 336-338) as follows:

> In 1959, excavations were started extensively over the summit seeking structural evidences. When it was discovered that no building remains were preserved on the top of the mound due to approximately a century of cultivation and erosion, the plan of operations was modified to a trenching procedure through the shorter north-south axis in order to secure a profile view, and ultimately to peel off the final mantle of the mound. When this trench had been excavated to a depth of about 4 feet, and an interior mound encountered, the true nature of the mound became apparent.
>
> The pottery and artifacts from the uppermost 4 feet resemble the Mississippian Rood focus material found elsewhere along the middle Chattahoochee River.... The portion of the mound below the Rood focus, approximately two-thirds of the mound, proved to be a Woodland construction, and excavation procedures were modified to meet this contingency. The lateral north-south trench

was cut just into the mound's flat top on both the north and south sides and down to the premound subsoil in order to determine the nature of mound construction. The middle section of the north-south trench was cut only to Layer III, due to lack of time. This, however, afforded enough insight into the mound's structure and its importance to plan for another season's work.

In the 1960 season, the Mound A operations were resumed by bulldozing off all the Rood focus cap (Layer V) lying east of the north-south trench of the previous season. This exposed the eastern one-half of the Woodland mound top, which was then horizontally stripped in an effort to uncover possible structures. This operation was discontinued after considerable work failed to disclose any distinguishable features. Then, several parallel test trenches from the top of Level IV were made from the 1959 north-south axis east across the mound. This operation disclosed no distinctive structural features; less than half a dozen post molds showed in trenches set at 10-foot intervals.

A change of plan was necessary in order to open up lower levels which might produce evidence on /of/ building activities on the mound. In the southeast quadrant of the mound, bulldozing operations cut the mound partially down to Layer IIIA, and on the extreme south edge, to the premound level (Layer I) where 1959 work had disclosed extensive dark midden accumulations. During the remainder of the 1960 season, the major operations were concerned with the removal of dark soil fill in large oval depressions showing initially on Level IV, extending down to Level III or IIIA, as well as to the horizontal shaving of Level III to uncover possible postmolds or other structural evidences. Much attention was given to trenching operations on the south periphery of the mound, bulldozed to the premound "Old Village" level. A well-defined profile of a small truncate pyramidal mound

(Feature 25) lying immediately over the Old Village premound layer was observed in the east-west face of this cut to the Old Village.

The final weeks of the 1960 season were devoted to working down to the top of this primary mound structure, and exposing its outlines and surface. Otherwise, a large area of the premound village was investigated and uncovered by bulldozing.

In 1961 and 1962, only a few weeks were spent at Mandeville. Work on Mound A in 1961 was aimed at securing additional collections from Layers II and III. Additional profile data was the goal in 1962 and a considerable portion of the mound was bulldozed to this end. Figure 3 diagrams the portions of the mound excavated between 1959-1962.

The field supervisors were as follows:

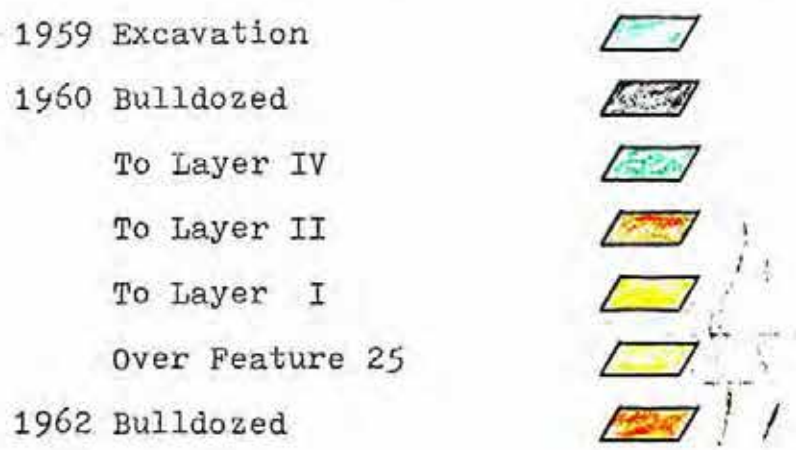
	Mound A	Mound B	Village
1959	McMichael		Kellar
1960	Kelly	Kellar	
1961	Kelly		
1962	deBaillou & Schnell		

STRATIGRAPHY

Figures 4 and 5 show the stratigraphy of Mound A as it appeared at the end of the 1959 season. These are the north and south profiles as noted on Figure 3. Blocks 10L0 (read ten left zero) through 50L0 make up the South Profile; blocks 120L0 through 160L0, the North Profile. Blocks 60L0 through 110L0 were excavated only to Layer IIIA. In McMichael's field diary, the levels were initially assigned letters A-G (top to bottom). The use of Roman numerals was

Figure 3: Mound A Excavations, 1959-1962

(adapted from the original, on file in the Department of Anthropology, University of Georgia)



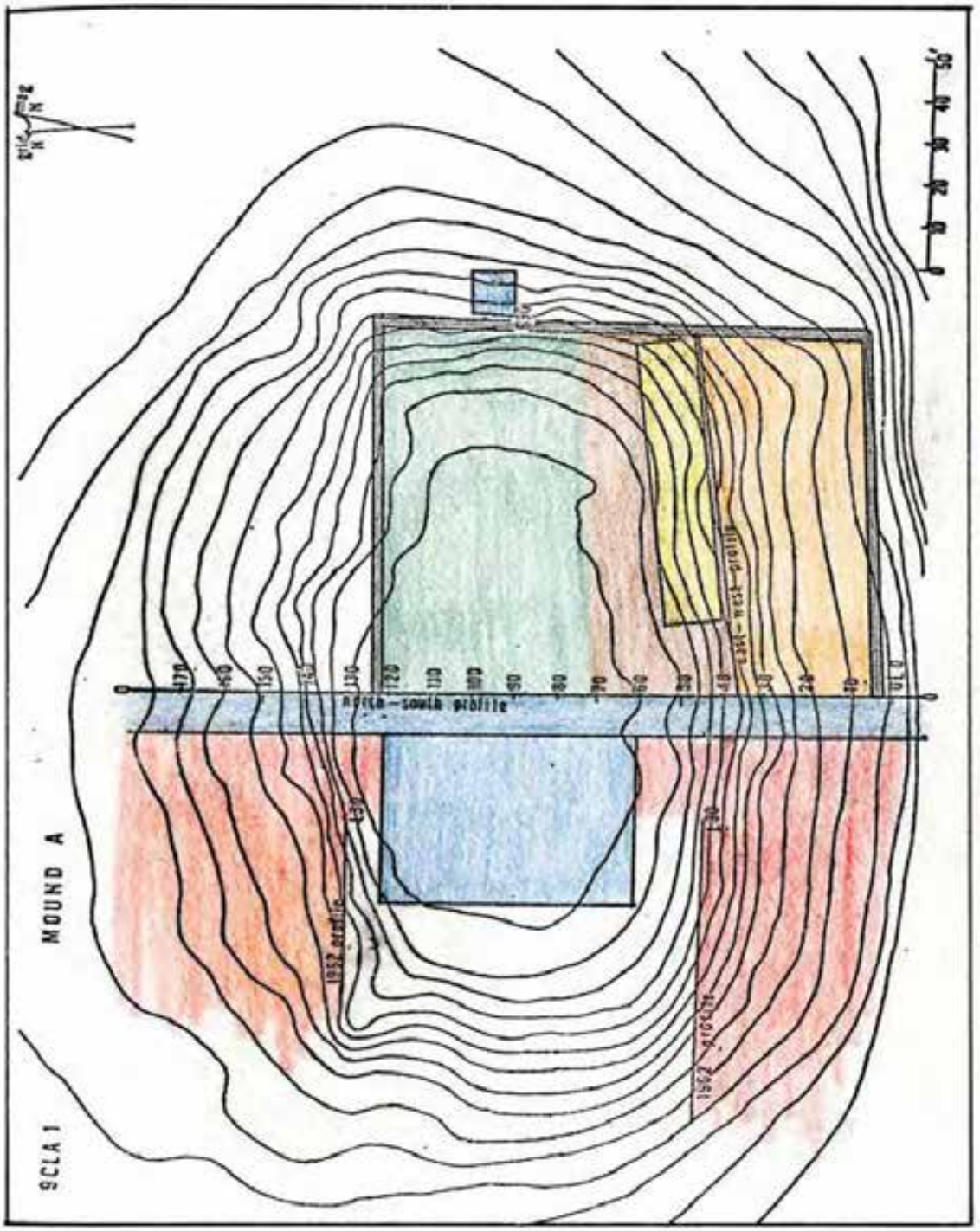

MOUND A
SCALE 1
north-south profile
east-west profile
1852 profile
1852 profile

Figure 4: Mound A--North Profile

(reduced from the original, on file in the Department of Anthropology, University of Georgia)

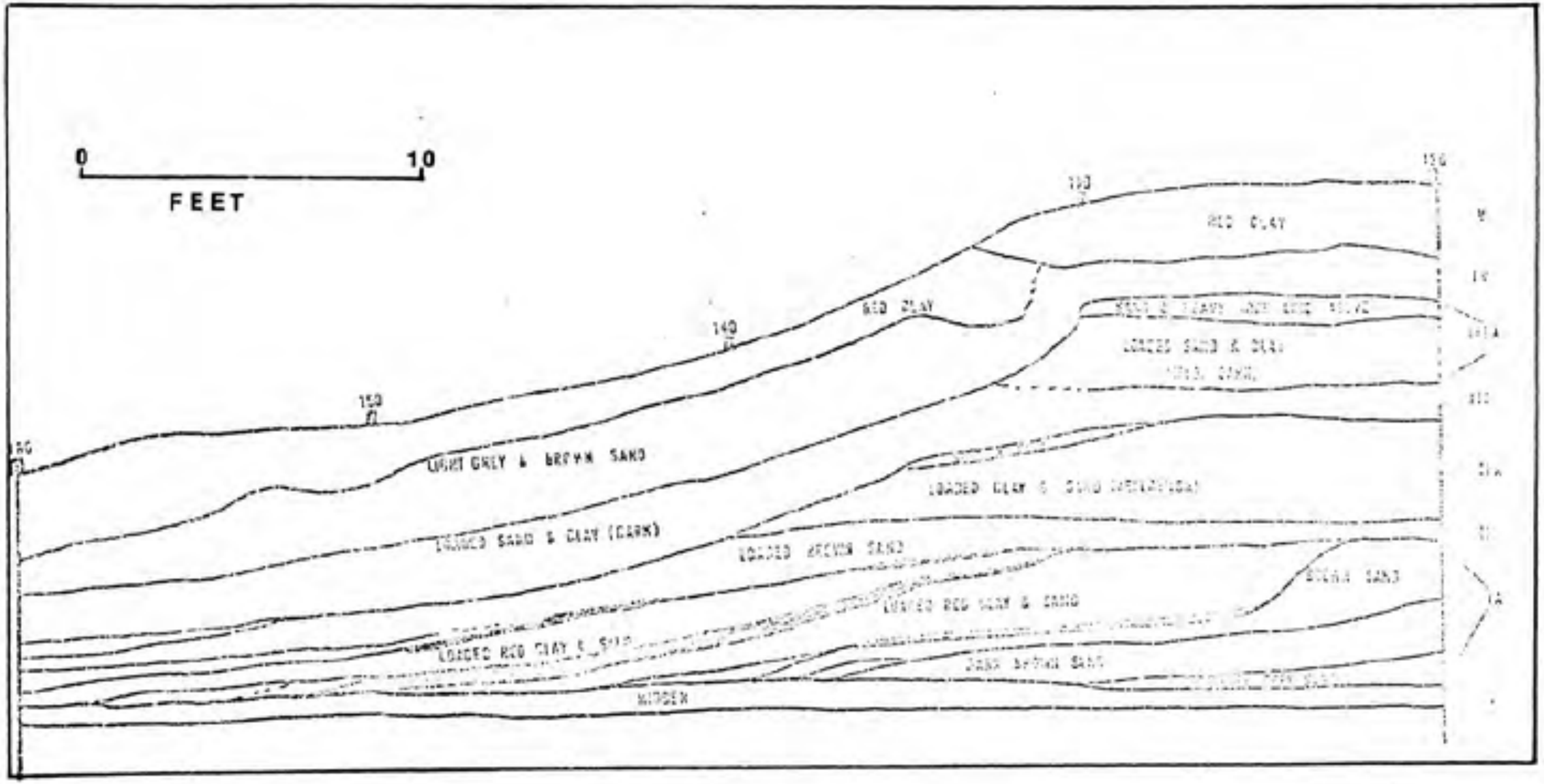
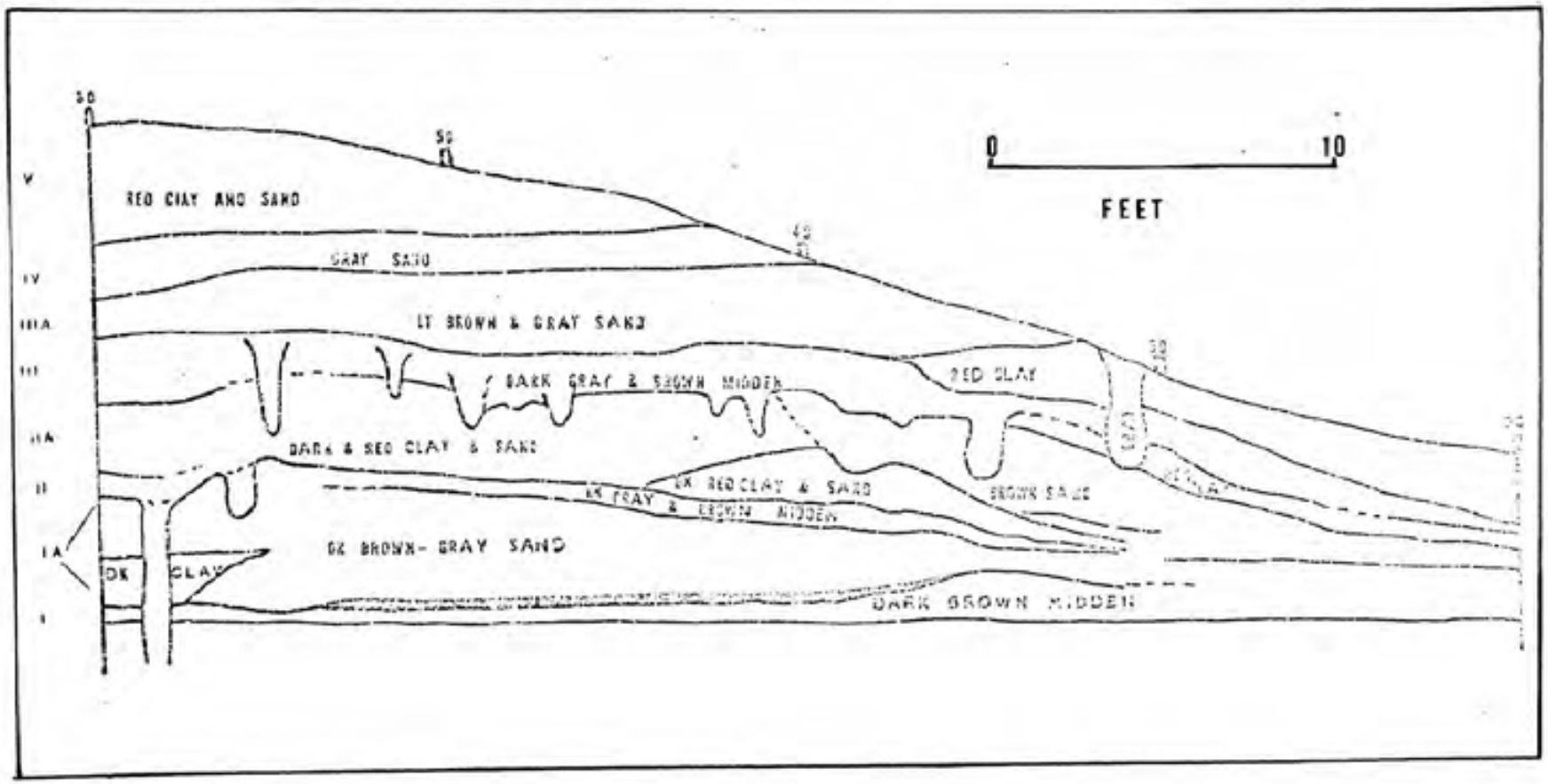

0
10
FEET
130
140
150
RED CLAY
RED CLAY
LIGHT GREY & BROWN SAND
LOADED SAND & CLAY (DARK)
LOADED BROWN SAND
LOADED RED CLAY & SAND
DARK BROWN SAND
MIDDEN

Figure 5. Mound A--South Profile

(reduced from the original, on file in the Department of Anthropology, University of Georgia)


RED CLAY AND SAND
GRAY SAND
LT BROWN & GRAY SAND
DARK GRAY & BROWN MIDDEN
RED CLAY
DARK & RED CLAY & SAND
DK RED CLAY & SAND
GRAY & BROWN MIDDEN
BROWN SAND
DK BROWN- GRAY SAND
DK CLAY
DARK BROWN MIDDEN
0
10
FEET

apparently adopted after the 1959 field season had ended as they are not used in the field diary. The following description of the South and North profiles is taken from the July 8 and August 14, 1959, entries in McMichael's field diary.

South Profile (Plate 2)

Layer A (Layer V). Three zones were recognizable in Layer V. These were (from top to bottom) a two-inch humus zone, a level of about one foot of leached brown sand, and a one-foot level of loaded sand and red clay.

Layer B (Layer IV). Layer IV consisted of a dark Early Swift Creek midden.

Layer C (Layer IIIA). Layer IIIA was about two feet thick. The upper foot was composed of gray sand; the lower foot, brown sand.

Layer D (Layer III). Layer III was about a foot of dark brown-black midden.

Layer E (Layer IIA). Layer IIA was about two and one-half feet thick and was composed of loaded black and red clay and brown, yellow, and gray sand.

Layer F (Layer II). Layer II was a six-inch layer of dark midden.

Layer G (Layer IA). Layer IA was a three-foot layer of brown sand.

Premound (Layer I). Layer I was a dark brown midden about a foot thick.

North Profile

Layer A (Layer V). As in the South Profile, three zones were recognized in Layer V: a two-inch layer of humus, about a foot of leached sand, and a foot of loaded red clay and sand.

Layer B (Layer IV). Layer IV was about a foot deep on the mound summit and thicker on the slope. It was composed of light brown sand.

Layer C (Layer IIIA). Layer IIIA was found only in Block 120L0, serving as a mound cap. It was composed of a foot of loaded red-orange clay and gray-brown sand.

Layer D (Layer III). Layer III was about nine inches of loaded red and dark clay.

Layer E (Layer IIA). Layer IIA, like Layer IIIA, was only a mound cap. It consisted of two and one-half feet of dark loaded clay and yellow sand.

Layer F (Layer II). Layer II consisted of two inches of very fine yellow sand and six inches of darker loaded sand.

Layer G (Layer IA). Three zones were recognized in Layer IA. The first one and one-half feet were composed of light brown sand with several lateral additions of red loaded clay and midden on the slope. Below this was one

foot of dark brown sand and six inches of light brown sand.

Premound (Layer I). Layer I was one of dark brown midden. Very little of this midden was found beyond Block 130L0.

A comparison of the descriptions of these two profiles discloses some definite differences. In the South Profile, Layers IV, III, II, and I were described as midden layers. In the North Profile, only Layer I was a midden layer; Layers II, III, and IV were composed of loaded sands and clays. This situation plus the fact that less cultural material was found in the North Profile blocks prompted Kellar, Kelly, and McMichael (1962a: 339-341; 1962b: 9-10, 57-58) to conclude that the southern portion of the mound was occupied while the northern portion served another (ceremonial?) purpose. It is unfortunate that the central portion of the mound was not excavated as this area might have aided in the interpretation of the apparent dichotomy in mound function. Later work on the mound concentrated on the southern portion of the mound.

Discrepancies in the recorded thickness of several of the layers should be noted. McMichael, in his field diary, recorded Layer V (the Mississippian cap) as being just over two feet thick. However, the earlier quote pertaining to excavation procedures and Frank Schnell (personal communication) indicate a thickness of four feet for Layer V. No vertical scale is given for the North-South Profile and

no explanation is available for the apparent error in McMichael's field notes.

Other discrepancies exist between McMichael's recorded layer thicknesses and the catalogued indications of layer thickness. The following is a comparison of the figures provided by McMichael, those from the catalogue, and those given in the American Antiquity article (Kellar, Kelly, and McMichael 1962a: 338-340):

Layer	McMichael	Catalogue	American Antiquity
IV	1 ft.	2 ft.	av. 1 ft.
IIIA	2 ft.	3 ft.	1-3 ft.
III	1 ft.	2 ft. 3 in.	av. 1 ft.
IIA	2½ ft.	2 ft.	2-3 ft.
II	½ ft.	1½ ft.	½ ft.
IA	3 ft.	1 ft.	-
I	1 ft.	1 ft.	1 ft.

The above illustrates quite conclusively that the various layers were not uniform throughout the mound and that the excavators sometimes had trouble distinguishing layer breaks.

In 1960, an East-West Profile was cut to intersect McMichael's North-South Profile (illustrated on Figure 6). In this new profile, Layers III, IA, and I were easily picked up and followed. Layers II and IIA were difficult to follow (Kellar, Kelly, and McMichael 1962b: 74). Overlying Layer I was Feature 25, a primary mound to be described in greater detail in a later section of this chapter. The 1962 profiles are shown on Figure 7. As can be seen on these diagrams, not all of the defined layers could be picked up in all portions of the mound.

Figure 6: Mound A--East-West Profile

(reduced from the original on file in the Department of Anthropology, University of Georgia)

BLOCK DIAGRAM OF MOUND A (EASTERN HALF)

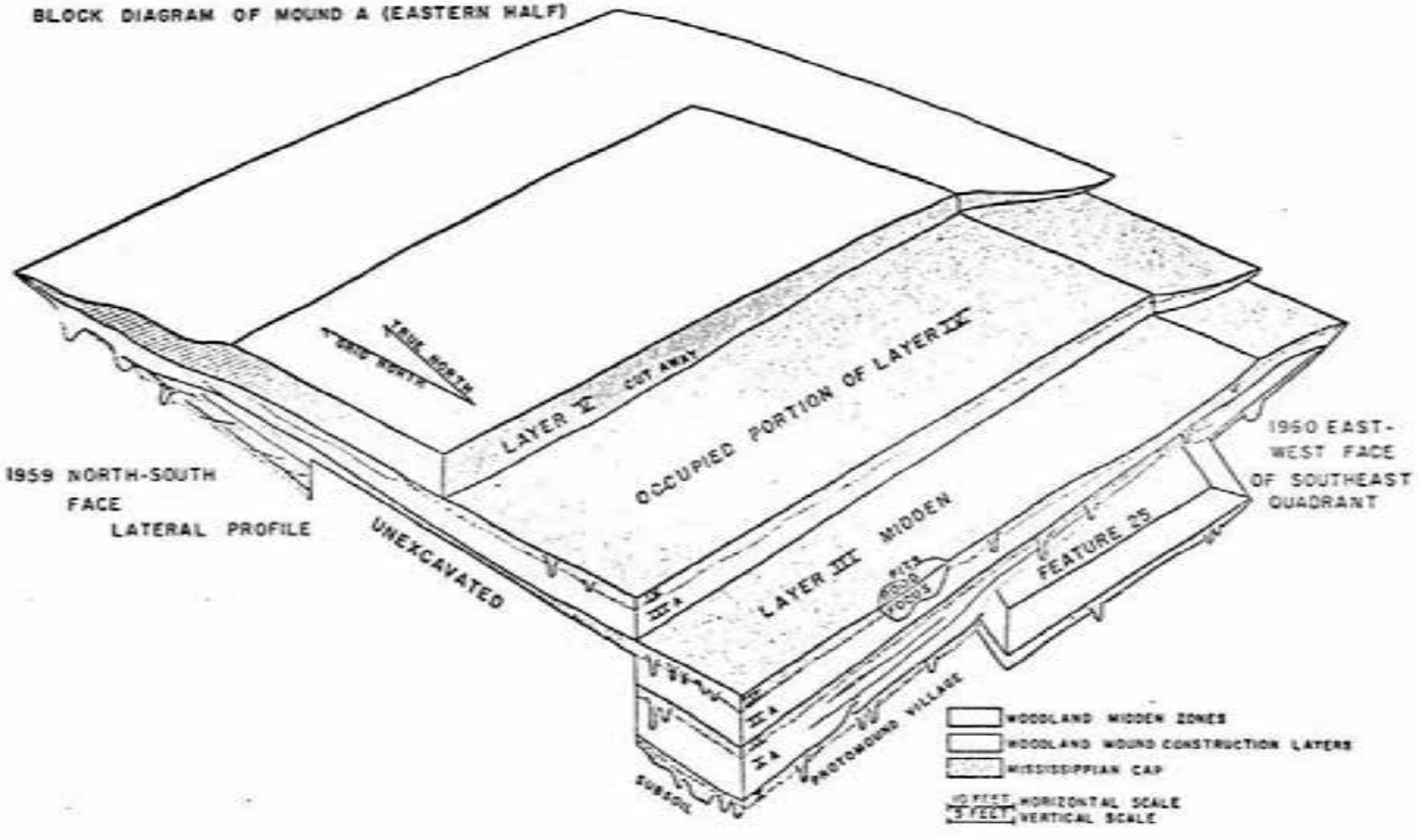
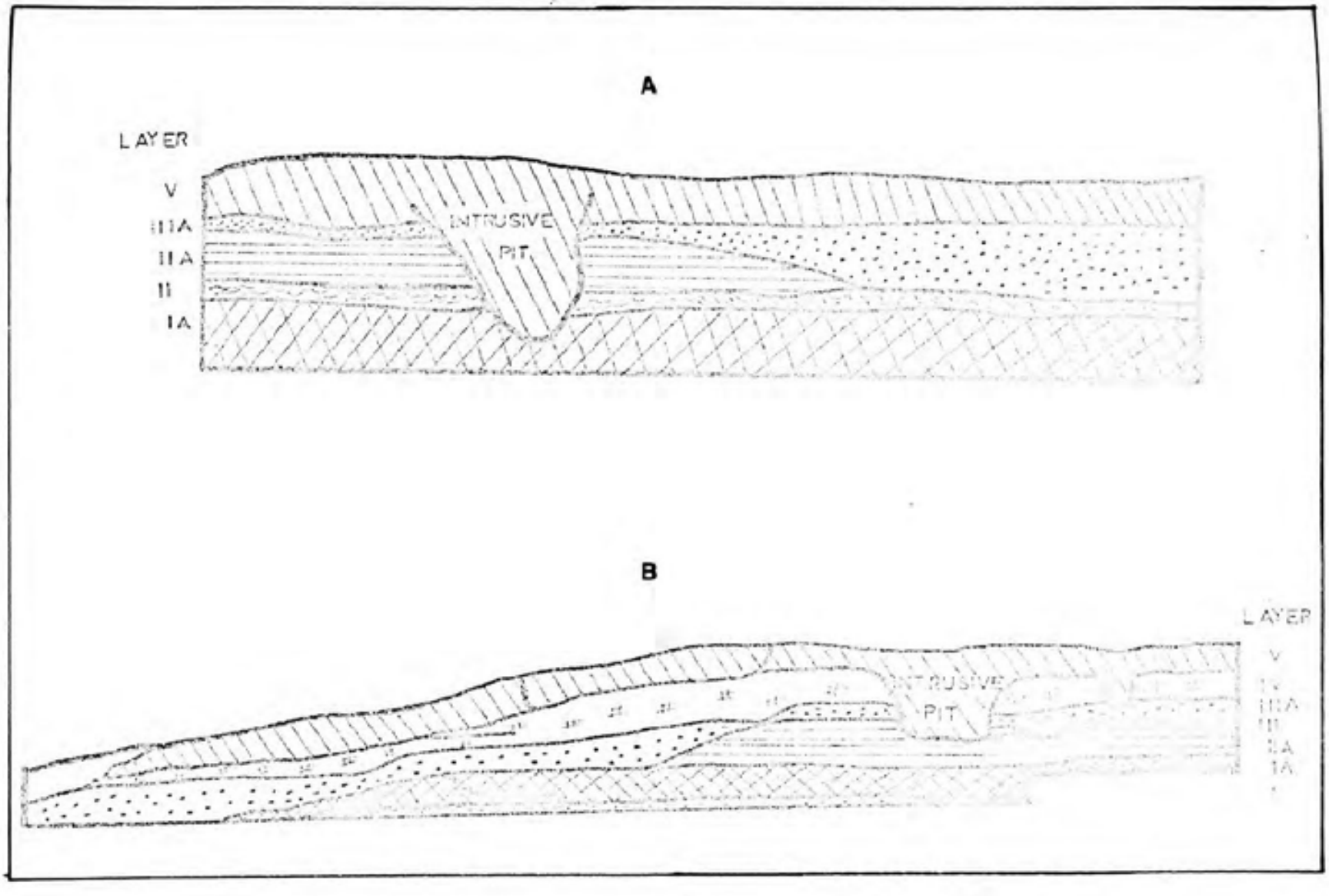


Figure 7: Mound A--1962 Profiles

(drawn from the original on file in the Department of Anthropology, University of Georgia)

A: N 130
L 30-70

B: N 45
L 30-100


A
LAYER
V
IIIA
IIA
II
IA
INTRUSIVE
PIT
B
LAYER
V
IIIA
II
IA
PIT

A study of these various profiles reveals that the mound was not simply built up in a layer-cake fashion by a series of successive additions. Instead, Mound A was a mound which gradually grew as both in situ occupational debris and fill brought in from elsewhere accumulated. Fireplaces and other features were not restricted to level breaks. In fact, there were no significant breaks between Layers II-IV until the top of Layer IV. Humus stains marked an old sod line separating Layers IV and V (Frank Schnell, personal communication). More will be said about the nature of Mound A in a later section of this chapter.

ARTIFACT ANALYSIS

Despite the rather large quantity of artifactual material (mostly pottery) recovered from Mound A, only about one-half of the material pertaining to the Woodland occupation is adequately provenienced to be profitably analyzed. The material, as it was taken from the ground, was placed in labeled paper bags (the label indicated square and level from which the artifacts came). When brought to the lab from the field, each bag was given a lot number and recorded in a catalogue. The material was then placed in shoeboxes with the lot number and provenience written on the outside of each box. Many of the original bags were evidently discarded. In the intervening years between the initial cataloguing and the present research (begun in 1973), one of the two catalogues, that containing

part of the 1960 and the 1961 and 1962 work, was lost. Also, someone combined the contents of many of the shoe-boxes. On these combined boxes, only a list of the lot numbers contained therein is given on the outside. Thus the provenience of most of the 1960 and 1961 material is lost. The feature forms for 1960 and 1962 are available, however, so that at least some of the material can be added to the 1959 collection for analysis.

Besides the material of lost provenience, bulldozed material and that excavated by arbitrary levels are not included in the analysis since they represent mixed samples. Finally, it should be noted that in the years between the excavation and this research, samples of pottery and other artifacts have been withdrawn for various reasons. This researcher has tried to gather together this material. Some of these artifacts are unlabeled, making provenience identification difficult and, in some cases, impossible.

Layers IA, IIA, and IIIA were defined by Kellar, Kelly, and McMichael as fill layers and, as such, are mixed samples. Layer IA should, however, be more pure than either IIA or IIIA since only the premound midden (Layer I) contributed to its construction. The midden layer (I, II, III, and IV) samples are those used in the following discussion of Mound A artifact content and changes in artifact types and modes through time. The total of all analyzed artifacts (midden layers and A layers) is used, however, in calculating total percentages.

The raw data upon which the following discussion of Mound A artifacts is based may be found in the various appendixes following the bibliography. The provenience from which each sample was taken is indicated in Appendix A.

Ceramic Analysis

Unless otherwise noted, all pottery to be described is sand tempered. The tempering agent is so fine as to be barely visible. Rarely, individual particles of sand can be seen. The paste is micaceous in almost all instances. Surface color ranges from black to shades of brown (brown, tan, brownish-yellow) to reddish-orange with the browns predominating. Interiors are well smoothed. The pottery is generally very well made.

In the description of Mound A ceramics to follow, two categories of ceramics are recognized: pottery types and ceramic modes. Pottery types will be treated first.

Pottery types. The pottery types from Mound A, for the most part, fit established type definitions and will be so designated.

(a) Franklin Plain (Willey 1949: 392-393) (Plate 3, left). Forty-two per cent of the analyzed sherds were classified as plain. Straight to slightly flaring rims with flattened or rounded lips predominated. Sherd thickness did not vary significantly from Layer I-IV. Occasional (3) drilled holes were noted near the rim.

(b) Polished (Plate 3, upper right). Polished is here differentiated from plain in that the surface finish of the former is smooth to the touch and has a luster whereas the latter is sandy to the touch and is not shiny. Kellar, Kelly, and McMichael (1962b: 14, 17, 21, and 28) distinguished between burnished (Deptford) and polished (Crystal River). The burnished variety they associated with Mandeville I; the polished variety, with Mandeville II. Nowhere do they describe these two varieties other than to mention that the surface color of the polished pottery is orangish-yellow. In Layer I, most of the sherds that are here classified as polished are black but there are also several orangish-yellow sherds. In other words, there does not appear to be a burnished (Mandeville I)-polished (Mandeville II) dichotomy as the orangish-yellow polished pottery is found in all levels. The black polished pottery does seem to be restricted to the lower levels but there is another possible explanation for this phenomenon. Most, if not all, of the black polished sherds are portions of the neck of the vessel as indicated by the curvature of the sherd. In the lower levels of Mound A, there is a ceramic mode that will be described more fully later as punctated. The punctated sherds are always a portion of the neck and are characterized by a row of rectangular or circular punctations separating a polished neck from a decorated body. The sherds always have a black surface. Therefore, the black polished neck sherds from the lower levels are

probably associated with this mode.

Seven per cent of the analyzed sherds were polished. Straight rims with flattened or rounded lips predominated. Sherd thickness decreased noticeably in Layers III and IV.

(c) Gulf Check Stamped (Willey 1949: 387-388) (Plates 4 and 5). The check-stamped pottery from Mandeville is here classified as Gulf Check Stamped because it corresponds with Willey's type description and because of its association with Early Swift Creek Complicated Stamped pottery. In many respects, the check-stamped pottery from Mandeville also resembles Cartersville Check Stamped (Caldwell nd: 174-175).

Eleven per cent of the analyzed sherds were check stamped. Again straight to slightly flaring rims with flattened or rounded lips predominated. The one slightly-folded or extruded rim was stamped on top of the lip. Sears (1963: 27) mentioned occasional stamped rims during the Deptford phase at the Tucker site in Florida. Sherd thickness remained fairly stable from Layers I-IV. The seeming decrease in thickness in Layers II and III is probably due to the smallness of these samples. One sherd from Layer I exhibited check stamping on both the interior and exterior of the sherd. Another, also from Layer I, was a combination of check and simple stamping. This was a rim sherd with a series of parallel lines applied obliquely to the rim. Below the simple stamp was a row of check stamping running obliquely in the opposite direction.

A considerable variety exists among the check-stamped sherds in terms of check size, form, and application. Size of individual checks may be used to classify sherds as small, medium, or large check stamped. Small checks were less than 4 mm on a side; medium checks, between 4-6 mm; and large checks, greater than 6 mm on a side. A few were linear check stamped; that is, the horizontal lands were more pronounced than were the vertical lands. The subdivision of the check-stamped category by check size is given on Table 4. The percentages of small, medium, and large checks are fairly even in each layer (the unusually large percentage of small check stamped in Layer II may be the result of small sample size). Linear check stamped is a minority variety which occurs in greatest concentration in Layer I. Check form varied from square to rectangular to rhomboid and application varied from bold to faint to over-stamping. Form and application were not quantified.

(d) Unnamed Simple Stamped (Plate 6). Although a minor amount of simple-stamped pottery is frequently found in association with Santa Rosa-Swift Creek ceramics in Florida, it has not been formally named.

Kellar, Kelly, and McMichael (1962a: 341; 1962b: 15) described two varieties of simple-stamped pottery from Mandeville. The first, with grooves V-shaped in cross-section, they identified as Mossy Oak-like. The second, with grooves U-shaped in cross-section, they named Deptford or Cartersville. In the present study, three varieties of

TABLE 4

CHECK STAMPED

check size	I		IA		II		IIA		III		IIIA		IV	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Small	58	25.3	30	26.0	11	46.0			20	39.2			23	32.4
Medium	88	38.4	57	49.0	8	33.3	2	33.3	15	29.4			28	39.4
Large	74	32.3	28	24.0	4	17.0	4	66.7	15	29.4	1		20	28.2
Linear	9	4.0	2	2.0	1	4.2			1	2.0				
Total	229		117		24		6		51		1		71	

simple stamped are distinguished. The first is a simple stamp with the grooves and lands bold and quite distinct with the grooves roughly U-shaped in cross-section (Plate 6, lower right). The second category appears to be what Kellar, Kelly, and McMichael were calling Mossy Oak-like in that the grooves tend to be V-shaped in cross-section. However, the surface finish is more like brushing than simple stamping (Plate 6, left, upper right, and center). A pottery type with similar surface finish is described by Keel (1972: 136) from Garden Creek Mound 2 and by Chapman (1973: 50) from the Icehouse Bottom site (see Map 9). Chapman's description is most definitive:

> The brushed texture of this type /Connestee Brushed/ appears to have been produced by dragging a bundle of sticks or the edge of a grooved paddle across the damp surface of the vessel. At times it was difficult to distinguish this treatment from simple stamping except that the grooves were smaller, frequently deeper, more irregular, and where visible, seemed to feather out from a scraping motion. The term simple stamped/brushed might be more descriptive.

His descriptions and illustrations correspond very well to this variety at Mandeville. In addition, Jefferies (personal communication) reports similar pottery from the Tunacunnhee site in northwest Georgia (Map 9). Prufer (1968: 9) described Turner Simple Stamped B as resembling coarse brushing. There is, therefore, strong precedent at other Hopewell-related sites for this variety of

simple-stamped pottery. A third, miscellaneous, category covers all simple stamping that does not fit either of the above categories. The breakdown of the simple-stamped pottery is given on Table 5. The simple stamped/brushed category decreases as the miscellaneous category increases in frequency.

A little over eight per cent of the analyzed sherds were simple stamped. The highest percentage of simple stamping was found in Layers I and II. Straight rims with flattened lips predominated. Stamping was either parallel or oblique to the rim with the former predominating. Sherd thickness remained fairly constant from Layers I-IV.

(e) West Florida Cord Marked (Willey 1949: 388-389) (Plates 7 and 8). Cord-marked pottery accounted for four per cent of the classified sherds from Mound A. The cord markings varied from widely spaced to closely spaced with the latter predominating. When rim sherds are available, the cord markings are vertical to the rim. This is in contrast to the simple-stamped pottery where the stamping is either parallel or oblique to the rim. Flattened lips on straight rims predominated. Sherd thickness remained constant.

(f) Early Swift Creek Complicated Stamped (Jennings and Fairbanks 1929, Willey 1949: 378-383) (Plates 9-27). Pottery with a curvilinear or combination curvilinear/rectilinear stamped design is classified here as Early Swift Creek Complicated Stamped. Its association with

TABLE 5

VARIETIES OF SIMPLE STAMPED

simple stamped	I		IA		II		IIA		III		IIIA		IV	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Bold	38	35.2	18	17.5	15	48.4	1	20.0	7	23.3	2	40.0	24	28.0
SS/brushed	37	34.5	47	46.0	8	26.0	1	20.0			1	20.0	11	13.0
Miscellaneous	33	31.0	38	37.0	8	26.0	3	60.0	23	77.0	2	40.0	52	60.0
Total	108		103		31		5		30		5		87	

check- and simple-stamped ceramics and with Santa Rosa-Swift Creek ceramics and the presence of notched and scalloped lips are criteria which help identify this pottery as Early Swift Creek rather than Middle or Late Swift Creek.

Twenty per cent of the classified sherds are Early Swift Creek Complicated Stamped. This type increased in frequency of occurrence as the check- and simple-stamped types decreased in frequency of occurrence. Straight to slightly flaring rims with notched lips predominated. A variety of motifs is evident but concentric circles, spirals, curving loops, and ovals seem to predominate. In some cases, concentric circles form the entire motif (Plates 19 and 20); in other instances, the concentric circle is a central or fill element in a more complex design (Plates 11, 14, and 16). Bettye Broyles' reconstructed designs (Plates 14-16, 19, 21-24) suggest an emphasis on symmetry by the craftsmen who carved the paddles. In Layers III and IV, a line-filled concentric circle or oval motif is added (Plate 25). The complicated-stamped motifs illustrated on Plates 9-27 are highly comparable to the Early Swift Creek motifs illustrated by Willey.

(g) Crooked River Complicated Stamped, Early Variety (Willey 1949: 383-384) (Plates 28-30). The Crooked River Complicated Stamped pottery from Mandeville corresponds very nicely with Willey's type description. This type made up seven per cent of the total ceramic count. Rims were

straight to slightly flaring and the lip treatment was evenly divided between flattened and notched lips. The chevron motif was either vertical or parallel to the rim.

(h) St. Andrews Complicated Stamped, Early Variety (Willey 1949: 385-386). St. Andrews Complicated Stamped, Early Variety occurs at Mandeville only in very small numbers (one per cent of the total of analyzed sherds). The line-block variety described by Willey is most common. As with the Crooked River Complicated Stamped, this type from Mandeville fits Willey's type description quite well.

(i) Unnamed Rectilinear Complicated Stamped (Plate 31). Twenty sherds with line-filled diamonds alternating with concentric diamonds were recovered from Layers III and IV. Wauchope (1966: 58) illustrated a similar motif which he identified as Napier. These sherds may indicate a brief Late Swift Creek occupation of Mound A prior to the addition of the Mississippian cap. Roy Dickens (personal communication) reports similar pottery from the Anneewakee Creek site, a Late Swift Creek site in Douglas County, Georgia. This site, with a platform mound, has been dated at AD 605 $\pm$ 85.

(j) Alligator Bayou Stamped (Willey 1949: 372-373). One rocker-stamped sherd, provenience unknown, was identified as Alligator Bayou Stamped (Plate 32, top center).

(k) Unclassified Rocker Stamped (Plate 32). In addition to the one Alligator Bayou Stamped sherd just mentioned, six unclassified rocker-stamped sherds were

recovered from Mound A. Two were found in Layer IA; one, in Layer IV. The remaining examples are of unknown provenience. All but one of these sherds are zoned rocker stamped but the stamping and incising differ from that of the Alligator Bayou Stamped specimen.

(l) Crystal River Negative Painted (Willey 1949: 391) (Plate 33). Two negative-painted sherds were found in Layer IA; two, in Layer IV. One of the Layer IV examples was a flanged rim. Six additional negative-painted sherds are of unknown provenience.

(m) Pierce Zoned Red (Willey 1949: 391-392). One example of the type, Pierce Zoned Red, provenience unknown, was recovered from Mound A.

(n) Unclassified Red Filmed. Eleven red-filmed sherds were found in Mound A. Seven of these sherds are of unknown provenience. They include two slightly inverted rims with flattened lips and one straight rim with a flattened lip. One sherd from Layer I was filmed on both the interior and exterior as was one sherd from Layer IV. The other two sherds from Layer IV were filmed on the interior only.

(o) Basin Bayou Incised (Willey 1949: 375-376) (Plate 34, to left corner). One sherd closely resembling Willey's description of Basin Bayou Incised was recovered from the lower levels of Mound A (the exact provenience is unknown). This sherd is apparently somewhat unusual in that the top of the flattened lip is incised. Phillips (1970:

119) illustrated a sherd of Marksville Incised, var. Yokena, the top of which is also incised. Phillips and others (Willey 1949: 376; Ford 1951: 52; and Greengo 1957: 155; 1964: 55) have pointed out the close resemblance between Basin Bayou Incised and Yokena Incised.

(p) Weeden Island-like sherds (Plate 34). Several Weeden Island-like sherds were found in Mound A. They include zoned punctate, a sherd resembling Keith Incised (Willey 1949: Plate 32), and one resembling Weeden Island Incised (Ibid.: Plate 26). Weeden Island material has been found along the Chattahoochee River as far north as Columbus, Georgia.

(q) Minority types. In addition to the above-mentioned types, a small amount of fiber-tempered plain; sand-tempered fabric impressed; and limestone-tempered plain, cord-marked, simple-stamped, and complicated-stamped ceramics was recovered from Mound A. These are enumerated on Tables 24-30 in Appendix B.

Ceramic modes. Several ceramic modes, "...attributes or attribute combinations that can be usefully employed in investigating cultural and historical relationships" (Phillips 1970: 28), merit attention.

(a) Punctate (Plate 35). The sherds classified as punctate are characterized by a row of rectangular or circular punctations separating a plain neck from a decorated body. In Mound B a partial vessel was recovered

with rectilinear punctations separating a check-stamped body from a plain neck. A similar vessel is illustrated by Moore (1903: Fig. 34) from the Crystal River site (see Map 10). Slashed incisions around the shoulder of a squat, check-stamped pot are illustrated for the Oakland Mound (Morrell 1960: 103) (see Map 10). Finally, Prufer (1968: 9) described Turner Simple Stamped B as having a row of punctations separating a plain neck from the stamped body. Of the nineteen punctate sherds (including two of unknown provenience) recovered from Mound A, four are check stamped and one, cord marked. The remainder are broken at the point of punctation and the surface decoration is indeterminate. For this reason, the punctated sherds are listed as a separate category rather than being included among the check-stamped, simple-stamped, and cord-marked types, within each of which they surely represent a distinctive mode. Fifteen of the sherds exhibit rectilinear punctations; four, circular cane or reed punctations.

The punctated sherds occur almost exclusively in Layers I and IA (two sherds were recovered from Layer IV). This coincides with the earlier discussion of the polished ceramics in which the black polished neck sherds from the lower levels of Mound A were tentatively associated with punctated pottery.

Two additional sherds, one from Layer IA and one from Layer IIIA, are classified as punctate but they differ from the above in having one or more rows of triangular

punctations (Weeden Island-like?) (Plate 34, lower right). These are not included with the Punctate mode on Tables 7 and 8 to follow but they are included with that category on Tables 25 and 29 in Appendix B.

(b) Check-stamped/raised central dot (Plate 4, upper left corner). A mode which may be restricted to the upper levels of Mound A is a check stamp with a raised dot in the center of each square. One sherd was found in Feature 29 (Layer IV). Several additional sherds, of unknown provenience, were recovered from Mound A and Kellar, Kelly, and McMichael (1962a: 346) attributed this mode to Mandeville II. At least two such sherds were also recovered from the village. These were found in square 480W570, in the 6-12 and 12-18 inch levels. Similar pottery has been reported from the Bird Hammock site in north Florida (Penton 1970). In addition Prufer (1968: 137 and Plate 45) described a sherd from the Turner site in Ohio as being check stamped with a central dot. He further indicated that he had not seen this particular design at any other Ohio Hopewellian site. Finally, Rein (1974: 80) reported the occurrence of seven check-stamped/central dot pattern sherds from the Mann site (Map 9).

(c) Notched and scalloped lips (Plates 3, 4, 10, 12, 14, 17, 20, 26-30). The type descriptions for Early Swift Creek Complicated Stamped, Crooked River Complicated Stamped, Franklin Plain, and Gulf Check Stamped all include notched and scalloped lips as a defining attribute. Table

6 outlines the lip treatment of these pottery types at Mandeville. Flattened lips predominated on all types with the exception of Early Swift Creek Complicated Stamped; notched lips were more common on that type.

(d) Flanged lips. Several flanged lips were recovered, mostly from the lower levels of Mound A. This lip mode is probably identical to Sears' (1962: 9) "T" shaped vessel lips which he described as "right-angle everted flat lips." At Mandeville, flanged lips were noted on two plain rims (Plate 3, right center), a check-stamped rim (flanged and notched), a cord-marked rim (Plate 7, bottom), a negative-painted sherd (Plate 33, upper right corner), and on three unclassified rims (one also notched; the other two, pinched--Plate 3, lower right corner). The check-stamped and negative-painted flanged lips were from Layer IV; the remaining, from layers I, IA, and II.

(e) Tetrapods and bases (Plates 9, 36, and 54). A total of 72 whole tetrapods, 19 tetrapod fragments, and four flattened bases were included in the Mound A pottery sample. Measurements of the whole tetrapods are given on Table 33 in Appendix E. Measurements were taken from what had been the inside of the vessel to the tip of the tetrapod. As can be seen from this table and from Table 34, also in Appendix E, tetrapod size tended to decrease from Layer I through Layer IV.

All but nine of the whole specimens were plain. Of these nine, four were check stamped; one, simple stamped;

TABLE 6: LIP TREATMENT OF SELECTED POTTERY TYPES FROM MANDEVILLE

Pottery Type	Lip Plattened		Rounded		Notched		Scalloped		Flanged		Extruded		Total
	#	%	#	%	#	%	#	%	#	%	#	%	
Franklin Plain	115	56.4	61	29.9	20	9.8	6	2.9	2	0.9	-		204
Polished	23	57.5	16	40.0	-		1	2.5	-		-		40
Gulf Check Stamped	21	45.6	18	31.9	4	8.7	1	2.2	1[1]	2.2	1	2.2	46
Unnamed Simple Stamped	17	60.7	8	28.6	3	10.7	-		-		-		28
W. Fla. Cord Marked	9	81.8	1	9.1	-		-		1	9.1	-		11
Early Swift Creek Comp. St.	27	32.1	7	8.3	46	54.8	3	3.6	-		1	1.2	84
Crooked River Comp. St.	11	57.9	-		8	42.1	-		-		-		19
Red-filmed	2		-		-		-		-		-		2
Unclassified Rims	44	47.8	20	21.7	22	23.9	1	1.1	3[2]	3.3	2	2.2	92
TOTAL													526

[1]Also notched

[2]One also notched; two also pinched

two, Early Swift Creek Complicated Stamped; and two, Crooked River Complicated Stamped.

Ceramics summarized. The Middle Woodland period pottery from Mound A was very homogeneous, showing no abrupt breaks or intrusions. Evolution of the ceramics is, however, evident from layers I through IV. Tables 7, 8, and 9 summarize the Swift Creek and associated ceramics from Mound A. Plain and polished wares made up nearly fifty per cent of the total ceramic inventory; Early Swift Creek Complicated Stamped, twenty per cent. Check-stamped pottery outnumbered Early Swift Creek Complicated Stamped pottery in layers I and II. In layers III and IV, Early Swift Creek Complicated Stamped pottery predominated over check-stamped pottery. Complicated-stamped motifs remained generally similar throughout the mound although there was an elaboration of motifs in the upper levels. Flattened vessel lips predominated although the percentage of notched lips gradually increased.

In addition to the pottery types and modes just discussed, two more classes of ceramic artifacts were recovered from Mound A.

Ceramic figurines. Two figurine fragments were recovered from Layer IA. The first (Plate 37, upper left corner), found in Blocks 40-50L0 at the 6-12 inch level,

> ...is 2¼ inches (57 mm) wide at the shoulders, 1½ inches (37.9 mm) high break at the wrist; and 3/4 inch (19.0 mm) wide from back to

TABLE 7: MIDDLE WOODLAND PERIOD CERAMICS FROM LAYERS I, II, III, AND IV, MOUND A

Pottery Type	Layer	I		II		III		IV	
		#	%	#	%	#	%	#	%
Franklin Plain		372	35.9	82	40.0	209	45.5	863	44.9
Polished		83	8.0	43	20.9	41	8.9	125	6.5
Gulf Check Stamped		229	22.1	24	11.7	51	11.1	71	3.7
Unnamed Simple Stamped		108	10.4	31	15.1	30	6.5	87	4.5
W. Fla. Cord Marked		39	3.8	9	4.4	15	3.3	42	2.2
Early Swift Creek Comp St.		158	15.2	15	7.3	69	15.0	492	25.6
Crooked River Comp St.		32	3.1	1	0.5	37	8.1	201	10.5
St. Andrews Comp St.		4	0.4	-		4	0.9	16	0.8
Unnamed Rectilinear Comp St.		-		-		3	0.7	17	0.9
Red-filmed		1	0.1	-		-		3	0.2
Crystal River Neg. Painted		-		-		-		2	0.1
Rocker Stamped		-		-		-		1	0.05
Punctate (mode)		11	1.1	-		-		2	0.1
	Total	1037		205		459		1922	

TABLE 8: MIDDLE WOODLAND PERIOD CERAMICS FROM LAYERS IA, IIA, AND IIIA, MOUND A

Pottery Type / Layer	IA		IIA		IIIA		Total (Tables 7 & 8)	
	#	%	#	%	#	%	#	%
Franklin Plain	346	43.0	12	48.0	30	33.0	1914	42.1
Polished	25	3.1	-		5	5.4	322	7.1
Gulf Check Stamped	117	15.0	6	24.0	1	1.1	499	11.0
Unnamed Simple Stamped	103	13.0	5	20.0	5	5.4	369	8.1
W. Fla. Cord Marked	61	8.0	1	4.0	2	2.2	169	4.0
Early Swift Creek Comp St.	116	14.4	-		38	41.3	888	20.0
Crooked River Comp St.	26	3.2	1	4.0	7	8.0	305	7.0
St. Andrews Comp St.	3	0.4	-		4	4.4	31	1.0
Unnamed Rectilinear Comp St.	-		-		-		20	0.44
Red-filmed	-		-		-		4	0.09
Crystal River Neg. Painted	2	0.3	-		-		4	0.09
Rocker Stamped	2	0.3	-		-		3	0.07
Punctate (mode)	3	0.4	-		-		16	0.35
Total	804		25		92		4544	

TABLE 9

TOTALS, LIP TREATMENT

	I		IA		II		IIA		III		IIIA		IV		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
flattened	41	45.6	66	67.4	10	43.5	2		27	57.5	8	53.3	115	46.0	269	51.0
rounded	34	38.0	19	19.4	10	43.5			11	23.4	3	20.0	55	22.0	132	25.1
notched	11	12.2	8	8.2					5	11.0	3	20.0	76	30.2	103	20.0
scalloped	2	2.2	3	3.1					1	2.1	1	6.7	5	2.0	12	2.3
flanged	1[1]	1.1	2	2.0	3	13.0							1[1]	0.4	7	1.3
extruded	1	1.1							3	6.4					4	0.8
Total	90		98		23		2		47		15		252		527	

[1]Also notched

> breasts in front. The edge of a skirt is seen at the waist; and just above, on the front of the figure only, an applique strip is broken away--apparently some manner of decoration in the midriff area or possibly where an arm was folded across the waist. The figure is very probably a female, judging by the breast indications (Kellar, Kelly, and McMichael 1962b: 22).

A second figurine fragment (Plate 37, lower left corner) appears to be the right chest and shoulder of a male figure. It was recovered from a brown layer above Feature 25 (Feature 28 or 36?). It measures 23.8 mm thick and 35.3 mm tall from the neck to the waist.

One clay figurine fragment, a human head, was found in Layer II (Plate 38, right). The right ear is missing.

> It is probably a representation of a male, has considerable facial prognathism, and a suggestion of almond shaped eyes.... The one ear present is very crudely made and stands straight out from the head; the large size of the ear may indicate an earspool. The dimensions of the head are: 1¼ inches (31.9 mm) front to back and side to side; 1 3/4 inch (44.4 mm) from top of head to the break at the neck (Ibid.: 24-26).

This figurine head is remarkably similar to a figurine found at the Block-Sterns site east of Tallahassee, Florida (Plate 39). That figurine, missing only the legs below the knees, appears to have been formed in a sitting posture.

> The figurine shows traces of pigment in all areas except where the hair should be. All bare skin areas are covered with a white pigment, and the skirt is black

> with vertical stripes of white and red. The lack of pigment within the hair area, excepting the center part, may indicate perishable hair (Dan Penton, personal communication).

Although the face of this figurine is very masculine, the breast indications suggest that it is a female figure. The hands are folded in the lap.

A fragment of a leg bent at the knee (Plate 37, center) recovered in square 30L0, level 96-102 inches, and a foot of unknown provenience round out the inventory of Mound A figurines. The figurine found in Mound B will be described in Chapter 4. Another figurine fragment recovered from the Mandeville site was a female figurine broken at the waist (Plate 38, left). This artifact was recovered from the spring below Mound A. However, as this was the area to which backdirt from Mound A was thrown, it may have come originally from the mound. This figurine differs from the others in having an elaborate headdress. A photograph of a figurine found in Florida by an amateur (the exact location of the find is undisclosed) was shown to this writer by Dan Penton. It has a similar headdress although peaked on the opposite side from the Mandeville example. Dan Penton says that, although the finder refuses to disclose the location of his find, it is suspected that it came from a mound that is known to produce Hopewellian artifacts.

Clay platform pipes. A final category of ceramic

artifacts is platform pipes. No whole specimens were found in Mound A (one from Mound B will be described later). A fragment, the distal portion of a platform pipe, is ascribed to Layer II by Kellar, Kelly, and McMichael (1962a: 344). At the point where the bowl would have rested, what appears to be modeled bird tailfeathers are visible, perhaps indicating that this was a bird effigy pipe (Plate 37, right). The proximal portion of a second clay platform pipe was found in Layer IV (Ibid.: 347). It had a central longitudinal ridge on the ventral side. Three additional fragments, all of unknown provenience, were recovered from Mound A.

Lithic Analysis

Unless otherwise noted, all of the chipped stone artifacts described herein were made from local cherts. Colors ranged from brown to purple to white.

Chipped stone. Chipped stone artifacts include points, knives, scrapers, drills, and blades.

(a) Points. There were relatively few projectile points found in Mound A but those that were found exhibit a rather wide variety in form. Many appear to be Archaic types; however, since the occurrence of fiber-tempered pottery indicates a late Archaic occupation of the site, the presence of Archaic-looking points is not unwarranted. Also, some Archaic types probably continued to be manufactured into Woodland times.

The majority of the projectile points from Mound A fall into four general categories: stemmed, lanceolate, corner-notched, and expanded stem. The projectile point categories used here are defined and described below.

Category I, stemmed points, (Plate 40), contains five subdivisions. The first, IA, is a medium to large point with a straight stem and wide blade. The second, IB, is similar to IA except the blade is long and narrow. Subdivision IC is a medium to large point with a straight stem and a concave base. These three varieties resemble both Savannah River Stemmed (Coe 1964: 44-45, Figs. 37, 38, and 39) and Cotaco Creek (Cambron and Hulse 1969: 27) points. They tend, however, to be somewhat smaller than these two Late Archaic types. Variety ID is a small to medium point with a rounded stem and wide blade. These resemble Gary points (Ibid.: 47). The final subdivision, IE, is a medium to large point with a weak stem.

The second general category of projectile point is lanceolate (II) (Plate 41). There are two subdivisions within this category. The first, IIA, is a small to medium point with a concave base and a long, narrow blade. Variety IIB is a medium-sized point with a straight base and a straight and excurvate blade. These points resemble Copena points in general form. They are, however, much smaller than Copena points. Copena points measure over 80 mm in length (Faulkner 1969: 53) whereas the largest of the lanceolate points from Mandeville is only 71 mm

long. The measurements of these points more closely approximate those of Copena Triangular (Ibid.: 26).

Category III, corner-notched points (Plate 42), contains four subdivisions. The first, IIIA, is a medium to large point with a concave base and long, narrow blade. Variety IIIB is similar to IIIA except that the base is straight. These two varieties resemble two points illustrated by Butler (1971: 37) as Jacks Reef Corner Notched. They do not particularly resemble the illustration in Cambron and Hulse (1969: 69) but they do fit the written description in that publication. Jacks Reef Corner Notched is generally considered to be a late Woodland point (Butler 1971: 32; Cambron and Hulse 1969: 69). The third variety, IIIC, is a medium-sized point with a straight base and a broad blade. Variety IIID is a small corner-notched point with a straight base and beveled blade, (Plate 44, bottom center). This variety resembles the Early Archaic type, Palmer Corner Notched (Coe 1964: 67-69, Fig. 59).

Category IV, expanded-stem points (Plate 43), has two subdivisions. The first, IVA, is a medium-sized point with a long, expanded stem. These points resemble Bakers Creek, which is an early to middle Woodland Alabama point type (Cambron and Hulse 1969: 8). Variety IVB is a medium-sized point with a short, expanded stem. This variety resembles the type, Steuben Expanded Stemmed, an Illinois Late Hopewell type (Morse 1963: Plate VIII, Fig. 1). Expanded-base points are generally considered to be "the

typical Early Swift Creek point" (Kellar, Kelly, and McMichael 1962a: 347; Phelps 1969: 16; Penton 1974: 12).

A fifth category, triangular, contains three varieties. Variety VA is a small to medium point, basally notched, with a straight or incurvate blade, (Plate 44, upper left). This variety is identical to the Florida type Hernando Subtype I (Bullen 1968b: 23). Variety VB is represented by one medium-sized triangular point with an amorphous base. A medium-sized point with a concave base is variety VC.

Two additional projectile point categories are side-notched (VIA) and ovate (VIIA). The side-notched variety is a small, shallow side-notched point with a thick blade (Plate 44, lower right). This variety resembles Swan Lake, a Woodland point type from Alabama (Cambron and Hulse 1969: 108).

The sixty-seven points analyzed from Mound A are listed on Tables 35 and 36 in Appendix F. Provenience, dimensions, and raw material are all included on these tables. Of these sixty-seven points, about 78 per cent were manufactured from local cherts; 22 per cent, from non-local materials. The exotic materials utilized include Ft. Payne chert, quartzite, and crystalline quartz. The sample size is so small that very little can be said definitely about the projectile points from the site. The Early Archaic Palmer Corner Notched point was found in Layer IV. Savannah River-like stemmed points occur throughout the mound. The lanceolate points do appear to be restricted to Layers I

and IA with corner-notched points more predominant in Layer IV. Bakers Creek, Steuben Expanded Stemmed, and Hernando are all Middle Woodland types; therefore, points resembling them are quite appropriate in the first four layers of Mound A.

(b) Preforms (Plate 45). Several stemless, rectangular preforms were recovered; unfortunately, all but one are of unknown provenience. The one of known provenience came from Layer III. All are broken but this one is the most complete and measures 65.3 mm long (tip broken), 39.0 mm wide at the base, and 22.4 mm thick.

(c) Knives. Knives are here differentiated from points on the basis that the former are asymmetrical while the latter tend to be symmetrical. Three broken knives were included in the Layer I sample. One broken knife or scraper was found in Layer IA. A rectangular flake which was worked along one edge, found in Layer IIIA, may have been a knife or a scraper. Two knives were recovered from Layer IV with one measuring 66.0 mm long, 32.5 mm wide, and 10.0 mm thick.

(d) Scrapers (Plate 45, 46). Seven scrapers were found in Layer I. This number includes two triangular scrapers, two ovate scrapers (one is unifacial), one end scraper, and two irregularly-shaped scrapers. From Layer IA came an irregularly-shaped flake worn along one edge which may have been a side scraper. A unifacial scraper was recovered from Layer III. It measured 56.1 mm long,

26.9 mm at the widest point, and 7.3 mm thick. Finally, a unifacial and scraper was recovered from Layer IV.

(e) Drills (Plate 43, 44, upper right and lower left corners). A stemmed drill was recovered from Layer I. It measured 63.7 mm long, 25.1 mm wide at the shoulder, and 7.8 mm thick. A drill with a broken base came from Layer III; and a concave-base drill with a broken tip, from Layer IV.

(f) Prismatic Blades (Plate 47). A total of 33 blades and blade fragments were analyzed from Mound A. Their provenience, dimensions, shape, and raw material are indicated on Tables 39 and 40 in Appendix F. Unfortunately, the provenience is unknown for 19 of the specimens. Non-local material from which 21 of the blades were made include Flint Ridge, Ohio, chert (Plate 47, first four on bottom row), crystalline quartz (fifth one on bottom row), and medium to dark gray chert (all on top row and sixth blade on bottom row).

The blades are of two forms: triangular and trapezoidal. It is interesting to note that all of the specimens made from local chert are triangular in cross-section. Those made from exotic materials may be either triangular (8) or trapezoidal (13). Also, the ones made from local materials average longer, wider, and thicker than those made from nonlocal materials. Differences in workmanship indicate that the examples made from exotic materials were probably imported as finished products rather than

manufactured at Mandeville.

Polished stone. Very few polished stone artifacts were recovered from Mound A. Bannerstone fragments were found in Feature 4 (Layer I) and Feature 34 (Layer IA). Kellar, Kelly, and McMichael (1962a: 344) reported a greenstone celt fragment from Layer I. Two other fragments of polished greenstone, from Feature 36 (Layer IA) and Layer IV, were recovered. One steatite platform pipe with the proximal end broken is ascribed to Layer III (Ibid.: 347) (Plate 47, 48).

From Layer IA in the North Profile came a broken, rounded, knob-like object. Its use is unknown but it may have been the head of a plummet. A possible stone plummet fragment of unknown provenience is a part of the Mandeville collection. And a broken ceramic object, also of unknown provenience (bulldozed from the top of Layer I), may be a plummet head. Since plummets are a common Santa Rosa-Swift Creek artifact, it is not without reason that some should appear at Mandeville.

Miscellaneous Worked or Utilized Stone.

(a) Nutting stones. Two hand-sized sandstone nutting stones were recovered from Layer I features. One, from Feature 51, had a nut-sized depression in two sides; the other, from Feature 56, had a depression in one side only.

(b) Metate. From Layer III was recovered a portion of a broken grinding slab or metate. A second fragment is

of unknown provenience.

(c) Other. From Layer IIIA was recovered an igneous rock apparently purposefully chipped into a circular shape (Plate 46). A piece of steatite with several grooves on either side, a piece of sandstone with grooves on one side, and a piece of sandstone notched along the edges were all recovered from Layer IV.

Minerals. Several minerals were utilized by the occupants of Mandeville. Map 3 illustrates possible sources of some of these minerals.

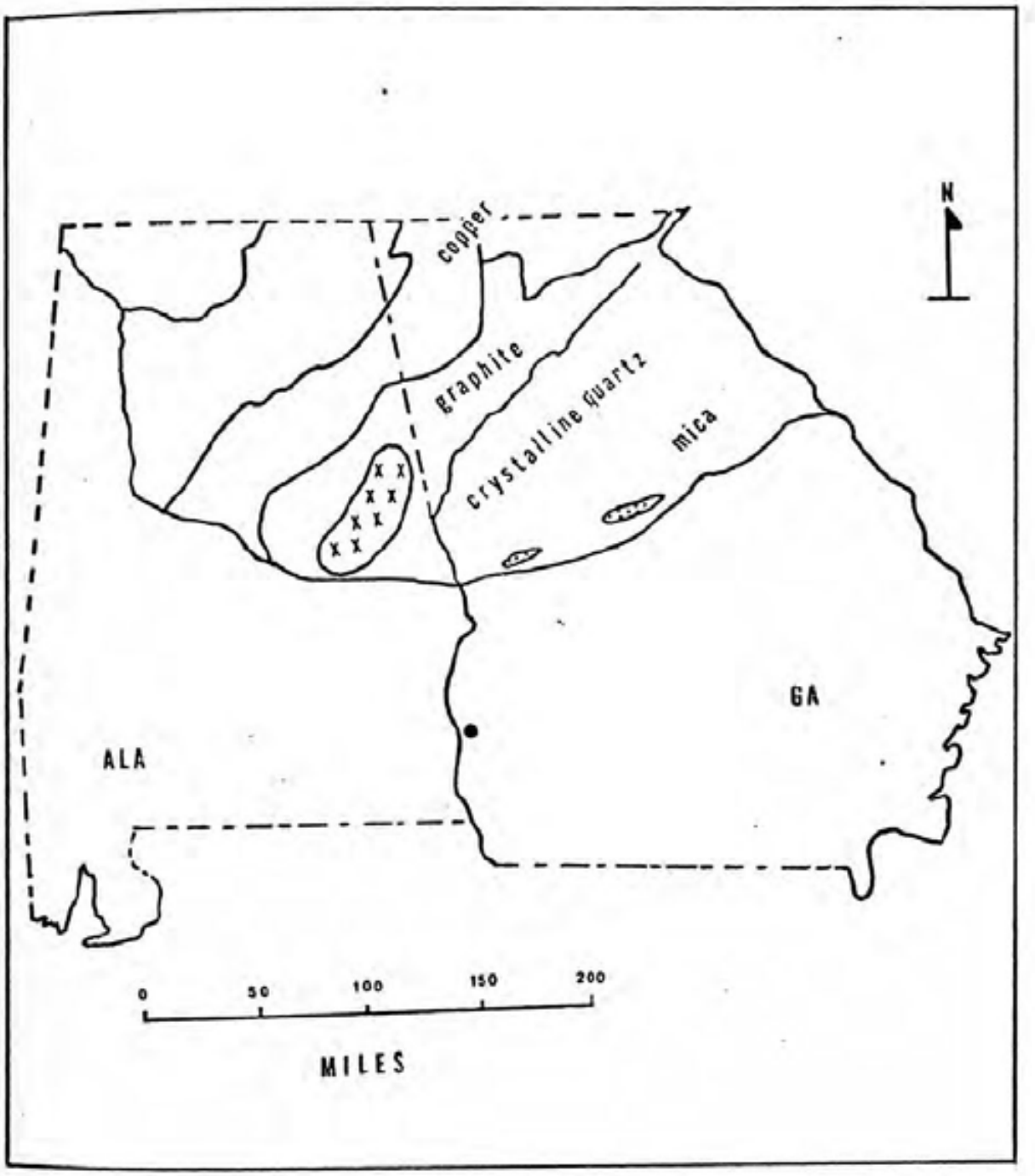
(a) Mica (Plates 49 and 50). There was some mica in all levels of Mound A. Although much of it appeared to be cut, none was in any discernable shape. The third piece in Plate 49 looks somewhat like the outline of a projectile point. Willey (1949: 241, 257, 271) reported mica cut into the shape of a spear point at several Santa Rosa-Swift Creek sites in northwest Florida. A few pieces of the Mandeville mica appeared to have been broken at a point where a hole had once existed, as if the mica had been perforated for attachment to a garment. The sands around Mandeville are heavily micaceous but sheet mica is not a local item and had to be brought in from the Piedmont. The source of sheet mica nearest to Mandeville is twenty to thirty miles northeast of Columbus, Georgia.

(b) Copper. One small fragment of copper was recovered from Layer I. The piece is flattened and folded

Map 3: Possible Sources of Some of the Raw Materials found at Mandeville

xx
x Mica, Copper, Galena, Graphite

.. Mica
.


N
copper
graphite
crystalline quartz
mica
GA
ALA
0
50
100
150
200
MILES

but whether it was just a scrap or originally part of an artifact is unknown. Copper artifacts from Mound B are described in Chapter 4.

(c) Petrified wood. Several pieces of petrified wood were found in the mound. Petrified wood is found in the vicinity of Ft. Gaines, within ten miles of Mandeville (Don Smith, personal communication). Worked petrified wood has been reported for at least one Santa Rosa-Swift Creek site (Willey 1949: 271).

(d) Hematite. Hematite occurs rather abundantly at Mandeville. It was probably ground and used as a red pigment. At least one sherd (from Feature 3) from Mound A exhibited reddish stains on the inside as if hematite had been ground to produce red powder. Hematite is available locally.

(e) Limonite. Less limonite than hematite was recovered. Ground limonite is a source of yellow pigment.

(f) Graphite. A small amount of graphite was found in Mound A (some was also found in the village). Graphite is a source of black pigment and comes from the Piedmont.

(g) Quartz crystal. Several quartz crystals, mostly broken, were found in Mound A. One example from Layer IV was badly battered on the tip. Nearly nine per cent of the waste flakes from the Mound A sample are crystalline quartz; however, two points and one blade (Plate 47) were the only artifacts made from crystalline quartz. This would seem to indicate that the flakes themselves were being used.

Crystalline quartz comes from the Piedmont.

(h) Galena. Galena was found in Mound B but not in Mound A. It is a source of white pigment and can be found in eastern Alabama.

(i) Steatite. Steatite is found in the Piedmont. Only two pieces of worked steatite were found at Mandeville, a platform pipe and a piece with grooves on either side. The rarity of this stone at the site would seem to indicate that little use was made of it by the inhabitants and the platform pipe was probably imported.

Worked Bone

Very little worked bone was recovered from Mound A despite the large quantity of animal bone found in the midden layers. Two bone awls from Layer I and two from Layer II were reported by Kellar, Kelly, and McMichael (1962a: 344). Two pieces of worked bone, an awl and a fragment of bone smoothed to a point, were a part of the Layer IA artifact sample.

A sample of the faunal remains from Mound A was sent to Paul Parmalee for identification. The results of his analysis are recorded in Chapter 2.

THE NATURE OF MOUND A

The stratigraphy of Mound A has been described as have the artifacts found therein; however, the function of the mound remains a question. That it grew as both in situ

occupational debris and fill brought in from elsewhere accumulated seems certain. Several lines of evidence pertaining to activities associated with the mound will be described in the following paragraphs.

The important Mound A features will be described in some detail; the remaining features are summarized on Table 41 in Appendix G. Ceramics from these features are included on Tables 24-30 in Appendix B. Finally, Figure 8 illustrates the horizontal distribution of the Mound A features for which provenience data is available.

Layer I

Layer I was a premound midden about a foot thick. Numerous cooking and storage pits and postmolds were found in this occupation layer. Figures 9 and 10 of the South and North floorplans show the heaviest premound occupation to have been in the southern portion of the mound. McMichael did note in his field diary that there were several other features in the north floor (120L0-140L0) but these were covered by slumping walls before they were mapped or excavated. Bulldozing operations in the western half of the mound in 1962 uncovered only five additional premound features.

McMichael (Kellar, Kelly, and McMichael 1962b: 4), although unable to work out any definite patterns, felt that the multitude of postmolds in the premound floor evidenced circular structures twelve to sixteen feet in

Figure 8: Horizontal Distribution of Mound A Features

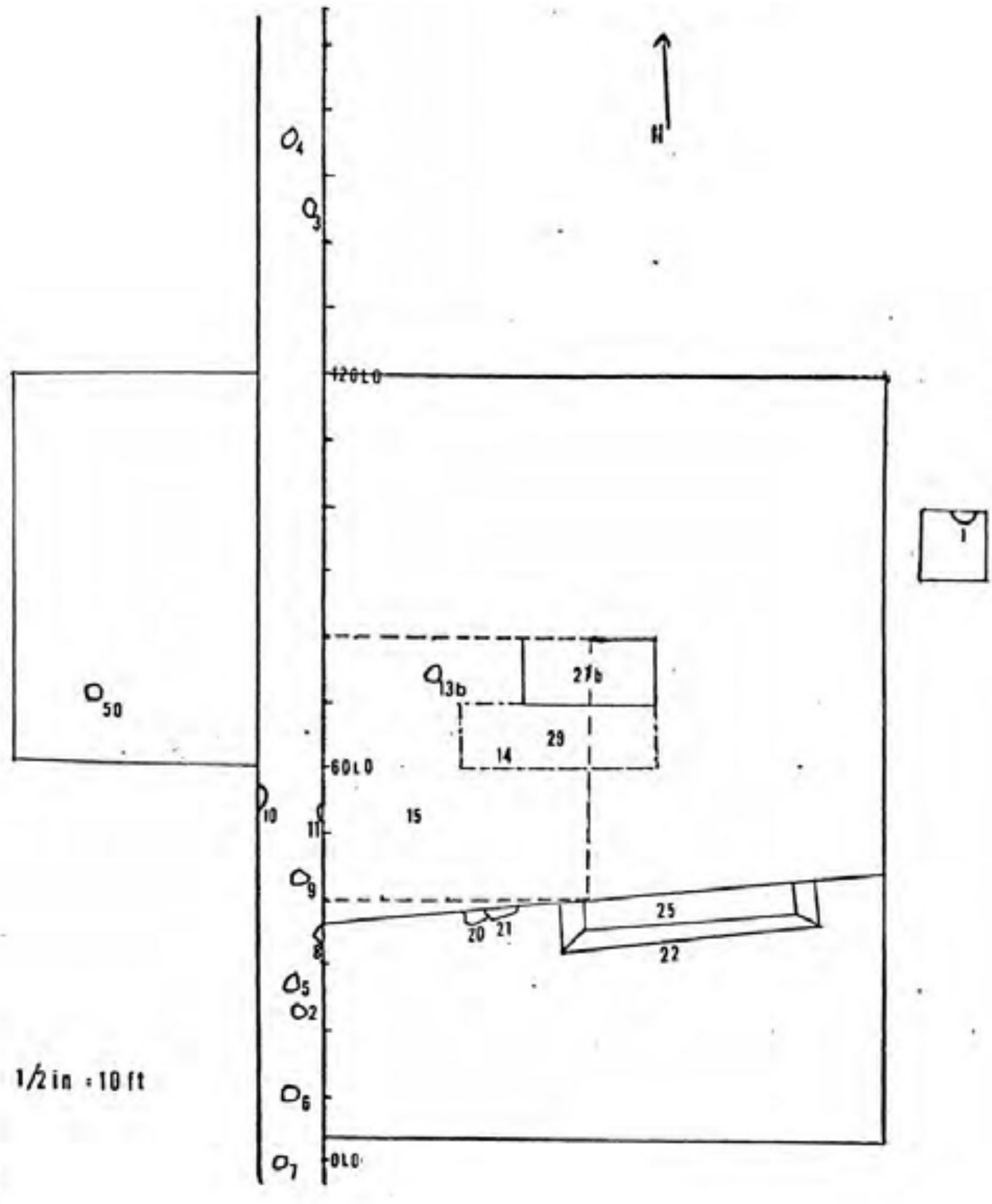

N
4
3
120 L 0
1
50
13b
27b
29
14
60 L 0
10
11
15
9
25
20
21
8
22
5
2
6
7
0 L 0
1/2 in = 10 ft

Figure 9: Mound A, Layer I, South Floor Plan

(reduced from an original on file in Department of Anthropology, University of Georgia)

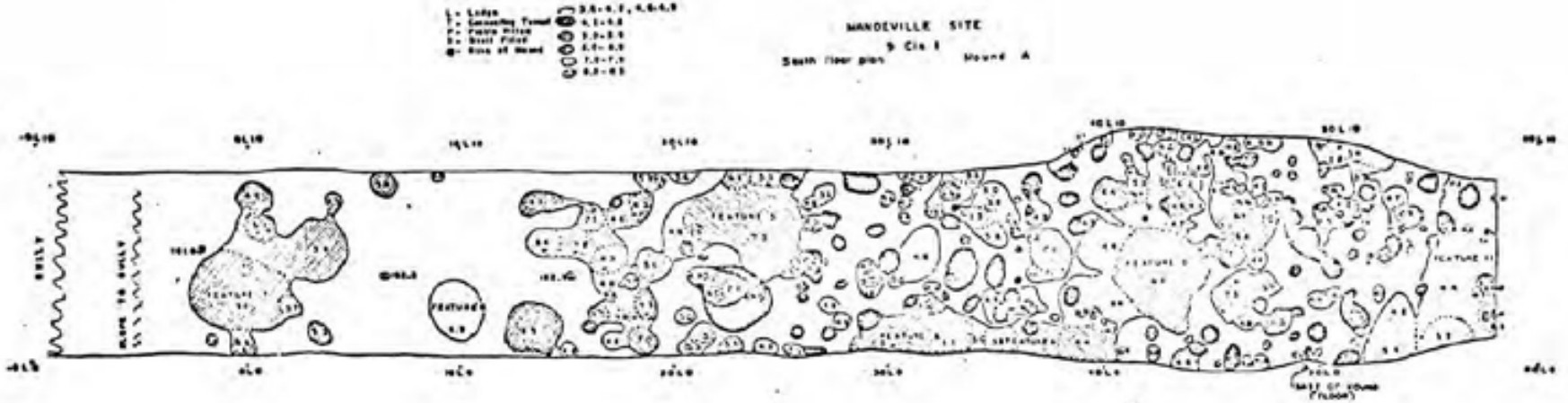
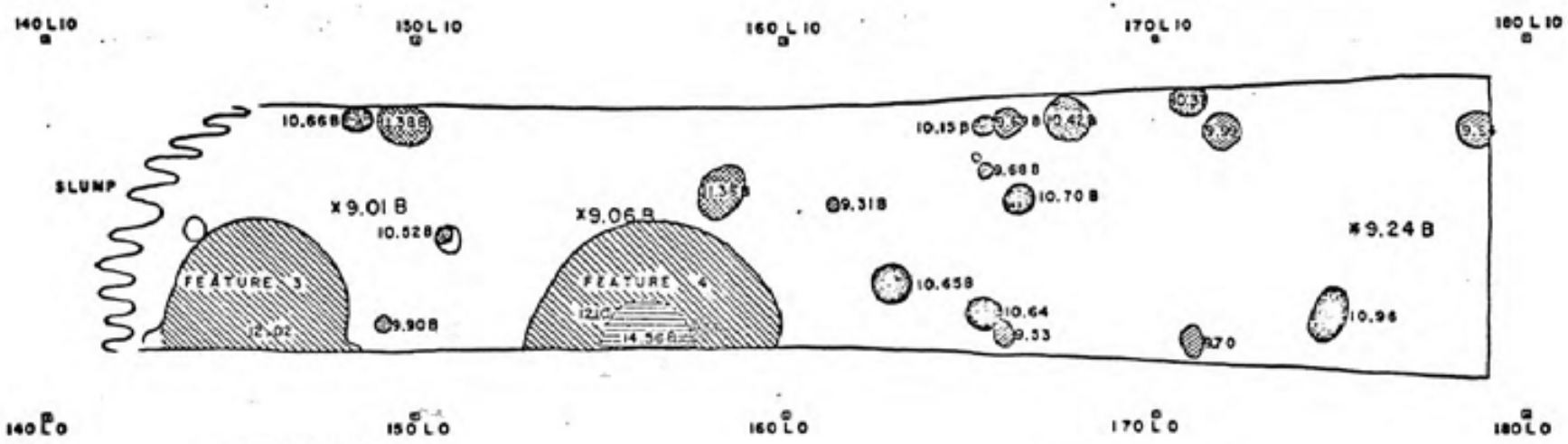

MANDEVILLE SITE
Feature A

Figure 10: Mound A, Layer I, North Floor Plan

(reduced from original on file in Department of Anthropology, University of Georgia)



9.30 - 9.99
10.00 - 10.49
10.50 - 10.99
11.38
12.00 - 12.10
14.56
B = Base of mound

MANDEVILLE SITE
9 Cla 1
Mound A Blocks 140 L 0 - 170 L 0
(area beyond slump)
North Floor Plan

diameter.

Showing in the break between layers I and IA in the South Profile (Figure 5) was an area of burned sand, ash, and charcoal in which was found a considerable amount of animal bone and pottery. McMichael (Ibid.) thought this might represent a housefloor. In his field diary, McMichael noted that there were a few postmolds passing through this "floor." The ceramics from this feature are included in the Layer I, 0-6" sherd count on Table 24 in Appendix B. For the record, however, the material recovered from this feature was as follows:

Plain	29
Polished	11
Check stamped	9
Simple stamped	8
Cord marked	11
Swift Creek	5
Punctate	1
Tetrapod	1

In addition to pottery, a small amount of mica, 13 chert chips, a broken chert knife, and a corner-notched, concave base (type IIIA) projectile point were found.

Layer IA

Layer IA marks the beginning of construction of Mound A. Mound A construction apparently began with the building of several small platforms with Feature 25 being one such platform. There were indications of at least one other platform near Feature 25 (Kellar, Kelly, and McMichael 1962a: 339) and bulldozing activities in 1962 disclosed another possible platform in the western half of the mound

(Kelly, et. al. 1962: 3). As the platforms were enlarged and the area between them filled in, the unit began to assume the shape of one large flat-topped mound (Kellar, Kelly, and McMichael 1962a: 339).

Feature 25 (Plate 51). Feature 25, the "Primary Mound," was a low, two-foot high flat-topped platform in the southeastern quadrant of Mound A. The top measured 18 feet wide by 40 feet long. It was composed of yellow sands and clays and was easily distinguished from the midden beneath it and the dark mound fill above it (Kellar, Kelly, and McMichael 1962a: 330; 1962b: 75).

> The fill...was largely a stiff yellow clay, with lenses of a bright golden yellow sand, the same sand being used as a sheathing or mantle over the summit portions. This same bright sand occurred in the east-west profile in bands 2 to five inches thick, with indications of continuity horizontally but broken in short intervals; two such broken zones occured in the overburden immediately above the yellow sand covering Feature 25. In troweling down through the survey prism these yellow patches were contacted and identified as the sand-strewn floors of other platforms, with extended aprons, overlying the original Primary Mound, Feature # 25. They were larger, more extensive, built from a dark, midden-stained soil probably derived from the margins of the large spring sites below the bluff, and thus much darker and homogenous in their entirety not revealing structural lines in profile so clearly as had been the case with the yellow clay

> lenses of Feature 25. Only the bright yellow sand on their summits indicated their presence in vertical profile, or provided a clear floor that could be followed consistently in horizontal clearing of the survey prism (Kellar, Kelly, and McMichael 1962b: 76).

Features 28, 34, 35, and 36 are the platforms and floors above Feature 25 just described. They are illustrated in Figure 11.

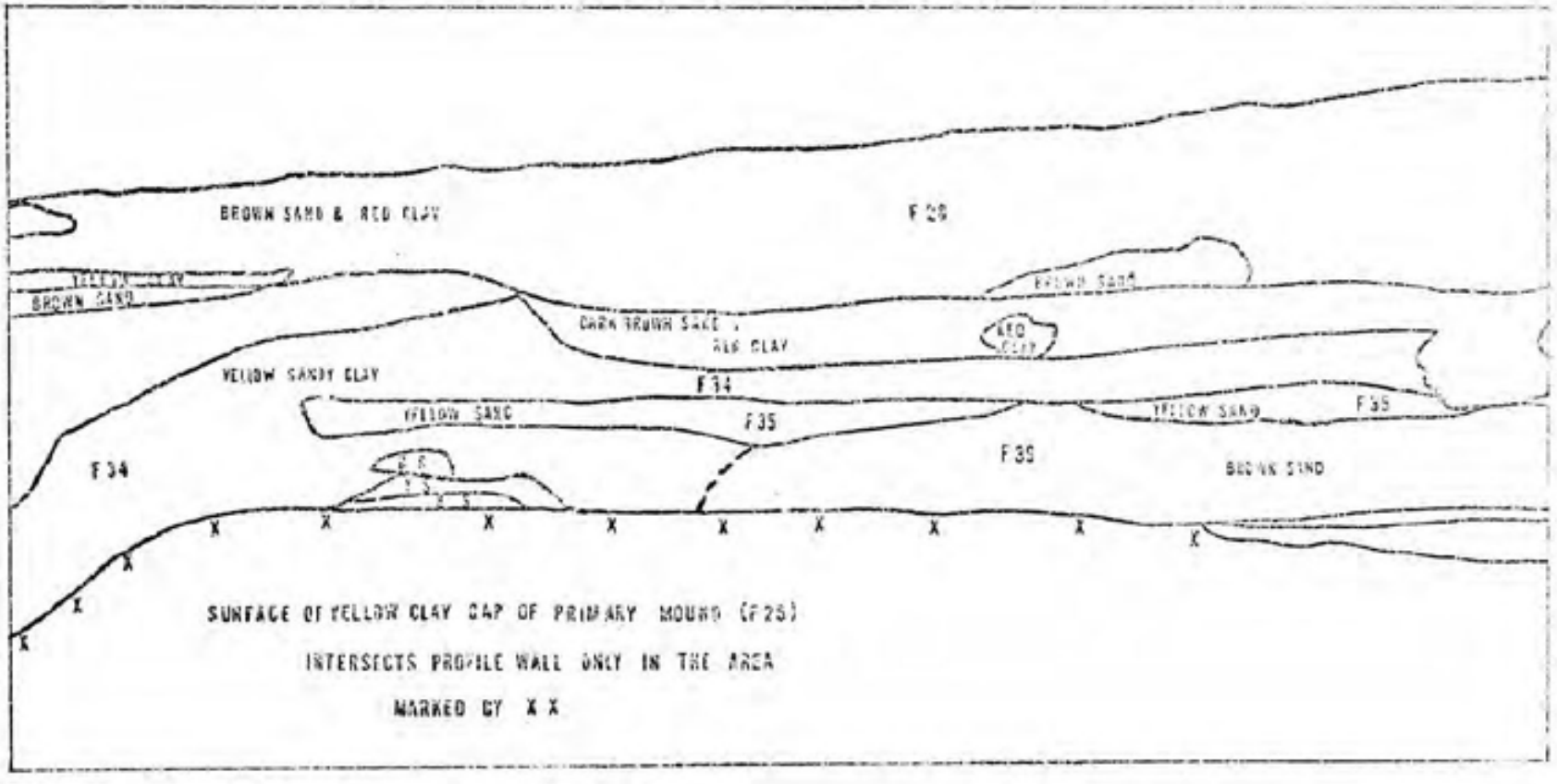
Feature 36. Feature 36 was a brown sand mantle over Feature 25. Artifactual content of this feature includes ceramics (listed on Table 25 of Appendix B), a possible side scraper, a fragment of polished greenstone, a small amount of mica, a piece of unworked petrified wood, and several chert chips.

Feature 34. Feature 34 was a layer of brown sand with a bright yellow and white sand floor on top. Much pottery, two blades, a bannerstone fragment, mica, chipping debris, and animal bone were taken from this feature.

Feature 35. Feature 35 was a floor on top of the brown sand mantle (Feature 36?) for Feature 25. It was composed of bright yellow and white sand. Quoting from the feature form: "Post molds from a higher structure show up very nicely as dark brown or black spots in the bright colored sand." Feature 35 was excavated by two different people a few days apart with a balk left between the two excavations. Frank Schnell excavated one-half of the feature.

Figure 11: Profile View of Features 28, 34, 35, and 36

(drawn from a profile on file in the Department of Anthropology, University of Georgia)


BROWN SAND & RED CLAY
F 28
YELLOW CLAY
BROWN SAND
DARK BROWN SAND
RED CLAY
YELLOW SANDY CLAY
F 34
YELLOW SAND
F 35
F 36
F 34
BROWN SAND
SURFACE OF YELLOW CLAY CAP OF PRIMARY MOUND (F 28)
INTERSECTS PROFILE WALL ONLY IN THE AREA
MARKED BY X X

Commitments elsewhere required his absence and Richard Nonas worked on the second half. Schnell recorded the post-molds as he uncovered them and believes they were not intrusive but were in definite association with Feature 35 (Frank Schnell, personal communication). Nonas, on the other hand, thought the postmolds were intrusive (Kellar, Kelly, and McMichael 1962b: 76) and so did not record their location. This writer, based upon data from the Annowakee Creek and Garden Creek Mound, two sites to be described below, accepts Schnell's statement that these postmolds were associated with Feature 35, indicating some sort of structure(s) on top of at least one of the super-imposed platforms above Feature 25.

Feature 28. Feature 28 was a level of brown sand with a bright yellow sand layer on top. Patches of burned sand and clay were found in the fill. Much pottery and animal bone, several chipped stone artifacts, a bone awl, and mica were recovered from this feature.

Mound B, the burial mound to be described in Chapter 4, was quite definitely a Hopewellian construction but was Mound A? Platform mounds are associated with four Ohio Hopewell earthworks systems; but, with one exception, these have never been excavated and any comparisons with Mound A can only be tenuous.

Three unexcavated platform mounds occur within the Marietta earthworks. These measure 188 x 132 x 9 feet,

150 x 120 x 8 feet, and 108 x 54 x less than 8 feet. The smaller of the three has two ramps; the others, four ramps each (Shetrone 1930: 10).

The Ginther Mound was a flat-topped mound measuring 120 feet square at the base and nine feet high. Adjacent to it was an earthen circle 250 feet in diameter with a southern entrance. The Ginther Mound was excavated by Shetrone, who found several fireplaces, ash beds, postmolds, and refuse pits in the floor beneath the mound. Other than one intrusive burial found about a foot below the top of the mound, no evidence of burials or of crematory pits was found. Shetrone (1925: 154-163) concluded that the Ginther Mound was not a burial mound.

The Cedar Banks earthwork included a large rectangular platform mound but it was destroyed before it could be investigated.

> There is no proof positive that the Cedar Banks earthwork is Hopewellian; but the Ginther structure with its associated 'sacred circle,' the Shilder Mound, and a village site, all in the immediate vicinity of Cedar Banks proved to be Hopewellian, suggesting that the entire complex including the Cedar Banks platform mound should be so classified.... It should also be noted that the Newark, Cedar Banks, and Marietta platform mounds were located within earthworks, apparently being integral parts of the obviously Hopewellian earthworks (Prufer 1964: 51).

Two of the mounds at the Marksville site (Map 9) are flat-topped (mounds 2 and 6). Neither have been excavated

but a series of test trenches were dug around three sides of mound 2. The ceramics recovered from this test indicates that the mound may date to the Baptiste phase, a late Marksville phase (Vescelius 1957: 417-420; Toth 1972: 8).

The above examples suffice to indicate that flat-topped, or platform, mounds were apparently constructed during the Hopewell period. Nothing is known, however, of the function of these mounds. Three other sites which merit mention in connection with the topic of early platform mounds in the Southeast are the Swift Creek, Garden Creek Mound 2, and Annawakee Creek sites (Map 9).

The Swift Creek site, located just south of Macon in Bibb County, Georgia, was a mound and village site. A rather intensive late Archaic occupation preceeded the Swift Creek occupation of the site and a very small amount of Lamar pottery is indicative of a brief later occupation of the site. The major occupation was Swift Creek and early through late Swift Creek is represented in a stratified sequence in Mound A. The two main north-south profiles of Mound A suggest that mound construction at the Swift Creek site may have begun with the erection of a small platform which was gradually expanded to form a large mound (Kelly and Smith 1975: 30).

Garden Creek Mound 2 is located on the Pigeon River in Haywood County in western North Carolina. This mound was constructed in at least two stages. The primary mound was a small flat-topped platform of yellow clay. It measured

40 x 60 x 1.7 feet. On the surface of this primary mound was a thin layer of ash covering a hard burned layer (burned structure), three hearths (one directly associated with the burned layer), two refuse pits, and three large postmolds. The conclusion that a structure had been erected on this platform is inescapable (Keel 1972: 106-107).

The second mound stage measured about 80 x 60 x 7-9 feet. The original height of the mound is approximate as the mound had been plowed down to 3.4 feet at the time of excavation. Additional postmolds, refuse pits, and rock-filled pit hearths were encountered. The ceramics and other artifacts from these two stages and from the pre-mound midden date to the Connestee phase. Intrusive Pisgah-period burials were found in the secondary mound (Ibid.: 110-113).

Connestee phase ceramics include brushed, cord marked, simple stamped, check stamped, fabric impressed, and plain (Ibid.: 136-139). Trade wares include Swift Creek and Napier from Georgia; limestone-tempered wares from Tennessee; and Chillicothe Rocker Stamped, Turner Simple Stamped B, and cross-hatched (Hopewell) rims from Ohio (Ibid.: 153-157). The following, taken from Table 3.12 (Ibid.: 128), illustrates the distribution of the Georgia and Ohio types:

TABLE 10

SELECTED CERAMICS FROM THE GARDEN CREEK MOUND 2 SITE

Ceramic Type or Series	Plow Zone		Secondary Md.		Primary Md.		Premd midden	
	No.	%	No.	%	No.	%	No.	%
Georgia Types								
Swift Creek	2	.37						
Napier			4	.57	1	.07	1	.01
Hopewell Types								
Turner Simple Stamped			2	.29	1	.07	62	.75
Chillicothe Rocker St								
plain rocked	1	.18	4	.57			2	.02
dentate rocked			1	.14	6	.44	15	.18
Rims							3	.04

Keel, using Wauchope (1966) as his reference, classified the few Swift Creek sherds as Early Swift Creek. However, the material described by Wauchope is Middle to Late Swift Creek, not Early Swift Creek. Roy Dickens (personal communication), who has seen the Garden Creek Mound 2 ceramics, says that it is similar to the material he found at Annawakee Creek.

The Annawakee Creek site is a mound in Douglas County, Georgia. At the time of investigation by Roy Dickens, all but the base of the mound had been bulldozed away. Enough remained of the base to indicate that mound construction had begun with the erection of a small platform. The basal dimensions of this mound were 40 x 40 feet; the summit dimensions, 30 x 30 feet; and it was 2-3 feet tall. Pottery associated with this platform mound is Napier and Late Swift Creek. There was definitely a structure (or structures) on top of this platform. One of the pits on the surface of this platform yielded a charcoal sample which was dated at AD 605 and a sample from an intrusive pit from a higher level was dated at AD 755 (Roy Dickens, personal communication).

At the Garden Creek Mound 2 site, Hopewellian traits other than the pottery mentioned above include fragments of clay human figurines, prismatic blades (at least one of which is identified as Flint Ridge chert), cut mica, a steatite platform pipe, and a copper pin (Keel 1972: 162, 188, 194, 201). The Hopewellian pottery and other traits

seem to be concentrated in the premound midden and primary mound; therefore, it appears likely that this portion of Garden Creek Mound 2 is contemporary with Feature 25 of Mandeville. The Swift Creek and Napier pottery at Garden Creek is concentrated in the secondary mound which may be contemporary with Annawakee Creek. Figure 12 outlines a tentative sequence of the sites just described.

Layer II

Layer II was the summit which resulted after the hypothesized enlarging and filling operations described earlier for Feature 25 and the other possible Layer IA platforms had been completed. In the South Profile, Layer II was composed of midden; in the North Profile, of loaded brown sand. Further, in the North Profile this layer was bounded by an iron precipitate layer separating it from Layer IA and by a band of yellowish-orange sand separating it from Layer IIA. To McMichael it appeared

> ...that prior to building the layer, the top of 1A /IA/ had seen considerable packing down, i. e., use as a floor--hence the very definite iron precipitate accumulation. The yellow sand band capping the layer may have similar origins, in that the layer above IIA) is dominantly composed of loaded yellow sand. The sand band might be a result of filtration of this sand downward, and concentration of it on an old packed surface--the top of layer II. If such is the case, it would indicate that after adding layer II on the north side, there was no immediate further mound construction, but rather continued use of the layer

Figure 12: Relative Chronology of Mandeville and Other Early Flat-topped Mound Sites in the Southeast

AD 755				
AD 605		Annawakee Creek	Garden Creek secondary mound	
ca. AD 500		Layer IV		
	Swift Creek			
ca. AD 150		Feature 25	Garden Creek primary mound	participation in the Hopewellian interaction sphere
		Mandeville Layer I		

> II top (Kellar, Kelly, and McMichael 1962b: 9-10).

McMichael (Ibid.: 9) noted a few postmolds in Layer II; however, only one feature, Feature 12, was catalogued from this layer. It was a subconical pit containing a few cobbles.

Layer IIA

Layer IIA was composed of loaded clay and sand. No features were found associated with this layer.

Layer III

Layer III was composed of midden in the South Profile and loaded clay and sand in the North Profile.

> Again this side was apparently built up of sterile soil to keep up with the midden accumulating on the south side of the mound (Ibid.: 10).

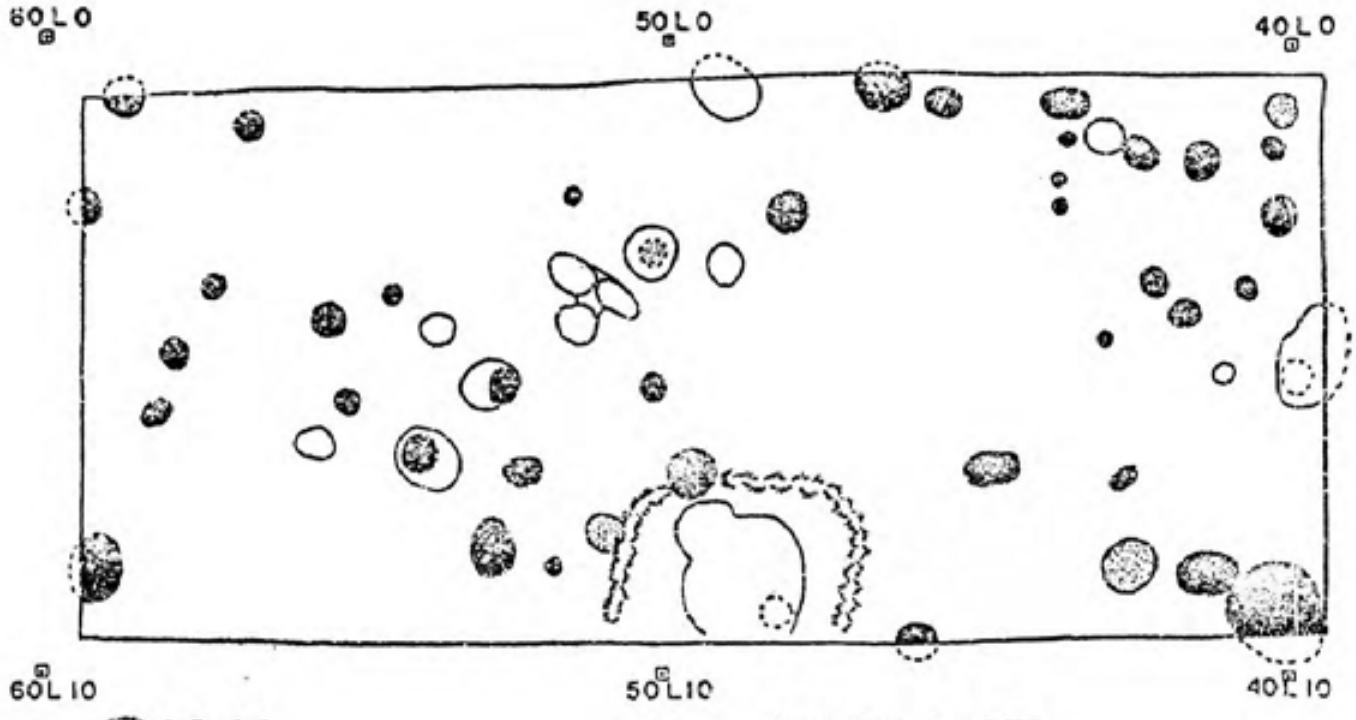
A number of postmolds were recorded at the bottom of Layer III. Feature 13a, a ring of fire-hardened clay, was found in the middle of the layer. Figure 13 is somewhat confusing, therefore, in that it appears to show both the postmolds from the base of this layer and the fired clay ring from the middle of the layer.

Layer IIIA

Layer IIIA was composed of loaded clay and sand. Feature 15, located on top of this layer, was horizontally widespread, covering Blocks 40R0-70R0 through 40R30-70R30, with a vertical thickness of about 0.5 foot. The fill was

Figure 13: Mound A, Layer III Floor Plan

(original on file in Department of Anthropology University of Georgia)



MANDEVILLE SITE
9 Cla i
Mound A 40 LO-50 L0
LAYER "D" at 27inch Floor
(Layer III)

composed of red sand, ash, charcoal flecks, sherds, and bone; however, neither pottery nor any other artifacts from this feature were located among the collections.

Layer IV

Layer IV was the final Middle Woodland layer. As in Layer III, postmolds (fewer in number, however) were noted in the bottom of the layer.

> On the surface of layer IV, a number of curious, apparently water filled holes were noted. It almost appeared as though they might have been postmolds from which the post had been removed and the empty hole filled by natural means. None ran deeper than 1 foot and no pattern was apparent (Ibid.: 11).

Work in 1960 and 1961 revealed several large oval depressions on the top of Layer IV. The significance of these depressions is uncertain.

> One possibility considered was that they might be some sort of large oval pit, up to 15 feet long and 8 to 10 feet wide, and 3 feet deep on the average, with sloping shoulders, that had been scooped out at Level 4, the final Swift Creek occupation of the site. Weathering after the removal of the Swift Creek group and the centuries of abandonment before the Mississippian cap was finally added might account for the smoothing out and contouring of the shoulders, and also the effacement of any postmolds or subsidiary structures which might have been associated with them.
>
> A second explanation is that incident to the final Swift Creek

> period of mound construction, Level 4, the surface was uneven due to nadal or mounded points which left the surface undulating and uneven and these inequalities may have filled with windblown material or leaf-mould from the encroaching forest. This would account for the occasional sand pockets or lenses and the overall dark homogenous organic residues in the fill to the large oval pits. The occasional included pottery or flint would come from material brought in basket-loading. Lewis Larson visited the site and thought it likely that the fill to these inequal swales in the mound surface came largely from lenses of mucky organic soils brought up from the nearby creek bank. Very little charcoal is contained in the dark fill, which favors the theory of decayed vegetation in place (Ibid.: 84).

From the long quote concerning excavation procedures given at the beginning of this chapter, it is readily apparent that one of the principle objectives during the excavation of Mound A was the discovery and definition of structures, first Mississippian and then as the origin of the mound became apparent, Swift Creek. Careful troweling failed to recover any definite structural evidence. About all that the original researchers could conclude was

> by Level 2 times the moundbuilders contemplated and executed a synostosed, filled in, overall mound summit of total proportions, leveled and hardpacked, but without evidences of structure in segments exposed by excavation, although local areas if /of/ extensive firing or burning, with deposits of animal bone, implied cooking operations on a communal scale. Deliberate, large-scale

mound construction is indicated (Ibid.: 85).

Flat-topped substructure mounds have traditionally been regarded as a trait unique to the Mississippian period; however, the evidence from the Mandeville, Swift Creek, Garden Creek Mound 2, and Annawakee Creek sites all indicate that platform mounds were also constructed by certain Middle Woodland groups. Archaeological data and ethnohistoric sources indicate that the structures on the summits of Mississippian mounds were used as mortuary houses, temples, residences of the chief, and as council houses. The probable structures on Feature 25 and on the Garden Creek and Annawakee Creek mounds may have served one or more of these functions; however, to repeat the statement which began this section: the function of Mound A remains a question. The contrast between layers II, III, and IV in the north and south portions of the mound recalls a statement made earlier in this chapter concerning the conclusion of Kellar, Kelly, and McMichael (1962a: 339-341; 1962b: 9-10, 57-58) that the southern portion of the mound was occupied while the northern half served another (ceremonial?) purpose. For a while the notion was entertained by the original researchers that Mound A had served as a "community crematory center" at which ceremonial cremations were performed prior to final burial in Mound B. This view was abandoned due to a lack of supporting evidence.

> One could envisage a situation in which cremations, individual, family, or mass, would be carried out ceremonially at Mound A, with ultimate burial in Mound B across the plaza, at least for certain individuals in the society. Yet the most careful technique in troweling and observing suspect areas never disclosed calcined bone of human origin. Animal bones were found which had been cracked and partially burned; this suggests ordinary open-fire cookery, broiling or baking, perhaps in connection with communal cooking. But the intriguing cremation theory had to be abandoned for lack of in situ /in situ/ evidences (Kellar, Kelly, and McMichael 1962b: 77).

Although the mound was probably not a crematory center, its possible role in community mortuary activities cannot be ruled out. In Florida, Crystal River and Santa Rosa series ceramics occur most frequently in burial mound contexts. The few Crystal River Negative Painted, red-filmed, and rocker-stamped sherds found in Mound A may indicate a mortuary function for that mound. Brown (nd: 5-7) reported that during the Spiro phase (AD 1200-1350) of eastern Oklahoma prehistory, low mounds were erected over structures that were probably mortuary houses in which the dead were temporarily placed. At the Spiro site itself, in the Great Mortuary mound, the "...remains were left in place and covered with a /platform/ mound that was the base for what is presumed to be a successor mortuary...."

Mississippian mounds which supported mortuary or other ceremonial buildings were kept meticulously clean with

little or no midden on the summit area. The midden layers and scattered postmolds, pits, and fired areas would seem to indicate actual occupation on Mound A or communal activities rather than the kind of specialized mortuary activity indicated by the Great Mortuary mound at Spiro. The evidence from Mandeville, Swift Creek, and Garden Creek favors the interpretation of Mound A as an occupational mound.

Mound B, the burial mound, and the village area will be described in the following chapters.

CHAPTER 4

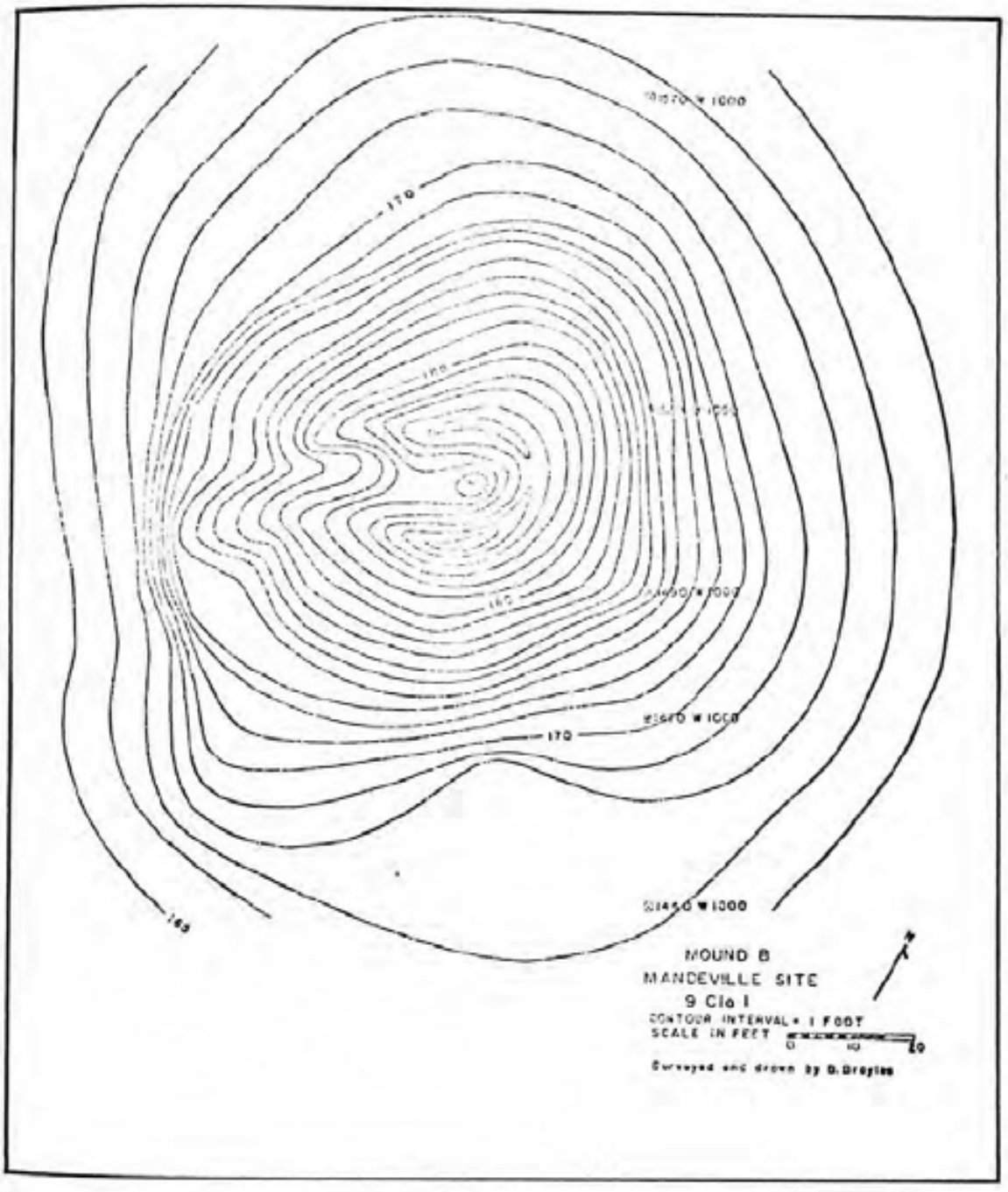
MOUND B

The preceeding chapter was devoted to the description and analysis of Mound A; in this chapter, Mound B will be discussed. Neither the field notes nor an artifact catalogue are available for Mound B. The following discussion is, therefore, primarily a summary of previous written descriptions of the mound. The lack of primary data does present some problems, as will be seen in the course of this chapter.

Mound B, also known as the Griffith Mound, was about a thousand feet north northwest of Mound A (Plate 52). It measured about one hundred feet in diameter and eighteen feet high, as can be seen from Map 4. Moore (1907: 447) reported that a large hole had been dug into this mound prior to his visit. The hole, begun ten feet above mound base, was dug from the west side inward approximately twenty-three feet. Near the center of the mound, this trench became a vertical shaft which stopped just short of the mound floor. Upon re-excavation in 1960, the pit was found to contain laminated layers of water-deposited sand, indicating that the pit had been left open (Kellar, Kelly,

Map 4: Contour Map of Mound B

(reduced from original on file in Department of Anthropology, University of Georgia)


170
170
170
169
MOUND B
MANDEVILLE SITE
9 Cla I
CONTOUR INTERVAL = 1 FOOT
SCALE IN FEET
0
10
20
Surveyed and drawn by B. Broyles

and McMichael 1962a: 349).

EXCAVATION PROCEDURES

Excavation procedures for Mound B are described by Kellar, Kelly, and McMichael (Ibid.) as follows:

> Limitations imposed on the work would not permit the complete removal of the mound by hand methods. Therefore, a four part excavation procedure was employed utilizing the grid system established for the village area. Initially, advantage was taken of the earlier excavation by digging a trench bracketing this intrusion. The resultant profiles and the absence of cultural debris clearly indicated differences from Mound A. The presence of a few fragments of human bone in the disturbed soil suggested a burial mound. Secondly, a 10-foot wide north-south trench was dug into the mound for a distance of 90 feet. It was placed 25 feet east of the mound's greatest height. The objectives were to obtain information regarding mound structure and possible burial disposition so as to make use of mechanical equipment in a more efficient manner. Though no ceramic precedent had been established for Weeden Island at Mandeville, the east side was chosen for locating possible pottery caches. Following this, a bulldozer made a 60-foot cut through the center of the mound leaving a floor of about two feet above mound base. This was then removed by hand.

STRATIGRAPHY

Kellar (Kellar, Kelly, and McMichael 1962a: 349-350; 1962b: 62-63) divided the construction of Mound B into four phases, indicated by Roman numerals on Figure 14 (see also Plate 53).

Phase I

A primary mound measuring approximately fifty feet in diameter and twelve feet high constituted the first phase of mound construction. It covered a shallow depression about fifteen feet in diameter. The fill of the primary mound was composed of tightly compacted clay and sand. The primary mound was capped by a thin layer of yellow-orange sand and about a foot of darker humus-laden soil (Kellar, Kelly, and McMichael 1962b: 62).

Phase II

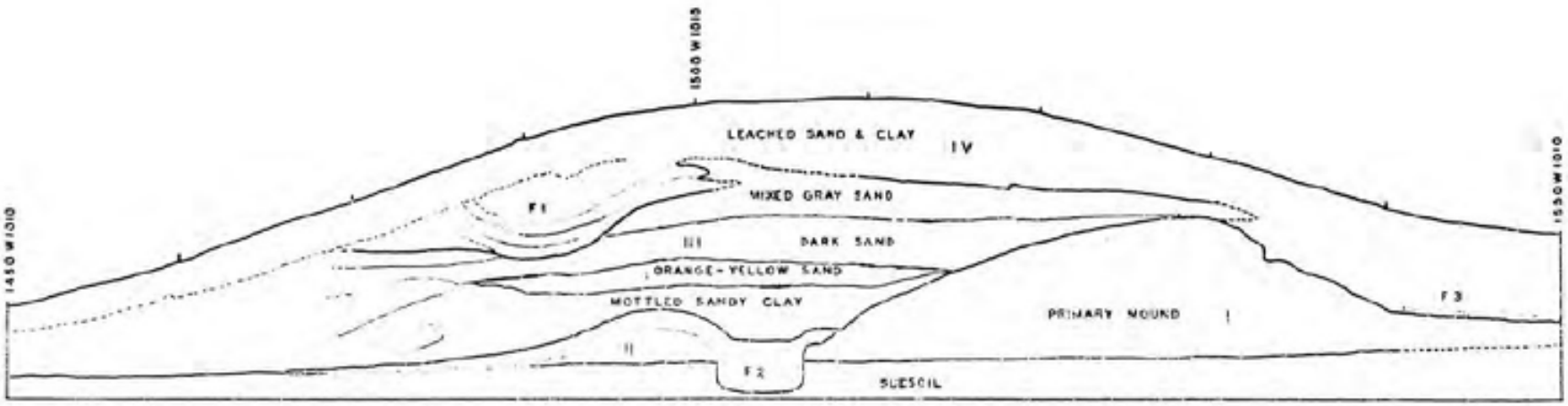
After the construction of the primary mound (how long after is unknown), at least eleven pits were dug around the southern edge of the mound (see Figure 15). At least three of these pits intruded into the edge of the primary mound (Ibid.). These eleven pits will be described in a later section of this chapter.

Phases III and IV

The third phase of mound construction consisted of placing four layers of earth over the basal pits but not covering the primary mound. Each of the four layers was

Figure 14: Mandeville, Mound B Profile

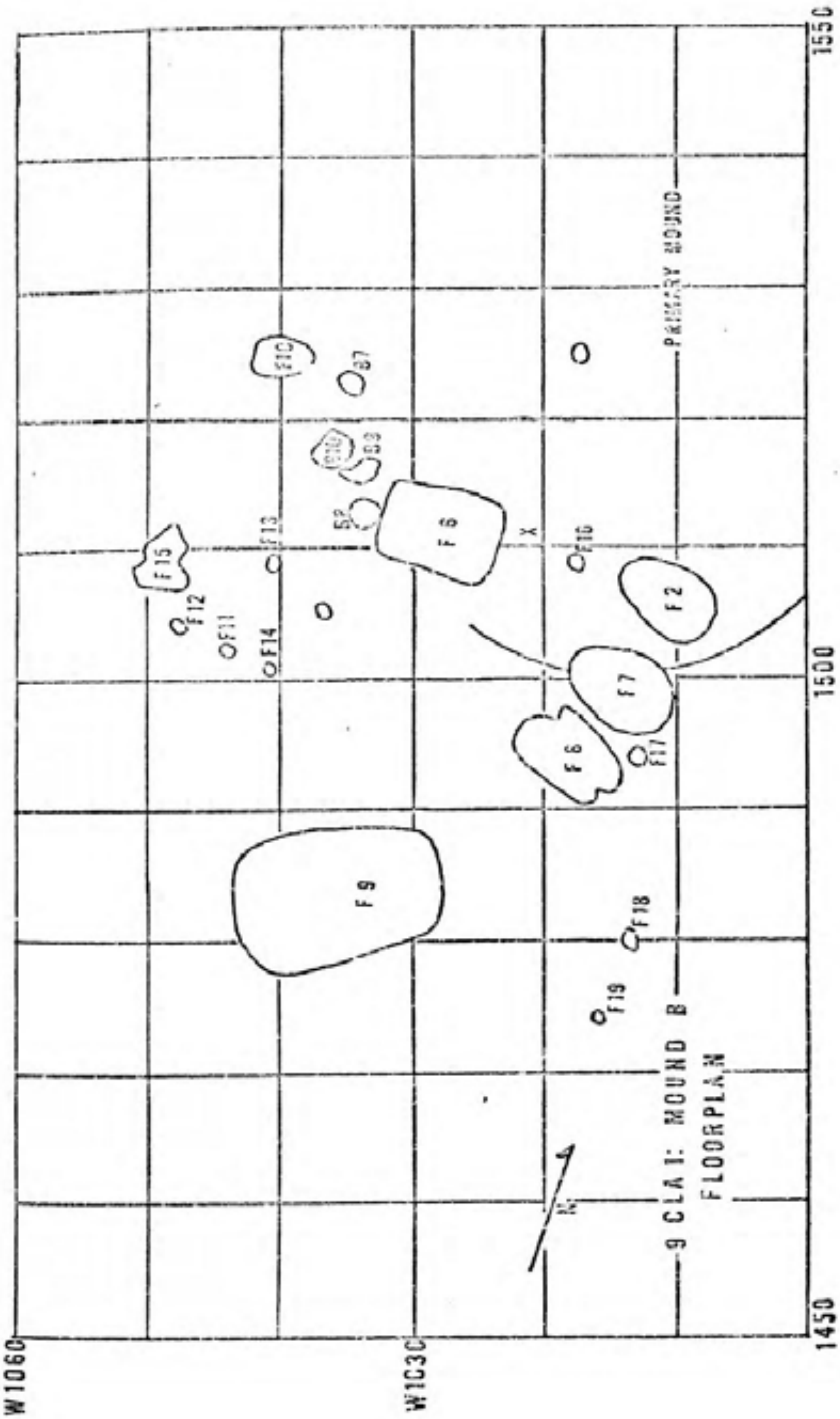
(original on file in Department of Anthropology, University of Georgia)



MOUND 8, 9CLA1
W1010 PROFILE

Figure 15: Mound B, Features from Mound Base

(redrawn from original on file in Department of Anthropology, University of Georgia)


9 CLA I: MOUND B
FLOORPLAN
PRIMARY MOUND
W1060
W1030
1450
1500
1550
F9
F6
F7
F2
F15
F12
F11
F14
F13
F16
F17
F18
F19
F10
N

composed of a different material, as is indicated on Figure 14. The apparent purpose of Phase III was to build up the area above the Phase II pits to the level of the primary mound. Phase IV, then, was the capping of this whole structure with a layer of earth (Ibid.: 62-63).

FEATURES AND BURIALS

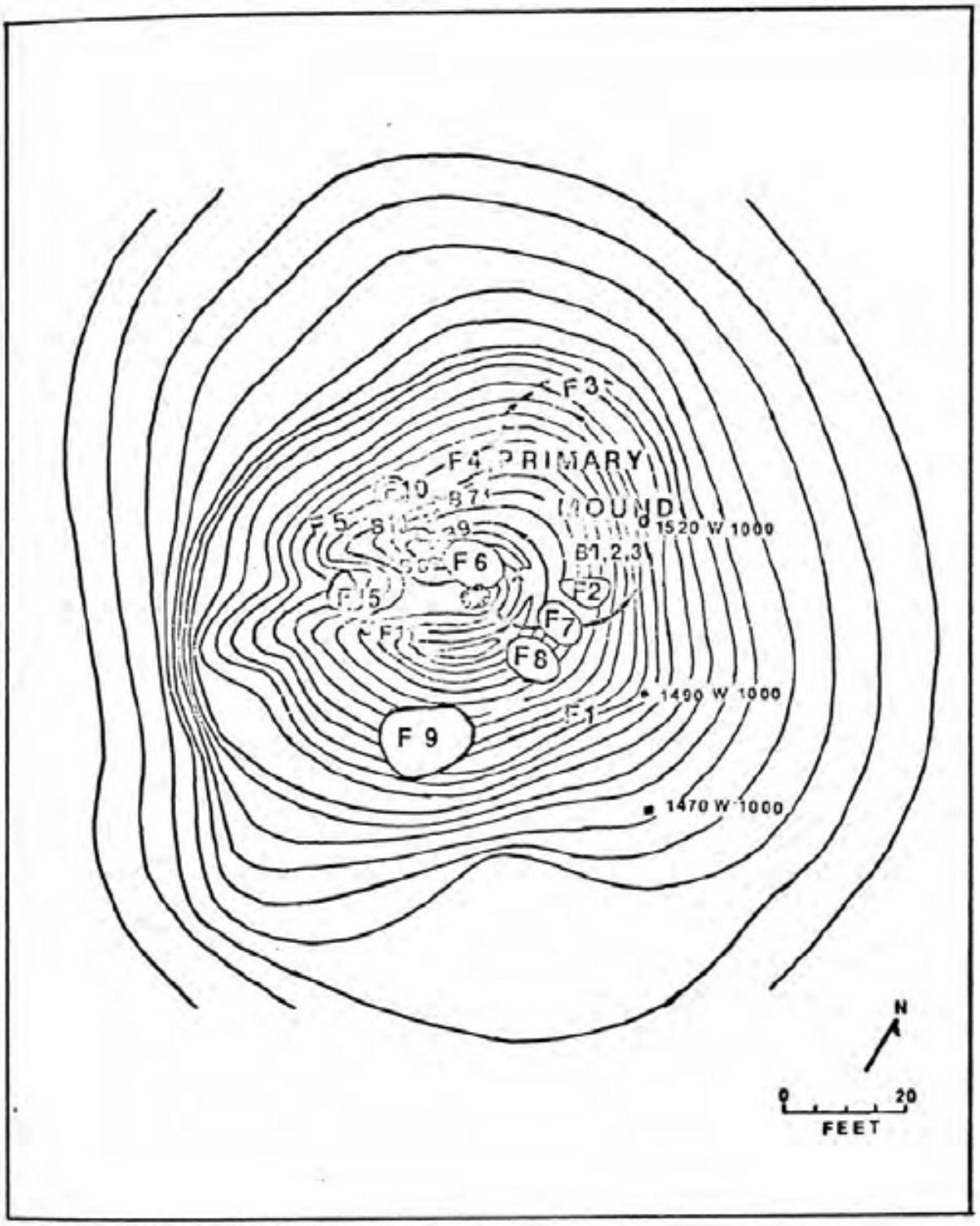
Features and burials were not consistently numbered. Twenty-four features, twelve of which contained human bone, were recorded for Mound B. Water drainage into the interior of the mound made possible by the pothole and "...the acid sand and clay making up the body of the mound combined to obliterate most of the skeletal remains and made feature determination difficult" (Kellar, Kelly, and McMichael 1962a: 349).

Figure 15 illustrates the features and burials found at the base of Mound B. Their position relative to the primary mound is indicated. The position of all features and burials relative to the total mound is illustrated on Figure 16. Kellar (Kellar, Kelly, and McMichael 1962b: 62-68) associated Feature 1 with Phase IV; features 3, 4, 5, and 9 and burials 1, 2, and 3 with Phase III; and the remaining features and burials with Phase II.

Feature 1

Feature 1 is erroneously labelled Feature 20 in Figure 7 of the American Antiquity article (Kellar, Kelly, and

Figure 16: Position of Mound B Features Relative to the Primary Mound


F3
F4 PRIMARY
MOUND
1520 W 1000
B1,2,3
F6
F2
F7
F8
F5
F1
1490 W 1000
F 9
1470 W 1000
N
0
20
FEET

McMichael 1962a: 349). Feature 1 was a shallow depression on top of the fourth Phase III layer. A few pieces of calcined bone, a piece of marine shell, and two pottery vessels were recovered (Kellar, Kelly, and McMichael 1962b: 68). One vessel was a Crooked River Complicated Stamped jar with tetrapods and a notched rim (Plate 54). The second vessel also had tetrapods and a notched rim. It was an Early Swift Creek Complicated Stamped vessel of unique form in that it was a compound jar.

Compound vessels have been found at several other Middle Woodland sites. These include Aspalaga, Crystal River, Carrabelle, and Harness. The vessel from Aspalaga (Moore 1903: 487) is most similar to the Mandeville vessel (Plates 55 and 56). Both the Mandeville and Aspalaga vessels exhibit a spiral complicated-stamped motif. The Mandeville example has a notched rim and the mid-section has been smoothed. The vessel from Aspalaga has a flattened rim and exhibits no such smoothing. Both have small tetrapods. The compound jar from Crystal River is plain and the one from Harness is incised (Greenman 1938: Figure 19). The vessel from Carrabelle is simple stamped with a row of punctations around the rim. It has tetrapods (Moore 1918: Figure 30).

Burials 1, 2, and 3

Parts of three burials forming one feature were found on the side of the primary mound about eighteen inches

above the base. The burials were apparently a secondary burial and two skulls. One of the skulls had a copper stain on it. A copper-covered panpipe and fragments of marine shell were associated with these burials (Kellar, Kelly, and McMichael 1962b: 67-68).

Feature 2 (Burial 4)

Feature 2 was a shallow pit intruding into the primary mound. It was 5.6 feet long and four feet wide. In the pit was a human skull, poorly preserved, and long bone fragments, indicating an extended inhumation. The only artifacts found with this burial were one simple stamped/brushed sherd, one plain sherd, one quartz pebble, and a fragment of marine shell. A small mound of earth covered the pit (Ibid.: 63).

Feature 3

Feature 3 was a large pit intruding into the north side of the primary mound. It measured 17.9 feet long and 9.6 feet wide. The bottom of the pit contained a four-inch layer of gravel above a thin layer of white sand. Deposits of calcined bone were located between two layers of gravel. A three-tube, silver- and copper-covered panpipe, five plain sherds, one linear check-stamped sherd, one simple-stamped sherd, and one stemmed point were recovered from the pit (Ibid.: 66).

Feature 4

Feature 4 was somewhat smaller than Feature 3; however, like Feature 3, it was lined with gravel and sand. It intruded into the west side of the primary mound. Calcined bone, two copper-covered panpipes, and a bicymbal copper earspool were found in this feature (Ibid.).

Among the copper artifacts in the special collection room of the University of Georgia Laboratory of Archaeology is one of the original labels from the box in which the Feature 4 material was at one time stored. This label indicates that three earspools and one panpipe were recovered from Feature 4. The source of the discrepancy between this label and Kellar's description of Feature 4 grave goods is unknown.

Feature 5 (Plate 57)

The upper part of Feature 5 was disturbed by the bulldozer, making correlation of this feature with the correct construction phase difficult. It was about 4.5 feet above the mound floor. Feature 5 was 5.4 feet long and 3.0 feet wide. A redeposited cremation, charred wood, nine greenstone celts, one chipped greenstone spade, thirteen bicymbal copper earspools (one of which was also covered with meteoric iron), four or five pounds of galena, and three check-stamped and two plain sherds were recovered from this feature. None of the artifacts had been burned (Ibid.: (67).

The following is a portion of a letter concerning the calcined bone sent from James B. Griffin to A. R. Kelly in March, 1961 as quoted by Kellar, Kelly, and McMichael (Ibid.):

> ...the bone material probably represents a single individual. The sutures of the skull, the size of the condiles [sic], the incomplete epiphyseal closures and the general small stature indicate a youngster of approximately an age around 11 - 12 years. The condition of the bone indicates that it was burned while dry. This means that it was exposed for a bit and probably then collected more or less as a bundle. The uniform exposure to heat is an indication of perhaps a small bundle of bones. It is suggested that the bone was fired in an oxidizing atmosphere, in a good hot fire with relatively quick burning. It appears, of course, that the body was disarticulated when the bones were burned and that the skull lay on its face in the fire. The fire seems to have been a log pyre and not a pit in the ground to judge from the high oxygen appearance of the fired parts of the bone and the absence of color changes which would have been due to a reducing atmosphere.

An original label from the box in which the Feature 5 material was at one time stored indicates that thirteen earspools and a small four-tube copper-covered panpipe were found in Feature 5. As with Feature 4 described above, the source of this discrepancy between the label and Kellar's description of Feature 5 grave goods is unknown.

Feature 6

Feature 6 measured six feet long and five feet wide.

Along the west wall of the pit were a few fragments of calcined bone. No artifacts were recovered from within this pit; however, on the old land surface east of the pit was a cache of broken pottery. The sherds represented at least nine vessels, none complete. Three of the vessels were of the Punctate variety described for Mound A. The body of each of these Punctate vessels was check stamped. Other vessels represented were check stamped, cord marked, and plain (Ibid.: 64). With the exception of two restored Punctate vessels, none of this pottery could be located. That this pottery cache was intentionally associated with Feature 6 is really only a guess because, since it was east of Feature 6, it immediately reminds one of the Weeden Island habit of locating pottery caches on the eastern edge of the burial mound. This may be, as Kellar, Kelly, and McMichael suggest, the beginning of the Weeden Island custom, or it may be a coincidence.

Feature 7

Feature 7 was a shallow pit about 7.5 feet long. A thin layer of gravel lay in the bottom; and the fill was composed of white sand, clay chunks, and pieces of charcoal. No indication of pit use was available as neither skeletal remains nor artifacts were found therein (Ibid.).

Feature 8

Feature 8 was an irregularly-shaped pit measuring about eight feet long. It, like Feature 7, was lined with

gravel. Again no skeletal remains were present but two blades and a clay platform pipe were recovered. The platform pipe was warped and in poor condition (Ibid.).

Feature 9

Feature 9 was located on the mound floor but Kellar (Ibid.: 67) felt that it was a Phase III feature because it was "...peripheral to the major addition which covered the /Phase II/ basal pits...." This feature measured fifteen feet long and ten feet wide. A small piece of bone, fragments of a copper-covered panpipe, a clay platform pipe (Plate 58), and pieces of a tetrapodal vessel were recovered. The vessel was plain with some irregularly-spaced simple stamping. The rim was slightly flaring. Green stain on the earth in the pit indicated oxidized copper.

Feature 10 (Plate 59)

Feature 10 was about seven feet long. It differed from other Mound B features in that there had been an in situ fire in the upper portion of the fill (about a foot above pit base). At the base of the pit was a single piece of galena and a clay figurine (Plate 60).

> The figure is that of a female bent slightly forward at the waist with the hands, detailed even to the knuckles, at the side with fingers extended. The thumb on the left hand was not modelled. The skirt, portions of the feet, hairline, and armbands are painted with a red pigment, while the hair and sections of the back are painted black. Her hair is parted to the

> left and tapers down the back and is rounded off just above the waist.... The extreme breadth of the upper neck regions suggest a goiterous condition (Ibid.: 64).

Feature 11

Feature 11 was a circular pit with a diameter of about 1.5 feet. It was about 1.2 feet deep and had a flat base. The fill was a gray ash-like silty material. Its shape was similar to Feature 20, a pit in which was found calcined human bone (Ibid.: 65).

Features 12, 16, 17, 18, and 19

Features 12, 16, 17, 18, and 19 were circular, tapering pits which may actually have been tree roots rather than true features. No cultural material was found in any of them (Ibid.).

Features 13, 14 and 15

Features 13, 14, and 15 were irregularly-shaped intrusions. A few pieces of unidentified calcined bone were found in Feature 15 (Ibid.).

Feature 20 (Burial 7)

Feature 20 was a pit 1.4 feet in diameter and 0.9 feet deep. Calcined human bone fragments and ash mark this as a crematory pit. No artifacts were associated (Ibid.).

Feature 21 (Burial 8)

Feature 21, like Feature 20, was a small pit filled with calcined bone and ash. A piece of galena and two pebbles were included in the fill (Ibid.).

Feature 22 (Burial 9)

Calcined bone and ash were recovered from Feature 22. At the bottom of the pit was an undetermined number of poorly-preserved copper beads and a celt (Ibid.).

Feature 23 (Burial 10)

Feature 23 contained calcined bone, ash, copper beads, a piece of galena, and a stone celt (Ibid.: 66).

To summarize, Features 12 through 19 may have been natural disturbances, such as tree roots. The remaining features appear to have been graves within the mound because all but four of them contained human bone. The four features (7, 8, 10, and 11) in which no evidence of human remains were found either contained artifacts (probably grave goods) or were in configuration similar to other features which did include human remains.

The artifacts found associated with the above features and burials are described in the following section.

GRAVE GOODS

The most common grave goods were Hopewellian in character: copper-covered panpipes and bicymbal copper earspools. Other Hopewellian items apparently used as burial accompaniments included a figurine, clay platform pipes, and blades. Galena, copper beads, objects manufactured from greenstone, marine shell (containers?), and pottery were also included as grave goods.

Copper-covered Panpipes (Plate 61)

Unfortunately, the copper artifacts from Mandeville were not adequately labeled and cared for; and, in some instances, it is not possible to definitely identify which came from what feature. The one silver- and copper-covered panpipe from Feature 3 is identifiable and a small, four-tube panpipe is labeled as coming from Feature 5. The latter has some sort of woven matter on one surface. This woven material appears to be basketry or matting rather than fabric. The remaining three panpipes are from features 4 and 9 and burial 1, 2, 3.

Copper Earspools (Plate 62)

Richard Jefferies (1975: 59 60) distinguished two varieties of earspools at the Tunacunnhee site in northwest Georgia. Variety A was composed of two outer discs and two inner discs held together by a central column or rivet which was fitted through holes in the discs and flattened.

vegetal fiber was wrapped around the central column. The edges of the discs were curved downward forming a convex surface. The diameter of the outer discs of the Tunacunnhee examples ranged from 1.6-1.8 inches. Variety B earspools, only two of which were recovered at Tunacunnhee, measured 2.3 inches in diameter. The discs of variety B were flatter with less curvature. There is no hole in the outer discs of this variety; they were apparently secured to the central column by some natural adhesive. The central depression of one of the outer discs was filled with iron. As with variety A, fiber was wound around the central column.

All but one of the Mandeville examples are similar to variety A. The Mandeville earspools appear to be somewhat smaller than the Tunacunnhee earspools, averaging 1.5 inches in diameter. One of the Mandeville earspools is similar to variety B. The disc of this incomplete earspool is flatter than the other Mandeville specimens and it does not have a hole through which a rivet could pass. The outer surface of this disc was apparently filled with meteoric iron, only traces of which now remain. The outer edge is broken, preventing accurate measure of diameter.

Sharon Goad (1974: 9-10) has begun an analysis of southeastern copper artifacts by testing five earspools from three Georgia sites: Tunacunnhee, Mandeville, and Kolomoki. Her preliminary conclusions concerning these artifacts are as follows: two copper earspools from a single burial from Tunacunnhee

> ...seem to have been manufactured from the same ore sample. A third earspool from the Mandeville site in Southwest /southwest/ Georgia is similar in construction and nearly identical in copper trace element content (Ibid.: 9).

The earspool from Kolomoki is similar to variety B from Tunacunnhee, including the iron in the outer disc. The trace element contents of the Kolomoki earspool and the Tunacunnhee variety B earspool are similar (Ibid.: 9-10).

Turning to a consideration of the source(s) of the copper ore used in the manufacture of these five earspools, she found the first three earspools to be similar to an ore sample from Ducktown, Tennessee. The last two earspools resemble ore from Ashe County, North Carolina. "In all five examples the trace element analysis show a marked difference when compared to ore samples from Michigan and Wisconsin" (Ibid.: 10).

It would be important to know if the variety B earspool from Mandeville is similar in trace element content to the variety B specimen from Tunacunnhee and the earspool from Kolomoki. Jefferies (personal communication) is of the opinion that the variety B earspool may be somewhat later than variety A. A similar earspool from Kolomoki would tend to corroborate that suggestion as would the fact that the variety B earspool at Mandeville was associated with Feature 5 which was radiocarbon dated at AD 420 $\pm$ 120.

Clay Figurine (Plate 60)

The physical description of the figurine found in Feature 10 has already been given. Caldwell (1964: 137) has called attention to the similarity between this figurine and those from the Knight mounds in Illinois. Griffin, Flanders, and Titterington (1970: 82-87), after listing the Hopewellian sites at which figurines and figurine fragments have been found, state that there is a set of stylistic similarities which help to identify Hopewellian figurines but that the figurines from each site are distinct. They (Ibid.: 87) conclude that

> ...figurines were not an item of trade, barter or exchange. At least the variations of either style, dress, ornaments or materials do not suggest that such was the case. There are no figurine features which are held in common at all of the sites, perhaps because of the inadequate sample from most of the sites.

Other Burial Accompaniments

Clay platform pipes. Two rather crude clay platform pipes (see Plate 58) were recovered from Mound B. Compared with the broken steatite platform pipe and the fragment of a possible bird effigy clay platform pipe from Mound A, these two pipes are definitely inferior in workmanship and not at all what one would imagine would be included as burial furniture in a Hopewellian mound.

Blades. Two blades were recovered from Feature 8. The author was unable to locate them; illustrations are, however, available (see Kellar, Kelly, and McMichael 1962a: Figure 3c) and they are quite similar to the blades shown in Plate 47.

Galena. A large quantity of galena was found in Feature 5. Only two other small pieces, in features 10 and 23, were recovered. The finding of galena in burial context in the Southeast is quite frequently taken as an indication of connections with Copena. Possible relationships between Mandeville and Copena are discussed in a later chapter.

Copper beads. Copper beads were associated with burials 9 and 10 in features 22 and 23. These beads were tubular rather than rounded.

Greenstone celts and spade. Greenstone artifacts were concentrated in Feature 5. Nine polished greenstone celts and a chipped greenstone spade were associated with the burial in this feature. Unidentified celts were also found in features 22 and 23.

Marine shell. Marine shell was rare in Mound B. As marine shell was a trade item from the Gulf coast to interior Hopewellian sites, the occupants of Mandeville may not have wanted to "waste" this valuable commodity by disposing of it within the community.

pottery. Pottery was not a common burial accompaniment. The only vessels found were the two examples in Feature 1 (Plates 54 and 55). The pottery cache near Feature 6 was probably an intentional ceramic deposit; the portion of a vessel found in Feature 9 may have been deposited intentionally. The occasional potsherds mentioned with other Mound B features were probably accidental inclusions in the other fill.

Mica. Rather conspicuous by its apparent total absence from Mound B is mica. Mica sheets, sometimes cut into recognizable forms, were common in the Santa Rosa-Swift Creek burial mounds (Willey 1949) and in the stone and earthern burial mounds at Tunacunnhee (Jefferies 1975). Sheet mica was abundant in Mound A and Mandeville may have been a supplier of mica to northwest Florida. If so, mica may be absent from the burial mound for the same reason suggested above for the scarcity of marine shell.

MOUND FILL

Few artifacts were found in the mound fill. Two medium-sized expanded stem points and 81 sherds were recovered. Of these, 74 were Early Swift Creek and related types; seven, Mississippian types (Kellar, Kelly, and McMichael 1962b: 69-70).

There was no midden layer beneath the mound. This fact coupled with the scarcity of artifacts in the fill

suggests that Mound B may have been located outside the limits of the Early Swift Creek village.

NATURE OF THE MOUND

Mound B was a conical burial mound. The few ceramic vessels and sherds associated with features and the radiocarbon dates (see chapter 6) indicate that this mound was contemporary with the Woodland portion of Mound A. The copper artifacts and figurine indicate connections with Hopewell. The extent and meaning of this connection will be discussed in a later chapter.

Only a small portion of the community was buried in Mound B. Even if one assumed that all of the features found in the mound were burial features and doubled or tripled this number to compensate for lost data due to the earlier pothunting and the bulldozing, this number would not account for the total population of the site. The grave goods indicate that those who were buried there were special status people.

CHAPTER 5

VILLAGE LAYOUT

This chapter is concerned with village layout. The village test excavations, some indications of activity areas, and settlement pattern are described in the following paragraphs.

THE VILLAGE AREA

A number of test squares (indicated as black squares on Map 2) were dug in the village area between mounds A and B. No field notes are available for this operation; however, a manuscript report on the village excavations and analysis is on file in the Department of Anthropology, University of Georgia. The following discussion of the village is based upon this report, written by James Kellar in 1960, and upon the 1962 American Antiquity article.

Excavation Procedure and Stratigraphy

In 1959, a total of twenty-three ten-foot test squares were excavated in the village. Arbitrary six-inch levels were used and the earth removed was screened (McMichael and Kellar 1960a: 114-115).

Occupation depth ranged from six inches to forty-two

inches in the various squares. This variation in midden thickness precluded any comparison of vertical stratigraphy; however, some horizontal clustering was noted. A heavy concentration of Early Swift Creek Complicated Stamped and related types was noted northeast of Mound A on the edge of the terrace overlooking the junction of Sandy Creek and Sandy Branch. Check stamping predominated in areas 1200W590 and 1300W600, perhaps indicating the presence of a small Cartersville settlement. Rood focus ceramics were concentrated north of Mound A; and a later occupation, characterized by Chattahoochee Brushed and related types, was found on the western edge of the village (Ibid: 130-132; Kellar, Kelly, and McMichael 1962a: 348).

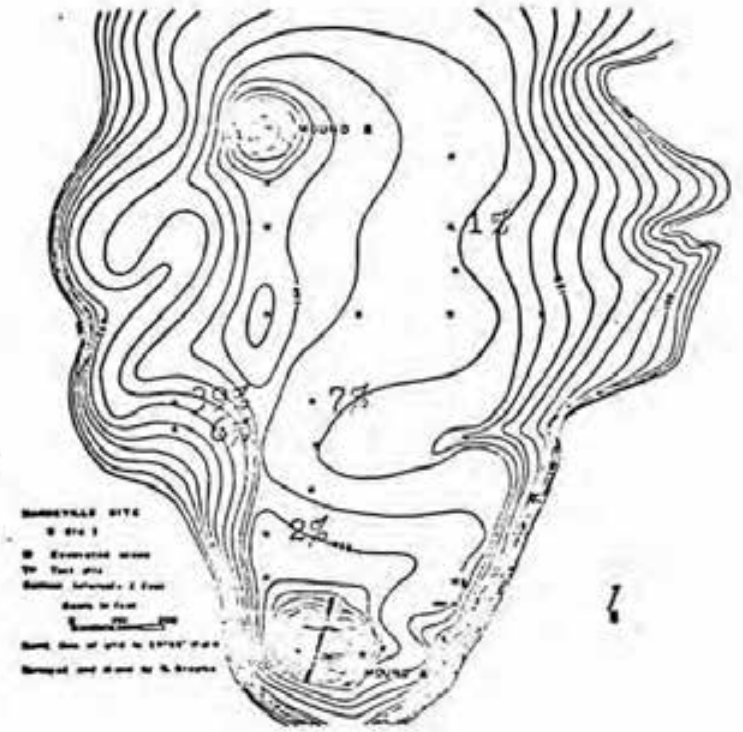
The horizontal clustering of pottery types noted by Kellar above was tested as follows: the percentage of the ceramic types for each square (using the sherd counts on Table 42 in Appendix H) were calculated. In each square, those types numbering less than five sherds were not calculated since only a very small percentage would be involved. For purposes of simplification, several of the ceramic types were grouped into four ceramic categories:

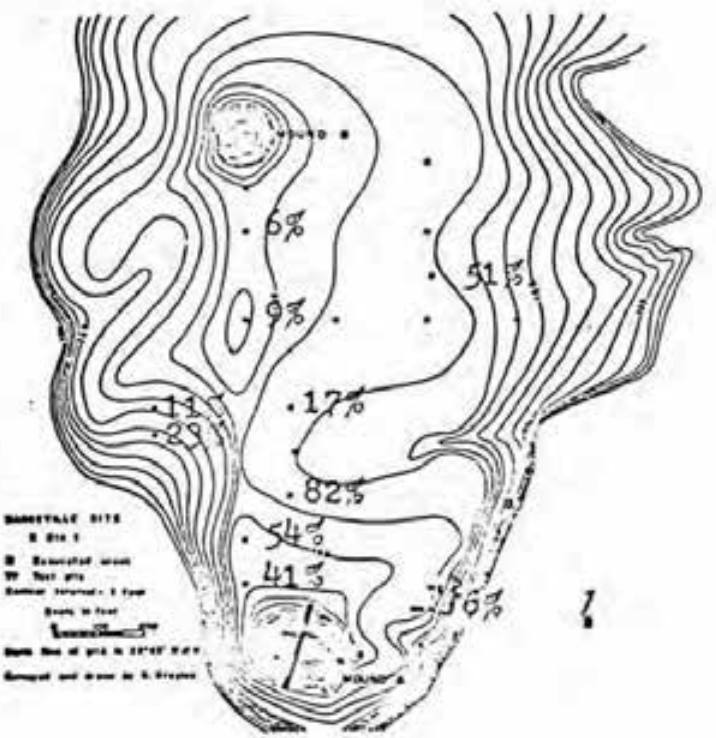
CATEGORY	TYPES
Chattahoochee	Chattahoochee Brushed Chattahoochee Plain
Rood	Plain, grit Plain, shell Incised (A)
Complicated Stamped	Complicated stamped, curv. Complicated stamped, rect.
Check and Simple stamped	Check stamped Simple stamped

The type Plain (B) was omitted since it was the overwhelmingly predominant type in all squares except one. The total of the four categories for each square was calculated and this total was used in calculating the percentages given on Table 43 in Appendix H. Seven squares in which the sherd total for all four categories was less than one per cent of the ceramics being considered were omitted from further consideration. Twelve squares (three of which had been combined by Kellar) were then used to test Kellar's idea of horizontal clustering. Maps 5 through 8 illustrate the distribution of the four ceramic categories by percentage. Kellar's findings concerning the Chattahoochee and Rood categories were confirmed. His findings concerning the Early Swift Creek Complicated Stamped and check stamped, however, require some elaboration. There does appear to be a high concentration of Early Swift Creek along the eastern edge of the site, but there is also a large percentage along the western edge of the site. As for the check-stamped pottery (grouped here with simple stamped),

Map 5: Distribution of Chattahoochee Ceramics in the Village Area of Mandeville

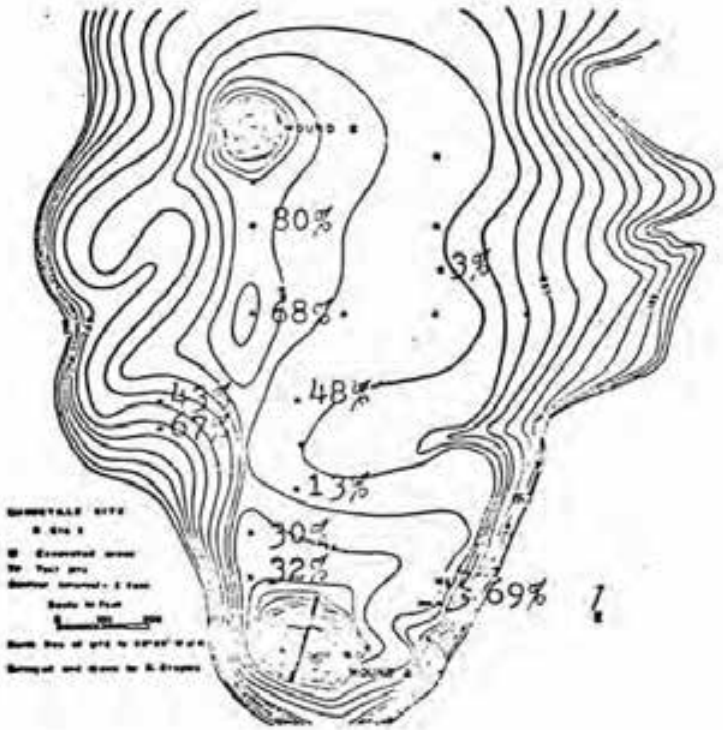
Map 6: Distribution of Rood Ceramics in the Village Area of Mandeville

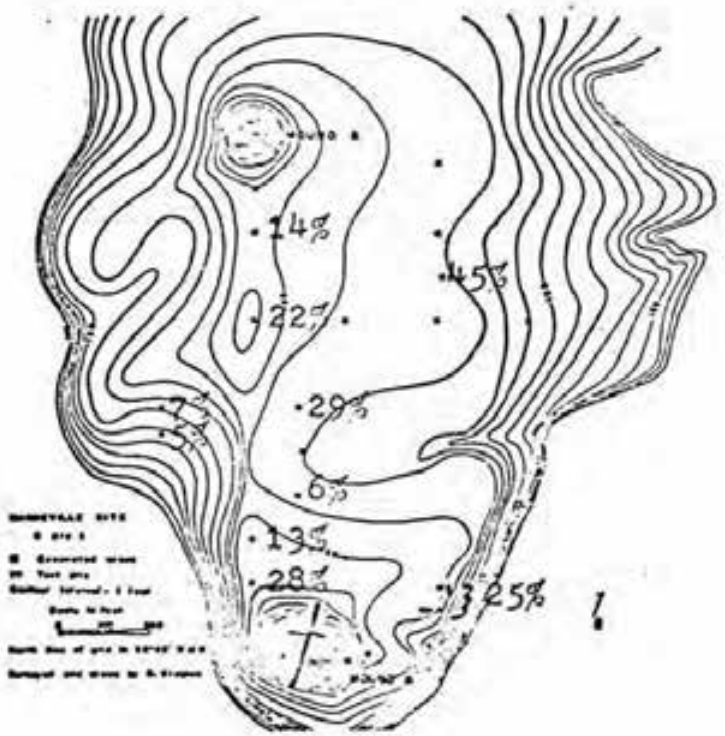

1%
2%
8%


6%
9%
51%
11%
17%
82%
54%
41%
36%

Map 7: Distribution of Complicated Stamped Ceramics in the Village Area of Mandeville

Map 8: Distribution of Check- and Simple-Stamped Ceramics in the Village Area of Mandeville


80%
68%
48%
13%
30%
32%
69%


14%
22%
29%
6%
13%
28%
25%

there is a concentration in the area noted by Kellar. In other areas of the site, this category appears as a constant minority, probably because of its association with complicated-stamped pottery.

Artifacts Recovered from the Village

Ninety per cent of the village ceramics were Early Swift Creek Complicated Stamped and related types, a finding which corresponds to the ceramic inventory of Mound A (McMichael and Kellar 1960a: 130-132). The area northeast of Mound A, besides containing a high percentage of Early Swift Creek Complicated Stamped and related ceramics, yielded eight red-filmed and two-rocker-stamped sherds, two figurine fragments, a fragment of a clay platform pipe, two blades, and a blade fragment, crystalline quartz chips, and cut mica.

One of the figurine fragments is the head of a female figurine (Plate 38, center). Part of the face is damaged. The other fragment may be a portion of a leg. The broken platform pipe appears to be the stem portion. It is rectangular and measures 33.3 mm wide. The blades and blade fragment were all made of local chert and all show use along one edge.

Other than the items just described, no re-analysis of the village material was undertaken because the vertical stratigraphy afforded in Mound A was not available. Since one of the problems being considered in the present study

is whether the Woodland occupation of the site can be justifiably divided into two components, it was deemed necessary to limit the analysis to material in a demonstrably stratified context. For the record, however, ceramic counts for the test squares are given on Table 42 in Appendix H. The categories and counts are those of Kellar (Ibid.: 116-128). "A" refers to Mississippian and later; "B", to Woodland and earlier.

ACTIVITY AREAS WITHIN THE SITE

Activity areas, archaeologically, are portions of a site at which specific activities seem to have regularly occurred. They are determined by the kinds of artifacts and/or features that are present (see, for example, Morse 1970; Winters 1969 for descriptions of the use of artifact types as indicators of specific activities). Any conclusions concerning activity areas at Mandeville can be made only in very general terms. Three such areas seem to be mounds A and B and the village area between the two mounds.

Mound B was obviously a burial area. Equally obvious is that only a small proportion of the total population of the site was interred there. In those features containing human bone, the most frequent type of burial was cremation. Since neither the ground surrounding these features nor the associated artifacts show any indication of in situ burning, the actual burning of the body before burial appears to have taken place elsewhere.

The activities associated with Mound A are unknown. The mound is similar in form to Mississippian pyramidal mounds on the summits of which, from archaeological reconstruction and early ethnographic accounts, were residences for the paramount chief, mortuary houses, and other ceremonial structures. Projecting such features back to the third or fourth century AD may be a hazardous proposition, but, at the moment, no alternative is apparent.

The north and south profiles indicated that the southern portion of the mound was composed of alternate layers of midden and fill whereas the northern portion was composed of layers of fill. The midden deposits on the northern portion of the mound tended to be on the slopes of the fill layers, perhaps indicating intentional cleaning of the summit. Excavation subsequent to 1959 concentrated on the southern portion of the mound; thus, additional data pertaining to the apparent north-south division of the mound was not collected.

If such a division did indeed exist, it is probable that functional differences between the northern and southern portions of the mound are indicated. One portion of the mound may have served as the place of residence of the village leader; and the other portion, as a focus of ceremonial activities. The apparent intentional cleaning of the northern half of the mound might imply that this was the portion of the mound at which ceremonial activity occurred.

The third general activity area was the village between mounds A and B. The limited testing of this area failed to uncover sufficient data to delineate activity areas within the village. The ceramic clusters described above relate to temporal differences rather than to functional differences within the site.

A fourth possible activity area was 9 Cla 2, a small site just across Sandy Creek from Mandeville. Limited test excavations were conducted at this site. The ceramic inventory indicated an occupational history similar to Mandeville with the exception that 9 Cla 2 yielded a somewhat larger percentage of Weeden Island ceramics than did Mandeville (Nonas and deBaillou 1962: 11). The sherd count for three of the excavation units is reproduced below.

TABLE 11: Ceramics from Site 9 Cla 2 (Ibid.)

POTTERY TYPE	X-1	X-2	X-4	TOTAL
Fiber-tempered	17	0	8	25
Deptford	185	28	27	240
Swift Creek	76	8	17	101
Weeden Island	25	39	2	66
Lamar	13	29	8	50
Chattahoochee Brushed	20	25	20	65

More than twice as many check-stamped as complicated-stamped sherds were recovered and Nonas and deBaillou (Ibid.: 3) indicate that most of the check-stamped sherds were linear check stamped. This probably means that most of the check-stamped ceramics date to the premound levels of Mound A or slightly earlier.

Nonas and deBaillou (Ibid.: 4) felt that 9 Cla 2 was a lithic workshop during the Early Swift Creek period; but this writer is unable to accept this interpretation since the lithic artifacts illustrated by Nonas and deBaillou and the material she has personally examined from the site are primarily Archaic in nature.

Sixteen artifact lots from excavation unit X-4, the area reported to be the Swift Creek lithic workshop, were briefly examined by this writer. The artifacts noted during this brief examination are indicated on Table 12 below. With the exception of one or two crystalline quartz chips, the chipping debris and artifacts represented only local material. One small Mississippian triangular and two Cat Cave Creek points were included in the sample. The latter are late Weeden Island points (Kelly, et. al. 1962: 23-24). Thirty-two per cent of the artifacts were patinated. One Palmer Corner Notched point was identified and other Early Archaic traits such as beveled and serrated edges and a unifacial point were also noted. No projectile points identifiable as Middle Woodland were included in the sample examined. Site 9 Cla 2 may have been part of the village during the Early Swift Creek period but it did not function specifically as a lithic workshop at that time.

TABLE 12

LITHICS FROM SITE 9 Cla 2

	100 N					300N			500 N			800 N
	0.0-0.5'	0.5'-1.0'	1.0'-1.5'	1.5'-2.0'	2.0'-3.0'	0.0-0.5'	0.5'-1.0'	1.0'-1.5'	0.5'-1.0'	1.0'-1.5'	2.0'-2.5'	1.5'-2.0'
Mississippian triangular	1											
Cat Cave Creek						2						
Palmer										1^{1}		
stemmed				1^{2}			1	1	1^{1} 1^{2}			1^{5}
stemmed, beveled							1^{1}				1^{1}	
Side-notched, beveled, triangular, serrated												1^{1} 1^{1}
distal	1	3				2						
knife						1^{1}	1^{4}		1^{4}			
scraper						1^{1}				$1^{1,5}$		
drill				1^{3}								

TABLE 12 (continued)

	100 N					300 N			500 N			800 N
	0.0-0.5'	0.5'-1.0'	1.0'-1.5'	1.5'-2.0'	2.0'-3.0'	0.0-0.5'	0.5'-1.0'	1.0'-1.5'	0.5'-1.0'	1.0'-1.5'	2.0'-2.5'	1.5'-2.0'
utilized flake	1[1]					1			1	1[1]		
worked chert				2		1	1					
mortar					1							

[1]patinated

[2]tip broken

[3]base broken

[4]broken

[5]unifacial

SETTLEMENT PATTERN

Any analysis of settlement patterns should include

> ...a description of (1) the nature of the individual domestic house-type or types; (2) the spatial arrangement of these domestic house types with respect to one another within the village or community unit; (3) the relationship of domestic house types to other special architectural features, such as temples, palaces, ball courts, kivas, and so on; (4) the over-all village or community plan; and (5) the spatial relationships of the villages or communities to one another over as large an area as is feasible (Vogt 1956: 174).

The latter category is also referred to as the settlement system, "...the relationship between contemporaneous sites whose inhabitants were interacting in systematic fashions" (Plog and Hill 1971: 9).

Lack of pertinant data precludes a thorough analysis of the settlement pattern at the Mandeville site. A few inferences, however, can be drawn. The following discussion is organized around the above categories.

Domestic Structures

No domestic structures were isolated at Mandeville. Numerous postmolds were found at the base of Layer I but no house patterns were discernable. Information concerning Middle Woodland structures from Mandeville must, therefore, be extrapolated from data from contemporary sites elsewhere.

One such site is 9 Me 60 (Walker Street or Key School site), just south of Columbus, Georgia. Harold Huscher tested the site for the Smithsonian Institution River Basin Surveys in the early 1960's. The predominant pottery type at this site was Cartersville Check Stamped. Minority types included large check stamped, complicated stamped, linear check stamped, simple stamped, and a combination check-complicated stamped. The projectile points were triangular with slightly excurvate sides and straight, slightly concave, or slightly convex bases (Roberts nd: 7-8). The ceramics and projectiles indicate that this site was roughly contemporaneous with Layer I of Mandeville Mound A. No house patterns were found but linear and curvilinear postmold alignments were noted (Ibid.). A wall trench with postmolds is illustrated in Plate 1 of the Eightieth Annual Report of the Bureau of American Ethnology, 1962-1963.

At the Kellog site (9 Ck 62), in the Allatoona Reservoir, Georgia, Caldwell (nd: 168) found one structure, a Cartersville period house. This structure was a circular house measuring eleven feet in diameter. It was of single-post construction and contained a central rock-lined fire basin. Cartersville ceramics were predominantly check and simple stamped and projectiles were small to medium stemmed isoceles points; thus, the Cartersville period probably dates to the early levels of Mound A or slightly earlier.

Twenty-one circular structures, twelve to twenty feet

in diameter with central fireplaces, were unearthed at 9 Fu 14 in southwest Atlanta. Some of the houses had flat floors and unprepared hearths; some had depressed floors and prepared hearths. One building was somewhat larger than the others; the central fire pit was made of puddled clay and the floor was devoid of midden. This latter structure may have served some ceremonial function. Ceramics from the site consisted of simple stamped, check stamped, fabric marked, and Swift Creek Complicated Stamped (Kelly and Meier 1969: 26-29). A charcoal sample from one of the fire pits was radiocarbon dated at 1736 BP ± 60 (AD 214) (UGA 65) (Noakes and Brandau 1974: 133), making this site contemporaneous with Mandeville.

Farther north into Tennessee, Faulkner and McCollough have recently excavated a Middle Woodland village in the Normandy Reservoir. The Banks III site (40 Cf 108) on the Duck River was a multicomponent site with Late Archaic, Terminal Archaic, Middle Woodland, and Mississippian occupations. Among the features documented for this site were four Middle Woodland houses (Faulkner and McCollough 1974: 259, 291). Structure I was an oval building with a single interior post. At each of the narrow ends of the structure was a semi-circular addition (Ibid.: 263-264). Structures II and III, also oval, each exhibited four central support posts and two large, heavily-fired earth ovens (double ovens). South of Structure II were two additional earth ovens, perhaps representing another

structure (Ibid.: 275, 281, 184). Structure IV was rectangular with a double wall (Ibid.: 291). A series of radiocarbon dates from these structures yielded a range of ca. AD 150--AD 400 (Ibid.: 294-298), making this occupation fully contemporaneous with Mandeville.

The structural elements of the houses at Banks III probably indicate extended family occupancy. "These /structures II and III/ are almost certainly multi-family dwellings which sheltered extended families or other winter population aggregates of up to twenty individuals" (Ibid.: 286). Sites 9 Fu 14 and 9 Ck 62, on the other hand, were probably single-family units. Differences in social organization are thus indicated for these Middle Woodland settlements. Mandeville structures were probably more similar to the 9 Fu 14 and 9 Ck 62 examples; the Banks III site is important, however, because it provided conclusive evidence of substantial, permanent dwellings during the Middle Woodland period.

Special Architectural Features

The only special architectural features were mounds A and B, both of which have been described in previous chapters.

Over-all Community Plan

The village plan as shown on Map 2 was one in which domestic structures were probably located on the terrace edges to the northeast and northwest of Mound A. The area

around Mound B was not adequately tested; however, because no midden was found beneath the mound and because there were so few artifacts in the mound fill, it seems likely that Mound B was located just beyond the limits of the village.

Settlement System

To go beyond the site itself, little can be said concerning the relationship between Mandeville and contemporary sites in the immediate vicinity. The surface collections and limited test excavations conducted by the Smithsonian Institution (Huscher 1959) and the University of Georgia (Kelly, et. al.: 1962a) revealed only infrequent occurrences of either check-stamped or Swift Creek ceramics in the Walter F. George Reservoir area. The low density of the Early Swift Creek occupation at other sites in the reservoir would seem to indicate that these sites were camps, possibly used sporadically by hunting parties from Mandeville.

One fairly large site, 1 Br 15, is related to Mandeville; but it seems to have been abandoned before the appearance of Hopewellian traits at Mandeville (see chapter 7 for a more detailed discussion of site 1 Br 15).

North of the Walter F. George Reservoir area is the Halloca Creek site (9 Ce 4). The ceramics from this site, described in chapter 7, relate the site to Mandeville. Fragments of animal bone and charred hickory nut shells in

the pits indicate a subsistence pattern similar to that of Mandeville. One burial, the partially-articulated skeleton of an elderly female, was found at the site. No grave goods were associated but several Early Swift Creek Complicated Stamped sherds were included in the pit fill (Chase and Kelly nd: 8-9).

This writer, in her perusal of the material from the various pits, noted several fragments of mica and cyrstalline quartz, a piece of petrified wood, and a broken blade made from dark gray chert. Map 3 indicates that sheet mica is available about twenty to thirty miles northeast of Columbus. Petrified wood may be found near Ft. Gaines, just south of Mandeville. The Halloca Creek site may, therefore, represent a local village which maintained a trading relationship with Mandeville. An alternate hypothesis is that the site represents a base camp occupied by peoples from Mandeville as they periodically came north in search of raw materials, such as mica and crystalline quartz.

The relationship between Mandeville and Santa Rosa-Swift Creek sites in northwest Florida is the subject of a later chapter.

Conclusion

Faulkner (1973: 44-45), discussing settlement system types during the Middle Woodland period in the upper Elk and Duck river valleys, Tennessee, suggested two possible

types: nucleated and dispersed. In a nucleated type settlement system, the base settlement is

> ...located in an optimum area for exploitation of the various resource zones, utilization of prime land for simple horticulture, and possible easy accessibility to an important ceremonial site.... Groups of hunters-foragers will leave it for a month or so at a time to exploit the various surrounding resource zones.

In a dispersed type settlement system, the base settlement is the most important ceremonial center but several other seasonally-occupied sites are of equal importance in the total subsistence system.

The Mandeville site situation corresponds most closely to Faulkner's nucleated type. The activities indicated by the artifacts recovered from the site designate neither a particular season nor a particular task. The deep middens (and especially the numerous pits and postmolds in Layer I) point to intensive, permanent occupation, as does the whole process of building Mound A. Plant and animal foods of some sort were available during all seasons of the year. Some food, such as acorns and nuts, could also have been stored to prolong their availability. Hunting and collecting parties probably systematically exploited resources in neighboring ecological zones. In addition, Mandeville itself was the important ceremonial center in the settlement system.

CHAPTER 6

MANDEVILLE RADIOCARBON DATES

A total of 17 radiocarbon dates are now available for the Mandeville site. This number represents six samples run by the University of Michigan Radiocarbon Laboratory in the early 1960's and fourteen samples recently run by Don Smith of the University of Georgia Geochronology Laboratory with the kind permission of Dr. John Noakes, director. Three of the last fourteen samples were from the same features as three of the samples run by Michigan. The Michigan dates bear the designation M-; the Georgia dates, UGA-.

Figures 17 and 18 illustrate graphically the Mound A and B radiocarbon dates. The dates are calculated with one standard deviation. This means that there is a 67 per cent chance that the true age of each sample falls within the range indicated on the graph. "If we had two contemporaneous samples...all that we are permitted to expect is that the total ranges of the two dates in question overlap" (Michels 1973: 156).

Figure 17: Mound A Radiocarbon Dates

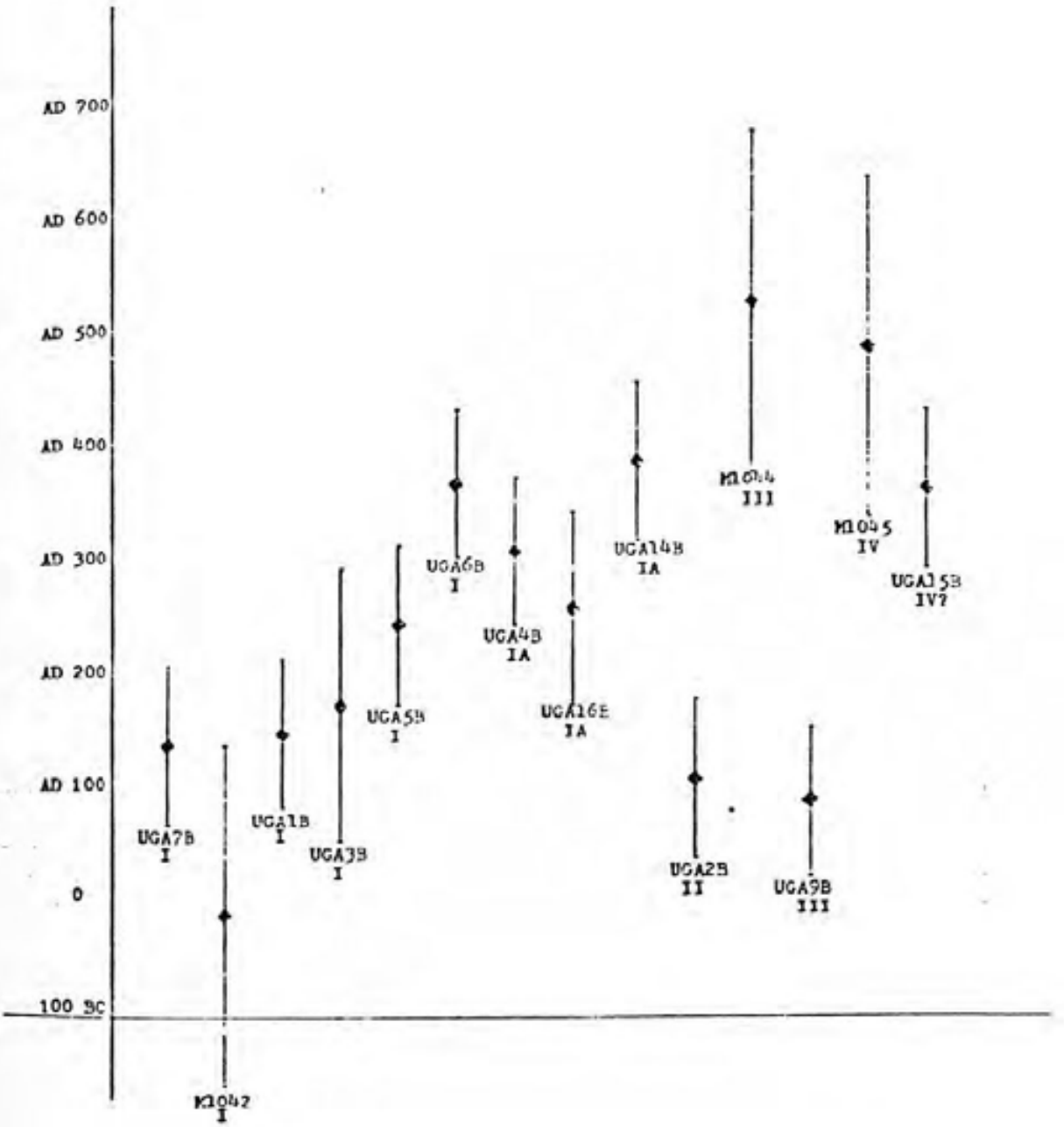
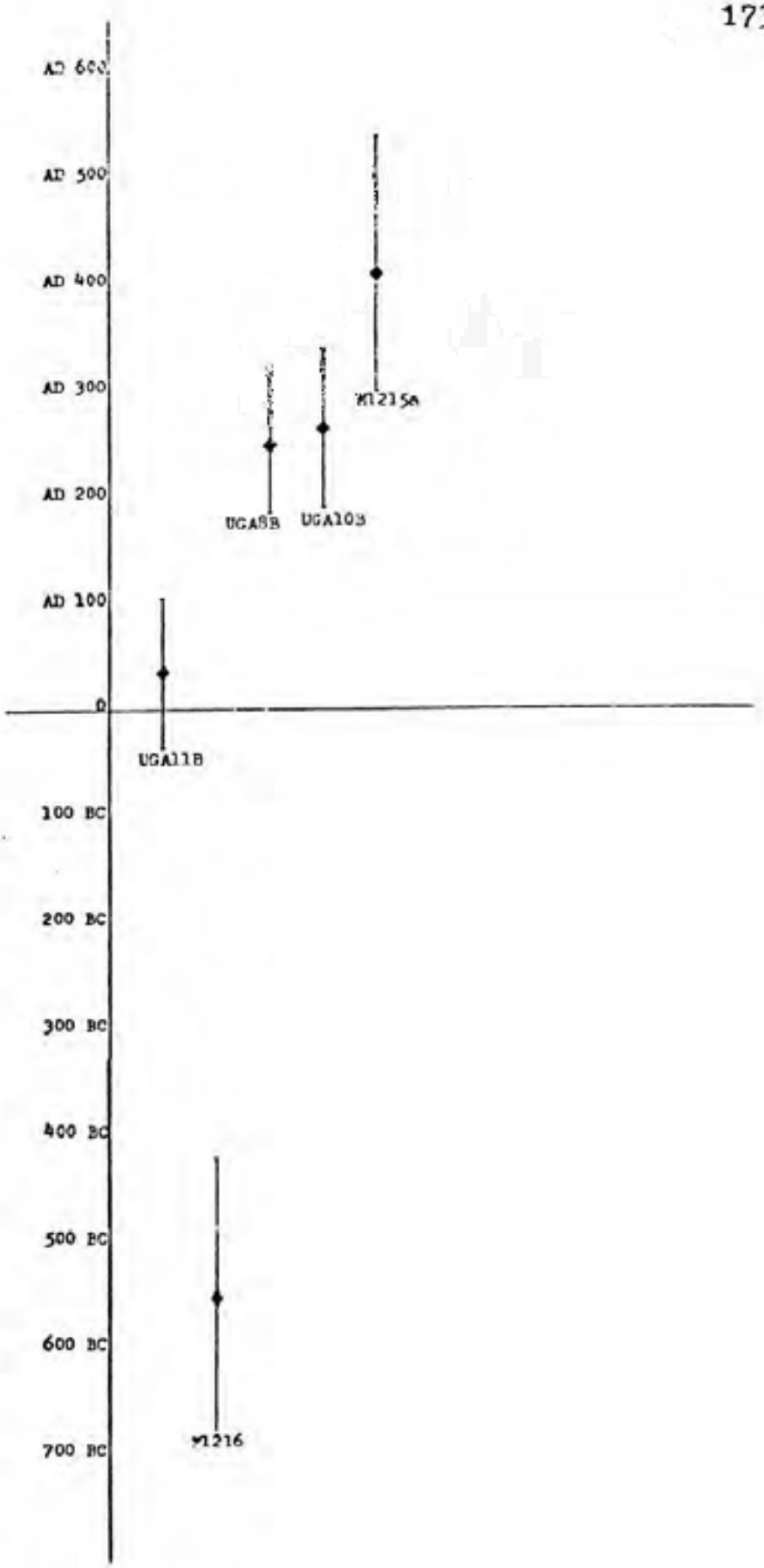

AD 700
AD 600
AD 500
AD 400
AD 300
AD 200
AD 100
0
100 BC
UGA7B I
M1042 I
UGA1B I
UGA3B I
UGA5B I
UGA6B I
UGA4B IA
UGA16E IA
UGA14B IA
M1044 III
M1045 IV
UGA15B IV?
UGA2B II
UGA9B III

Figure 18: Mound B Radiocarbon Dates


AD 600
AD 500
AD 400
AD 300
AD 200
AD 100
0
100 BC
200 BC
300 BC
400 BC
500 BC
600 BC
700 BC
M1215a
UGA8B
UGA10B
UGA11B
M1216

MOUND A

Layer I

UGA-7B. A radiocarbon date of 1810 ± 70 BP (AD 140) was obtained from a charcoal sample taken from Feature 3. A sample from this feature was run by Michigan (M-1042) with a date of 1960 ± 150 BP (10 BC). Although both dates fall within the range of other Layer I dates, the UGA date more closely approximates other Layer I dates and is considered here to be the more acceptable of the two.

UGA-1B. A date of 1800 ± 65 BP (AD 150) was obtained from charcoal in a postmold in Layer I, below 12 inches.

UGA-3B. A radiocarbon date of 1775 ± 120 BP (AD 175) was obtained from a charcoal sample taken from Feature 1. A sample from this feature was run by Michigan (M-1043) with a date of 1030 ± 150 BP (AD 930). The UGA date is a more reasonable date for Layer I than is the Michigan date.

UGA-5B. Sample UGA-5B provided a date of 1705 ± 70 BP (AD 245) for Layer I.

UGA-6B. A charcoal sample from the 6" to 12" level of Layer I was dated at 1580 ± 65 BP (AD 370).

The first three dates are all from Layer I features that fall below the twelve-inch level and are in good agreement. The fourth date overlaps the upper end of the ranges of the first three and also probably dates Layer I. The

fifth date, however, appears to be too late.

Layer IA

UGA-4B. A charcoal sample from Layer IA was dated at 1640 ± 65 BP (AD 310).

UGA-16B. A sample of animal bone from Feature 34 was dated at 1690 ± 85 BP (AD 260).

UGA-14B. A sample of animal bone from Feature 28 was dated at 1560 ± 70 BP (AD 390).

The plus-minus ranges of these three dates overlap some of the Layer I dates. Layer IA represents the first stage of deliberate mound construction. If this construction began as a series of small platform mounds as surmised, it would not be improbable that occupation of Layer I overlaped the construction of these platform mounds. The 130-year separation between Features 34 and 28, both mantles covering Feature 25, the primary mound, seems excessive and cannot be explained here.

Layer II

UGA-2B. A charcoal sample from Layer II was dated at 1840 ± 70 BP (AD 110). This date seems to be too early to accurately date this layer.

Layer III

UGA-9B. A sample of animal bone from Layer III was dated at 1860 ± 65 BP (AD 90). This date appears to be too

early for this layer.

M-1044. A charcoal sample was dated at 1420 ± 150 BP (AD 530).

Layer IV

M-1045. A Layer IV charcoal sample was dated at 1460 ± 150 BP (AD 490). The ranges of this and sample M-1044 above are such that these two may be viewed as contemporary samples.

UGA-15B. Sample UGA-15B was originally thought to be an animal bone sample from Layer IV; however, when a date of 1585 ± 70 BP (AD 365) was recorded, the provenience was rechecked. Upon a more careful reading of the catalogue, this sample is noted as coming from a test to the northeast of the basal portion of Feature 29. Although Feature 29 was a Layer IV feature, the sample may have come from any layer as there is no clear indication of the depth to which the test was carried.

MOUND B

Mound B

UGA-11B. A charcoal sample from the base of the primary mound was dated at 1915 ± 70 BP (AD 35). This date apparently predates the Layer I occupation of Mound A and may represent a burned tree on the old ground surface over which Mound B was later constructed.

UGA-8B. A charcoal sample from Feature 10 was dated at 1700 ± 65 BP (AD 250). A sample from this feature was run by Michigan (M-1216) with a date of 2500 ± 130 BP (550 BC). The UGA date is more reasonable for this Hopewell-related burial mound and is in accordance with the Mound A dates.

UGA-10B. A charcoal sample from Feature 3 was dated at 1685 ± 75 BP (AD 265).

Kellar, in his description of Mound B, recognized four construction phases. He attributed Feature 10 to Phase II; Feature 3 to Phase III. These two radiocarbon dates clearly indicate that these two stages fall very close together in time and may be considered to be contemporaneous.

M-1215a. A charcoal sample from Feature 5 was dated at 1530 ± 120 (AD 420). This feature is also attributed to Phase III but it was located at a higher level than was Feature 3 and so may well date later.

Summary

The premound village appears to date from about AD 140 to about AD 245. The construction of both mounds began around AD 250. The radiocarbon dates for features 34 and 28 in Mound A suggest that Feature 25 may have been in use (additional layers added and enlarged) for as long as 130 years. The site was abandoned around AD 500.

RECONSTRUCTION

The following paragraphs outline the cultural history of the Mandeville site as can be surmised from the preceeding analyses and radiocarbon dates.

The Mandeville site was occupied for about a hundred years (ca. AD 140-245) by a group of people with relatively few outside contacts. Their pottery was of local manufacture, predominantly plain, check stamped, complicated stamped, and simple stamped. All but two of the projectile points found in Layer I were made from local materials. An efficient hunting and gathering economy allowed for the aggregation of a fairly large population, to judge from the proliferation of pits and postmolds and the foot of midden accumulation beneath Mound A.

By about AD 250, two things had happened: construction of mounds A and B had begun and items identifiable as Hopewellian had been introduced. The occurrence of copper-covered panpipes and earspools in burial contexts indicates that ideas concerning usage as well as the items themselves had been introduced and accepted.

If the construction of both mounds did begin at about the same time, it seems likely that the same force(s) served as the impetus for both. The burial mound would seem to be Hopewell inspired; however, as was discussed in chapter 3, there is no clear precedent for Hopewellian platform mounds. The impetus for mound construction at

Mandeville may not, therefore, have been Hopewell per se but a developing system of status differentiation which required some method of display.

Struever (1968b: 288) saw from the Early to Middle Woodland periods the "...development of complex ceremonial-mortuary activity reflecting increased status differentiation." If variations in the treatment of the dead and in the kinds or amounts of grave goods placed with the dead are indicators of status differentiation within a society, evidence of such differentiation in the Southeast dates as early as the Late Archaic (Indian Knoll).

Indian Knoll and Adena preceded Hopewell. Both used as grave goods marine shell, presumably from the Gulf Coast. The acquisition of marine shell may have been via a series of exchange links or it may have been via direct contact with the Gulf. In either case, the ideas concerning status differences could have easily been diffused so that by the time that Hopewell penetrated the Gulf area, it found a group of societies, with developing social classes, which were receptive to its tenets.

Between ca. AD 250-420, Hopewellian traits were much in evidence, especially in the burial mound. Unless the pothole and bulldozing activities obliterated evidence to the contrary, the last of the Hopewellian items were placed with the burial in Feature 5. The cremated remains of a child eleven to twelve years old were placed in a large pit along with nine greenstone celts, a chipped greenstone

spade, thirteen bicymbal copper-covered earspools, and four or five pounds of galena. If possession of the exotic Hopewellian items was the right of a ruling family, then this family line may have died out with this child.

The period ca. AD 250-500 was also one in which cultural ties with Santa Rosa-Swift Creek were most pronounced. Mutual participation in the Hopewellian interaction sphere may account for this closeness. As the Hopewellian interaction sphere reached its climax and dropped from sight, the occupants of Mandeville may have looked more and more to the south where Santa Rosa-Swift Creek was gradually evolving into Weeden Island (many of the burial mounds to be described in chapter 8 show this evolution and a few Weeden Island-like sherds were found at Mandeville). When the Mandeville site was abandoned, ca. AD 500, the population may have moved to Kolomoki, forming the foundation for the cultural developments at that site.

CHAPTER 7

THE EARLY SWIFT CREEK CERAMIC COMPLEX AT MANDEVILLE AND RELATED SITES

The earliest pottery in the Southeast was fiber-tempered plain, punctate, and incised pottery. At a time and place as yet unknown, sand-tempered pottery decorated with simple lines or checks made by impressing the clay with a carved paddle superceded the fiber-tempered wares. From this time to the historic period, stamped designs predominated on ceramics in Georgia and the contiguous portions of surrounding states. Holmes (1903: 130) defined the area in which stamped pottery was found as the South Appalachian Province. The focus of his work was upon the geographic distribution of a particular style of pottery. Caldwell later (1958: 34) used a similar term, Southern Appalachian tradition, to focus on the pottery itself. This tradition is characterized by stamped pottery in three main styles--simple, check, and complicated stamping.

The earliest simple- and check-stamped pottery is Deptford (the term Deptford is used here in the generic sense--several regional varieties of the type are recognized). The earliest complicated-stamped pottery is Swift Creek. Deptford is earlier than Swift Creek although there

is some temporal overlap between the two. It is this period during which Deptford and Swift Creek pottery occur together that is the focus of the present chapter.

The Deptford ceramic complex includes check-stamped, simple-stamped, cord-marked, and plain (and fabric-marked in all areas except the Georgia coast and Florida) pottery. Late Deptford has been defined as that time when complicated-stamped pottery (i.e., Swift Creek) was added to the Deptford complex (Smith 1972: 48-49).

A Swift Creek ceramic complex has never been defined but as a type, Swift Creek has been divided into Early, Middle, and Late phases. Early Swift Creek, according to Kelly (1938: 28), is

> ...characterized by the presence of naturalistic patterns, simple and combined curvilinear compositions, poorer paste and less favorable decorative finish, less precise cutting of stamps, and in general a relatively inferior ware.

This is in contrast with Middle Swift Creek with its

> ...elaborate composite patterns combining both curvilinear and linear motifs in a very sophisticated manner. The stamped designs are impressed with die-like precision. The designs themselves, although very intricate, are beautifully proportioned and restrained in execution (Ibid.).

Finally, Late Swift Creek "...complicated stamp grows larger and more exaggerated, loses balance in composition, and in general becomes caricature of the earlier patterns" (Ibid.).

These descriptions are largely impressionistic. More definitively, Early Swift Creek is characterized by notched and scalloped lips and overall stamping; Middle Swift Creek, by a small rim fold and either a plain neck and stamped body or a stamped neck and plain body; Late Swift Creek, by a large rim fold and zoned stamping. Only Early Swift Creek pottery is found at Mandeville.

Components exhibiting both Deptford and Swift Creek ceramics have been called either Late Deptford or Early Swift Creek for, as Dan Penton recently (1974: 7) pointed out, "...when you are looking at a continuum, Late Deptford and Early Swift Creek can represent the same point, dependent only upon the viewer." McMichael, who did a preliminary analysis of the Mandeville ceramics defined both a Late Deptford and an Early Swift Creek component. The three components recognized by the original researchers for Mound A were as follows:

Mandeville I--Late Deptford
Layer I (premound midden)
Layer II (midden)

Mandeville II--Early Swift Creek
Layer III (midden)
Layer IV (midden)

Mandeville III--Mississippian Rood focus
Layer V (cap)

The Mandeville I (Late Deptford) ceramic inventory, according to McMichael, consisted of predominately check- and simple-stamped pottery (ignoring the plain ware which accounted for nearly half of the total pottery for both

Mandeville I and II). Complicated-stamped pottery followed check and simple stamped in frequency of occurrence. Minority wares included cord marked, burnished, punctate, and limestone-tempered plain and cord marked. Tetrapods were primarily medium sized. None of the vessel lips were notched (Kellar, Kelly, and McMichael 1962a: 341-346).

Mandeville II (Early Swift Creek) ceramics, again according to McMichael, were dominated by Early Swift Creek, Crooked River, and St. Andrews complicated-stamped potteries. The check and simple stamped were minority types. Also found in minor amounts were Crystal River plain, red-filmed, and negative painted and rocker-stamped sherds of the Santa Rosa series. Small tetrapods predominated and notched and scalloped lips were common (Ibid.: 346-347).

McMichael, recognizing that complicated-stamped pottery did occur in Mandeville I, called it Deptford Complicated Stamped. The following is McMichael's (1960: 211) description of Deptford Complicated Stamped:

> ...medium coarse grit temper; granular paste (as compared with Early Swift Creek); coarser in general than Early Swift Creek. Stamping medium bold, some overstamping, medium deep, usually curvilinear (simple concentric circles, loops; a few simple rectilinear designs) flat, slightly everted rims dominant. No notching or scalloping.

He continues

> this is not to be confused with

> Brewton Hill Complicated Stamped, the Georgia Coast "Deptford Complicated Stamped" type; the writer is coining the name for Level I and II, Mandeville site complicated stamped, which underlies good Early Swift Creek pottery. Possibly in a type-variety system, this could be a variety of Early Swift Creek but certain diagnostics of Early Swift Creek are lacking, and the stamping is poorer.

Early Swift Creek Complicated Stamped pottery, on the other hand, is

> ...micaceous, sandy, fine paste; curvilinear motifs of complex nature, some natural forms?, fine lands and grooves, well executed; little overstamp; jars with semi-conoidal bases, small tetrapods; all over stamping; notched and scalloped lips (Ibid.).

It is quite obvious from the above that many of the criteria used by McMichael to distinguish "Deptford Complicated Stamped" from Early Swift Creek Complicated Stamped are subjective. There is little difference between the complicated-stamped material from the lower and upper levels of the Middle Woodland portion of Mound A. The temper, paste, and execution are identical. Motifs remain generally similar although there is an elaboration of motifs in the upper levels. Tetrapods do tend to decrease in size up through the levels but this is a trend that has been noted many times elsewhere. Apparently notched and scalloped lips are the "diagnostics of Early Swift Creek" that are absent in Mandeville I. This is incorrect for notched

and scalloped lips are found in Mandeville I. A little over fourteen per cent of the rims from Layer I alone are notched or scalloped.

Plain and polished wares make up fifty per cent of the total ceramic inventory of the four Middle Woodland midden layers. In layers I and II, the check-stamped, but not the simple-stamped, pottery is more abundant than is the complicated-stamped pottery. In layers III and IV, this situation is reversed with the complicated-stamped pottery outnumbering the combined total of check- and simple-stamped pottery. A few red-filmed, negative-painted, and rocker-stamped sherds are found in the lower levels as well as in the upper levels of the mound.

There are not enough differences between the upper and lower levels to justify the naming of the two components, Mandeville I and II. McMichael, in so doing, was influenced by the traditional view of many southeastern archaeologists that "Deptford people" made Deptford pots and "Swift Creek people" made Swift Creek pots with the implicit assumption that the two pottery types always indicated that two different groups of people were involved. This view results when the two concepts pottery type and ceramic complex are confused. A type is "a pattern of attributes that distinguishes a group of artifacts and defines it as a class" (Rouse 1972: 300). A ceramic complex is "...the sum total of types, varieties, and modes of an archaeological phase" (Phillips 1970: 30).

The consideration of the co-occurrence of Deptford and Swift Creek at Mandeville in terms of a total ceramic complex should prove to be more useful in the explication of cultural dynamics than will be the consideration of each as separate types requiring such explanation as "the sample is mixed", or "Swift Creek pottery has intruded in Deptford," or "Deptford traits have lingered into Early Swift Creek."

The ceramic analysis presented in chapter 3 indicates an uninterrupted continuum from Layer I up through Layer IV. The addition of some new ideas and traits is evident but these did not materially affect the ceramic tradition at the site. Mandeville I and II actually represent a single component. The problem, then, becomes one of deciding whether to call this occupation Late Deptford or Early Swift Creek. It would seem more appropriate to use the term Early Swift Creek because it is the overall dominant decorated type at the site and because complicated stamping was a dominant mode in southeastern ceramics from Early Swift Creek up to the historic period while check stamping continued only as a minority type. Having made this decision to call the Middle Woodland component at Mandeville Early Swift Creek, it is now necessary to tentatively define an Early Swift Creek ceramic complex.

At least three sites with Early Swift Creek components are known, these being Mandeville, Halloca Creek (9 Ce 4), and the Shorter site (1 Br 15). The lower levels of the Swift Creek mound (9 Bi 3) also merit consideration in

this discussion. These sites are shown on Map 9.

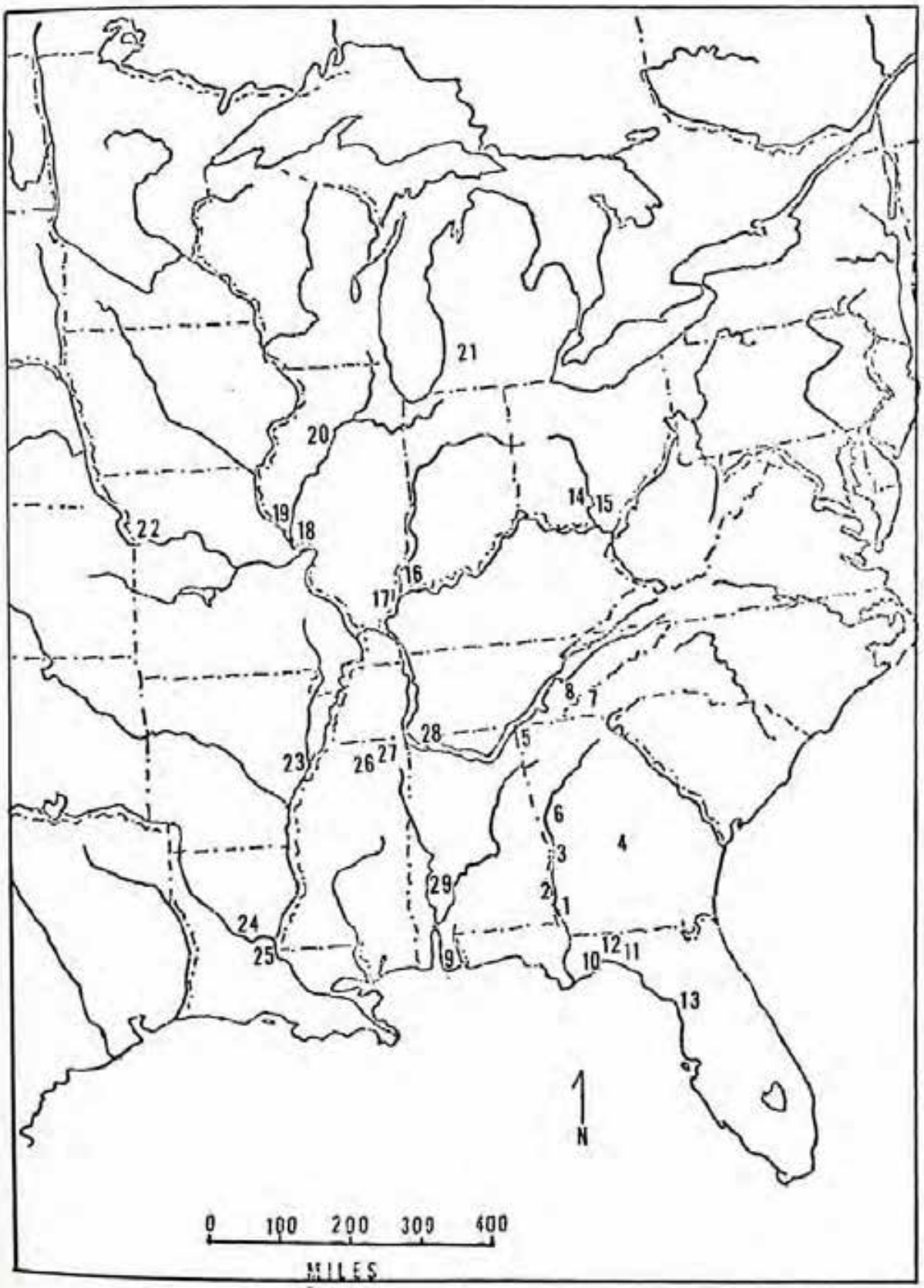
The Halloca Creek site was a small village or campsite on the Fort Benning Military Reservation south of Columbus, Georgia. No mounds were associated with this site, which was located on a sandy terrace bordering the swampy bed of Halloca Creek. Test excavations were conducted by David Chase in 1955 and by Chase and A. R. Kelly in 1957. The material recovered in 1957 is currently held in storage in the Laboratory of Archaeology, University of Georgia. This writer has briefly examined the artifacts from the excavated pits; her findings are indicated on Table 13.

The ceramics from the Halloca Creek site are very similar to those from Mandeville. Similarities include the use of fine sand as tempering agent, the micaceous paste, the simple stamped/brushed mode of simple stamping, vessel lip treatment, and tetrapodal supports. A complicated-stamped motif consisting of concentric overlapping loops resembling fish scales is common at the site (Frank Schnell, personal communication). A few examples of this motif were found at Mandeville (Plate 18, lower right). Chase and Kelly (nd: 12) indicate that the lower quarter of the Swift Creek Complicated Stamped vessels from Halloca Creek was often plain. This trait is generally absent at Mandeville although one Crooked River Complicated Stamped sherd, a portion of which had been smoothed, was recovered from Mound A (Layer IV, Feature 29).

The predominance of complicated stamping over check

Map 9: Selected Sites Discussed in the Text

1. Mandeville
2. Shorter (1 Br 15)
3. Halloca Creek
4. Swift Creek
5. Tunacunnhee
6. Annawakee Creek
7. Garden Creek Mound 2
8. Icehouse Bottom
9. Third Gulf Breeze
10. Tucker
11. Bird Hammock
12. Block-Sterns
13. Crystal River
14. Hopewell
15. McGraw
16. Mann
17. Rutherford
18. Macoupin
19. Knight
20. Steuben
21. Norton
22. Renner
23. Helena Landing
24. Crooks
25. Marksville
26. Bynum
27. Pharr
28. Wright
29. McQuorquodale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300
400
MILES

TABLE 13

CERAMICS FROM HALLOCA CREEK, 9 Ce 4

Pit	A	B	C	D	F	G	I	2	3
Plain	15	3	4	3	-	9	36	27	193
Check Stamped	5	-	-	-	1	2	1	6	2
Simple Stamped	6	1	-	-	-	5	33	6	16
Cord M	1	1	-	-	2	2	5	-	-
Swift Creek	-	2	2	6	-	2	20	27	144
Crooked River	-	-	-	-	1	2	2	12	4
St. Andrews	-	-	-	-	-	-	-	-	1
Unnamed Rect.	-	-	-	-	-	-	1	1	4
fiber t Plain	1	-	-	-	-	1	-	-	4
fabric m	-	-	-	-	-	-	-	1	1

and simple stamping and the presence of rectilinear complicated stamped with a barred diamond motif would seem to indicate contemporaneity with the upper levels of Mound A. The radiocarbon date of 2020 BP ± 150 (70 BC) (M-1046) (Crane and Griffin 1962: 190) appears, therefore, to be too early for this site.

The Shorter site was on the Alabama side of the Chattahoochee River just north of Eufaula. It was a mound and village site; and, like Mandeville, it was situated on a low terrace overlooking a tributary stream of the Chattahoochee River. Ceramic and lithic remains indicate the following components: Ocmulgee Fields (historic Creek), Fort Walton-Lamar, Early Swift Creek, Cartersville, and Late Archaic (DeJarnette 1974: 116-117).

The village material was mixed and the recorded features all contained Fort Walton-Lamar or Ocmulgee Fields pottery (Ibid.: 122). The mound was apparently constructed in three stages as follows:

a. Primary mound--flat-topped, composed of grey-white sand

b. Secondary mound--clay cap, also flat

c. Tertiary mound--white sand and gravel.

Artifacts were abundant in the primary and tertiary mound fills but scarce in the clay fill of the secondary mound. The premound zone was composed of grey-white sand and yielded a sizeable ceramic sample (Ibid.: 130-133).

This writer has not seen any of the pottery from the

Shorter site and so must rely upon the data contained within the manuscript report (DeJarnette 1975). Tables 14 and 15 are reproduced here from that report. Table 14 represents a surface collection from the site; Table 15 is a count from the four zones recognized within the mound.

The apparent total absence of Swift Creek Complicated Stamped from the premound level would seem to indicate the presence of a Cartersville component at the Shorter site which predated the premound level (Mound A, Layer I) at Mandeville. The occurrence of check-stamped and fabric-marked pottery to the exclusion of simple-stamped pottery is suggestive of Caldwell's Post-Kellog focus in the Allatoona Reservoir (Caldwell nd: 150-151). Early Swift Creek Complicated Stamped, Crooked River Complicated Stamped, and West Florida Cord Marked ceramics are present in the third mound zone and in the village, indicating an occupation of the site by Early Swift Creek peoples. The description of the Swift Creek pottery given in the manuscript is so vague that any additional comments are not possible at this time.

The date of mound construction is unknown. DeJarnette (1975: 143) felt that the mound was built during the Fort Walton-Lamar occupation. It is always difficult to use the material from fill to date a mound; however, the presence of only Cartersville pottery in the primary and secondary mound levels may indicate that mound construction began with the Cartersville component. If the mound was built

TABLE 14

POTTERY FOUND ON THE SURFACE OF 1 Br 15
(from DeJarnette 1975: 118)

	Number	Percent
Ocmulgee Fields Types		
Chattahoochee Brushed	43	3.258
Kasita Red Filmed	2	.152
Ocmulgee Fields Incised	1	.076
Total	46	3.485
Fort Walton-Lamar Types		
Fort Walton Incised	15	1.136
Lake Jackson Plain	13	.985
Plain Shell Tempered	11	.833
Lamar Complicated Stamped	5	.379
Lamar Plain	187	14.167
Total	231	17.500
Early Swift Creek Types		
Swift Creek Complicated Stamped (Early Variety)	13	.985
Crooked River Complicated Stamped	13	.985
West Florida Cord Marked (Early Variety)	8	.606
Total	34	2.576
Cartersville Types		
Cartersville Check Stamped	462	25.000
Deptford Simple Stamped	12	.909
Deptford Linear Check Stamped	8	.606
Micaceous Plainware	459	34.773
Dunlap Fabric Marked	29	2.197
Total	970	73.485

TABLE 14 (continued)

	Number	Percent
Miscellaneous		
Stallings Plain	3	.227
Miscellaneous Zone Punctated Ware	3	.227
Eroded Complicated Stamped	14	1.061
Residual Plain	19	1.438
Total	39	2.955
SITE TOTAL	1320	100%

TABLE 15

POTTERY FROM THE MOUND BY ZONES, 1 Br 15 x 1

(From DeJarnette 1975: 137)

	Tertiary Mound	Secondary Mound	Primary Mound	Pre-Mound
Lake Jackson Plain	6			
Lamar Complicated Stamped	7			
Fort Walton Incised	13			
Pinellas Incised	1			
Plain Shell Tempered	5			
Lamar Plain	175	1		
Crooked River Complicated Stamped	1	1		
Swift Creek Complicated Stamped (Early Variety)	33			
West Florida Cord Marked	5			
Cartersville Checked Stamped	373	35	117	550
Cartersville Simple Stamped	46			
Deptford Bold Check Stamped				1
Dunlap Fabric Marked	8		2	29
Micaceous Plainware	223	8	46	290
Miscellaneous Zone Punctated Ware				
Stallings Plain	6			
Stallings Punctated	2			
Residual	3			
TOTAL	907	45	165	870

later, either by the Early Swift Creek or by the Fort Walton-Lamar component, the builders used midden from the premound Cartersville occupation as fill.

The Swift Creek site was a mound and village site near Macon, Georgia. The lower levels of the Swift Creek mound are pertinent to the present discussion. Plain and curvilinear complicated-stamped pottery with flattened, notched, and scalloped lips predominate in the lower levels. Scalloped lips may be more numerous than notched lips. Minor amounts of Crooked River Complicated Stamped, St. Andrews Complicated Stamped, and check-stamped pottery are also present. Simple-stamped and cord-marked pottery is rare. Curvilinear complicated-stamped motifs include concentric circles and curving loops. An interesting composite design is one in which an elongated barred oval is associated with a star (Plate 63). The frequent occurrence of notched and scalloped lips, the predominance of complicated stamping over check and simple stamping, and the elaborate star-and-barred-oval design all indicate to this researcher that the lower levels of the Swift Creek site were contemporary with or follow very closely the upper levels of Mound A at Mandeville.

A comparison of the ceramic assemblages from the Mandeville, Halloca Creek, Shorter, and Swift Creek sites (Table 16) prompts this writer to propose an Early Swift Creek ceramic complex to consist of the following types:

TABLE 16

EARLY SWIFT CREEK SITES, CERAMIC INVENTORY

	MANDEVILLE	HALLOCA CREEK	1 BR 15	SWIFT CREEK	SANTA ROSA-SWIFT CREEK
Early Swift Creek Comp. St.	x	x	x	x	x
Crooked River Comp. St.	x	x	x	x	x
St. Andrews Comp. St.	x	x		x	x
Check Stamped	x	x	x	x	x
Simple Stamped	x	x	x	x	x
Cord Marked	x	x	x	x	x
Plain	x	x	x	x	x
Polished	x				
Red-filmed	x				x
Negative-painted	x				x
Rocker-stamped	x				x
Limestone-tempered Plain	x				
Limestone-tempered Cord M.	x				
Fiber-tempered Plain	x	x		x	
New River Comp. St.		x			x
Alligator Bayou Stamped	x				x
Basin Bayou Incised	x				x
Santa Rosa Stamped					x
Santa Rosa Punctate					x
Crystal River Incised					x
Crystal River Zoned Red					x
Pierce Zoned Red	x				x

Early Swift Creek Complicated Stamped
Crooked River Complicated Stamped
St. Andrews Complicated Stamped
Check Stamped
Simple Stamped
Cord Marked
Plain

Analysis of collections from additional Early Swift Creek sites are needed to test the validity of this list. It seems to be supported by the presence of all these types in the Santa Rosa-Swift Creek complex of northwest Florida. Santa Rosa-Swift Creek may be considered an Early Swift Creek complex to which has been added types of the Santa Rosa and Crystal River series. The above types also seem to occur together on the Georgia coast at least as far north as the Altamaha River (Charles Pearson, personal communication).

McMichael (Kellar, Kelly, and McMichael 1962a: 1962b), in his analysis and discussion of the ceramic evidence from Mound A, used a two-component model. This writer takes exception to McMichael's conclusion that both a Late Deptford and an Early Swift Creek component can be identified at the Mandeville site. Her opinion that the Middle Woodland occupation of the site is subsumed under only one component, which she has designated Early Swift Creek, is based upon the following two criteria for distinguishing components: "...contrast between the excavation units assigned to one component and those assigned to other components, and uniformity within the units assigned to one component" (Rouse 1972: 43). Of course the degree of

contrast or uniformity is often a subjective matter. This writer sees a significant contrast between the Middle Woodland and Mississippian occupations of the site; however, within the Middle Woodland occupation, she sees more uniformity than contrast. The ceramic differences exhibited from Layers I through IV fit more closely an evolutionary model than they do a two-component model.

Ceramic assemblages from the Halloca Creek and Shorter sites and the lower levels of Mound A at theSwift Creek site have been compared with the Mandeville assemblage. Similarities between the assemblages of these four sites and those of Santa Rosa-Swift Creek sites in northwest Florida has led to the tentative definition in this chapter of an Early Swift Creek ceramic complex. Santa Rosa-Swift Creek will be dealt with in more detail in the following chapter. The Hopewellian aspects of the Mandeville site is the focus of still another chapter.

CHAPTER 8

MANDEVILLE AND SANTA ROSA-SWIFT CREEK

In the course of discussion in previous chapters, mention has been made of similarities between artifacts found at Mandeville and those found in the Santa Rosa-Swift Creek complex of northwest Florida. Plates 38 and 39 illustrate two figurines, one from Mandeville and one from the Block-Sterns site (8 Le 148), which bear a striking resemblance to one another. The plates are not as clear as one would like, but this writer, having seen both specimens, believes the likeness to be such that both could have been made by the same individual. Table 16 on page 198, listing the ceramics from several Early Swift Creek sites, shows a strong correspondence between the ceramic assemblages of Mandeville and the Santa Rosa-Swift Creek complex. The relationship between Mandeville and Santa Rosa-Swift Creek is, thus, the focus of this chapter. The chapter begins with a definition of Santa Rosa-Swift Creek, followed by a description of some Santa Rosa-Swift Creek sites. Sears' division of the Santa Rosa-Swift Creek complex into the Yent and Green Point complexes will also be reviewed in some detail. Finally, the relationship between Mandeville

and Santa Rosa-Swift Creek will be examined.

SANTA ROSA-SWIFT CREEK

The Santa Rosa-Swift Creek complex was defined by Willey (1949: 366-396). His definition of Santa Rosa-Swift Creek and other cultural complexes was based upon his surface survey of the northwest Florida coast, his test excavations of a few sites, and Moore's published descriptions of the mounds which he had excavated. This section outlines briefly the defining characteristics of the Santa Rosa-Swift Creek complex.

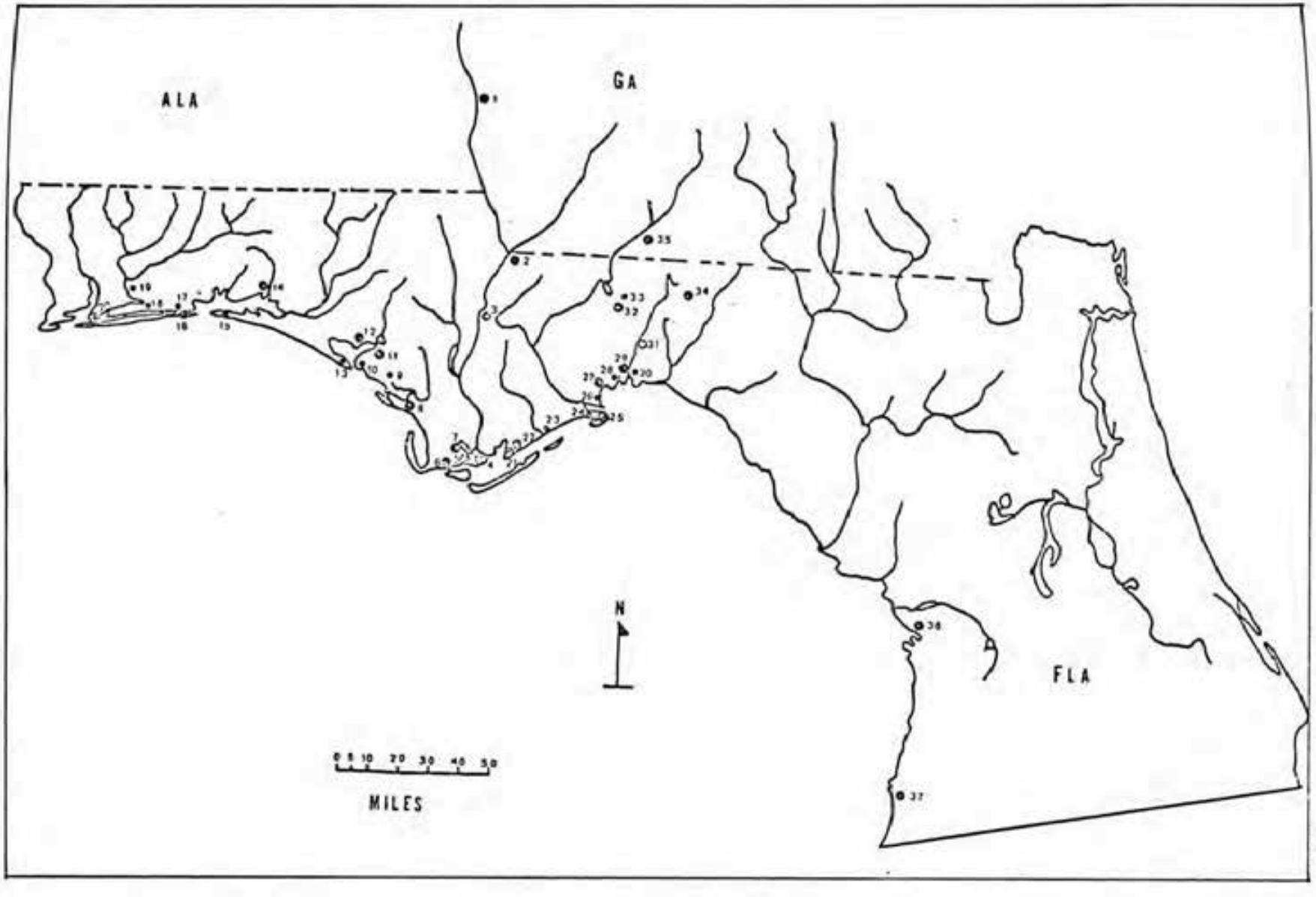
The Santa Rosa-Swift Creek period, temporally, falls between the Deptford and Weeden Island periods. The occurrence of such items as copper-covered panpipes and earspools in some Santa Rosa-Swift Creek burial mounds indicates contemporaneity with Hopewell. The geographic distribution of the Santa Rosa-Swift Creek complex is illustrated on Map 10. Settlements along the streams, bays, and shore of the Gulf coast were characterized by small shell middens, frequently with an associated burial mound. The middens generally fronted the water with the burial mound being situated back inland from the water (Ibid.: 368). Inland midden sites tended to be somewhat larger than coastal sites (Penton 1974: 4).

Santa Rosa-Swift Creek ceramics are as follows:

Map 10: Santa Rosa--Swift Creek Sites

1. Mandeville (9 Cla 1)
2. Aspalaga (8 Gd 1)
3. Hartsfield (8 Le 120 H)
4. Pierce Mound A (8 Fr 14)
5. Jackson (8 Fr 15)
6. Eleven Mile Point (8 Fr 10)
7. Huckleberry Landing (8 Fr 12)
8. Bakers Landing (8 By 29)
9. Parkers Branch (8 By 10)
10. Davis Point, west (8 By 7)
11. Anderson Bayou (8 By 21)
12. Alligator Bayou (8 By 18)
13. Drummond (8 By 4)
14. Basin Bayou (8 W1 14)
15. (8 Ok 19)
16. (8 Es 6)
17. Wheeler Springs (Wynhaven) (8 Ok 1)
18. Navarre (8 Sa 4)
19. Maester Creek (8 Sa 2)
20. Third Gulf Breeze (8 Sa 8)
21. Porters Bar (8 Fr 1)
22. Green Point (8 Fr 11)
23. Carrabelle (8 Fr 2)
24. Tucker (8 Fr 4)
25. Yent (8 Fr 5)
26. Snow Beach (8 Wa 52)
27. Refuge Tower (8 Wa 14) and West Headquarters Mound (8 Wa 20)
28. Hall (8 Wa 4)
29. Spring Creek (8 Wa 5)
30. West Goose Creek (8 Wa 6)
31. Bird Hammock (8 Wa 30) and (8 Wa 10)
32. Block-Sterns (8 Le 148)
33. (8 Le 120A) Hartsfield
34. Oakland (8 Je 53)
35. Melrose (9 Gr 50)
36. Crystal River (8 Ci 1)
37. Safford (Tarpon Springs) (8 Pi 3)

- Midden sites
- Mound or Mound-and-midden sites


ALA
GA
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0 5 10 20 30 40 50
MILES

SANTA ROSA SERIES

Alligator Bayou Stamped
Basin Bayou Incised
Santa Rosa Stamped
Santa Rosa Punctated

COMPLICATED STAMPED SERIES

Swift Creek Complicated Stamped, Early Variety
Crooked River Complicated Stamped, Early Variety
St. Andrews Complicated Stamped, Early Variety
New River Complicated Stamped

GULF CHECK STAMPED

WEST FLORIDA CORD MARKED, Early Variety

CRYSTAL RIVER SERIES

Crystal River Incised
Crystal River Zoned Red
Crystal River Negative Painted
Pierce Zoned Red

FRANKLIN PLAIN

UNIQUE FORMS

Compound vessel
Multiple-orifice vessel
Grub-worm vessel
Four-lobed tetrapod vessel
Miniature vessel
T-shaped rim
Human-hand motif

The four types of the Santa Rosa Series are generally clay or sherd tempered, occasionally sand tempered (Willey 1949: 372-378). The tempering agent and decorative techniques bespeak the Lower Mississippi Valley root of the series. Crystal River Series may be a misnomer. The Crystal River site, to be described in more detail later, is a little understood multicomponent site. The ceramics of the Santa Rosa-Swift Creek component include several of the unique

forms listed above and the Crystal River Series. However,

> ...the negative-painted, punctated, and incised specimens from Crystal River are foreign to that site. All of them are made of a sandy paste with flecks of mica, a type of paste and clay native to the northwestern coast and adjacent areas to the north. Not only is the paste of the pottery from the midden at this site limestone-tempered (Bullen 1953: 16-21), it is doubtful if micaceous clays could be found in the Crystal River area (Sears 1962: 9).

The occurrence of many of the unique forms and these types at Yent, Pierce Mound A, and Mandeville may indicate that they originated in the region between the Apalachicola and Ochlocknee rivers (see also Penton 1974: 14). The Complicated Stamped series may have originated in the same area.

Primary and secondary burials were interred in sand mounds. These Santa Rosa-Swift Creek burial mounds were apparently the earliest such mounds in northwest Florida. The Weeden Island trait of placing a cache of broken or "killed" pottery in the burial mound was foreshadowed in Santa Rosa-Swift Creek (Willey 1949: 371). Several of the Santa Rosa-Swift Creek burial mounds continued in use during the Weeden Island I period, to judge from the illustrations in Moore's various publications describing his excavations along the northwest Florida coast. The use of some of the mounds during two recognized archaeological periods and Moore's inclination to illustrate the more elaborate

Weeden Island ceramics tend to render difficult an adequate assessment of the Santa Rosa-Swift Creek component for comparison with other, relatively pure, sites.

Other traits of the Santa Rosa-Swift Creek complex include polished stone celts, shell ornaments and tools, ceramic and stone platform and elbow pipes, and Hopewellian earspools and panpipes (Ibid.: 393-394).

SOME SANTA ROSA-SWIFT CREEK SITES

The few Santa Rosa-Swift Creek sites which have been excavated by controlled methods are described below along with comparisons with Mandeville where pertinent.

Third Gulf Breeze (8 Sa 8)

The Third Gulf Breeze site, located on Santa Rosa Sound, was used by Willey as a control in setting up the Santa Rosa-Swift Creek phase (Phelps 1969a: 15). Six test pits were dug by Willey in 1940. Subsequent excavation at the site was conducted by Phelps in the 1960's. The interpretation of the site by these two individuals varied somewhat, as will be shown below.

Table 17 is a sherd count combining the totals for Willey's six test pits. The percentages were calculated by this researcher. Except for a small amount of material from the Fort Walton and Weeden Island periods, the site was a pure Santa Rosa-Swift Creek site. Phelps (personal communication) indicated that at least fifty per cent of the

TABLE 17

CERAMICS FROM THE THIRD GULF BREEZE SITE, 8 Sa 8
(From Willey 1949: 92-94)

Fort Walton Period sherds	30	1.76%
Weeden Island Period sherds	3	0.18%
Swift Creek Comp. St.	96	5.60%
St. Andrews Comp. St.	10	0.59%
Santa Rosa St.	53	3.10%
Basin Bayou Incised	32	1.87%
Alligator Bayou St.	35	2.05%
Santa Rosa Punctated	9	0.53%
Franklin Plain	30	1.76%
West Fla. Cord M.	2	0.12%
Dept. Bold CS	1	0.06%
Dept. SS	10	0.59%
Plain Red	3	0.18%
Smooth Plain	69	4.04%
Residual Plain	1324	77.55%

ceramics from the site were Santa Rosa series types. Using Willey's figures on Table 17, only seven to eight per cent of the ceramics belong to that series. The source of the discrepancy between these two percentages is unknown; perhaps Phelps was only considering the Swift Creek and Santa Rosa series to the exclusion of the other ceramics at the site. In this case the two are about equal in frequency.

Willey (1949: 91) thought there was some slight indication that the Santa Rosa series was somewhat earlier at the site than the Complicated Stamped series. Phelps (1969a: 18) took the opposite view, writing

> ...it appears that the Swift Creek series is earlier, and this leads to the hypothesis that this was originally within the territory of Swift Creek, into which the western influences of Sears' Gulf Tradition intrude. It is noteworthy that the Santa Rosa types adopt the scalloped and notched rims of Swift Creek, and that some Basin Bayou Incised vessels are decorated with incised copies of Swift Creek complicated stamps.

Willey concluded that his suggestion was based upon very little evidence since only small numbers of sherds were involved. Phelps did not include the data on which he based his conclusions; thus, no evaluation is possible.

In addition to pottery, two figurine fragments, a nude female torso and a leg fragment, were recovered from the site by Phelps (Ibid.: 17). Two radiocarbon dates are available for the Third Gulf Breeze site. They are

AD 465 ± 75 (FSU 350)

AD 600 ± 75 (FSU 351)

(Ibid.: 18; Phelps, personal communication). The first date falls within the range of the Michigan date of AD 490 ± 150 for Layer IV at Mandeville; the second date appears to be too late to date Santa Rosa-Swift Creek. Few radiocarbon dates, however, are available for Santa Rosa-Swift Creek in Florida and the complex may have outlasted the Early Swift Creek occupation of Mandeville.

Tucker (8 Fr 4)

The Tucker site, situated on the eastern end of St. James Island, was occupied from the Norwood through the Fort Walton periods. Two mounds, Tucker and Yent, were a part of the site. The Tucker Mound was a Fort Walton period structure; the Yent Mound was a Santa Rosa-Swift Creek burial mound.

Sears (1963) excavated thirteen test squares in the midden area. The earliest component which he recognized was Deptford. Unable to distinguish between the Santa Rosa-Swift Creek and Weeden Island I components, he referred to the occupation between Deptford and Weeden Island II as the Middle Period. Plain ware predominated during this Middle Period (Sears 1963: 41). The ceramic inventory of the Deptford component was as follows: Deptford Check Stamped, Deptford Simple Stamped, Mossy Oak Simple Stamped, fiber-tempered plain, Santa Rosa Stamped, West Florida Cord

marked, brushed, Cartersville Check Stamped (distinguished from Deptford Check Stamped by having a plain neck), Dunlap Fabric Marked, Bayou La Batre Stamped, Brewton Hill Complicated Stamped, Crooked River Complicated Stamped, and St. Andrews Complicated Stamped (Ibid.: 27-28). This ceramic assemblage is consistent with that from the lower levels of Mound A at Mandeville; hence, this researcher would be inclined to classify the component as Early Swift Creek rather than Deptford.

Phelps (1966) later made a surface collection from a different area of the site. His findings are compared with those of Sears and Willey on Table 18. On this table, taken from Phelps (1966: 17), Sears' test excavations are treated as a surface collection. The number of Deptford Linear Check Stamped and Deptford Simple Stamped sherds collected by Phelps does indicate a intensive Deptford component. A Early Swift Creek component is also indicated by Phelps' collection.

The Tucker site illustrates a situation which appears to be true for several northwest Florida sites: a horizontal rather than vertical distribution of components. Different areas of some sites were occupied at different times and error may result when only a portion of such a site is tested.

Carbon from surfaces of sherds of "presumed Gulf Check Stamped" was radiocarbon dated at AD 345 $\pm$ 325 (Ibid.: 20). The plus-minus factor is larger than one would like, but

TABLE 18

CERAMICS FROM THE TUCKER SITE, 8 Fr 4
(From Phelps 1966: 17)

	Phelps	Sears	Willey
Norwood Plain	197	20	-
Norwood Simple Stamped	41	-	-
Deptford Simple Stamped	414	292	10
Deptford Cross-Stamped	184	-	-
Deptford Linear Check Stamped	661	66	5
Swift Creek I Complicated Stamped	169	18	45
New River Complicated Stamped	5	1	-
St. Andrews Complicated Stamped	4	1	1
Crooked River Complicated Stamped	4	19	4
Napier Complicated Stamped	7	3	-
West Florida Cord Marked	6	38	-
Santa Rosa Stamped	3	3	-
Weeden Island (all decorated types)	158	169	99
Sweet Creek II Complicated Stamped	44	44	-
Fort Walton (all decorated types)	63	-	-
St. Johns	17	-	-

the date is an acceptable Santa Rosa-Swift Creek date.

Bird Hammock (8 Wa 30 and 8 Wa 10)

The Bird Hammock site was about eighteen miles south of Tallahassee. Site number 8 Wa 30 refers to the village; site number 8 Wa 10, to Mound B. Mound A (8 Wa 9) was a Weeden Island I burial mound.

The first excavation of the site was that of Moore (1918: 561-564). He described Mound B as being six feet high with basal dimensions of 56 feet by 75 feet. Moore also indicated that the mound had two ramps, one to the southwest and one to the southeast. Fifteen burials, pottery, points, hones, and mica were found by Moore (Penton 1970: 8-9). Willey, after making a surface collection in 1940, concluded that both mounds were Weeden Island (Ibid.: 9). In 1959 an amateur found a Crystal River Negative Painted bowl with a "T" rim, a Franklin Plain tetrapodal vessel, cut mica sheets, and blades and points in Mound B (Ibid.: 10). The Early Swift Creek portion of the village was tested by Penton as the subject of his MA thesis.

The sherd count given on Table 19 was taken from Table 7 of Penton's thesis (1970). The percentages were calculated by this writer. The percentages correspond with those from Layer IV of Mound A at Mandeville. It was also in that layer that the check stamped with the dot in the center was found.

TABLE 19

CERAMICS FROM THE BIRD HAMMOCK SITE, 8 Wa 30 (from Penton, 1970: Table 7)

	505R20	505R15	510R20	505L100	505L105	490L195	445L100	355L100	6025B25		
Swift Ck. Comp. Stp.	431	437	349	227	407	122	103	13	30	2119	36 %
Franklin Plain	570	546	442	532	724	191	119	359	39	3522	59.6 %
St. Andrews Comp. Stp.	4	8		2	2	1	2			19	0.32%
Crooked River Comp. Stp.	2	19	1	1	1	3	1			28	0.5 %
Zoned Comp. Stp.		10		4	3					17	0.28%
Gulf Check Stp.	4	13	3	2	12	4	2			40	0.67%
Simple Stp.	5			2		11	4			22	0.37%
Crystal River Plain	10	20	9	25	25	2	1	1		93	1.58%
Red Painted		1			1					2	0.03%
West Fla. Cord Mark	2	2				9				13	0.22%
Bold Check Stp. w/dot		1		3	3	2				9	0.15%
										5884	

Lithic artifacts from Bird Hammock included expanded-base projectile points, limestone nutting stones, graphite, and mica (Ibid.: 43-45). Faunal and floral remains recovered from the village included Virginia deer, fish, turtles, turkey, shark, rabbit, opposum, oyster, charred hickory nut fragments, and a possible maize cob fragment (Ibid.: 47-48).

The ceramics, projectile points, and subsistence pattern as evidenced by the faunal and floral remains are all similar to those of Mandeville. Further, the nearest source of mica and graphite is the Georgia Piedmont, perhaps channelled through Mandeville.

A radiocarbon date of AD 340 ± 70 (FSU 385) (Phelps, personal communication) is available for the site.

Block-Sterns (8 Le 148)

The Block-Sterns site, consisting of two mounds and a village area, is about six miles east of Tallahassee. To date, only about twenty per cent of Mound A has been excavated. Penton (1974: 7) described the mound as follows:

> The first stage of construction was the completion of a low mound into which a number of burial pits were dug. Over this was placed several layers of fill, and the completed mound was ultimately capped with a mantle of red clay. The layers sandwiched between the primary mound and the final clay mantle exhibited numerous postmolds. Scattered over the surface of these zones was a minor amount of debris, and an occassional /occasional/ human bone fragment.

> With approximately 20% of this mound excavated, it appears that it initially began as a burial area and was later used as a foundation for a charnel structure.

Sixteen burials were found in burial pits within or near the primary mound. Bone preservation was poor; there were no cremations although most of the burials exhibited exposure to fire. Burial 14 was an extended burial in a large daub-filled pit. Associated with this burial were four Franklin Plain and one simple-stamped tetrapodal vessels, two caches of crystal quartz chips, a quartzite hammerstone, a conch shell dipper, a bear mandible, and a figurine (Plate 39). Other artifacts found in the mound include a miniature tetrapodal vessel, incised and with a notched lip (with a burial), a slate bar gorget (on the mantle), a cache of expanded-base points (with a burial), a ceramic platform pipe (within burial pit fill), and a cache of 26 triangular chert preforms covered by a sheet of mica (Penton, personal communication).

A comparison of the figurine from this site with one from Mandeville has already been made. Penton's description of Mound A indicates a series of construction stages similar to Mound B at Mandeville. The main differences appear to be that no postmolds were found in Mound B (although the excavation techniques used there may have precluded the discovery of postmolds) and there were burials in the upper levels of Mound B, whereas Penton's description would indicate there were none in the upper levels of Mound A at

Block-Sterns.

Crystal River (8 Ci 1)

The Crystal River site is a much discussed but little understood site. Figure 19 outlines the main features of the site.

Mound A. Mound A was a flat-topped mound about 28 feet tall. Moore recorded the following dimensions:

Base--180 feet by 100 feet

Summit--107 feet by 50 feet

Ramp--80 feet long by 14-21 feet wide (Willey 1950: 41).

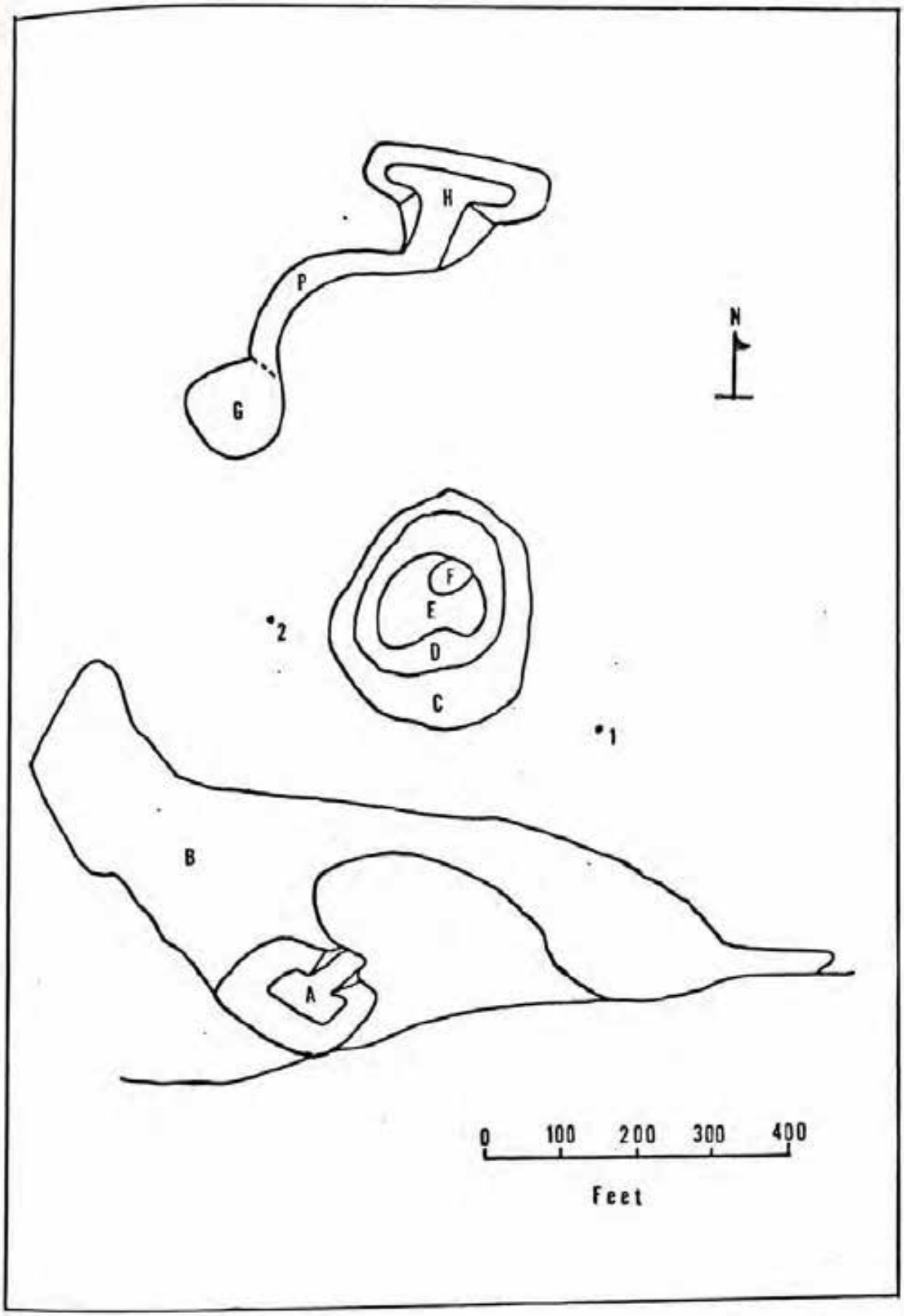
No controlled excavation of the mound has been undertaken; in 1960 the landowner removed a large portion of the east side and the ramp for fill. A lense of charcoal at a depth of nineteen feet below the mound surface was thus exposed. A charcoal sample from this feature was dated at AD 640 ± 100 (I-1365) (Bullen 1966: 865).

Area B. Area B on Figure 19 is an extensive shell midden. Bullen dug two test pits in the western portion of the midden. Limestone-tempered Pasco Plain pottery predominated in all levels. Two periods of occupation, Santa Rosa-Swift Creek and Weeden Island I, were recognized (Bullen 1953: 31). Bullen later (1966: 861) extended the range of occupation to include the Deptford, Weeden Island II and early Safety Harbor periods. A radiocarbon date of

Figure 19: The Crystal River Site (8 Ci 1)

(Drawing based on Bullen 1966: Fig. 2)

A Temple Mound 1
B Shell Midden
C Circular Embankment
D General Level of Surrounding Ground
E Platform of Burial Mound 1
F Burial Mound 1
G Burial Mound 2
H Temple Mound 2
P Shell Walkway
1 Stela 1
2 Stela 2


H
P
G
N
F
E
D
C
2
1
B
A
0
100
200
300
400
Feet

AD 200 ± 130 was obtained from a charcoal sample from a depth of 54-60 inches below the surface of the midden area. Deptford Linear Check Stamped, Deptford Simple Stamped, and Pasco Plain were found at that depth (Buckley, Trautman, and Willis 1968: 282-283).

Area C. Area C was an earthen embankment surrounding the burial mound complex (E-F). Moore recorded that a few burials were found in this embankment (Willey 1950: 42).

Burial Mound 1. Burial Mound 1 was excavated by Moore (1903, 1907). It was composed of a conical mound (F) and an extension, or platform (E). The mound was seventy feet in diameter and ten feet high; the platform was one hundred thirty feet in diameter and five feet high. Ceramics of the Crystal River series, unique vessel forms, and Hopewellian earspools and panpipes were confined to the mound proper. Willey (1950: 43) concluded that the mound (F) dated to the Santa Rosa-Swift Creek period and that the platform (E) was mixed Santa Rosa-Swift Creek and Weeden Island I. Bullen (1953: 14; 1966: 861) reached a similar conclusion, further stating that the surrounding embankment belonged at least in part to the Weeden Island II period.

Burial Mound 2. Burial Mound 2 (G) was tested by Bullen (Ibid.). No information is available, however, concerning the cultural association of this feature.

Area P. Bullen (Ibid.: Fig. 2), from which Figure 19 was taken illustrates a shell walkway connecting mounds G and H. Moore's original map did not show this feature and Willey could not locate Mound H in 1949 because of extensive ground cover (Willey 1950: 42) and so he made no mention of a shell walkway.

Mound H. Mound H was a second flat-topped mound. Bullen (1953: 12) reported that Hale G. Smith made a test of the mound, finding eight Pasco Plain sherds.

Stelae 1 and 2. Two boulders, apparently purposefully shaped and placed in an upright position, have been found at the site. Bullen (1966: 864-865), noting their position with respect to mounds A and H, the caches of chert chips and food remains beneath them, and a radiocarbon date of AD 530 ± 125 (I-1464) from a charcoal sample from beneath Stela 1, considers them to be evidence of diffusion from Veracruz or the Yucatan around AD 500.

The preceeding description of the various features from the Crystal River site reveal how little work has actually been done at the site. The Santa Rosa-Swift Creek and Weeden Island I burial artifacts are well known due to the published works of Moore. The cultural affiliation of the platform mounds and the second burial mound is unknown.

THE YENT AND GREEN POINT COMPLEXES

The preceeding description of certain of the Santa Rosa-Swift Creek sites concentrated primarily upon midden sites. Some of the better-known mound sites come into focus as Sears' Yent and Green Point complexes will now be considered.

Sears (1962), after completing a comparative analysis of seven Santa Rosa-Swift Creek burial mounds (Crystal River, Pierce, Yent, Green Point, Huckleberry Landing, Anderson's Bayou, and Alligator Bayou), divided the Santa Rosa-Swift Creek complex into the Yent and Green Point complexes. Sears' analysis was based upon the published reports and manuscript field notes of C. B. Moore and upon his examination of the artifacts recovered by Moore which are now in the collections of the Heye Foundation Museum of the American Indian and the R. S. Peabody Foundation for American Archaeology (Ibid.: 5). His Table 1 illustrating the distribution of selected traits in the Yent and Green Point complexes is partially reproduced here as Table 20. The Mandeville site has been added to the seven sites listed by Sears.

Sears apparently used four main criteria for distinguishing between the Yent and Green Point complexes: the absence of Early Swift Creek Complicated Stamped pottery from Crystal River and Pierce; the absence of copper artifacts specifically identifiable as Hopewellian from

TABLE 20

SELECTED TRAITS OF THE YENT AND GREEN POINT COMPLEXES
(from Sears 1962: Table 1)

	Crystal River	Pierce	Yent	Green Point	Huckleberry Land.	Anderson's Bayou	Alligator Bayou	Mandeville
Copper panpipes	x	x	?					x
Elongate Plummets	x	x	x					?
Cut animal jaw-teeth	x	x	x	x				
2-hole stone bar gorgets	x		x					
cut shell ornaments	x		x	x				
double ended plummet								?
cymbal shaped copper ornaments	x	x			x			x
moniter pipes	x	x	x	x	x			x
bi-cymbal copper ornaments	x							x
continuous-use md.	x	x	x	x	x	x		x
East-side deposit						x	x	
Functional tetrapods	x	x	x					x
Unique shapes and decoration	x	x		x				
Crystal River Incised	x	x	x					
Pierce Zoned Red	x	x						x
Pasco Plain	x		x					
'T' Lip	x		x					x
Cord m, tetrapoidal, Plain rim		x	x					

TABLE 20 (continued)

	Crystal River	Pierce	Yent	Green Point	Huckleberry Land.	Anderson's Bayou	Alligator Bayou	Mandeville
Booger Bottom CS	x							x
4 lobed tetrapodal Pots	x		x					
Rocker St., Tchefuncte		x	x					
Crystal River Neg. P.	x			x				x
Early Swift Creek Comp. St.			x	x	x	x	x	x
St. Andrews Comp. St.				x		?	x	x
Zoned rocker St.						x	x	x
Stubby or Nubbin tetrapods				x	x	x	x	x

Green Point, Anderson's Bayou, and Alligator Bayou; the presence of vessels of unique shape and decoration in sites of the Yent complex; and the presence of an east-side pottery deposit in the Anderson's Bayou and Alligator Bayou mounds. These four items merit additional consideration.

Early Swift Creek Complicated Stamped. Willey (1949: 282, 320) indicated that Moore did find Early Swift Creek Complicated Stamped pottery at Pierce and Crystal River. And where there is Early Swift Creek Complicated Stamped pottery, there is also generally St. Andrews Complicated Stamped pottery and stubby or nubbin tetrapods. Table 21 lists undescribed ceramic traits mentioned by Moore for the sites under consideration. Such traits as complicated stamping, notched or scalloped lips, and tetrapods (i. e., Early Swift Creek Complicated Stamped) are consistently mentioned.

Hopewellian copper artifacts. Copper-covered panpipes and/or copper earspools were found at Crystal River, Pierce, and Yent. A composite ceramic and copper earspool came from Huckleberry Landing. In addition, a fragment of sheet copper was found in the mound fill at Anderson's Bayou; and a copper-covered wooden object, in the Alligator Bayou mound (Ibid.: 277, 243, 241).

Vessels of unique shape and decoration. Yent complex sites yielded vessels of unique shape and decoration

TABLE 21

UNDESCRIBED CERAMIC TRAITS FROM YENT AND GREEN POINT COMPLEX SITES

	Crystal River	Pierce	Yent	Green Point	Huckleberry L.	Allig. Bayou
Plain		x	x	x	x	x
Incised		x	x	x		x
Comp. St.		x	x	x	x	x
Red painted		x		x		x
notched or scalloped lips	x	x		x	x	x
tetrapods	x	x		x	x	x

(including Crystal River Incised, Pierce Zoned Red, Crystal River Negative Painted, and "T"-shaped rims). Among the R. S. Peabody Foundation collections are a Crystal River Negative painted bowl and a Crystal River Zoned Red vessel from Green Point (Ibid.: 277).

East-side pottery deposit. The east-side pottery deposit was apparently present in only the Anderson's Bayou and Alligator Bayou mounds; however, one or more caches of pottery were found within the Pierce, Yent, and Green Point mounds.

Sears (1962: 14) correlated the Yent complex with Late Deptford; the Green Point complex, with Early Swift Creek. Suffice to refer to chapter 7 of this paper.

Sears' definition of the Yent and Green Point complexes has been the only attempt, to date, to subdivide the Santa Rosa-Swift Creek Complex. The foregoing illustrations have demonstrated that, although Sears is probably generally correct in his belief that temporal differences are evident in the seven mounds he studied, the distinctions he recognized are not valid. He failed to adequately consider Moore's lack of controlled excavation techniques and Moore's propensity to illustrate only whole pots. Bias, then, may account for some of the differences recognized by Sears.

MANDEVILLE AND SANTA ROSA-SWIFT CREEK

Many points of similarity between Mandeville and the Santa Rosa-Swift Creek complex have been noted in the preceeding pages. It remains now to consider the nature of these similarities and their meaning.

Ceramics

As has been said, the marker pottery types for Santa Rosa-Swift Creek are the Santa Rosa series, the Complicated Stamped series (early varieties), the Crystal River series, Gulf Check Stamped, West Florida Cord Marked (early variety), and Franklin Plain. These all occur in varying amounts at Mandeville, the most numerous being Franklin Plain, Early Swift Creek Complicated Stamped, and Gulf Check Stamped. Despite the attention which Santa Rosa and Crystal River series ceramics have received because several whole pots have been recovered from burial mounds, these types are also the most abundant ceramics at most Santa Rosa-Swift Creek sites. Sherds of the Santa Rosa and Crystal River series are rare at Mandeville; and, curiously, these occur in midden context rather than in burial mound context as they do in Florida.

Similarities between one of the figurine fragments from Mandeville and the figurine from the Block-Sterns site (Plates 38 and 39) have already been discussed. Figurine fragments from the Third Gulf Breeze and Refuge Tower sites are illustrated in Phelps (1969a: Figure 4). Comparison

of figurines from Mandeville and Santa Rosa-Swift Creek sites in northwest Florida reveal the following points of similarity:

1. Predominance of female figurines
2. Female figurines frequently bare-breasted with a line below the breasts
3. Painted figurines
4. Peaked headdress

These figurines are stylistically similar to those found in Hopewellian contexts elsewhere (see Griffin, Flanders, and Titterington 1970: 82-87 for a discussion of Hopewellian figurines).

Ceramic platform pipes were found at Crystal River, Pierce, Yent, Green Point, and Huckleberry Landing as well as at Mandeville (see Table 20).

Lithics

Kellar, Kelly, and McMichael (1962a: 347) considered the expanded-stem projectile point (Plate 43) to be the typical Early Swift Creek point. Researchers in northwest Florida have generally accepted this view (Phelps 1969a: 16; Penton 1974: 12); however, few published illustrations of Florida Santa Rosa-Swift Creek projectile points are available for analysis. Phelps (1969a: Figure 3) illustrates some points which resemble those on the bottom row of Plate 43, this paper. Bullen (1953: Figure 4) illustrates four points which are somewhat similar to the

expanded-stem points from Mandeville. Willey (1949: 393) made little mention of Santa Rosa-Swift Creek projectile points.

Little detailed descriptive information is available concerning other lithic artifacts found in Santa Rosa-Swift Creek contexts. Willey (Ibid.) described a variety of polished stone celt frequently occurring in Santa Rosa-Swift Creek burial mounds. Although he gave no indication of the type of stone from which these celts were made, he did state that the stone was not available locally. These celts were probably made of greenstone and were similar to those found in Feature 5 of Mound B at Mandeville (Plate 57). Willey (Ibid.: 394) also mentioned the presence of stone platform pipes in Santa Rosa-Swift Creek.

Raw materials such as mica, crystalline quartz, galena, graphite, and petrified wood (Ibid.: 241, 243, et passim) have been found in Santa Rosa-Swift Creek burial mounds. Map 3 illustrates possible sources of these raw materials. Mandeville could well have supplied these raw materials to the Florida coast sites.

Hopewellian Items

Figurines and platform pipes in the Hopewellian style have been mentioned. In addition, such diagnostic items as copper-covered panpipes and earspools occur. The presence of Hopewellian items in Mound B at Mandeville and in various Santa Rosa-Swift Creek burial mounds indicates participation

in the Hopewellian Interaction Sphere. This particular point of semblance must be held until the following chapter when Hopewell in the Southeast will be considered in some detail.

Subsistence Pattern

If the faunal sample from Mandeville sent to Parmalee for identification was a random one, then deer predominated over all other faunal remains in frequency of occurrence. The data from the Bird Hammock site indicating a subsistence pattern similar to that at Mandeville has already been mentioned. The Hartsfield site yielded Early Swift Creek ceramics, numerous flat-bottomed storage pits, and carbonized hickory nuts and seeds, leading Fryman (1971: 3) to hypothesize that this inland site was seasonally occupied by people who had a permanent village on the coast.

Shellfish and fish made up 95 per cent of the faunal remains at the Third Gulf Breeze, Snow Beach, and Refuge Tower sites. Deer, raccoon, birds, and alligator together were the remaining 5 per cent of the faunal sample (Phelps 1969a: 15-16).

At the Wheeler Springs site, fish, shellfish, box terrapene, and deer were identified. This small midden site was a single component Santa Rosa-Swift Creek site. The absence of sterile zones in the midden and the presence of multi-season faunal remains led Sharon and Bunn (1973: 153-156) to conclude that the site was occupied year round.

The evidence from these sites indicates that a hunting and gathering economy prevailed at Mandeville and in northwest Florida during this period. Some sites may have been occupied year round while others may represent seasonal occupation.

Summary and Conclusions

The preceeding examples are sufficient to indicate the degree of cultural similarity which existed between the Mandeville site and Santa Rosa-Swift Creek period sites in northwest Florida. The most striking difference between Mandeville and Santa Rosa-Swift Creek sites is the apparent absence of flat-topped occupation mounds similar to Mound A. A second point of difference is that no Santa Rosa or Crystal River series ceramics were found in the burial mound. Finally, the settlement system of Florida Santa Rosa-Swift Creek may have been dispersed rather than nucleated (see chapter 5 for definitions of these terms). Despite these differences, the similarities are strong enough that Mandeville may be considered to be a component of the Santa Rosa-Swift Creek Complex. Trade is postulated here as accounting for the occurrence of nonlocal items--mica, crystalline quartz, etc. in Santa Rosa-Swift Creek sites; marine shell and Crystal River and Santa Rosa series ceramics at Mandeville. Trade, however, probably does not explain the co-occurrence of such utilitarian items as complicated-stamped pottery and expanded-stem projectile

points. These items, both functioning in the subsistence activities of the society, may be identified as integral parts of similar cultural subsystems; and their appearance in both areas was probably the result of a common origin of the Middle Woodland cultures exhibited at Mandeville and other Santa Rosa-Swift Creek sites. Continued contact, enhanced by participation in the Hopewellian interaction sphere, fostered parallel cultural development.

A close relationship between Mandeville and Santa Rosa-Swift Creek has been demonstrated. The relationship between Mandeville and Hopewell will be discussed in the following chapter.

CHAPTER 9

HOPEWELL IN THE SOUTH

Shortly before and in the first few centuries of the Christian era, a variety of local cultures throughout a significant portion of the eastern woodlands were participating in a network of contact and communication resulting in the transfer/exchange of raw materials, finished products, and ideas. This phenomenon is labeled Hopewell.

Hopewell in the South is the topic of this chapter; but, before it can be discussed, some consideration must be given to defining Hopewell and to describing the northern manifestations of Hopewell. This chapter begins with a brief historical sketch of the term Hopewell, followed by a definition of Hopewell. Regional manifestations of Hopewell will then be described. In considering the spread of Hopewell in general and specifically its penetration into the South, several explanatory models will be analyzed.

HISTORICAL BACKGROUND

With expansion of American settlement westward after the Revolutionary War, the existence of numerous earthworks and mounds in the Ohio Valley attracted public attention.

A race of Moundbuilders was hypothesized as the originators of these earthen monuments. From where did the Moundbuilders come? What became of them? These were much debated questions. It was not until near the end of the end of the nineteenth century that the myth of the Moundbuilders was laid to rest (Silverberg 1974: 1-112).

Warren K. Moorehead excavated several mounds in southern Ohio in order to obtain an anthropological exhibit for the Chicago World's Fair in 1893. The most spectacular artifacts came from the Ross County farm of M. C. Hopewell and the name "Hopewell" began to be applied to other sites at which similar artifacts were found (Ibid.: 138). Hopewellian traits were recognized from New York to Kansas City, from Michigan to Florida, and the concept of a single Hopewell Culture was used in explaining this trait distribution (Struever and Houart 1972: 47). It was not until the last decade or so that regional variation was fully appreciated and it became apparent that an all-pervasive Hopewell Culture would not suffice as an explanatory model. Some researchers, such as Prufer (Prufer, et. al. 1965: 132), began to argue that Hopewell represented a religious-based "death cult" in which exotic raw materials and items were procured for the sole purpose of placing them in the graves of selected members of the society. While this may be an extreme view, a definition of Hopewell cannot be contemplated without prime consideration of the mortuary aspects of the phenomenon for it was the mortuary complex

that was first recognized and named in Ohio and it was certain specific elements of that complex which were reproduced in similar contexts elsewhere.

HOPEWELL DEFINED

The Hopewell type site merits description before Hopewell is defined. Situated near Chillicothe, Ohio, the Hopewell site consisted of geometric earthworks and over thirty burial mounds. The site was mapped by Caleb Atwater in 1820. Four mounds were excavated by Squier and Davis in 1846; several were excavated by Moorehead in 1891-1892; and Shetrone worked at the site from 1922-1925. The following description of the artifacts recovered from some of the mounds is taken from Shetrone (1930).

Mound 1 was excavated by Squier and Davis who reported finding carved stone serpents covered with mica and copper, pottery, carved bone, and fossil teeth. Mound 2 was tested by Squier and Davis and by Moorehead before its complete excavation by Shetrone. A cache of over eight thousand chipped hornstone disks was found in this mound along with a stone grave, a crematory basin, and an unknown number of burials all "...richly supplied with ornaments and implements." Obsidian blades, cut mica scrolls, woven fabric, bone needles, and pearls were found in Mound 9. In Mound 11 was found a crematory basin. Beside it was a charred skeleton, mica and pearl ornaments, and several hundred pounds of obsidian. Circling the basin, skeleton, and

obsidian was a border of boulders.

Mound 17 contained two artifact caches of plain and effigy stone pipes; slate and chlorite gorgets and tablets; crystal quartz cones and boatstones; ornaments of copper, stone, chert, bone, shell, silver, etc.; about a hundred stone celts, ungrooved axes, and digging tools; a human head made of copper; chlorite dishes; pyrite cones; and raw materials--graphite, micaceous hematitie, chlorite, pyrite, and galena.

Mound 23 contained over fifty burials. Artifacts included cut and perforated human jaws, pipes, copper ornaments, pearl beads, a seventeen-pound copper axe, and a limestone bowl.

Mound 25 was the largest of the Hopewell group. Nearly two hundred burials were recorded by Moorehead and Shetrone. Moorehead found two caches of copper artifacts. The first cache contained copper cut-out figures--circles, squares, diamonds, trefoils, quatrefoils, fish and bird effigies, serpent heads, and swastikas. The second cache contained a thirty-eight-pound copper axe, sixty-six smaller copper axes, and twenty-three copper breastplates. This cache was with a double burial that also contained shell and pearl beads and bone and meteoric iron objects. A basin or alter in the mound contained mica ornaments, copper ear-spools, copper balls, beads, bear and panther teeth, carved bone, stone effigies, stone tablets, slate ornaments, stone and ceramic rings, worked quartz crystals, chert

knives, and cloth. One burial had a copper headdress with wooden deer antlers covered with copper. Another burial had a bird headdress of copper, mica, and pearls. A double burial, a male and a female, had pearl beads; wooden and stone buttons covered with copper; copper earspools, bracelets, breastplates, rods, and noseplugs; and bear canine necklaces. A burial in Mound 26 had pearl beads, a copper breastplate, and a human skull perforated for suspension (Shetrone 1930: 200-213).

This site and other large earthwork and mound sites in Ohio indicate that

> Ohio was indubitably the climatic center--though clearly not the ultimate point of origin--of all Hopewellian phenomena. It is here that Hopewell traits appear in their greatest density, quantitatively and qualitatively (Prufer 1964a: 40).

As was previously mentioned, it is now generally accepted that to speak of the Hopewell Culture is inappropriate. Since coming to this conclusion, archaeologists have taken great pains to avoid defining Hopewell, preferring instead to label it. Even the now-popular concept of the Hopewell Interaction Sphere is an explanatory model, not a definition.

The evidence available to date continues to support a definition of Hopewell which makes prominent mention of the mortuary complex. The best definition of Hopewell available in the literature and the one accepted here is

the following: Hopewell may be defined as

> ...the material expression of a ceremonial-mortuary complex which introjects itself as an alien element into a variety of local cultural traditions of usually considerable time depth and continuity (Prufer, et. al. 1965: 128).

Struever and Houart have recently attempted to minimize the mortuary aspects of Hopewell.

> Recent investigations in habitation sites in the Scioto and Illinois valleys (Prufer and others, 1965; Rackerby, 1969) indicate diagnostic Hopewell artifacts were kept and used in the community, where they were frequently lost. Instead of mortuary items per se, they appear to have been status-specific objects which functioned in various ritual and social contexts (including burial) within community life (Struever and Houart 1972: 49).

However, the examples they cite are not conclusive. Prufer found at the McGraw site a worked bear canine, pieces of mica which were "...thin sheets, usually of indefinable shape; these fragments are obviously scraps," and a copper object which may have been a drill (Prufer, et. al. 1965: 93-99).

Rackerby (1970: 4-8) reported the following from the Macoupin site:

Copper--7 small lumps, 1 fragment of a bicymbal earspool, 2 copper awls, 1 subrectangular celt

Galena--8 pieces of ground or polished galena, 20 pieces of natural galena cubes

Mica--25 small flakes

Hematite--12 lumps, 8 pieces of polished hematite, 8 plummets

Obsidian--6 secondary flakes

Clay figurines--29 fragments

Platform pipes--four fragments (3 stone, 1 clay)

Clay earspools--3 fragments, 1 whole specimen

Alligator tooth--1

Hopewellian series pottery--35% of the pottery. No doubt many of these were used within the community but where are the copper earspools, panpipes, breastplates, and cut-out figures; the mica cut-outs; the obsidian points; the cyrstalline quartz artifacts; the 8000 chipped hornstone disks; the copper headdress; the thirty-eight-pound copper axe?

This writer does not accept the position of Prufer that Hopewellian artifacts were "...primarily intended for deposition with the dead" (Prufer, et. al. 1965: 132). She agrees that "...artifact types diagnostic of Hopewell functioned in the social subsystem where they served integrational or social maintenance tasks" (Struever and Houart 1972: 50); however, she would go farther and identify the social subsystem so involved as that encompassing the belief system. It is a system of beliefs pertaining to the social system--be it a statement of cosmology or merely the result of a need to honor certain members of the society after death--that is indicated in

the Hopewellian mounds wherever they are found.

REGIONAL MANIFESTATIONS OF HOPEWELL

As was previously mentioned, Hopewell was recognized in Ohio in the late nineteenth century. Table 22, compiled by this writer from several sources, is a partial list of Ohio Hopewell traits. Several of the traits from this table are repeated in simplified form on Table 23 as a comparative list of traits found on Middle Woodland sites in various parts of the eastern United States. Table 23 only indicates the presence or absence of certain traits; it may, therefore, be somewhat misleading. Suffice to recall a previous quote that it is in Ohio "...that Hopewell traits appear in their greatest density, quantitatively and qualitatively" (Prufer 1964a: 40). This table should be referred to in the course of reading the following paragraphs because it is these traits which are used to identify regional manifestations of Hopewell.

These regional expressions of Hopewell will be briefly described using a double tradition model (Prufer et. al. 1965: 127-130). One element of the double tradition is the local culture; the second element is Hopewell. This double tradition model helps to account for the regional variation in mound construction, burial types, grave goods, and local utilitarian artifacts that will be seen in the following paragraphs.

TABLE 22

OHIO HOPEWELL TRAITS

I. EARTHWORKS

- A. Burial mounds
- B. Platform mounds
- C. Geometric earthworks
- D. Hilltop enclosures (stone)

II. MORTUARY

- A. Burial mounds
- B. Tombs
  - 1. Log tombs
  - 2. Stone cist tombs
  - 3. Crematory basins
- C. Burial types
  - 1. Extended
  - 2. Bundle
  - 3. Cremation

III. GRAVE GOODS--emphasis on exotic raw materials

- A. Mortuary vessels
  - 1. Cross-hatched rims
  - 2. Rocker-stamping
  - 3. Bird-motif
  - 4. Vessels of foreign origin
- B. Ceramic figurines
- C. Platform pipes
  - 1. Ceramic
    - a. plain
    - b. effigy
  - 2. Stone
    - a. plain
    - b. effigy
- D. Marine shell--cups
- E. Copper
  - 1. awls
  - 2. earspools
    - a. sometimes covered with silver
    - b. sometimes covered with meteoric iron
  - 3. beads
  - 4. adzes
  - 5. celts
  - 6. breastplates
  - 7. panpipes
  - 8. rings

TABLE 22 (continued)

9. buttons
10. cut-out figures
11. cones
12. bracelets

F. Mica
1. trimmed sheets
2. cut-out figures

G. Obsidian
1. projectile points
2. lamellar flakes
3. ceremonial spears

H. Crystalline quartz
1. lamellar flakes
2. ceremonial spears
3. plummets
4. boatstones
5. cones

I. Hornstone

J. Galena

K. Graphite

L. Iron pyrite

M. Flint Ridge chert blades

N. Fresh-water pearls
1. necklaces
2. set on earspools
3. set in bear canines

O. Bone-teeth
1. engraving on bone, often human
2. cut animal jaws
3. shark, alligator teeth
4. worked bear canines

IV. CERAMICS

A. Mortuary vessels
1. Cross-hatched rims
2. Rocker-stamping
3. Bird-motif
4. Vessels of foreign origin

B. Utilitarian ware--cord-marked

C. Figurines

V. LITHICS

A. Stemmed and corner-notched points

B. Blades

VI. SUBSISTENCE

A. Hunting and collecting

B. Horticulture

TABLE 23

COMPARATIVE TRAIT LIST OF REGIONAL MANIFESTATIONS OF HOPEWELL

Ohio Hopewell	Illinois Hopewell	New York Hopewell	Goodall Hopewell	Trempealeau Hopewell	Kansas City Hopewell	Cooper Hopewell	Marksville Hopewell	Miller Hopewell	Copena	Porter Hopewell	Santa Rosa-Swift Creek
1. Geometric earthworks	x										
2. Burial mounds	x	x	x	x			x	x	x	x	x
3. Log tombs	x						x		x		
4. Stone cist tombs		x									
5. Crematory basins											
6. Extended burial	x	x		x			x		x	x	x
7. Bundle burial	x			x			x		x		x
8. Cremation	x	x						x	x		x
9. Cross-hatched rims	x				x	x	x				
10. Rocker-stamping	x				x	x	x			x	x
11. Bird-motif	x						x			x	
12. Platform pipes	x	x	x	x	x		x	x			x
13. Figurines	x						x				x

TABLE 23 (continued)

	Illinois Hopewell	New York Hopewell	Goodall Hopewell	Trempealeau Hopewell	Kansas City Hopewell	Cooper Hopewell	Marksville Hopewell	Miller Hopewell	Copene	Porter Hopewell	Santa Rosa-Swift Creek
14. Marine shell cups	x		x				x	x	x		x
15. Copper earspools	x	x		x			x	x	x	x	x
16. Copper panpipes	x	x	x	x			x			x	x
17. Copper awls	x	x	x	x							
18. Copper beads	x	x	x	x			x		x	x	x
19. Copper adzes	x				x				x		
20. Copper celts	x	x	x	x							
21. Copper breast-plates	x	x		x					x		x
22. Copper rings	x										
23. Copper buttons	x			x							
24. Copper cut-out figures	x										
25. Copper cones				x							
26. Copper bracelets							x		x		

TABLE 23 (continued)

	Illinois Hopewell	New York Hopewell	Goodall Hopewell	Trempealeau Hopewell	Kansas City Hopewell	Cooper Hopewell	Marksville Hopewell	Miller Hopewell	Copene	Porter Hopewell	Santa Rosa-Swift Creek
27. Mica trimmed sheets	x	x	x						x	x	x
28. Mica cut-out figures											
29. Obsidian	x			x							
30. Crystalline quartz artifacts											x
31. Galena	x	x					x	x	x	x	x
32. Flint Ridge chert blades		x						x			x
33. Fresh-water pearls	x		x	x			x				
34. Engraving on bone, often human											
35. Cut animal jaws	x		x				x				x
36. Worked animal teeth	x		x	x							
Total	28	14	11	15	4	2	17	7	13	9	17

Ohio Hopewell

In southern Ohio, Hopewell is but one phase of the Scioto tradition. Hopewell phase ceramics have been grouped into three series: Scioto, Hopewellian, and Southeastern. Scioto series pottery is plain or cord marked; Hopewellian series pottery, rocker stamped; and Southeastern series pottery is simple stamped, check stamped, and complicated stamped (Prufer 1968: 4-5).

The best-known Hopewell phase habitation site is the McGraw site, the location of which is shown on Map 9. At this site, over 95 per cent of the pottery belonged to the Scioto series; a little over 3 per cent, to the Hopewellian series; and 1 per cent, to the Southeastern series. The most numerous projectile point type was Snyders Corner Notched. Other stone tools included blades, perforators, and knives. Bone and shell artifacts recovered from the site included awls, needles, turtle shell objects, a worked bear canine, and worked fresh-water shells. Fragments of mica, an unidentified copper object, and a sandstone cone round out the artifact inventory (Prufer et. al. 1965: 32, 60, 81-85, 90-93, 98-100).

Subsistence activities at the McGraw site were indicated by the following remains (no priority is implied by this ordering): deer, beaver, squirrel, muskrat, skunk, rabbit, raccoon, turkey, ducks and geese, turtle, fish, fresh-water molluscs, hickory and walnut shells, acorns, hackberry seeds, a plum pit, and maize (Ibid.: 107-119).

The Ohio Hopewell settlement system

> ...seems to have been characterized by a system of semi-permanent shifting agricultural farmsteads or hamlets, clustered around a series of ceremonial centers and burial mounds with which a number of such settlements identified themselves (Ibid.: 137).

New York Hopewell

The Hopewellian burial mound sites in western New York were grouped under the Squawkie Hill phase by Ritchie (1965: 213-226). Burial mounds with prepared floors, stone cist graves, cremations, and extended burials are characteristic of this phase. Grave goods included platform pipes; copper beads, breastplates, earspools, panpipes, celts, and awls; pearl beads; Flint Ridge chert prismatic flake blades; galena; quartz cyrstals; and mica.

Illinois Hopewell

Three Woodland regional traditions, each with several phases, have been identified in Illinois. These regional traditions--Crab Orchard, Havana, and Pike--and the phases in which Hopewell was a component are described below.

Crab Orchard tradition. The Crab Orchard tradition is associated with the Oak-Hickory forest of southern Illinois. The characteristic pottery of the Crab Orchard tradition is sherd-tempered cord-marked and fabric-impressed ceramics. Tamms Expanding-stem points and petaloid celts are also

diagnostics of the Crab Orchard tradition (Streuver 1964: 91-92).

The Rutherford site will be described as an example of a Hopewell phase site in southern Illinois. Mound construction began with the preparation of a white sandy clay floor into which fourteen burials were placed. A two-three feet high mound was erected over these burials and twenty more burials were placed within this primary mound. This group of burials formed a circle with two to four individuals interred together. The primary mound was capped by two to three feet of secondary mound fill. One intrusive burial was found in the secondary mound. The predominant mode of burial seemed to be extended although several were disarticulated burials (Fowler 1957: 4-9).

Of the thirty-five burials found in the Rutherford Mound, sixteen had no associated artifacts. Grave goods with the remaining burials included copper earspools (found in the hands of four individuals), panpipes, beads, and a copper celt; pearl and shell beads; a raven effigy pipe and a clay platform pipe; galena; prismoidal flake knives; and bear canines (Ibid.: 9). With one burial was found a sand-tempered, simple-stamped, tetrapodal vessel (Ibid.: 27). Cord-marked and rocker-stamped pottery was found in the mound fill (Ibid.: 11).

Near the Rutherford Mound was a small village, the Kaegi site. Prismoidal flake knives, clay-tempered rocker-stamped and cord-marked pottery, and side-notched

points were found at both sites, indicating that the Kaegi site may have been the village site of those who built Rutherford Mound (Ibid.: 38-41).

Havana tradition. The second regional tradition in Illinois is the Havana tradition. It is associated with the eastern Prairie environmental zone. Cord-marked and dentate-stamped ceramics and Snyders Corner Notched and Dickson Broad-bladed points are diagnostics of the Havana tradition. Other traits include small, rectangular flint hoes, lamellar flake blades and end scrapers, and celts (Struever 1964: 91).

The Steuben site will be described as an example of a Havana tradition Hopewell phase site. The Steuben site consisted of a village area on the Illinois River bottoms and nine burial mounds situated on two bluffs overlooking the village (Morse 1963: 4-5). Three test pits were dug in the village. Ceramics recovered from the village include the Havana, Weaver, and Hopewell series. Both the Havana and Weaver series are characterized by cord-marked pottery. A stratigraphic analysis indicated that Havana predominated in the lower levels and Weaver predominated in the upper levels with minor amounts of Hopewell ware in all levels. The predominance of Weaver ceramics over those of the Hopewell series identified this site as a Late Hopewell site (Ibid.: 14-15). Expanded-stem, corner-notched, side-notched, and contracting-stem points were found in the

village tests. Blades, knives, and scrapers round out the chipped stone inventory in the village (Ibid.: 30-32). Bone, shell, and antler utilitarian objects were also recovered from the village (Ibid.: 36-47).

Surface collections from the village area yielded stone celts and gorgets, fragments of copper, galena, and mica (Ibid.: 64-65, 72). Faunal remains included several varieties of fish, turtle, deer, elk, muskrat, raccoon, rabbit, beaver, mink, turkey, Canada goose, and freshwater molluscs (Ibid.: Appendixes A-3). No floral remains were recorded.

Nine burial mounds were located on two bluffs overlooking the village. Seven of these had been excavated previous to the work of Morse (Ibid.: 75). Mound 1, the largest of the nine mounds, was undisturbed prior to its excavation by Morse. Mound construction began with a row of three primary conical mounds. These three small mounds, each with a central burial pit, were eventually covered over to form one large mound. Fifty-eight burials--15 males, 16 females, 4 unclassified adults, and 23 children under the age of fourteen--were found in Mound 1 (Ibid.: 91). Artifacts found associated with the burials included whole pots, worked bear canines, shell spoons, a conch shell vessel, and shell beads (Ibid.: 80-88). "The large number of burials within one mound is characteristic of Late Hopewell as is the relatively large proportion of children" (Ibid.: 109).

pike tradition. The Pike tradition is a sub-regional tradition within the Havana tradition and is restricted to a seventy-mile stretch from the confluence of the Illinois and Mississippi rivers northward. Ceramics of the Pike tradition are combed, brushed, scratched, or rocker stamped; the projectile points are similar to the Tamms type of the Crab Orchard tradition (Struever 1968a: 5-7). The Havana tradition began around 150 BC with the Hopewell phase dating to about 50 BC-AD 100. The Pike Hopewell phase dated between AD 100-400 (Ibid.: 140-141). Thus, in the lower Illinois valley, the Havana and Pike phases are sequential and many sites exhibit components of both. Two lower Illinois valley sites to be described are the Knight mounds and the Macoupin site.

The Knight group of mounds consisted of twenty-six mounds aligned in a linear arrangement on low ridges overlooking the Mississippi River floodplain (Griffin, Flanders, and Titterington 1970: 13). The ceramics associated with burials in some of the mounds indicate that some postdate Hopewell; other mounds are mixed with Pike phase ceramics in the lower levels and the later Fox Creek phase ceramics in the upper levels. Pike phase burials tended to be extended or bundle types whereas Fox Creek burials were generally flexed. Fewer grave goods were found with the later phase burials (Ibid.: 22, 35-37).

Pike phase burials were in subfloor pits or central burial areas; they were generally multiple burials with

both sexes and adults and children represented (Ibid.: 122). Artifacts found associated with Pike phase burials included effigy platform pipes; lamellar flakes; turkey bone awls; copper and pearl beads; sheet mica; galena; bone effigy bear canines; shell effigy animal mandibles; copper earspools, panpipes, and celts; and figurines (Ibid.: 35-38, 66-69, 74-79, 97-100).

The Macoupin site exhibited about five acres of occupational debris along two ridges running parallel to Macoupin Creek, a tributary of the Illinois River (Rackerby 1969: 1-2). The surface distribution of pottery indicated occupation of the site during three phases: Havana Hopewell (100 BC-AD 150), Pike Hopewell (AD 100-400), and White Hall (AD 400-750). One area of the site which appeared to be pure Havana was chosen for excavation (Ibid.: 5).

Faunal remains from the Havana occupation included deer, raccoon, turtle, fish, fresh-water mussel, and turkey. One ear of charred corn, a grain of maize pollen, and a few grains of curcurbita and lagenaria pollen were also recovered. Rackerby (Ibid.: 9-11) concluded from this that maize was cultivated during the Havana phase but that its importance in the subsistence system was negligible. Artifacts from the site, most of which were recovered by intensive surface survey, have been described in an earlier portion of this chapter.

Goodall Hopewell

Hopewellian sites in northern Indiana-southern Michigan were grouped under the name Goodall Focus by Quimby (1941a). More recently Brown (1964: 122) has suggested that the name Goodall be dropped. He argues that the sites in northern Indiana belong to the Havana tradition. He further suggests that the Hopewellian sites in southern Michigan, since they are distinct from Havana, be named the Butterworth Focus or Complex. One of these Michigan sites, the Norton site, will be described as an example of Goodall Hopewell or the Butterworth Complex.

Seventeen mounds composed the Norton Mound Group. The three largest mounds were about 700 feet east of the Grand River and the remaining mounds were grouped in a curved line behind them (Smith 1966: 3). The mounds typically contained a rectangular central burial pit with multiple extended and bundle burials. The burial pits of all except one of the mounds appeared to point toward the largest mound leading Griffin, Flanders, and Titterington (1970: 181) to hypothesize that the three large mounds contained individuals from several families whereas the smaller mounds were family tombs.

Artifacts associated with Norton burials seemed to be primarily of local manufacture and utilitarian in nature. They included bone awls and pins; turtle shell dishes, some of which were engraved; mussel shell spoons; worked conch shell; grinding stones and hammerstones; whole

vessels; chert blanks, lamellar flakes, and corner-notched points; bear canines and bone effigy bear canines; worked beaver incisors; bobcat claws; mica; copper beads, awls, and celts; pearl beads; and effigy and plain platform pipes (Ibid.: 134-135, 140-155).

Trempealeau Hopewell

Burial mound sites which exhibit Hopewellian traits in southwestern Wisconsin are labeled Trempealeau Hopewell. Shallow submound pits containing two to forty-five extended, flexed, and bundle burials are typical of Trempealeau mounds. Associated grave goods include copper celts, awls, beads, earspools, cones, breastplates, and panpipes; copper- and silver-covered wooden buttons; obsidian ovates and corner-notched points; platform pipes; pearl beads; drilled or split bear canines; and cord-marked pottery (Bennett 1952: 115-116).

Kansas City Hopewell

Several village sites in northcentral Missouri have been identified as Hopewellian, primarily on the evidence of ceramics. The best known of these is the Renner site. Most of the pottery from the site was cord marked although some was rocker stamped with cross-hatched rims.

> In most respects this ware closely approaches the so-called Hopewellian type, but the body ornamentation is somewhat less intricate and the roulette or dentate stamped technique apparently less common than on

> pottery from the classic sites farther east (Wedel 1938: 102).

A copper adze, imitation bear teeth, and a clay and a stone cone-shaped object were found at the site (Wedel 1943: 49, 59, 204).

Several earthen mounds containing stone cists occur in the Kansas City Hopewell region but few artifacts have been found to allow adequate determination of their cultural affiliation.

Cooper Hopewell

Griffin (1967: 181) recognized a group of sites in southwest Missouri-northeast Oklahoma as being Hopewellian. The only reference to Cooper Hopewell which this writer has been able to locate is one which mentions villages and bluff shelters in northwest Oklahoma with Hopewellian pottery (Orr 1952: 245). Presumably, this means rocker-stamped pottery with cross-hatched rims, which is not sufficient to define a regional manifestation of Hopewell.

Marksville Hopewell

> By definition Marksville is the period of Hopewellian radiation, if that is the correct name for it, in the Lower Mississippi Valley (Phillips 1970: 886).

Most of the Marksville sites in the Lower Mississippi Valley are village sites and the only indication of their connection with Hopewell is ceramic (Ibid.: 887-900). Marksville period pottery is quite similar in decoration to

Illinois Hopewell ware (cross-hatched rims, rocker stamping, bird motifs, etc.) but the paste and temper characteristics indicate that it was definitely manufactured locally (Toth 1972: 5).

Three well-known Marksville Hopewellian burial mound sites are Marksville, Crooks, and Helena Landing. The Crooks site will be described as an example of a Marksville period site.

The Crooks site consisted of two conical mounds. Mound A measured 85 feet in diameter and 18 feet high; Mound B was only two feet high (Ford and Willey 1940: 5). Mound A construction apparently began with the building of a large rectangular platform. One hundred sixty-eight burials were placed in the top layer of this platform and 214 burials were piled in a mass on top of the platform. The primary mound above the platform contained 270 burials and 503 more burials were found in the secondary mantle. A few other burials scattered throughout the mound brought the total to 1175 (Ibid.: 35-36). Flexed burials were the most common; other burial modes in order of frequency of occurrence were single skull, indeterminate, bundle, semi-flexed, partially disarticulated, and extended. The single skulls were generally placed near the head or the pelvis of a more complete skeleton (Ibid.: 36-38).

Thirteen burials were found in Mound B. Ford and Willey (Ibid.: 131) speculated that Mound B may have functioned as a site of a mortuary structure during the

latter phase of Mound A use. They record that sixteen per cent of the Crooks site burials were accopanied by grave goods; however, this percentage is somewhat inflated. If grave goods were found in a multiple burial situation, each burial was credited with having grave goods. Burial accompaniments included Marksville pottery vessels; stemmed and corner-notched points; stone and clay platform pipes; copper earspools, beads, and bracelets; galena beads; worked and unworked quartz crystals; pearl beads; bone fishhooks and awls; and a figurine fragment (Ibid.: 133-135).

The Helena Landing site, the northernmost Marksville burial mound site, is more similar to the Illinois and Ohio Hopewell burial mounds. Mortuary traits included log tombs and bundle and extended burials. Grave goods included copper earspools, panpipes, and a tube with a cut-out design; pearl beads; worked wolf canines; conch shell cups; mica; Harrison County, Indiana, flint blades; and Marksville pottery vessels (Ford 1963: 47).

The Marksville, Crooks, and Helena Landing sites have been lumped together under the label Marksville. However, from the above it can be seen that the burial patterns at the Marksville and Crooks sites are strikingly different from those of Helena Landing, implying differences in the social organization and belief systems of the groups constructing these burial mounds. Helena Landing was more closely affiliated with Hopewell than were Marksville and Crooks and may have been the source of the Hopewellian

artifacts found at those sites.

Miller Hopewell

Several sites in northern Mississippi possess burial mounds which have been designated Hopewellian; however, they appear to be more similar to Marksville than to Hopewell mounds. One such site is the Pharr site.

The Pharr site had eight mounds, four of which were described by Bohannon (1972). Mound A construction began with the erection of a primary mound on the old ground surface. Two cremations were found in the mound fill. A pit containing fragments of calcined bone, dug into the ground surface, cut through the edge of the primary mound (Ibid.: 9-11).

The ground surface was cleared before the construction of a ten-foot primary mound of Mound D began. A burial on the old ground surface near the primary mound consisted of skull fragments accompanied by two copper earspools. The area beneath the primary mound was paved with sandstone slabs. On this floor were found a few fragments of bone and a broken earspool (Ibid.: 13-14).

Mound E exhibited a primary mound over a low burial platform. A shallow basin on top of the platform contained a Marksville Incised vessel, a Baldwin Plain bowl, a sand-tempered zoned-stamped vessel, silver plating, and a rectangular piece of wood covered with sheet copper. The primary mound which covered the platform was extended

beyond the platform on one side to cover a probable crematory pit and two graves dug into the old ground surface. Two graves were dug into the primary mound. One burial in the secondary mantle contained a sheet of unworked mica, a greenstone labret, a sandstone pallet, and a piece of galena (Ibid.: 17-20).

Mound H exhibited a fired basin on the old ground surface beneath the mound. A greenstone platform pipe was found in this feature (Ibid.: 7-8). Other artifacts recovered from the site included one whole and two broken clay platform pipes, three sandstone celts, and six Flint Ridge chert lamellar blades (Ibid.: 60-64).

Mound structure and artifacts from the Bynum site were similar to those from the Pharr site (Cotter and Corbett 1951). The floral and faunal remains from Bynum merit some mention. Honey locust seeds, hickory nuts, maypop, acorns, and cane; deer, Bison bison, beaver, raccoon, bobcat, opossum, fox, fish; molluscs and Busycon contrarium were all found at this site (Jones 1951: 48-49; Setzer 1951: 49; Morrison 1951: 50).

Porter Hopewell

Several sites in southern Alabama are frequently classified as Hopewellian sites; but again, elements of mound construction are more similar to Marksville. One example is the McQuorquodale Mound. This mound was constructed in two stages, the first of which was the

erection of a platform. Six burials were placed on the top of this platform. Artifacts associated with them included a copper bead, a copper earspool, a scraper, and worked galena. The secondary mantle over the platform contained four burials with an expanded-stem point, galena, and mica (Wimberly and Tourtelot 1941: 3-9). Ceramics from the mound fill included plain, check stamped, incised, pinched, and punctated types. Projectile points were stemmed or corner notched (Ibid.: 20-21, 31).

Santa Rosa-Swift Creek

Burial mounds with such Hopewellian items as copper earspools and panpipes, mica, figurines, and platform pipes characterize Santa Rosa-Swift Creek. The Mandeville site as described in this paper is one example of a Santa Rosa-Swift Creek Hopewellian site.

Copena

Although the cultural affiliation of Copena has been a matter of some debate, the general consensus today is that it is another regional manifestation of Hopewell (Faulkner 1970).

Copena complex traits include conical burial mounds occurring singly or in groups numbering up to seven; puddled clay, log, or bark-lined pits; bundle, flexed, extended, and cremation burial types; copper reel-shaped gorgets, earspools, bracelets, celts, and beads; marine shell cups and beads; long stemless projectile points; galena;

greenstone celts and digging implements; and steatite elbow pipes (Walthall 1973: 2).

Wright village, located near two Copena mounds, was situated on a low knoll about a half mile from the Tennessee River. Numerous pits and a circular house with a central hearth were noted from the site. Ceramics included limestone-tempered plain, check stamped, simple stamped, complicated stamped, and cord marked. Other artifacts included greenstone celts and digging implements, bone awls, bone and antler points, a copper pin, and an engraved cannel coal disk (Ibid.: 98-133).

Two radiocarbon dates now available for two Copena burial mounds are AD 320 ± 65 and AD 375 ± 75 (Walthall 1972: 140-141). The burial in Feature 5, Mound B of Mandeville, contained such Copena artifacts as 9 greenstone celts, a greenstone spade, and several pounds of galena and was radiocarbon dated at AD 420 ± 120 (Crane and Griffin 1964: 9).

Other Regional Manifestations

Three additional Hopewellian sites which merit mention are Tunacunnhee, Icehouse Bottom, and Garden Creek Mound 2.

Tunacunnhee. The Tunacunnhee site is a Hopewellian site in northwest Georgia. Although geographically close to the Copena area, Tunacunnhee exhibits none of the Copena complex traits described above. The site consisted

of four stone and earth burial mounds and a village area. Hopewellian artifacts found in the mounds included copper earspools, panpipes, breastplates, and a copper awl with a bone handle; cut mica; stone effigy platform pipes; drilled bear canines; and bone pins (Jefferies nd: 2-6). Organic material from a submound pit in Mound C was radiocarbon dated at AD 150 ± 95. Artifacts from this pit included a copper breastplate, two sets of copper earspools, and the copper awl (Ibid.: 3-4).

A village area was located about two hundred yards southwest of the mound group. Ceramics from the village were limestone- and sand-tempered plain and cord marked and projectile points were identified as Greenville and Nolichucky types. Fragments of copper and mica were found in the village (Ibid.: 7).

Connestee phase. The Icehouse Bottom site in east Tennessee and the Garden Creek Mound 2 site in western North Carolina are two components of the Middle Woodland Connestee phase. A small amount of Hopewellian trade material was found at both sites. Garden Creek Mound 2 was described in some detail in chapter 3. The Icehouse Bottom site was a small village site. A few sherds of Ohio Hopewell pottery and prismatic blades made from Flint Ridge, Ohio, chert were found at these two sites. A small amount of mica was also found at both sites. Since they are near a local mica source, it is postulated that the

inhabitants were suppliers of mica to Ohio Hopewell (Chapman 1973: 155).

WHY HOPEWELL?

Regional manifestations of Hopewell have been so classified on the basis of a few "diagnostic" traits; however, some consideration must also be given to the traits individually. Burial mounds, for example, are listed as a trait of Hopewell; but not all burial mounds found in the eastern United States are Hopewellian. Certain of the traits compared on Table 23, then, are generalized, occurring in other situations as well as in Hopewell. Other traits--platform pipes; figurines of a certain style; copper earspools, panpipes, and cut-out figures; mica cut-out figures; obsidian; and blades made from Flint Ridge chert, for example--appear to be specialized, occurring only in Hopewellian sites. The diffusion of these specialized traits was probably the product of a multiplicity of events and causes, many of which may never be known.

One of the areas into which many of the Hopewellian traits diffused was the area of Santa Rosa-Swift Creek; and Mandeville, the focus of this paper, is a prime example of the interaction between Hopewell and Santa Rosa-Swift Creek. Several explanatory models will now be reviewed in an attempt to account for this interaction, anticipating that such a discussion may be applicable in other areas where Hopewellian also occurred. Some of those models were

formulated with Hopewellian data in mind; others pertain to other archaeological situations but merit consideration.

Mesoamerican Influence on Hopewell

McMichael (1964) postulated that the Hopewellian climax, which he dated at ca. AD 1, resulted from influence from Veracruz via the Crystal River complex. His essay merits consideration here because he used Mandeville as the Crystal River complex site upon which he based his arguments.

Traits which he saw Veracruz, Crystal River, and Hopewell sharing included figurines, earspools, panpipes, pyramidal mounds, Crystal River series ceramics, complicated stamping, and possibly maize and tobacco. These traits, according to McMichael, diffused into the northwest coast of Florida shortly before AD 1. The Hopewellian climax with the unprecedented appearance of these traits is dated shortly after AD 1 (Ibid.: 130-131). The error lies in the fact that McMichael based his argument on radiocarbon dates which have since been shown to be inaccurate (see chapter six). Mandeville dates between ca. AD 100-500, well after McMichael's Hopewellian climax of AD 1.

While certain general trait similarities between Hopewell and Mesoamerica did exist, no one has been able to conclusively demonstrate a connection between the two areas (Prufer 1964a, 1964c; Phelps 1969b; Porter 1953) during the Middle Woodland period.

Hopewellian Interaction Sphere

Caldwell (1964), addressing himself to the question of the distribution of diagnostic Hopewell traits, coined the term "Hopewellian interaction sphere." He was not explicit in his definition of the term but he would assuredly have accepted Olien's (1973: 5) definition of interaction sphere as

> ...an area within which contact and communication between peoples take place facilitating the exchange of ideas and artifacts. However, there are regional and local variations as local groups each have unique problems of adaptation to particular environmental niches, population pressures, levels of sociopolitical integration, and so on.

Caldwell considered the Hopewellian interaction sphere to relate to the mortuary-ceremonial aspect of the cultures so involved.

> The interactions and hence the connections among the various societies are in mortuary-religious matters but not, primarily, at least, in other departments of culture (Caldwell 1964: 137).

It is apparent from a further reading of his essay that Caldwell felt that the exchange of ideas was a more important element of the Hopewellian interaction sphere than was the exchange of material goods. Struever and Houart, to be discussed below, emphasize the material side of the interaction sphere.

Prufer (Prufer et. al. 1965: 132) elaborated upon

Caldwell's concept of the ideological basis of the Hopewellian interaction sphere as follows:

> One of the hallmarks of most Hopewellian traits is the emphasis on exotic raw materials.../which seemed/ to have been crucial components in the material maintenance of the Hopewellian idea system. In order to obtain these materials a vast, and undoubtedly complex /,/ exchange network had to be maintained throughout large areas of the United States.... The exchange network itself seems to have provided the mechanical basis upon which this system spread, leading to a vast dynamic interaction sphere, the aim of which appears to have been exclusively the production of ceremonial objects primarily intended for deposition with the dead.

Few archaeologists have accepted Prufer's view of the Hopewell death cult. Griffin (1967: 184), for example, wrote

> The art, the procurement of exotic raw materials, the earthwork complex, and the elaborate burial procedures were all a part of a religious ceremonialism centered on a propitiation of the spiritual world which affected the hunting, trading, warfare, games, health, death, and, in fact, every phase of the existence of these people.... The burial ceremonialism was not a special exotic cult but a climactic expression of a central theme in their way of life.

Struever (1968a: 26) essentially agreed with Griffin although his statement is less specific.

> ...Artifact types diagnostic of Hopewell functioned in the social

sub-system where they served integrational or social-maintenance tasks.

Struever and Houart accept that a Hopewell Interaction Sphere model can be used to examine the relationship between at least certain of the Ohio and Illinois Hopewell sites. They recognize seven to twelve regional transaction centers, such a center being identified on the basis of size, complexity of earthworks, and quantity and diversity of Hopewellian items (Struever and Houart 1972: 52). The Hopewell site itself apparently "...functioned as a major receiving, manufacturing and transaction center..." (Ibid.: 55).

The twelve sites designated by Struever and Houart as possible regional transaction centers--Trempealeau, Albany, Ogden-Fettie, Golden Eagle, North, Twenhafel, Mann, Cincinnati, Portsmouth, Hopewell, Newark, and Marietta--are spaced 40 to 180 miles apart (linear distance) (Ibid.: 52). The Golden Eagle site is taken as an example from which further analysis of the Hopewell Interaction Sphere is attempted. They postulate that this site functioned "...to articulate lower Illinois Middle Woodland groups with each other and them, in turn, with groups outside the region" (Ibid.: 60). Interaction Sphere goods were brought into Golden Eagle for distribution among sites in the surrounding region.

Situated along the Illinois River above the Golden Eagle site are six smaller sites which Struever and Houart

(Ibid.: 61) have designated possible local transaction centers.

> In this model, goods arriving at Golden Eagle by means of the interregional interaction network were distributed within the lower Illinois Valley by means of activities associated with these six local nodes. In turn, freshwater pearls or other goods destined to move into the interregional network accumulated initially at these six local centers and subsequently moved out of the lower Illinois region altogether through economic-political-ritual activities associated with the Golden Eagle regional center (Ibid.: 61-63).

Struever and Houart also discuss the transactional relationships among the Ohio Hopewell centers. A quantitative analysis of the distribution of exotic raw materials and finished products suggests local specialization in the manufacture of certain items. For example, about 300 pounds of obsidian chipping debris and raw material and about 150 large obsidian ceremonial spears were found at the Hopewell site. Only a few such spears were found at the five other Hopewell sites, suggesting that the Hopewell site was the center at which these items were manufactured. The Hopewell site was also apparently a center for the manufacture of copper, mica, and crystalline quartz artifacts. Other Hopewell centers also apparently had specialties: mica and galena items and effigy platform pipes at Mound City; plain platform pipes at Tremper (Ibid.: 68-71).

One test of Struever and Houart's hypothesis would be to determine if similar regional and local transaction centers can be identified in other areas where Hopewellian traits occur. Mandeville may have served to funnel Hopewellian items into northwest Florida and Gulf Coast products--ceramics, marine shell, shark teeth--northward; but it does not appear to have been a regional transaction center quite in the same sense as those identified by Struever and Houart. The difficulty in applying this model to Mandeville lies in the absence of data from the general area around the site. Mandeville, thus, appears to be nearly a hundred miles from the region it served.

Flannery's Model of Inter-regional Interaction

Flannery proposed a model for inter-regional interaction between the Olmec and the Valley of Oaxaca which merits consideration here. The significance of Flannery's model for Hopewell lies in the fact that "the Olmec and the Valley of Oaxaca interacted most strongly on a level of shared concepts about religion, symbolism, and status paraphernalia" (Flannery 1974: 75). This is exactly the level at which Caldwell saw the Hopewellian interaction sphere functioning, although for different reasons.

Flannery (Ibid.: 73-75) made the following points of comparison between the Olmec and the inhabitants of the Valley of Oaxaca. Both groups were agricultural; however, the Valley of Oaxaca farmers practiced irrigation

agriculture while the Olmec practiced rainfall agriculture. The settlement system of each consisted of large, nucleated villages rather than scattered hamlets. Olmec towns were larger than those in the Valley of Oaxaca. Status differences within the population was a characteristic of both areas; however, "...if degree of status may be fairly measured by quantity and quality of mortuary offerings, the Olmec had achieved a level of social stratification barely approached by the highlands" (Ibid.: 75). "Ceremonial" architecture was generally similar in both areas and a high degree of similarity existed in the symbolism and iconography of the two areas (Ibid.). It is these last two points which most strongly indicates interaction between the Olmec and the Valley of Oaxaca.

Flannery, being of the opinion that "...one of the main mechanisms of communication between the two regions was through the exchange of exotic raw materials," used two ethnographic examples "...of developing societies which used imported and exotic raw materials to reinforce their status systems" to develop his model for Olmec-Valley of Oaxaca interaction (Ibid.: 76).

In order to obtain furs, the stratified Tlingit of the Northwest coast established a trading relationship with the inland Athabascan tribes. Involved in this establishment of trade was the wedding of Tlingit women to Athabascan men. The Athabascans gradually became "Tlingitized;" they began using the Tlingit language, developed social classes,

practiced the funeral potlatch, and adopted many of the Tlingit songs and myths.

> The inland Athabascans took seriously their marriage ties to Tlingit clans, emulated the esoteric and prestigious aspects of Tlingit culture to the best of their ability, but continued to earn a living in the manner of Athabascans (Ibid.: 77).

A similar situation existed between the valley-dwelling Shan and the Kachin hill tribes in Burma. Shan society was stratified; the Kachins were a group of tribes, some of which had egalitarian lineages and some of which had ranked lineages. The Kachins depended upon the Shan for rice; the Shan depended upon the Kachins for exotic raw materials--jade, amber, tortoise shell, gold, and silver. One of the ways of maintaining ties between the two groups was intermarriage. The Kachin groups which so participated in this interaction tended to develop a stratified society in which the language, religion, behavior, and symbolism of the Shan were imitated (Ibid.: 77-78).

Flannery's model of inter-regional interaction is based upon the above examples of interaction between highly-stratified societies and ones which are less highly stratified. Elements of such a system include

1. exchange (interaction) carried on between the higher-ranking lineages of the societies in question

2. the exchange of raw materials was not trade per se, but involved ritual visits, intermarriage, adoption,

etc.

3. the elite of the less stratified society would begin to imitate the religion, symbolism, dress, and behavior of the elite of the more stratified society

4. the exchange system generally would not affect the local subsistence pattern or the local material culture (Ibid.: 79).

The two propositions upon which Flannery's model rest (Ibid.: 76) may be restated in terms of Hopewell: acquisition of exotic goods was an important part of the Ohio Hopewell status system; groups outside nuclear Ohio were equally interested in maintaining the exchange network. Finally, in order to apply Flannery's model to the Hopewell situation, it is necessary to assume that Ohio Hopewell was more highly stratified than were other regional manifestations of Hopewell. Using Flannery's own criterion for measuring degree of stratification (quantity and quality of mortuary offerings), Ohio Hopewell was, indeed, more highly stratified than were the other regional expressions. In addition, Struever's (1965: 212-214; 1968a: 16-20) comparative analysis of Ohio and Illinois Hopewell sites using Service's criteria for identifying a chiefdom level of social integration has shown that Ohio Hopewell exhibited a higher level of social integration than did Illinois Hopewell.

A point made by Flannery seems especially appropriate for the Hopewell situation.

> Olmec influence will appear most strong in those areas which were already most developed and alreday had status systems into which Olmec concepts could be most profitably fitted (Ibid.: 80).

A similar idea was expressed in chapter six of this paper when the writer postulated that Hopewell, as it spread into the Gulf area, may have found a group of societies with developing social classes which were receptive to its tenets. Cases may also be made for this in other areas into which Hopewell penetrated.

Item four of the above elements of Flannery's system definitely fits the Hopewell situation; item three probably does also. Certainly the Hopewellian traits outside the core area of Ohio and Illinois appear to be a pale reflection or mere imitation of those within that area. Element number two, that the exchange of raw materials was via some mechanism other than trade, is suggested by data from the Mann site. Tenuous evidence of some form of contact other than trade, perhaps even of intermarriage, between the Mann site and Santa Rosa-Swift Creek occurs in the form of a fair percentage of complicated-stamped pottery resembling Early Swift Creek, Crooked River, and St. Andrews complicated-stamped wares at that southern Indiana Hopewellian site. Mann Complicated Stamped is identical to Early Swift Creek in terms of vessel shape, rim morphology, and decoration. Some of the complicated-stamped designs are identical to those found in Santa Rosa-Swift Creek; others are different,

suggesting some designs were developed locally. Much of the complicated-stamped pottery was also made on the local paste (Rein 1974).

Flannery's model of inter-regional interaction between the Olmec and the Valley of Oaxaca appears to be applicable to the Hopewell situation; however, this researcher agrees with Struever and Houart (1972: 60) that

> ...the Hopewell Interaction Sphere was not a single, homogeneous unit involving the sharing of a number of exotic raw materials and artifact styles by local Middle Woodland groups throughout the area from New York to Kansas, Michigan to Florida. Emerging instead is a picture of a number of interaction networks, of different types and on different scales (Ibid.: 60).

Continuing, they (Ibid.: 64) provide a guide for an analytical approach to the question of Hopewellian interaction.

> ...Analysis of the distribution of styles of a single artifact produced at a localized, identifiable manufacturing site may allow the archaeologist to establish the limits of the transactional network involving that artifact style (Ibid.: 64).

The central problem in an analysis of this sort would be locating the probable point of origin of the artifact in question. If that can be accomplished, the primary concern then would be to take steps to ensure that only identical artifacts are included in the sample. For example, one could not lump all copper earspools into one category and

plot their distribution because there were several varieties of Hopewellian copper earspools, each of which may have been manufactured at a different locality and which may have diffused independently of the others.

HOPEWELL IN HISTORICAL PERSPECTIVE

Hopewell cannot be fully understood until it is considered in historial perspective. Hopewell was part of a continuum of interaction between the northern and southern sections of the eastern woodlands which may be traced back at least as far as the Late Archaic.

At Ohio Hopewell sites are found large quantities of a variety of copper artifacts, much of the copper for which must have come from the Great Lakes region to the north. Also present at Ohio Hopewell sites are several items--marine shell and ceramics primarily--which must have come from the northwest Florida coastal area to the south. Copper and marine shell were both found in the Late Archaic Indian Knoll phase in Kentucky, although in quantities so small that Beale's (1973: 141) concept of trickle trade probably suffices as an explanatory model. Just as in the case of Hopewell, these items were found in association with burials. Winters' (1968: 175-221) analysis of the burials from the Indian Knoll and nearby sites revealed a differential distribution of artifact categories as grave goods within the population. Differential treatment of the dead and the acquisition of exotic raw materials were, thus,

first evidenced at Indian Knoll, ca. 2500-2000 BC.

Over a thousand years later, these same elements were combined in Old Copper, Red Ocher, Glacial Kame, and Adena. Deliberate construction of earthen burial mounds was added to the retinue. In Ohio Adena was replaced by Hopewell and the pattern--differential treatment of the dead, acquisition of exotic raw materials, and mound burial--reached a climax.

Finally, as Hopewell waned, the pattern was continued in the Weeden Island complex of the Florida Gulf Coast; it reached its final climax with the Southern Cult. Copper and marine shell artifacts were important burial accompaniments at Etowah, Moundville, and Spiro, the three largest Southern Cult sites. Thus, Hopewell was part of a long continuum of cultural interaction and evolution in eastern North American prehistory.

CHAPTER 10

SUMMARY

The Middle Woodland period was a very dynamic time in eastern North American prehistory. The re-analysis of the Mandeville site and the study of related materials has provided some new insights into the little understood problems of cultural affiliations and interactions during this period. Specifically, this research focused upon two main problems: the relationship between Deptford and Swift Creek ceramics and Hopewell in the South.

This dissertation consists of two parts, the first of which (chapters two through six) is the Mandeville site report. It is in these chapters that the cultural remains, stratigraphy, and dating of the site are discussed. Chapters seven through nine are interpretive and theoretical in nature. A tentative definition of an Early Swift Creek ceramic complex was proposed in chapter seven; the relationship between Mandeville and Santa Rosa-Swift Creek was explored in chapter eight; and chapter nine considered the question of Hopewell in the South.

Mandeville was a large mound and village site in southwest Georgia. Analysis of the cultural remains from

the site suggested to this writer the presence of components from the following archaeological periods: Late Archaic, Middle Woodland, Mississippian, and protohistoric. The Middle Woodland component was the largest of these and the focus of this research.

Mound A was a flat-topped occupational mound. Layer I was a premound midden level. Midden layers I, II, III, and IV were separated by mound fill. Layer V was a clay cap added to the mound during the Mississippian occupation of the site. There were indications that Mound A construction began with the erection of one or more small platforms. These platforms were enlarged and the area between them filled in until one large flat surface (Layer II) was formed. The function of this mound could not be determined; however, if the mortuary data does, as it is generally assumed, indicate status differences among the population and if a later Mississippian period trait of building mounds to support domestic structures of the higher-ranking families living in the community can be used as an ethnographic analogy, such may have been the purpose of Mound A.

The Middle Woodland ceramic assemblage was dominated by Early Swift Creek Complicated Stamped pottery and related types. Kellar, Kelly, and McMichael had previously recognized two ceramic traditions, Late Deptford and Early Swift Creek; thus, the relationship between Deptford and Swift Creek was one of the problems under consideration. This researcher's analysis of the ceramics from the Mandeville

site and related sites led her to define an Early Swift Creek ceramic complex which included check- and simple-stamped pottery as minor elements.

Mound B was a conical burial mound containing such Hopewellian items as copper earspools and panpipes, a figurine, clay platform pipes, and prismatic blades. Mandeville thus participated in the Hopewellian interaction sphere, forming the basis for the second major problem around which the research was conducted.

The concepts of the double tradition and interaction sphere have greatly advanced the understanding of Hopewell; however, much remains to be done in the way of collecting basic data before the phenomenon which is Hopewell can be fully appreciated. Explicit definition of Hopewell and its regional expressions must include division of all such expressions into phases with closely-determined time ranges. More must also be learned about the sources of the raw materials that were so important in Hopewell. When the temporal element has been refined and the sources of the raw materials has been made more precise, then the true nature of Hopewell and the types of interactions which resulted in the wide distribution of its diagnostic traits may finally be explicated.

The Early Swift Creek occupation of Mandeville dated from ca. AD 150 to AD 500 with the Hopewellian phase apparently beginning around AD 250.

Close cultural affiliation of the Early Swift Creek

component at Mandeville with the Santa Rosa-Swift Creek complex of Florida was demonstrated in chapter eight. This connection was intensified by participation in the Hopewellian interaction sphere.

In conclusion, Mandeville may be considered a case study of the Middle Woodland period; the complexity of the series of interaction networks operating during that period has been suggested in the course of analyzing the internal history and external relations of the site.

BIBLIOGRAPHY

Adams, William R.
1949 Archeological Notes on Posey County, Indiana. Indianapolis: Indiana Historical Bureau.

Allen, Glenn J.
1954 Archaeological Excavations in the Central Northwest Gulf Coast Area. Florida State University Studies, No. 16: 61-86.

Baby, Raymond S.
1954 Hopewell Cremation Practices. Ohio State Historical Society, Papers in Archaeology, No. 1.

Bacon, Willard S. and H. L. Merryman
1973 Salvage Archaeology at 40 Fr 47. Tennessee Archaeological Society, Miscellaneous Paper No. 11.

Baker, Frank C., J. B. Griffin, R. G. Morgan, et. al.
1941 Contributions to the Archaeology of the Illinois River Valley. American Philosophical Society, Transactions, Vol. 32, Pt. 1.

Beale, Thomas W.
1973 Early Trade in Highland Iran: A View from a Source Area. World Archaeology, Vol. 5: 133-148.

Beaubien, Paul L.
1953a Some Hopewellian Mounds at the Effigy Mounds National Monument, Iowa. Wisconsin Archeologist, Vol. 34: 125-138.

1953b Cultural Variation within Two Woodland Mound Groups of Northeastern Iowa. American Antiquity, Vol. 19: 56-66.

Bell, Robert E.
1958 Guide to the Identification of Certain American Indian Projectile Points. Special Bulletin No. 1, Oklahoma Anthropological Society.

1960 Guide to the Identification of Certain American Indian Projectile Points. Special Bulletin No. 2, Oklahoma Anthropological Society.

Bennett, John W.
1944a Hopewellian in Minnesota. American Antiquity, Vol. 9: 336.

1944b Archaeological Horizons in the Southern Illinois Region. American Antiquity, Vol. 10: 12-22.

1945 Archaeological Explorations in Jo Daviess County, Illinois. Chicago: University of Chicago Press.

1952 The Prehistory of the Northern Mississippi Valley. in J. B. Griffin, ed. Archaeology of Eastern United States. Chicago: University of Chicago Press. pp. 108-123.

Berger, R., G. J. Fergusson, and W. F. Libby
1965 UCLA Radiocarbon Dates IV. Radiocarbon, Vol. 7: 336-371.

Binford, Lewis R.
1962 Archaeology as Anthropology. American Antiquity, Vol. 28: 217-225.

1965 Archaeological Systematics and the Study of Cultural Process. American Antiquity, Vol. 31: 203-210.

1968 Archeological Perspectives. in Binford and Binford, eds. New Perspectives in Archeology. Chicago: Aldine Publishing Co. pp. 5-32.

Bishop, G. Norman
1961 Native Trees of Georgia. Georgia Forestry Commission. School of Forestry, University of Georgia. Georgia Agricultural Extension Service.

Black, Glenn A.
1933 The Archeology of Green County, Indiana. Indiana History Bulletin, Vol. 10: 183-346.

Bluhm, Elaine A.
1951 Ceramic Sequence in Central Basin and Hopewell Sites in Central Illinois. American Antiquity, Vol. 16: 324-329.

Bluhm, E. A. and W. J. Beeson
1960 The Excavation of Three Hopewell Mounds at the Caterpillar Tractor Company. Bulletin No. 2, Indian Mounds and Villages in Illinois. Urbana: Illinois Archaeological Survey. pp. 1-24.

Bohannon, Charles F.
1972 Excavations at the Pharr Mounds, Printiss and Itawamba Counties, Mississippi and Excavations at the Bear Creek Site, Tishomingo County, Mississippi. Washington: National Park Service.

Brandau, Betty Lee and John Noakes
1972 University of Georgia Radiocarbon Dates II. Radiocarbon, Vol. 14: 486-497.

Brannon, Peter A.
1909 Aboriginal Remains in the Middle Chattahoochee Valley. American Anthropologist, Vol. 11: 186-198.

Braun, E. Lucy
1950 Deciduous Forests of Eastern North America. Philadelphia: The Blakiston Co.

Brown, James A.
1964 The Northeastern Extension of the Havana Tradition. in Caldwell and Hall, eds. Hopewellian Studies. Scientific Papers, Vol. 12, Springfield: Illinois State Museum. pp. 107-122.

n.d. Spiro Art and Its Mortuary Contexts. (Death and the After life. Dumbarton Oakes Conference, Oct. 27, 1973.

Brown, James A., ed.
1968 Hopewell and Woodland Site Archaeology in Illinois. Bulletin 6. Urbana: Illinois Archaeological Survey.

Broyles, Bettye J.
1968 Reconstructed Designs from Swift Creek Complicated Stamped Sherds. Proceedings of the 24th Southeastern Archaeological Conference, Bulletin No. 8: 49-75.

1971 Second Preliminary Report: The St. Albans Site, Kanawha County, West Virginia. Report of Investigations No. 3. Morgantown: West Virginia Geological and Economic Survey.

Broyles, B., ed.
n.d. Pottery Type Descriptions. Special Publication of the Southeastern Archaeological Conference.

Buckley, J. D., M. A. Trautman, and E. H. Willis
1968 Isotopes' Radiocarbon Measurements VI. Radiocarbon, Vol. 10: 246-294.

Buckley, J. D. and E. H. Willis
1970 Isotopes' Radiocarbon Measurements VIII. Radiocarbon, Vol. 12: 87-129.

Buikstra, Jane
1972 Hopewell in the Lower Illinois River Valley: A Regional Approach to the Study of Biological Variability and Mortuary Activity. Ph. D. Dissertation, University of Chicago.

Bullen, Ripley P.
1950 An Archaeological Survey of the Chattahoochee River Valley in Florida. Journal of the Washington Academy of Sciences, Vol. 40: 101-125.

1951 The Enigmatic Crystal River Site. American Antiquity, Vol. 17: 142-143.

1953 The Famous Crystal River Site. The Florida Anthropologist, Vol. 6: 9-37.

1958 Six Sites Near the Chattahoochee River in the Jim Woodruff Reservoir Area, Florida. in F. H. Roberts, Jr., ed. River Basin Surveys, No. 14. Bureau of American Ethnology, Bulletin 169. Washington: Smithsonian Institution. pp. 315-357.

1966 Stelae at the Crystal River Site, Florida. American Antiquity, Vol. 31: 861-865.

1968a Report of the Florida-South Georgia Group. Proceedings of the 24th Southeastern Archaeological Conference, Bulletin No. 8: 7-10.

1968b A Guide to the Identification of Florida Projectile Points. Gainesville: Florida State Museum.

1971 The Sarasota County Mound, Englewood, Florida. Florida Anthropologist, Vol. 24: 1-30.

Bunn, Jennings W., Jr.
1971 Excavation of a Deptford Midden Burial, Destin, Florida. Florida Anthropologist, Vol. 24: 169-172.

Butler, Brian M.
1971 Hoover-Beeson Rockshelter, 40 Cn 4, Cannon County, Tennessee, Tennessee Archaeological Society, Miscellaneous Paper, No. 9.

Butterfield, J., ed.
1973 Archives and History News, Vol. 4 (4). Tallahassee: State of Florida Department of State, Division of Archives, History and Records Management.

Caldwell, Joseph R.
1958 Trend and Tradition in the Prehistory of the Eastern United States. American Anthropological Association, Memoir 88.

1962 Eastern North America. in Braidwood and Willey, eds., Courses Toward Urban Life. Viking Fund Publications in Anthropology, No. 32. New York: The Wenner-Gren Foundation. pp. 288-308.

1964 Interaction Spheres in Prehistory. in Caldwell and Hall, eds. Hopewellian Studies. Scientific Papers, Vol. 12. Springfield: Illinois State Museum. pp. 133-143.

1965 Primary Forest Efficiency. Proceedings of the 21st Southeastern Archaeological Conference, Bulletin No. 3: 66-69.

1966 The New American Archaeology. in Caldwell, ed. New Roads to Yesterday. New York: Basic Books, Inc. pp. 333-347.

n.d. Survey and Excavations in the Allatoona Reservoir, Northern Georgia. (unpublished manuscript).

Caldwell, J. R., C. E. Thompson, and S. K. Caldwell
1952 The Booger Bottom Mound, A Forsyth Period Site in Hall County, Georgia. American Antiquity, Vol. 17: 319-328.

Cambron, James W. and D. C. Hulse
1969 Handbook of Alabama Archaeology Part I, Point Types. The Archaeological Research Association of Alabama, Inc.

Carpenter, Edmund S.
1950 Four Hopewellian Tumuli in Western New York. Journal, Washington Academy of Sciences, Vol. 40: 209-216.

Chang, K. C.
1967 Rethinking Archaeology. New York: Random House.

1968 Settlement Archaeology. Palo Alto, Calif.: National Press Books.

Chapman, Carl
1947 A Preliminary Survey of Missouri Archaeology: Part II, Middle Mississippi and Hopewellian Cultures. The Missouri Archaeologist, Vol. 10, Bulletin No. 21: 60-94.

1952 Culture Sequence in the Lower Missouri Valley. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 139-151.

Chapman, Carl H. and E. F. Chapman
1964 Indians and Archaeology of Missouri. Missouri Handbook No. 6. Columbia: University of Missouri Press.

Chapman, Jefferson
1971 Hopewell Elements in the Lower Valley of the Little Tennessee River. Paper presented at the 1971 meeting of the Southeastern Archaeological Conference.

1973 The Icehouse Bottom Site--40 Mr 23. Masters Thesis, University of North Carolina.

Chase, David W.
1955 Archaeological Reconnaissance of the Middle Chattahoochee River Valley. Early Georgia, Vol. 2: 20-21.

1968 Pottery Typology Committee for Central Alabama. Proceedings, 24th Southeastern Archaeological Conference, Bulletin No. 8: 11-22.

Chase, D. W. and A. R. Kelly
n.d. The Halloca Creek Site--9 Ce 4. Manuscript on file at the Columbus Museum of Arts and Crafts, Columbus, Georgia.

Clarke, David L.
1971 Analytical Archeology. London: Methuen & Co., Ltd.

Cleland, Charles E.
1966 The Prehistoric Animal Ecology and Ethnozoology of the Upper Great Lakes Region. Museum of Anthropology, Anthropological Papers No. 29. Ann Arbor: University of Michigan.

Coe, Joffre L.
1964 The Formative Cultures of the Carolina Piedmont. Transactions of the American Philosophical Society, n.s. Vol. 54, Pt. 5.

Cole, Fay-Cooper, and Thorne Deuel
1937 Rediscovering Illinois: Archaeological Explorations in and Around Fulton County. Chicago: University of Chicago Press.

Cooke, C. Wythe
1943 Geology of the Coastal Plain of Georgia. Bulletin 941. Washington: United States Geological Survey.

Cotter, John L. and J. M. Corbett
1951 Archaeology of the Bynum Mounds. Archaeological Research Series, No. 1. Washington: National Park Service.

Crane, H. R. and J. B. Griffin
1959 University of Michigan Radiocarbon Dates IV. Radiocarbon Supplement 1: 173-198.

1961 University of Michigan Radiocarbon Dates VI. Radiocarbon, Vol. 3: 111-116.

1962 University of Michigan Radiocarbon Dates VII. Radiocarbon, Vol. 183-203.

1963 University of Michigan Radiocarbon Dates VIII. Radiocarbon, Vol. 5: 228-253.

1964 University of Michigan Radiocarbon Dates IX. Radiocarbon, Vol. 6: 1-24.

1965 University of Michigan Radiocarbon Dates X. Radiocarbon, Vol. 7: 123-152.

1966 University of Michigan Radiocarbon Dates XI. Radiocarbon, Vol. 8: 256-285.

1972 University of Michigan Radiocarbon Dates XV. Radiocarbon, Vol. 14: 155-194.

Deetz, James
1967 Invitation to Archaeology. Garden City: The Natural History Press.

DeJarnette, David L.
1952 Alabama Archaeology: A Summary. in Griffin, ed. Archaeology of Eastern United States. Chicago: University of Chicago Press. pp. 272-284.

DeJarnette, David L., Ed.
1975 Archaeological Salvage in the Walter F. George Basin of the Chattahoochee River in Alabama. University: The University of Alabama Press.

Deuel, Thorne
1952a The Hopewellian Community. in Thorne Deuel, ed. Hopewellian Communities in Illinois. Scientific Papers, Vol. 5. Springfield: Illinois State Museum. pp. 249-270.

1952b Hopewellian Dress in Illinois. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 165-175.

Devereaux, R. E. and E. D. Fowler
1929 Soil Survey of Quitman County, Georgia. Bureau of Chemistry and Soils, Series 1926, No. 1. Washington: United States Department of Agriculture.

Dice, Lee P.
1943 The Biotic Provinces of North America. Ann Arbor: University of Michigan Press.

Dickens, Roy S., Jr.
1974 A Processual Approach to Mississippian Origins on the Georgia Piedmont. (Paper presented to the 31st Annual Southeastern Archaeological Conference).

Dickson, Don F.
1956 The Liverpool Mounds. Central States Archaeological Journal, Vol. 2: 85-92.

Dragoo, Donald W.
1963 Mounds for the Dead: An Analysis of the Adena Culture. Annals of Carnegie Museum, Vol. 37. Pittsburgh: Carnegie Museum.

1964 The Development of Adena Culture and Its Role in the Formation of Ohio Hopewell. in Caldwell and Hall, eds. Hopewellian Studies. Scientific Papers, Vol. 12. Springfield: Illinois State Museum. pp. 1-34.

Duncan, Wilber H.
1941 Guide to Georgia Trees. Athens: University of Georgia Press.

Fairbanks, Charles H.
1952 Creek and Pre-Creek. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 285-300.

1954 1953 Excavations at Site 9H164, Buford Reservoir, Georgia. Florida State University Studies, Anthropology, No. 16: 1-26.

Fairbanks, C. H., A. R. Kelly, G. R. Willey, and P. Wofford, Jr.
1946 The Leake Mounds, Bartow County, Georgia. American Antiquity, Vol. 12: 126-127.

Faulkner, Charles H.
1967 Tennessee Radiocarbon Dates. Tennessee Archaeologist, Vol. 23: 12-30.

1968 The Old Stone Fort: Exploring an Archaeological Mystery. Knoxville: University of Tennessee Press.

1969 Comments on the Copena Point and Its Distribution. Proceedings of the 25th Southeastern Archaeological Conference, Bulletin No. 9: 53-55.

1971 Adena and Copena: A Case of Mistaken Identity. in B. K. Swartz, ed. Adena: The Seeking of An Identity. Muncie: Ball State University. pp. 100-121.

1973 Middle Woodland Subsistence - Settlement Systems in the Highland Rim: A Commentary. in Bacon and Merryman, eds. Salvage Archaeology at 40 Fr 47. Tennessee Archaeology Society, Miscellaneous Papers, No. 11: 35-45.

Faulkner, Charles H. and M. C. R. McCollough
1973 Introductory Report of the Normandy Reservoir Salvage Project: Environmental Setting, Typology, and Survey. Department of Anthropology, Report of Investigation, No. 11. Knoxville: University of Tennessee Press.

1974 Excavations and Testing, Normandy Reservoir Salvage Project: 1972 Seasons. Department of Anthropology, Report of Investigations, No. 12. Knoxville: University of Tennessee Press.

Fenneman, Nevin M.
1938 Physiography of the Eastern United States. New York: McGraw Hill.

Fergusson, G. J. and W. F. Libby
1963 UCLA Radiocarbon Dates II. Radiocarbon, Vol. 5: 1-22.

Fernald, Merritt L. and A. C. Kinsey
1943 Edible Wild Plants of Eastern North America. Cornwall-on-Hudson: Idlewild Press.

Fischer, Fred W., and C. H. McNutt
1962 Test Excavations at Pinson Mounds, 1961. Tennessee Archaeologist, Vol. 18: 1-13.

Fitting, James E. and David S. Brose
1970 The Northern Periphery of Adena. in B. K. Swartz, Jr., ed. Adena: The Seeking of an Identity. Muncie: Ball State University. pp. 29-55.

Flannery, Kent V.
1972 Summary Comments: Evolutionary Trends in Social Exchange and Interaction. in Edwin R. Wilmsen, ed. Social Exchange and Interaction. Museum of Anthropology, Anthropological Papers, No. 46. Ann Arbor: University of Michigan. pp. 129-125.

Flannery, K. V.
1974 The Olmec and the Valley of Oaxaca: A Model for Inter-regional Interaction in Formative Times. in Sabloff and Lamberg-Karlovsky, eds. The Rise and Fall of Civilizations. Menlo Park: Cummings Publishing Co. pp. 64-83.

Ford, James A.
1963 Hopewell Culture Burial Mounds Near Helena, Arkansas. Museum of Natural History, Anthropological Papers, Vol. 50, Pt. 1.

Ford, James A. and George I. Quimby
1945 The Tchefuncte Culture, An Early Occupation of the Lower Mississippi Valley. Society for American Archaeology, Memoir 2.

Ford, James A. and Gordon R. Willey
1940 Crooks Site, A Marksville Period Burial Mound in La Salle Parish, Louisiana. Anthropological Study, No. 3. New Orleans: Louisiana Department of Conservation.

1941 An Interpretation of the Prehistory of the Eastern United States. American Anthropologist, Vol. 43: 325-63.

Fowke, Gerard
1928 Archaeological Investigations-II: Explorations in the Red River Valley in Louisiana. Forty-Fourth Annual Report. Bureau of American Ethnology, 1926-1927. Washington: Smithsonian Institution. pp. 405-540.

Fowler, Melvin L.
1952 The Clear Lake Site: Hopewellian Occupation. in Thorne Deuel, ed. Hopewellian Communities in Illinois. Scientific Papers, Vol. 5. Springfield: Illinois State Museum. pp. 131-174.

1957 Rutherford Mound, Hardin County, Illinois. Scientific Papers, Vol. 7. Springfield: Illinois State Museum. pp. 1-44.

Fryman, Frank B., Jr.
1971 Highway Salvage Archaeology in Florida. Archives and History News, Vol. 2. Tallahassee: State of Florida, Department of State, Division of Archives, History and Records Management.

Gabel, Creighton
1967 Analysis of Prehistoric Economic Patterns. New York: Holt, Rinehart and Winston, Inc.

Galpin, S. L.
1915 A Preliminary Report on the Feldspar and Mica Deposits of Georgia. Bulletin No. 30. Atlanta: Geological Survey of Georgia.

Gibson, Jon L.
1969 The Nature of Southern Hopewell. Southeastern Archaeological Conference, Bulletin No. 11: 58-66.

Goad, Sharon I.
1974 Optical Spectroscopy as a Method of Archaeological Analysis. (Paper presented at the 73rd Annual Meeting of the American Anthropological Association).

Goggin, John M.
1952a Archeological Notes on Lower Fisheating Creek. Florida Anthropologist, Vol. 4: 50-66.

1952b Space and Time Perspective in Northern St. Johns Archeology, Florida. Yale University Publications in Anthropology, No. 47. New Haven: Yale University Press.

Golley, Frank B.
1962 Mammals of Georgia. Athens: University of Georgia Press.

Greengo, Robert E.
1964 Issaquena: An Archaeological Phase in the Yazoo Basin of the Lower Mississippi Valley, Society for American Archaeology, Memoir 18.

Greenman, Emerson F.
1938 Hopewellian Traits in Florida. American Antiquity, Vol. 3: 327-332.

1944 The Hopewellian in the Detroit-Windsor Area. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 30: 457-64.

Griffin, James B.
1941 Additional Hopewell Material from Illinois. Prehistoric Research Series, Vol. II, No. 3. Indianapolis: Indiana Historical Society.

1945 The Box Elder Mound in LaSalle County, Illinois. American Antiquity, Vol. 11: 47-48.

1949 Meso-America and the Southeast: A Commentary. in John W. Griffin, ed. The Florida Indian and his Neighbors. Winter Park: Inter-American Center, Rollins College. pp. 77-98.

1951 Some Adena and Hopewell Radiocarbon Dates. Society for American Archaeology, Memoir 8. pp. 26-29.

1952a Some Early and Middle Woodland Pottery Types in Illinois. in Thorne Deuel, ed. Hopewellian Communities in Illinois. Scientific Papers, Vol. 5. Springfield: Illinois State Museum. pp. 93-129.

1952b Culture Periods in Eastern United States Archeology. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 352-64.

1952c Radiocarbon Dates for the Eastern United States. in J. B. Griffin, ed. Archeology of the Eastern United States. Chicago: University of Chicago Press. pp. 365-370.

1958 The Chronological Position of the Hopewellian Culture in the Eastern United States. Museum of Anthropology, Anthropological Papers, No. 12. Ann Arbor: University of Michigan.

1960 Climatic Change: A Contributory Cause of the Growth and Decline of Northern Hopewellian Culture. Wisconsin Archeologist, n.s., Vol. 14: 21-33.

1965a Radiocarbon Dating and the Cultural Sequence in the Eastern United States. Proceedings of the Sixth International Conference: Radiocarbon and Tritium Dating.

1965b Hopewell and the Dark Black Glass. The Michigan Archaeologist, Vol. 11: 115-55.

1967 Eastern North American Archaeology: A Summary. Science, Vol. 156: 175-191.

Griffin, James B., R. E. Flanders and P. F. Titterington
1970 The Burial Complexes of the Knight and Norton Mounds in Illinois and Michigan. Museum of Anthropology, Memoirs No. 2. Ann Arbor: University of Michigan.

Griffin, J. B., A. A. Gordus, and G. C. Wright
1969 Identification of the Sources of Hopewellian Obsidian in the Middle West. American Antiquity, Vol. 34: 1-14.

Griffin, James B. and Richard G. Morgan, eds.
1941 Contributions to the Archaeology of the Illinois River Valley. Transactions of the American Philosophical Society, n.s., Vol. 32, Pt. 1.

Griffin, John W.
1974 Investigations in Russell Cave. Publications in Archeology 13. Washington: National Park Service.

Griffin, John W., ed.
1949 The Florida Indian and His Neighbor. Winter Park: Inter-American Center, Rollins College.

Harper, Roland M.
1913 Economic Botany of Alabama. Montgomery: Geological Survey of Alabama.

Harrington, Mark R.
1922 Cherokee and Earlier Remains on Upper Tennessee River. Museum of the American Indian, Indian Notes and Monographs, No. 24. New York: Heye Foundation.

Harris, Corra
1950 A Sketch of the Pine Indian Cave. Early Georgia, Vol. 1: 41-42.

Haseltine, R. H.
1924 Iron Ore Deposits of Georgia. Bulletin No. 41. Atlanta: Geological Survey of Georgia.

Henricksen, Harry C.
1965 Utica Hopewell, A Study of Early Hopewellian Occupation in the Illinois River Valley. Bullitin No. 5. Urban: Illinois Archaeological Survey. pp. 1-67.

Higgs, E. S. and C. Vita-Pinzi
1972 Prehistoric Economies, a Territorial Approach. in E. S. Higgs, ed. Cambridge: Cambridge University Press. pp. 27-36.

Holder, Preston
1938 Excavation on St. Simons Island and Vicinity, Winter 1936-1937. Society for Georgia Archaeology, Proceedings, Vol. 1: 8-9.

Holliman, Rhodes B.
1968 Bird Hammock, Mound B, Revisited. Florida Anthropologist, Vol. 21: 61-66.

Holmes, W. H.
1894 Caribbean Influence on the Prehistoric Ceramic Art of the Southern States. The American Anthropologist, Vol. 7: 71-79.

1903 Aboriginal Pottery of the Eastern United States. Twentieth Annual Report. Bureau of American Ethnology, 1898-1899. Washington: Smithsonian Institution.

Hubbel, T. H., A. M. Laessle, and J. C. Dickinson
1956 The Flint-Chattahoochee-Apalachicola Region and its Environments. Florida State Museum, Biological Series, Vol. 1. Gainesville: University of Florida.

Huscher, H.
1959 Appraisal of the Archaeological Resources of the Walter F. George Area, Chattahoochee River, Alabama and Georgia. River Basin Surveys. Washington: Smithsonian Institution. (mimeographed).

Jefferies, Richard W.
n.d. Preliminary Report: Excavation of the Tunacunnhee Site (9 Dd 25), June-August 1973. (unpublished manuscript).

1975 The Tunacunnhee Site: Evidence of Hopewellian Interaction in Northwest Georgia. Unpublished M A Thesis, Department of Anthropology, University of Georgia.

Jennings, Jesse D.
1941 Chickasaw and Earlier Indian Cultures of Northeast Mississippi. The Journal of Mississippi History, Vol. 3: 155-226.

1946 Hopewell-Copena Sites Near Nashville. American Antiquity, Vol. 12: 126.

1952 Prehistory of the Lower Mississippi Valley. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 256-271.

Jennings, Jesse D. and C. Fairbanks
1939 Type Descriptions of Pottery. Newsletter, Southeastern Archaeological Conference, Vol. 1.

Jennings, Jesse D., G. R. Willey, and M. L. Newman
1957 The Ormond Beach Mound, East Central Florida. Anthropology Papers, No. 49, Bureau of American Ethnology, Bulletin 164. Washington: Smithsonian Institution. pp. 1-28.

Johnson, Frederick
1951 Radiocarbon Dating. Society for American Archaeology, Memoirs, No. 8.

Johnson, Gregory A.
1972 A Test of the Utility of Central Place Theory in Archaeology. in Peter J. Ucko, R. Tringham, and G. W. Dimbleby, eds. Man, Settlement and Urbanism. London: Gerald Duckworth and Co., Ltd. pp. 769-786.

Jones, C. C., Jr.
1873 Antiquities of the Southern Indians. New York.

1878 Aboriginal Structures in Georgia. Annual Report for 1877. Washington: Smithsonian Institution. pp. 278-279.

Jones, Grove B.
1908 Soil Survey of Henry County, Alabama. Field Operation of the Bureau of Soils, 10th Report. Washington: United States Department of Agriculture.

Jones, Volney H.
1951 Vegetable Material. in Cotter and Corbett, eds. Archeology of the Bynum Mounds. Archeology Research Series, No. 1. Washington: National Park Service. pp. 48-49.

Katz, Susanna R.
1974 Kansas City Hopewell Activities at the Deister Site. Museum of Anthropology, Research Series, No. 1. Lawrence: University of Kansas.

Keel, Bennie C.
1972 Woodland Phases of the Appalachian Summit Area. Doctoral Dissertation, Washington State University.

Keesing, Roger M. and Felix M. Keesing
1971 New Perspectives in Cultural Anthropology. New York: Holt, Rinehart and Winston, Inc.

Kellar, James H.
1960 The C. L. Lewis Stone Mound and the Stone Mound Problem. Indiana Historical Society, Prehistoric Research Series, Vol. 3. Indianapolis: Indiana Historical Society. pp. 357-481.

Kellar, James H., A. R. Kelly, and E. McMichael
1962a The Mandeville Site in Southwest Georgia. American Antiquity, Vol. 27: 336-355.

1962b Final Report on Archaeological Explorations at The Mandeville Site, 9 Cla 1, Clay County, Georgia, Seasons 1959, 1960, 1961. Laboratory of Archaeology Series Report No. 8. Athens: University of Georgia. (mimeographed).

Kelly, A. R.
1938 A Preliminary Report on Archaeological Excavations at Macon, Georgia. Anthropological Papers, No. 1. Bureau of American Ethnology, Bulletin 119. Washington: Smithsonian Institution. pp. 1-68.

1960 A Weeden Island Burial Mound in Decatur County, Georgia and Related Sites on the Lower Flint River. Laboratory of Archaeology Series, Report No. 1. Athens: University of Georgia.

1973 Early Villages on the Chattahoochee River, Georgia. Archaeology, Vol. 26: 32-37.

n.d.a North Georgia Cave Burials. Manuscript on file, Department of Anthropology, University of Georgia.

n.d.b Swift Creek Site. (unpublished manuscript).

Kelly, A. R., ed.
1950 News and Notes. Early Georgia, Vol. 1: 44.

Kelly, A. R., et. al.
1962a Survey of Archaeological Sites in Clay and Quitman Counties, Georgia. Laboratory of Archaeology Series, Report No. 5. Athens: University of Georgia.

1962b Report on Final 1962 Survey at Mandeville Site, 9 Cla 1, Chattahoochee River Basin Survey. (Unpublished manuscript on file in the Department of Anthropology, University of Georgia).

Kelly, A. R. and L. Meier
1969 A Pre-Agricultural Village Site in Fulton County, Georgia. Proceedings of the 26th Southeastern Archaeological Conference, Bulletin 11: 26-29.

Kelly, A. R. and Betty A. Smith
1975 The Swift Creek Site, 9 Bi 3, Macon, Georgia. Report submitted to the National Park Service, August, 1975.

Koehler, Thomas Hume
1966 Archaeological Excavation of the Womack Mound (22-Ya-1). Bulletin No. 2, Mississippi Archaeological Association.

Kottak, Conrad P.
1974 Anthropology: The Exploration of Human Diversity. New York: Random House, Inc.

Kroeber, Alfred L.
1939 Cultural and Natural Areas of Native North America. Publications in American Archaeology and Ethnology, Vol. 38. Berkley: University of California Press.

Kurjack, Edward B.
1963 A Progress Report of Archaeological Salvage Operations in the Walter F. George Basin. (abstract). Journal of the Alabama Academy of Science, Vol. 34: 13-14.

Langford, George
1927 The Fisher Mound. Successive Aboriginal Occupations near the Mouth of the Illinois River. American Anthropologist, Vol. 29: 152-206.

Lamberg-Karlovsky, C. C.
1974 Trade Mechanisms in Indus-Mesopotamian Interrelations. in Sabloff and Lamberg-Karlovsky, eds. The Rise and Fall of Civilizations. Menlo Park: Cummings Publishing Co. pp. 302-313.

Lathrop, Donald W., Recorder and Editor
1956 An Archaeological Classification of Culture Contact Situations. in Wauchope, ed. Seminars in Archaeology: 1955. Society for American Archaeology Memoir 11. pp. 3-30.

LeClair, Edward E., Jr. and Harold K. Schneider
1968 Economic Anthropology: Readings in Theory and Analysis. New York: Holt, Rinehart and Winston.

Lenski, Gerhard
1973 Human Societies. New York: McGraw-Hill Book Co.

Lewis, T. M. N. and Madeline Kneberg
1957 The Camp Creek Site. Tennessee Archeologist, Vol. 13: 1-48.

MacNeish, Richard S.
1952 The Archeology of the Northeastern United States. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 46-58.

McCallie, S. W., ed.
1925 Physical Geography of Georgia. Bulletin No. 42. Atlanta: Geological Survey of Georgia.

McGregor, John C.
1952 The Havanna Site. in Thorne Deuel, ed. Hopewellian Communities in Illinois. Scientific Papers, Vol. 5. Springfield: Illinois State Museum. pp. 44-91.

1957 Prehistoric Village Distribution in the Illinois Valley. American Antiquity, Vol. 22: 272-79.

1958 The Pool and Irving Villages: A Study of Hopewell Occupation in the Illinois River Valley. Urbana: University of Illinois Press.

McIntire, William G.
1958 Prehistoric Indian Settlements of the Changing Mississippi River Delta. Coastal Study Series, No. 1. Baton Rouge: Louisiana State University Press.

McKern, W. C.
1931 A Wisconsin Variant of the Hopewell Culture. Bulletin, Vol. 10, No. 2. Milwaukee: Milwaukee Public Museum.

McKern, W. C., P. F. Titterington, and J. B. Griffin
1945 Painted Pottery Figurines from Illinois. American Antiquity, Vol. 10: 295-302.

McKinney, Joe J.
1954 Hopewell Sites in the Big Bend Area of Central Missouri. Missouri Archaeologist, Vol. 16: 7-54.

McMichael, E. V.
1959 Mandeville - 9 Cla 1 - Md. A, Field Diary. On file, Department of Anthropology, University of Georgia.

1960 The Anatomy of a Tradition: A Study of Southeastern Stamped Pottery. Unpublished Ph. D. dissertation, Indiana University.

1964 Veracruz, the Crystal River Complex, and the Hopewellian Climax. in Joseph R. Caldwell and R. L. Hall, eds. Hopewellian Studies. Scientific Papers, Vol. 12. Springfield: Illinois State Museum. pp. 123-132.

McMichael, E. V. and J. H. Kellar
1960a Mandeville Site (9 Cla 1): First Season. Unpublished manuscript, Department of Anthropology, University of Georgia.

1960b Archeological Salvage in the Oliver Basin. Laboratory of Archeology Series, Report No. 2. Athens: University of Georgia.

Magrath, W. H.
1945 The North Benton Mound: A Hopewell Site in Ohio. American Antiquity, Vol. 11: 40-46.

Martin, Frances P.
1954 A Vanderburgh County Site with Southern Affinities. Proceedings of the Indiana Academy of Science, Vol. 63: 57-58.

1958 The Southern Affinities of the Ellerbusch Site, Warrick County, Indiana. Proceedings of the Indiana Academy of Science, Vol. 67: 90. (abstract).

Mattoon, Wilbur R.
1923 Common Forest Trees of Georgia. Forest Service, Vol. 7. Athens: United States Department of Agriculture.

Maxwell, Moreau S.
1951 Woodland Cultures in Southern Illinois: Archaeological Excavations in the Carbondale Area. Publications in Anthropology, Bulletin No. 7. Beloit: Logan Museum, Beloit College.

1952 The Archeology of the Lower Ohio Valley. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 176-189.

Michels, Joseph W.
1973 Dating Methods in Archaeology. New York: Seminar Press.

Mills, William C.
1906 Baum Prehistoric Village. Ohio State Archaeological and Historical Quarterly, Vol. 15: 45-136.

1907 The Explorations of the Edwin Harness Mound. Ohio State Archaeological and Historical Quarterly, Vol. 16: 113-93.

1916a Exploration of the Tremper Mound. Ohio State Archaeological and Historical Quarterly, Vol. 25: 263-398.

1916b Certain Mounds and Village Sites in Ohio, Vol. II, Pt. 3.

1917 Explorations of the Westenhaver Mound. Ohio State Archaeological and Historical Quarterly, Vol. 26: 227-66.

1921 Flint Ridge. Ohio Archaeological and Historical Quarterly, Vol. 30: 90-161.

1922 Exploration of the Mound City Group. Ohio Archaeological and Historical Quarterly, Vol. 31: 423-584.

1926 Exploration of the Hopewell Group. Certain Mounds and Village Sites in Ohio, Vol. 4, Pt. 4: 204-267.

Montet-White, Anta
1968 The Lithic Industries of the Illinois Valley in the Early and Middle Woodland Period. Museum of Anthropology, Anthropology Papers, No. 35. Ann Arbor: University of Michigan.

Moore, C. B.
1892 Supplementary Investigation at Tick Island. American Naturalist, Vol. 26: 568-79.

1893 Certain Shell Heaps of the St. Johns River, Florida, Hitherto Unexplored. American Naturalist, Vol. 27: 8-13; 113-17; 605-24; 709-33.

1894a Certain Sand Mounds of the St. John's River, Florida, Part I. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 10: 5-105.

1894b Certain Sand Mounds of the St. John's River, Florida, Part II. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 10: 129-246.

1895a Certain River Mounds of Duval County, Florida. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 10: 449-502.

1895b Two Mounds on Murphy Island, Florida. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 10: 503-516.

1895c Certain Sand Mounds of the Oklawaha River, Florida. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 10: 518-543.

1897 Certain Aboriginal Mounds of the Georgia Coast. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 11: 1-138.

1901 Certain Aboriginal Remains of the Northwest Coast of Florida, Part I. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 11: 421-497.

1902 Certain Aboriginal Remains of the Northwest Florida Coast, Part 2. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 12: 127-358.

1903 Certain Aboriginal Mounds of the Florida West Coast. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 12: 361-438.

1905 Aboriginal Remains of Black Warrior River, Lower Tombigbee River, Mobile Bay and Mississippi Sound, and Miscellaneous Investigations in Florida. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 13: 125-332.

1907a Crystal River Revisited. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 13: 406-424.

1907b Mounds of the Lower Chattahoochee and Lower Flint Rivers. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 13: 426-456.

1915 Aboriginal Sites on Tennessee River. Journal of the Academy of Natural Sciences of Philadelphia, n.s., Vol. 16: 170-428.

1918 The Northwest Florida Coast Revisited. Journal of the Academy of Natural Sciences of Philadelphia, Vol. 16: 514-581.

1922 Additional Mounds of Duval and of Clay Counties, Florida. Museum of the American Indian, Miscellaneous Papers, No. 26. New York: Heye Foundation. pp. 9-34.

Moorehead, Warren K.
1922 The Hopewell Mound Group of Ohio. Publication 211, Anthropological Series, Vol. 6. Chicago: Field Museum of Natural History. pp. 75-185.

Morgan, Richard G.
1952 Outline of Cultures in the Ohio Region. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 83-98.

Morrell, L. Ross
1960 Oakland Mound (Je 53), Florida. The Florida Anthropologist, Vol. 13: 101-109.

Morrison, J. P. E.
1951 Shell Material. in Cotter and Corbett, eds. Archeology of the Bynum Mounds. Washington: National Park Service. p. 50.

Morse, Dan F.
1963 The Steuben Village and Mounds: A Multicomponent Late Hopewell Site in Illinois. Museum of Anthropology, Anthropological Papers, No. 21. Ann Arbor: University of Michigan.

1970 Recent Indications of Dalton Settlement Pattern in Northeast Arkansas. Proceedings of the Twenty-seventh Southeastern Archaeological Conference, Bulletin No. 13: 5-10.

Myer, William E.
1928 Indian Trails of the Southeast. Forty-second Annual Report, Bureau of American Ethnology, 1924-1925. Washington: Smithsonian Institution. pp. 727-857.

Neumann, George K. and Melvin L. Fowler
1952 Hopewellian Sites in the Lower Wabash Valley. in Thorne Deuel, ed. Hopewellian Communities in Illinois. Scientific Papers, Vol. 5. Springfield: Illinois State Museum. pp. 177-248.

Newell, H. Perry and A. D. Krieger
1949 The George C. Davis Site, Cherokee County, Texas. Society for American Archaeology, Memoir No. 5.

Noakes, John E. and B. L. Brandau
1974 University of Georgia Radiocarbon Dates III. Radiocarbon, Vol. 16: 131-141.

Nonas, Richard and C. de Baillau
1962 Cultural History at 9 Cla 2 Clay County, Georgia. in Kelly, et. al., Survey of Archaeological Sites in Clay and Quitman Counties, Georgia. Laboratory of Archaeology Series, Report No. 5. Athens: University of Georgia. pp. 1-12.

Ogden, J. G., III and R. J. Hay
1964 Ohio Wesleyan University Natural Radiocarbon Measurements I. Radiocarbon, Vol. 6: 340-348.

Olien, Michael D.
1973 Latin Americans: Contemporary Peoples and Their Cultural Traditions. New York: Holt, Rinehart and Winston, Inc.

Olson, Edwin A. and W. S. Broecker
1959 Lamont Natural Radiocarbon Measurements, 5. Radiocarbon, Vol. 1: 21.

Orr, Kenneth G.
1952 Survey of Caddoan Area Archeology. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 239-255.

Ottaway, B.
1973 Dispersion Diagrams: A New Approach to the Display of Carbon-14 Dates. Archaeometry, Vol. 15: 5-12.

Pearson, F. J., Jr., E. M. Davis, and H. A. Tamers
1966 University of Texas Radiocarbon Dates IV. Radiocarbon, Vol. 8: 453-466.

Penton, Daniel T.
1970 Excavations in the Early Swift Creek Component at Bird Hammock (8 Wa 30). MA thesis, Department of Anthropology, Florida State University.

1974 The Early Swift Creek Phase in North Florida: Internal Expressions and External Connections. (paper read before 39th annual meeting, Society for American Archaeology, Washington, D. C.)

Perino, Gregory
1966 A Preliminary Report on the Peisker Site, Part 2--The Hopewell Occupation. Central States Archeological Journal 13: 84-89.

1968 The Pete Klunk Mound Group, Calhoun County, Illinois: The Archaic and Hopewell Occupations (With an Appendix on the Gibson Mound Group). in J. A. Brown, ed. Hopewell and Woodland Site Archaeology in Illinois. Bulletin 6. Urbana: Illinois Archaeological Survey. pp. 9-128.

Phelps, David S.
1966 Early and Late Components of the Tucker site. The Florida Anthropologist, Vol. 19: 11-38.

1969a Swift Creek and Santa Rosa in Northwest Florida. The Institute of Archaeology and Anthropology Notebook, Vol. 1: 14-24.

1969b Mesoamerican Glyph Motifs on Southeastern Ceramics. Proceedings of the XXXVIIIth International Congress of Americanists.

Phillips, Philip
1970 Archaeological Survey in the Lower Yazoo Basin, Mississippi, 1949-1955. Papers of the Peabody Museum of Archaeology and Ethnology, Vol. 60. Cambridge: Harvard University.

1973 The Archaeological Reports of Frederic Ward Putnam. Antiquities of the New World: Early Explorations in Archaeology, Vol. 8. New York: AMS Press, Inc.

Phillips, Philip, James A. Ford, and James B. Griffin
1951 Archaeological Survey in the Lower Mississippi Alluvial Valley, 1940-1947. Papers of the Peabody Museum of American Archeology and Ethnology, Vol. 25. Cambridge: Harvard University.

Plog, Fred and James N. Hill
1971 Explaining Variability in the Distribution of Sites. in George I. Gumerman, ed. The Distribution of Prehistoric Population Aggregates. Prescott College Anthropological Reports 1: 7-36.

Porter, M. N.
1953 Tlatilco and the Pre-Classic Cultures of the New World. Viking Fund Publication in Anthropology, No. 19. New York: Wenner-Gren Foundation.

Powell, B. Bruce
1957 Hopewellian Pottery of the Lower Illinois Valley: the Snyders Site Ceramics. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 42: 219-224.

Prufer, O. H.
1961a The Hopewell Complex of Ohio. Unpublished Ph. D. dissertation, Peabody Museum, Harvard University.

1961b Prehistoric Hopewell Meteorite Collecting: Context and Implications. Ohio Journal of Science, Vol. 61: 341-52.

1964a The Hopewell Complex of Ohio. in Joseph R. Caldwell and R. L. Hall, eds. Hopewellian Studies. Scientific Papers, Vol. 12. Springfield: Illinois State Museum. pp. 35-84.

1964b The Hopewell Cult. Scientific American, Vol. 211: 90-102.

1964c Hopewell versus Meso-America and Asia. XXXV Congress Internacional de Americanistas 1962, Actas y Memorias 1: 113-120.

1968 Ohio Hopewell Ceramics: An Analysis of the Extant Collections. Museum of Anthropology, Anthropological Papers, 33. Ann Arbor: The University of Michigan.

Prufer, O. H., et. al.
1965 The McGraw Site: A Study in Hopewellian Dynamics. Scientific Publications, New Series, Vol. 4. Cleveland: Museum of Natural History.

Prufer, Olaf H. and D. H. McKenzie
1967 Studies in Ohio Archaeology. Cleveland: Western Reserve University Press.

Putnam, Fredrick W.
1882 Notes on the Copper Objects from North and South America. First Annual Report of Peabody Museum of American Archaeology and Ethnology, Vol. 3: 166-167, 110-111, 121-122.

Quimby, George I.
1941a The Goodall Focus: An Analysis of Ten Hopewellian Components in Michigan and Indiana. Prehistoric Research Series, Vol. 2. Indianapolis: Indiana Historical Society. pp. 63-147.

1941b Hopewellian Pottery Types in Michigan. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 28: 489-494.

1943a The Ceramic Sequence Within the Goodall Focus. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 28: 543-548.

1943b A Subjective Interpretation of Some Design Similarities between Hopewell and Northern Algonquian. American Anthropologist, Vol. 45: 630-633.

1944 Some New Data on the Goodall Focus. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 29: 419-23.

1952 The Archeology of the Upper Great Lakes Area. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 99-107.

Rackerby, Frank
1969 Preliminary Report on the Macoupin Site: A Lower Illinois Valley Middle Woodland Settlement. (unpublished paper presented at the 1969 Society for American Archaeology Meetings).

1970 Exchange Systems and the Hopewell Interaction Sphere. (unpublished paper prepared for 1970 Society for American Archaeology Meetings).

Rathje, William L.
1971 The Origin and Development of Lowland Classic Maya Civilization. American Antiquity, Vol. 36: 275-285.

Rein, Judith S.
1974 The Complicated Stamped Pottery of the Mann Site, Posey County, Indiana. Unpublished M A thesis, Indiana University.

Ritchie, William A.
1965 The Archaeology of New York State. Garden City: The Natural History Press.

Roberts, Frank H., director
1963 Eightieth Annual Report, Bureau of American Ethnology, 1962-1963. Washington: Smithsonian Institution. pp. 7-8.

Roedl, Leo J. and J. H. Howard
1957 Archeological Investigations at the Renner Site. Missouri Archeologist 19: 52-96.

Rouse, Irving
1972 Introduction to Prehistory: A Systematic Approach. New York: McGraw-Hill Book Company.

Sahlins, Marshall D.
1965 On the Sociology of Primitive Exchange. The Relevance of Models for Social Anthropology. Association of Social Anthropologist Monographs I. New York: Fredrick Praeger.

1968 Tribesmen. Foundations of Modern Anthropology Series. Englewood Cliffs: Prentice-Hall, Inc.

Schmitt, Karl
1952 Archeological Chronology of the Middle Atlantic States. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 59-70.

Schneider, K. A., J. D. Spaulding, and J. E. Noakes
n.d. Tracing the Origins of Georgia Copper Artifacts by Neutron Activation Analysis. (unpublished manuscript).

Schultz, Floyd and A. C. Spaulding
1948 A Hopewellian Burial Site in the Lower Republican Valley, Kansas. American Antiquity, Vol. 13: 306-313.

Sears, William H.
1958 Burial Mounds on the Gulf Coastal Plain. American Antiquity, Vol. 23: 274-284.

1961 The Study of Social and Religious Systems in North American Archaeology. Current Anthropology, Vol. 2: 223-246.

1962 The Hopewellian Affiliations of Certain Sites on the Gulf Coast of Florida. American Antiquity, Vol. 28: 5-18.

1963 The Tucker Site on Alligator Harbor, Franklin County, Florida. Contributions of the Florida State Museum, Social Sciences, No. 9. Gainesville: University of Florida.

1971 Food Production and Village Life in Prehistoric Southeastern United States. Archaeology, Vol. 24: 322-329.

Setzer, Henry W.
1951 Animal Bones. in Cotter and Corbett, eds. Archaeology of the Bynum Mounds. Archeological Research Series, No. 1. Washington: National Park Service.

Setzler, Frank M.
1933a Hopewell Type Pottery from Louisiana. Journal, Washington Academy of Sciences, Vol. 23: 149-153.

1933b Pottery of the Hopewell Type from Louisiana. Proceedings, United States National Museum, Vol. 82, Article 22. Washington: Smithsonian Institution. pp. 1-21.

1934 A Phase of the Hopewell Mound Builders in Louisiana. Explorations and Field-Work of the Smithsonian Institution in 1933, pub. no. 3235. Washington: Smithsonian Institution. pp. 38-40.

Sharon, Donald W. and J. W. Bunn, Jr.
1973 A Swift Creek Midden at the Wheeler Springs Site, Wynnhaven Beach, Florida. Florida Anthropologist, Vol. 26: 153-156.

Shelford, Victor E.
1963 The Ecology of North America. Urbana: University of Illinois Press.

Shetrone, Henry C.
1920 The Culture Problem in Ohio Archaeology. American Anthropologist, Vol. 22: 144-172.

1924 Exploration of the Wright Group of Prehistoric Earthworks. Ohio State Archaeological and Historical Quarterly, Vol. 33: 341-58.

1925 Exploration of the Ginther Mound: the Miesse Mound. Ohio State Archaeological and Historical Quarterly, Vol. 34: 154-168.

1926 Exploration of the Hopewell Group of Prehistoric Earthworks. Ohio State Archaeological and Historical Quarterly, Vol. 35: 1-227.

1930 The Moundbuilders. New York: Appleton-Century.

Shetrone, H. C. and E. F. Greemman
1931 Explorations of the Seip Group of Prehistoric Earthworks. Ohio State Archaeological and Historical Quarterly, Vol. 40: 349-509.

Shippee, J. M.
1967 Archaeological Remains in the Area of Kansas City. The Woodland Period, Early, Middle and Late. Missouri Archaeological Society Research Series, No. 5.

Shutler, Dick, Jr., and P. E. Damon
1959 University of Arizona Radiocarbon Dates, 2. Radiocarbon, Vol. 1: 60.

Silverberg, Robert
1975 The Moundbuilders. New York: Ballantine Books.

Smith, Betty Anderson
1972 An Analysis of Regional Variations of Deptford Pottery. (unpublished Master's Thesis, Department of Anthropology, University of Georgia).

Smith, Eugene A. and H. McCalley
1904 Index to the Mineral Resources of Alabama. Montgomery: Geological Survey of Alabama.

Smith, Hale G.
1951 Cyrstal River, Revisited, Revisited, Revisited. American Antiquity, Vol. 17: 143-144.

Smith, Robert
1966 Excavating the Hopewell Burial Mounds at Grand Rapids. Research News, Vol. 16. Ann Arbor: The University of Michigan.

Smith, William G. and N. M. Kirk
1914 Soil Survey of Clay County, Georgia. Field Operations of the Bureau of Soils. Washington: United States Department of Agriculture. pp. 919-960.

Spalding, A. C.
1958 The Significance of Differences between Radiocarbon Dates. American Antiquity, Vol. 23: 309-311.

Squier, Ephraim G. and Edwin H. Davis
1848 Ancient Monuments of the Mississippi Valley. Smithsonian Contributions to Knowledge, Vol. 1. Washington: Smithsonian Institution.

Steinen, Karl T.
1971 Analysis of the Non-ceramic Artifacts from a Hopewellian Affiliated Site in Glades County, Florida. (unpublished Master's Thesis, Florida Atlantic University).

Steward, Julian
1973 The Concept and Method of Cultural Ecology. in Bohannan and Glazer, eds. High Points in Anthropology. New York: Alfred A. Knopf. pp. 322-332.

Struever, Stuart
1962 Implications of Vegetal Remains from an Illinois Hopewell Site. American Antiquity, Vol. 27: 584-587.

1964 The Hopewell Interaction Sphere in Riverine-Western Great Lakes Culture History. in Joseph R. Caldwell and R. L. Hall, eds. Hopewellian Studies. Scientific Papers, Vol. 12. Springfield: Illinois State Museum. pp. 85-106.

1965 Middle Woodland Culture History in the Great Lakes Riverine Area. American Antiquity 31: 211-223.

1968a A Re-Examination of Hopewell in Eastern North America. Unpublished Ph. D. dissertation, Department of Anthropology, University of Chicago.

1968b Woodland Subsistence-Settlement Systems in the Lower Illinois Valley. in Sally R. Binford and Lewis R. Binford, eds. New Perspectives in Archaeology. Chicago: Aldine Publishing Co. pp. 285-312.

Struever, Stuart and Gail L. Houart
1972 An Analysis of the Hopewell Interaction Sphere. in Edwin N. Wilmsen, ed. Social Exchange and Interaction. Museum of Anthropology, Anthropological Papers, No. 46. Ann Arbor: University of Michigan. pp. 47-79.

Struever, Stuart and K. D. Vickery
1973 The Beginnings of Cultivation in the Midwest-Riverine Area of the United States. American Anthropologist, Vol. 75: 1197-1220.

Swanton, John R.
1946 The Indians of the Southeastern United States. Bureau of American Ethnology, Bulletin 137. Washington: Smithsonian Institution.

Swartz, B. K., Jr.
1972 A Provisional Taxonomy of Prufer's Scioto Tradition. Proceedings of the Indiana Academy of Science for 1971, Vol. 81: 81-85.

Taylor, Walter W.
1948 A Study of Archaeology. American Anthropological Association, Memoir 69.

Thomas, Cyrus
1894 Report on the Mound Explorations of the Bureau of American Ethnology. Annual Report, Bureau of American Ethnology, Vol. 12. Washington: Smithsonian Institution. pp. 3-730.

Thurston, Gates P.
1890 The Antiquities of Tennessee and the Adjacent States. Cincinnati.

Toth, Alan
1966 Hopewellian Influence in the Southeastern United States. Unpublished honors thesis, Department of Anthropology, Harvard University.

1972 The Marksville Period in the Lower Mississippi Valley. (Paper read to the Society for American Archaeology).

1974a Marksville Period Ceramics. Unpublished M. A. Thesis, Louisiana State University.

1974b Archaeology and Ceramics at the Marksville Site. Museum of Anthropology, Anthropological Papers, No. 56. Ann Arbor: University of Michigan.

Trickery, E. B.
1958 A Chronological Framework for the Mobile Bay Region. American Antiquity, Vol. 23: 388-396.

Trickey, E. Bruce and N. H. Holmes, Jr.
1971 A Chronological Framework for the Mobile Bay Region. Journal of Alabama Archaeology, Vol. 17: 115-128.

Trigger, Bruce G.
1967 Settlement Archaeology - its Goals and Promise. American Antiquity, Vol. 32: 149-160.

Ucko, Peter J.
1969 Ethnology and Archaeological Interpretation of Funerary Remains. World Archaeology, Vol. 1: 262-280.

Valestro, S., Jr., E. Mott Davis, and C. T. Rightmire
1968 University of Texas Radiocarbon Dates VI. Radiocarbon, Vol. 10: 384-401.

Van Vleet, James F.
n.d. Greenstone, Its Distribution and Geological Analysis in an Attempt to Cite Probable Outcrops Accessible to Aboriginal Inhabitants in Middle and Eastern Tennessee. Research Paper on File in the Department of Anthropology, University of Tennessee.

Veatch, Otto and L. W. Stephenson
1911 Preliminary Report on the Geology of the Coastal Plain of Georgia. Bulletin No. 26. Atlanta: Geological Survey of Georgia.

Vesceluis, G. S.
1957 Mound 2 at Marksville. American Antiquity, Vol. 22: 416-420.

Vickery, Kent D.
1970 Evidence Supporting the Theory of Climatic Change and the Decline of Hopewell. Wisconsin Archaeologist, N.S., Vol. 51: 57-76.

Vogt, Evan Z.
1956 An Appraisal of Prehistoric Settlement Patterns in the New World. in Willey, ed. Prehistoric Settlement Patterns in the New World. New York: Wenner-Gren Foundation.

Walker, Winslow M.
1952 The Dickinson Mound Group, Peoria County. in Thorne Deuel, ed. Hopewellian Communities in Illinois. Scientific Papers, Vol. 5. Springfield: Illinois State Museum. pp. 13-41.

Walthall, John A.
1972 The Chronological Position of Copena in Eastern States Archaeology. Journal of Alabama Archaeology, Vol. 18: 137-151.

1973 Copena: A Tennessee Valley Middle Woodland Culture. Unpublished Ph. D. dissertation, University of North Carolina.

n.d. Ceramic Figurines, Porter Hopewell, and Middle Woodland Interaction. (unpublished manuscript).

Watson, Thomas L.
1906 A Preliminary Report on the Ocher Deposits of Georgia. Bulletin No. 13. Atlanta: Geological Survey of Georgia.

Wauchope, Robert
1966 Archaeological Survey of Northern Georgia. Society for American Archaeology, Memoir 21.

Webb, Malcolm C.
1974 Exchange Networks: Prehistory. Annual Review of Anthropology, Vol. 3: 357-383. Palo Alto: Annual Reviews Inc.

Webb, William S. and David DeJarnette
1942 An Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi, and Tennessee. Bulletin 129. Washington: Bureau of American Ethnology.

Wedel, Waldo R.
1940 Hopewellian Remains Near Kansas City, Missouri. Proceedings, United States National Museum, Vol. 83. Washington: Smithsonian Institution. pp. 99-106.

1943 Archeological Investigations in Platte and Clay Counties, Missouri. United States National Museum, Bulletin 183. Washington: Smithsonian Institution.

Willey, Gordon R.
1948 The Cultural Context of the Crystal River Negative-painted Style. American Antiquity, Vol. 13: 325-328.

1949 Archeology of the Florida Gulf Coast. Smithsonian Miscellaneous Collections, Vol. 113. Washington: Smithsonian Institution.

1950 Crystal River, Florida: A 1949 Visit. The Florida Anthropologist, Vol. 2: 40-46.

1962 The Early Great Styles and the Rise of Pre-Columbian Civilizations. American Anthropologist, Vol. 64: 1-14.

1966 An Introduction to American Archaeology, Vol. 1 North and Middle America. Englewood Cliffs: Prentice-Hall, Inc.

Willey, Gordon R., ed.
1956 Prehistoric Settlement Patterns in the New World. Viking Fund Publication in Athropology, No. 23. New York: Wenner-Gren Foundation.

Willey, Gordon R. and Philip Phillips
1944 Negative-painted Pottery from Crystal River, Florida. American Antiquity, Vol. 10: 173-185.

1965 Method and Theory in American Archaeology. Chicago: The University of Chicago Press.

Williams, Stephen, ed.
1967 The Waring Papers: The Southern Cult and Other Archaeological Essays. Athens: The University of Georgia Press.

Williams, Stephen, ed.
1973 The Selected Archaeological Papers of Frederic Ward Putnam. New York: AMS Press, Inc.

Willoughby, C. C. and E. H. Hooton
1922 The Turner Group of Earthworks, Hamilton County Ohio. Papers of the Peabody Museum of Archaeology and Ethnology, Vol. 8. Cambridge: Harvard University.

Wilmsen, Edwin N.
1972 Introduction: The Study of Exchange as Social Interaction. in E. N. Wilmsen, ed. Social Exchange and Interaction. Museum of Anthropology, Anthropological Papers, No. 46. Ann Arbor: University of Michigan. pp. 1-4.

Wilson, Rex L.
1965 Excavations at the Mayport Mound, Florida. Contributions of the Florida State Museum. Social Sciences, No. 13. Gainesville: University of Florida.

Wimberly, Steve B.
1960 Indian Pottery from Clarke County and Mobile County, Southern Alabama. Alabama Museum of Natural History, Museum Paper No. 36. University: Geological Survey of Alabama.

Wimberly, Stephen B. and Harry A. Tourtelot
1941 The McQuorquodale Mound, A Manifestation of the Hopewellian Phase in South Alabama. Alabama Museum of Natural History, Museum Paper No. 19. University: Geological Survey of Alabama.

Winters, Howard D.
1962 The Adler Mound Group, Will County, Illinois. in Elaine A. Bluhm, ed. Bulletin 3. Urbana: Illinois Archaeological Survey. pp. 57-88.

1963 An Archaeological Survey of the Wabash Valley in Illinois. Reports of Investigations, No. 10. Springfield: Illinois State Museum.

1968 Value Systems and Trade Cycles of the Late Archaic in the Midwest. in S. R. Binford and L. R. Binford, eds. New Perspectives in Archeology. Chicago: Aldine Publishing Co. pp. 175-221.

1969 The Riverton Culture, A Second Millenium Occupation in the Central Wabash Valley. Reports of Investigations, No. 13. Springfield: Illinois State Museum.

Witherspoon, Y. T.
1961 A Statistical Device for Comparing Trait Lists. American Antiquity, Vol. 26: 433-436.

Wray, Donald E.
1952 Archeology of the Illinois Valley: 1950. in J. B. Griffin, ed. Archeology of Eastern United States. Chicago: University of Chicago Press. pp. 152-164.

Wray, Donald E., and Richard S. MacNeish
1961 The Hopewellian and Weaver Occupations of the Weaver Site, Fulton County, Illinois. Scientific Papers, Vol. 7, No. 2. Springfield: Illinois State Museum.

Yarnell, Richard A.
1964 Aboriginal Relationships Between Culture and Plant Life in the Upper Great Lakes Region. Museum of Anthropology, Anthropological Papers, No. 23. Ann Arbor: University of Michigan.

Plate 1: Mandeville, Mound A

(photograph made from slide in Department of Anthropology, University of Georgia)

Plate 2: Mound A, South Profile

(photograph made from slide in Department of Anthropology, University of Georgia)

Plate 3: Franklin Plain

Top left: 70L0, L. IV, 6"-12"

Lower left: L. IV, F 29

Top right: L. IV, F 29

Right center: no provenience

Lower right: 40-50L0, L. II, 6"-18"

Plate 4: Gulf Check Stamped

Top left: L. IV, F 29

Top center: L. IV, F 14

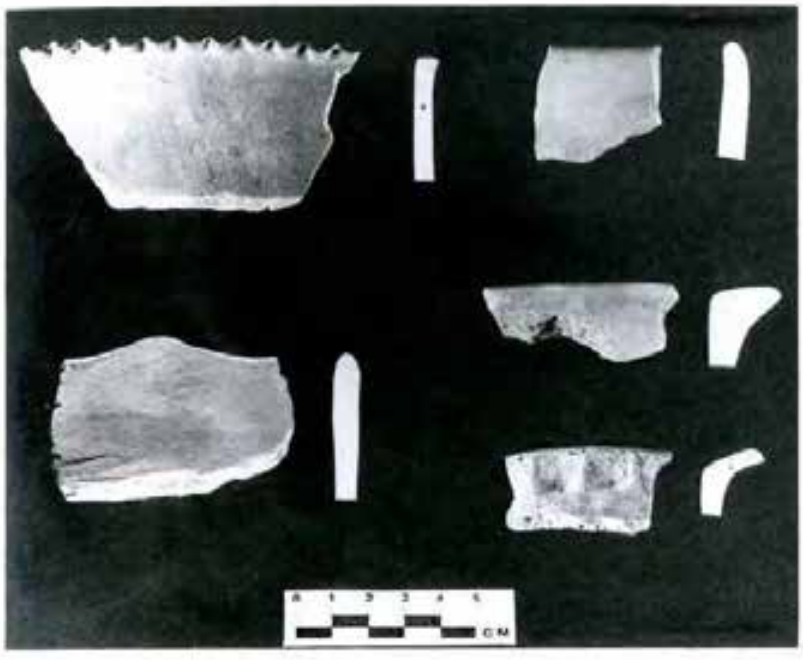
Top right: L. IV, F 29

Center: 20L0, L. I, 6"-12"

Lower left: L. IV, F 29

Lower center: L. I, F 51-52

Lower right: 40-50L0, L. III, 15"-21"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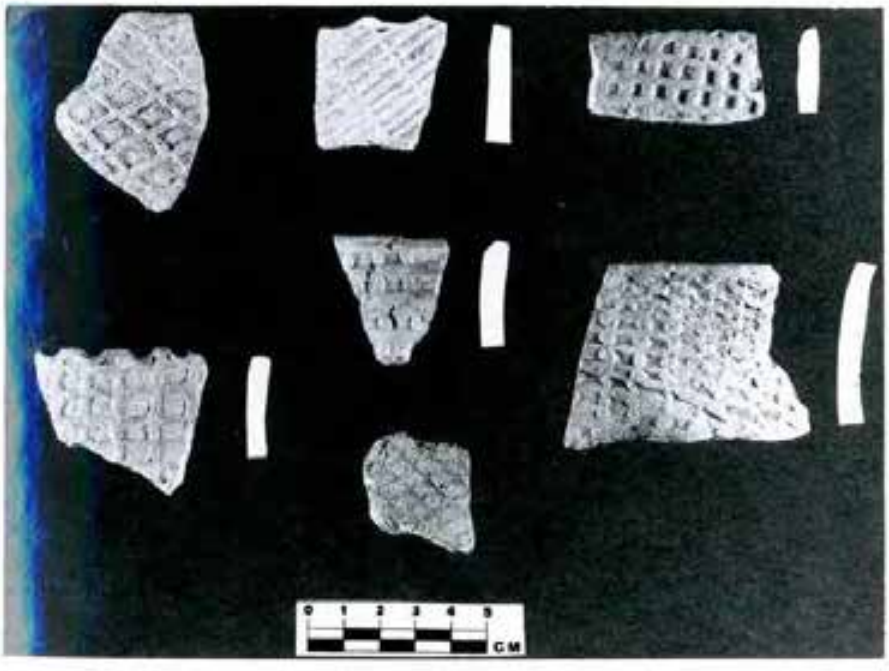
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Plate 5: Gulf Check Stamped

L. IA, removing F 25 between VT#1 and VT#2

Plate 6: Unnamed Simple Stamped

Top left: 40-50LO, L. II, 6"-18"

Lower left: 40-50LO, L. I, below 12"

Center: 40-50LO, L. II, 0-6"; 30LO, L. I, 6"-12"

Top right: L. IA, F 34

Right center: 60-70LO, L. IV, 0-6"

Lower right: 40-50LO, L. I, below 12"


0 1 2 3 4 5
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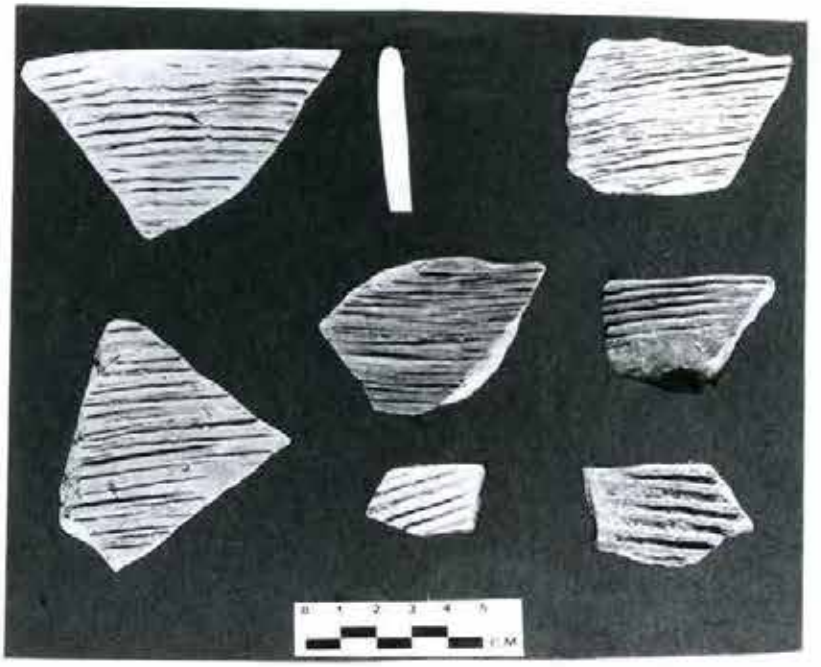
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Plate 7: West Florida Cord Marked

Top: Expanded test trench #4

Bottom: L. IA, F 36

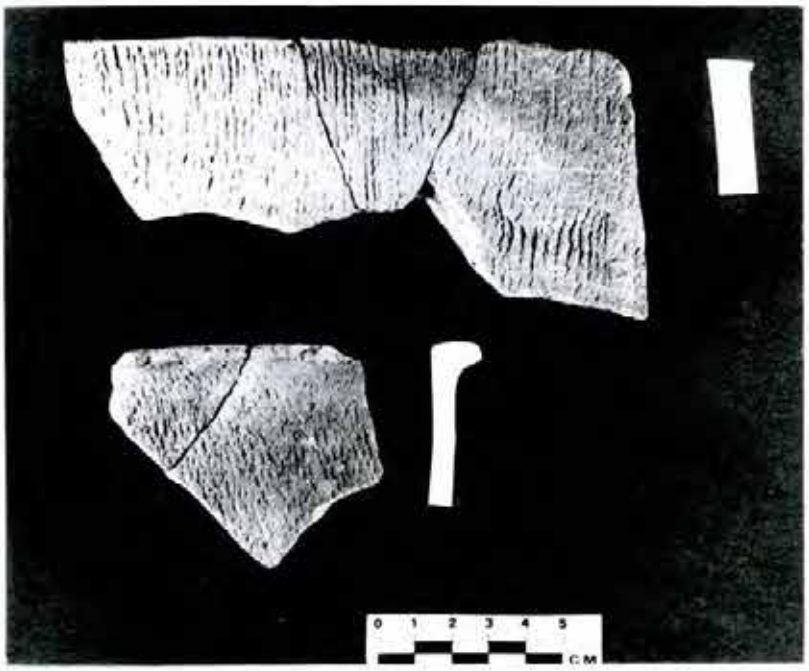
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Plate 8: West Florida Cord Marked
40-50LO, L. I, 0-6"

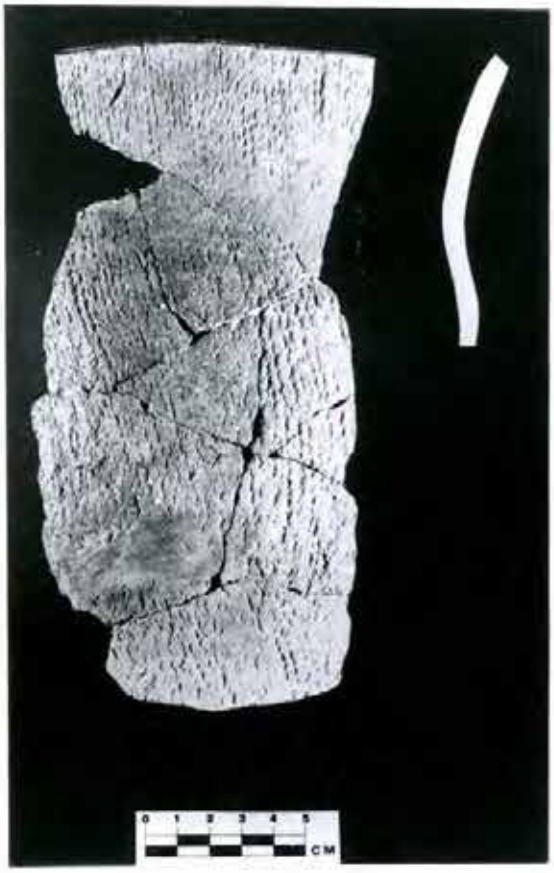
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Plate 9: Early Swift Creek Complicated Stamped
40-50LO, L. I, 6"-12"

Plate 10: Early Swift Creek Complicated Stamped
60-80LO, L. IIIA, 24"-36"


0 1 2 3 4 5
CM


0 1 2 3 4 5
CM

Plate 11: Early Swift Creek Complicated Stamped
no provenience

Plate 12: Early Swift Creek Complicated Stamped
L. IA, cleaning top of brown layer over F 25

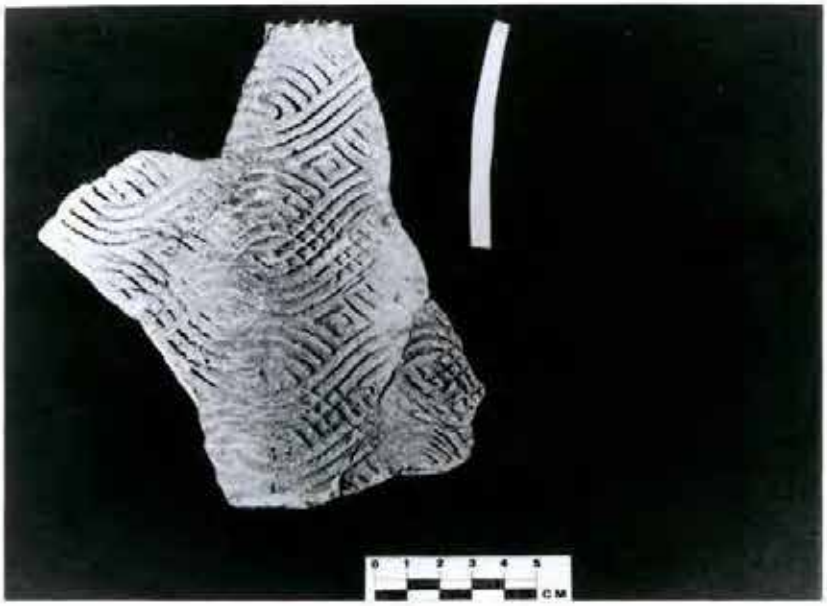
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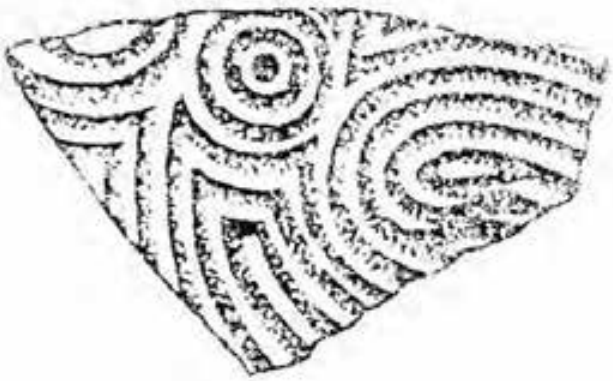
Plate 13: Early Swift Creek Complicated Stamped
no provenience

Plate 14: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)



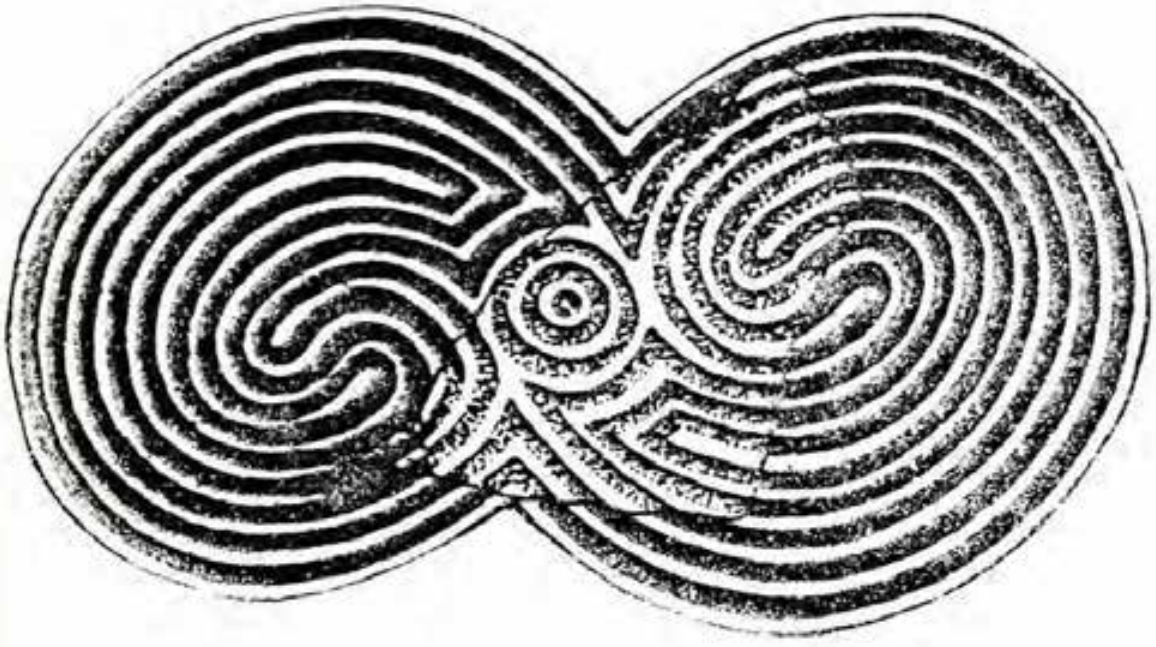


Plate 15: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

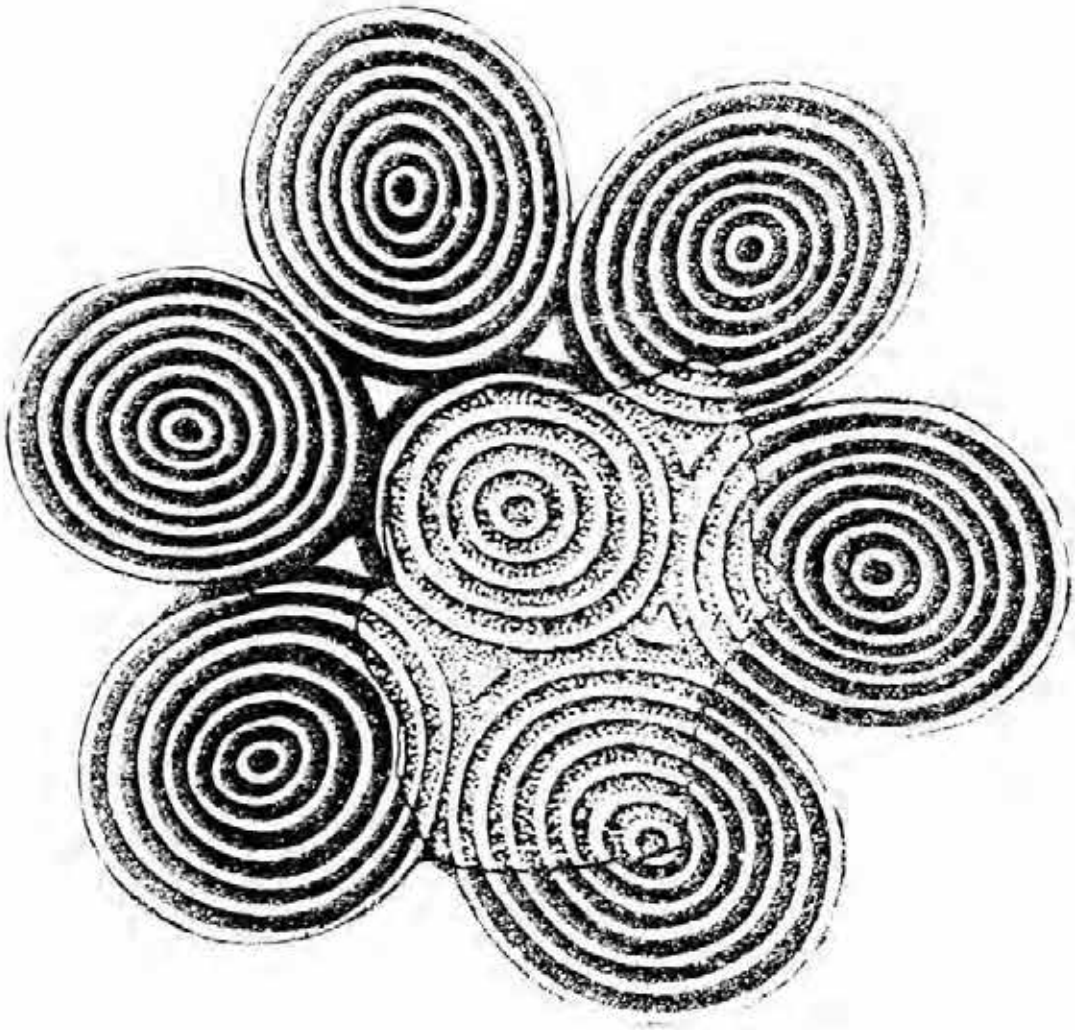


Plate 16: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

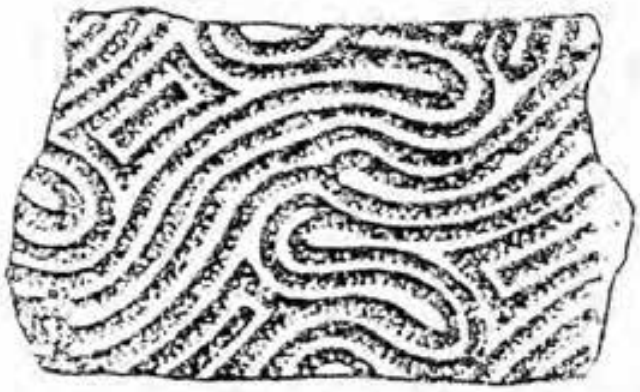


Plate 17: Early Swift Creek Complicated Stamped

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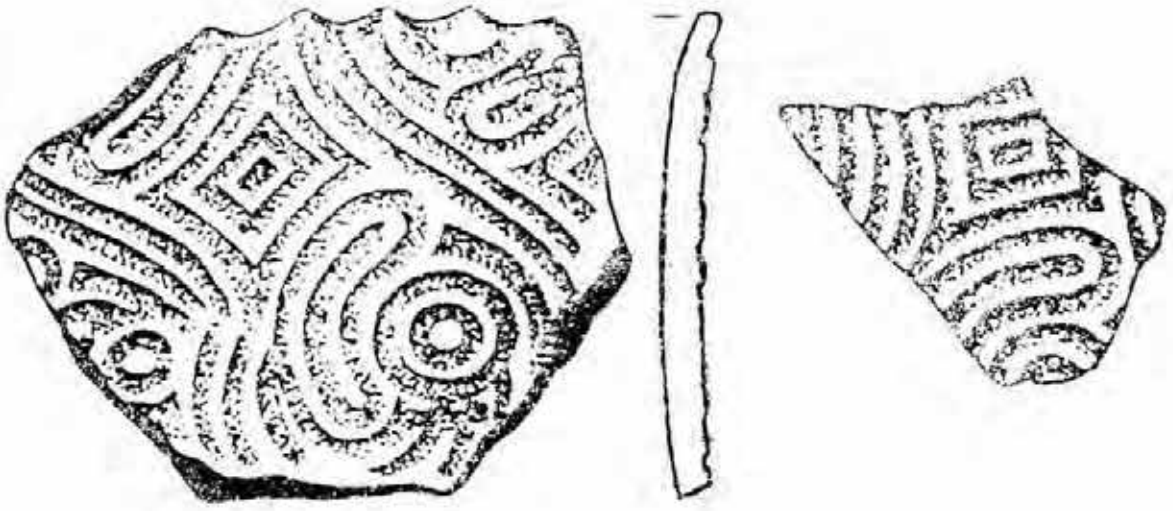


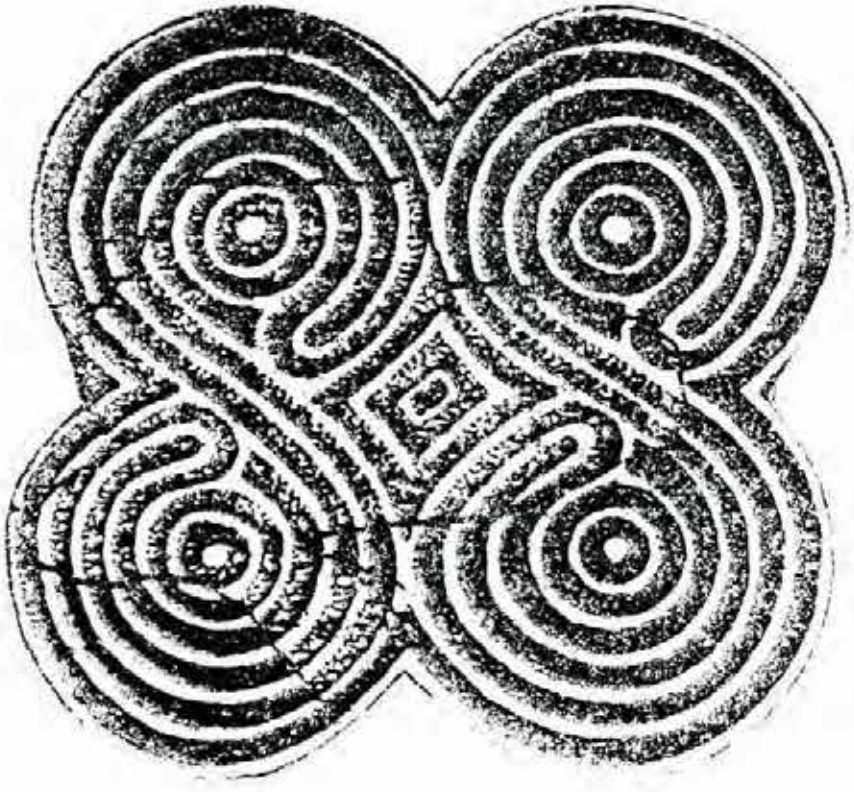


Plate 18: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

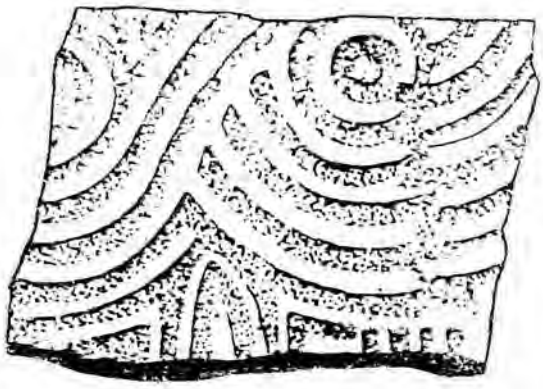


Plate 19: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

Plate 20: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

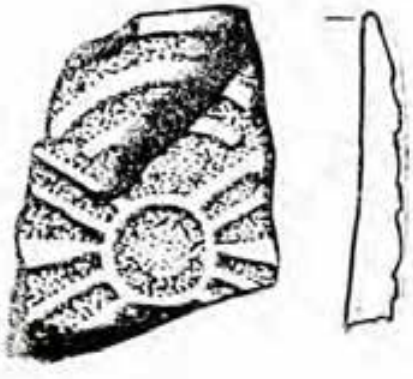
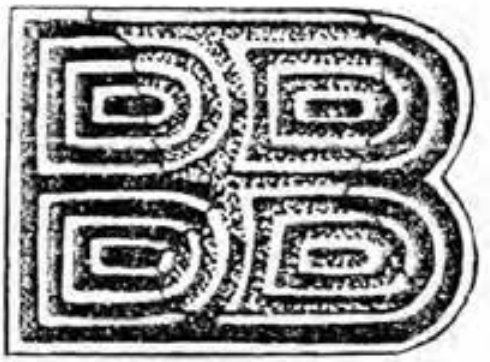


Plate 21: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)



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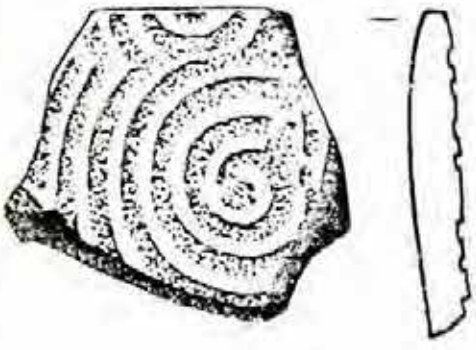

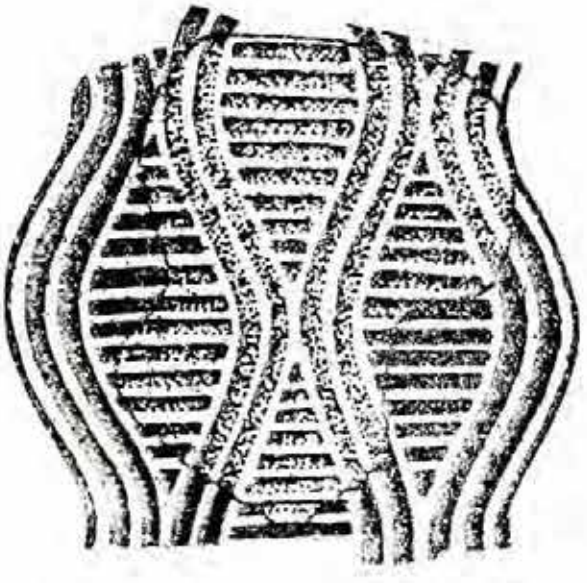

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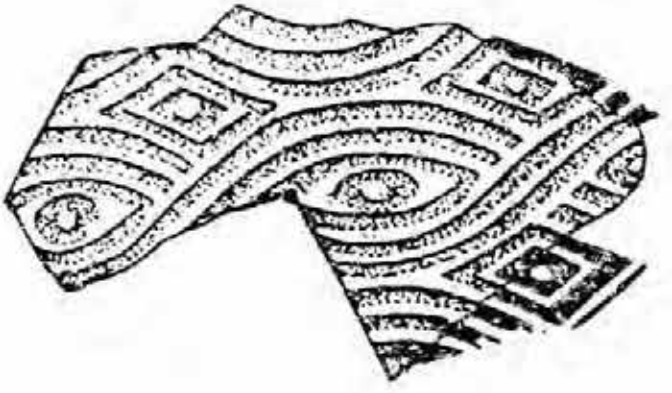
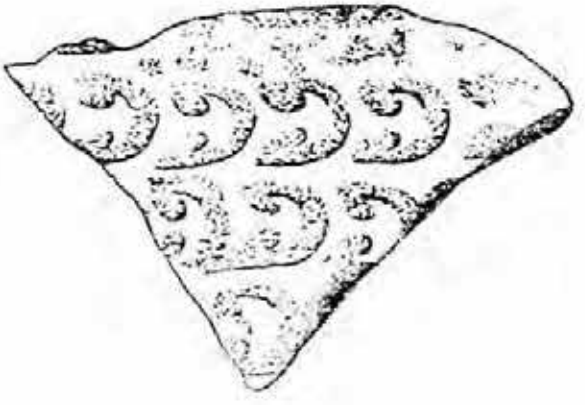




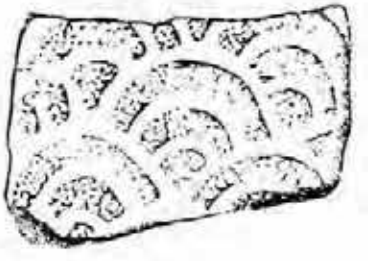
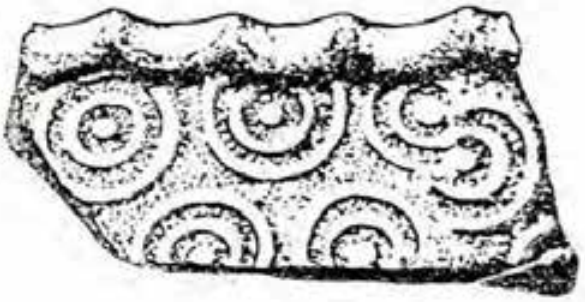


Plate 24: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)



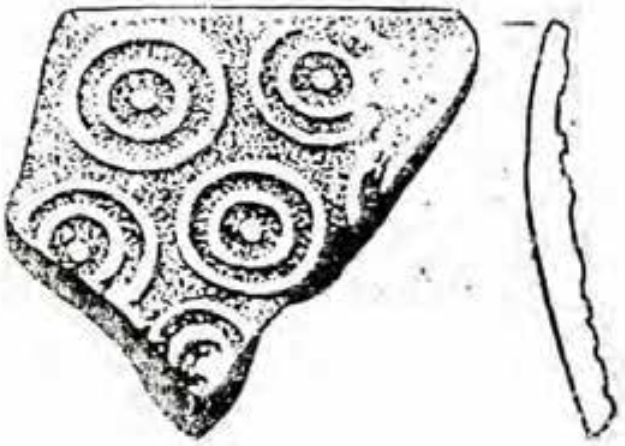
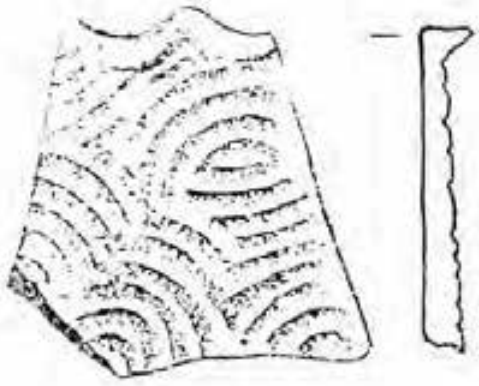


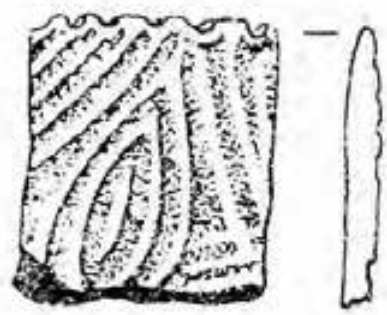
Plate 25: Early Swift Creek Complicated Stamped

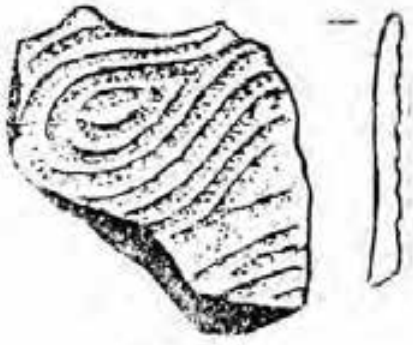
(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

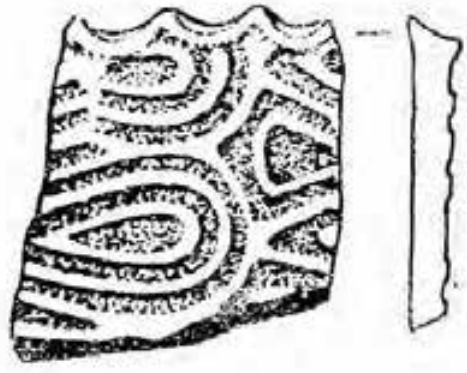
Plate 26: Early Swift Creek Complicated Stamped

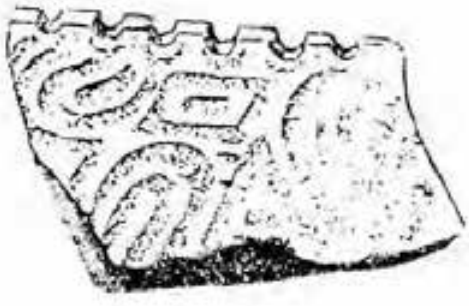
(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)











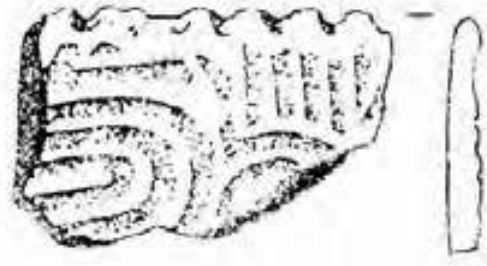
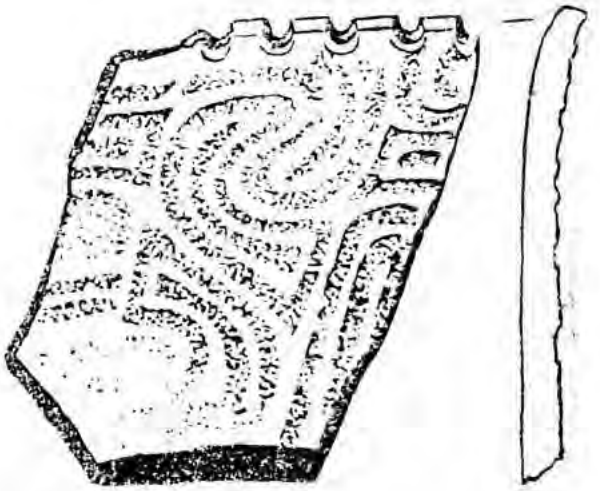


Plate 27: Early Swift Creek Complicated Stamped

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)



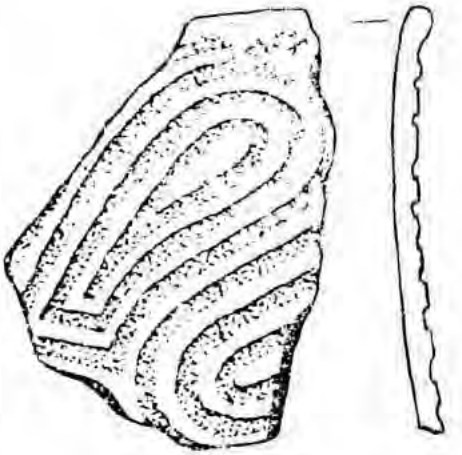


Plate 28: Crooked River Complicated Stamped, Early Variety

Top: south profile slump

Bottom: 40-50L0, L. III, 0-6"


0 1 2 3 4 5
CM

Plate 29: Crooked River Complicated Stamped, Early Variety

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

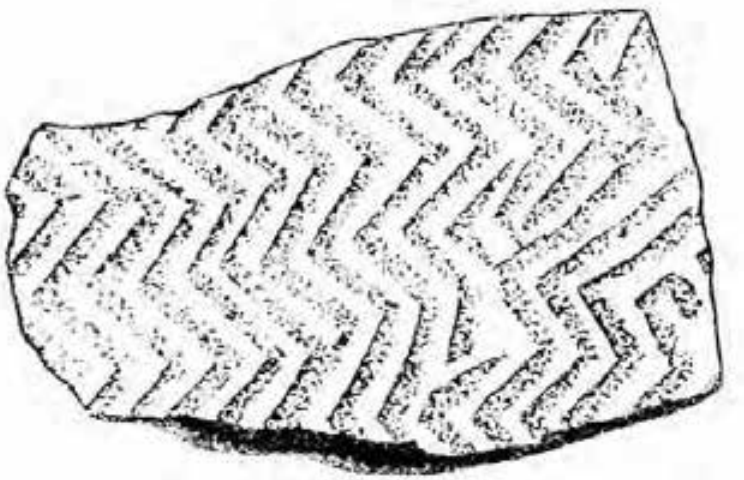


Plate 30: Crooked River Complicated Stamped, Early Variety

(drawings by Bettye Broyles, on file in the Department of Anthropology, University of Georgia)

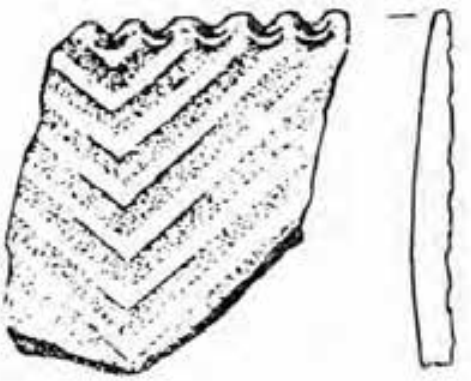


Plate 31: Unnamed Rectilinear Complicated Stamped

L. IV, F. 29

Plate 32: Rocker Stamped

Top left: L. IV, F 29

Top center: no provenience

Top right: 120L0, L. IA

Lower left: no provenience

Lower right: L. IA, F 28

Plate 33: Crystal River Negative Painted

Top left: L. IA, F 28

Left center: L. IA, F 28

Lower left: south profile slump

Center: trench between 80.0'-82.5' lines

Top right: L. IV, F 29

Right center: 60-70L0, L. IV, 0-6"

Lower right: test trench 70R0-70R50; 72.5R0-72.5R50


0 1 2 3 4 5
CM

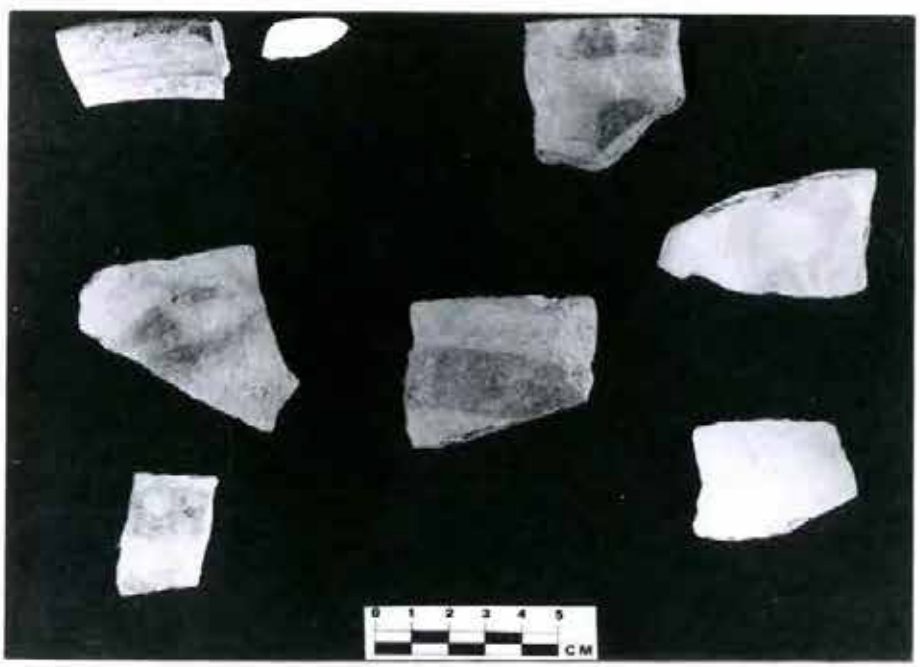

0 1 2 3 4 5
CM

Plate 34: Incised and Punctated

Top left: Basin Bayou Incised; exploratory trenches above L. I.

Top center: no provenience

Top right: no provenience

Lower left: L. IA, F 36

Lower center: no provenience

Lower right: L. IA, F 36

Plate 35: Punctate

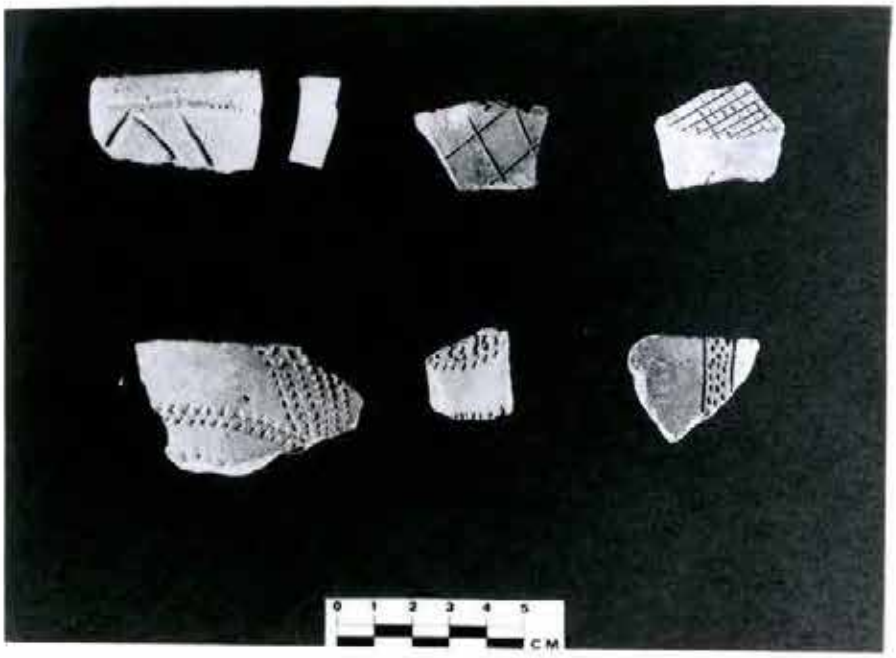
Top left: L. IV

Top right: 30L0, L, I, 0-6"

Center: 30L0, L. I, below 12"

Lower left: L. I, F 22

Lower right: no provenience


0 1 2 3 4 5
CM


0 1 2 3 4 5
CM

Plate 36: Tetrapodal Base
40-50L0, L. IV, 0-6"

Plate 37: Figurine and Platform Pipe Fragments
Top left: 40-50L0, L. IA, 6"-12"
Lower left: L. IA
Center: 30L0, 96"-102"
Right: Layer II

Plate 38: Figurine Fragments
Left: spring below Mound A
Center: village tests
Right: L. II

Plate 39: Figurine from the Block-Sterns Site, Florida

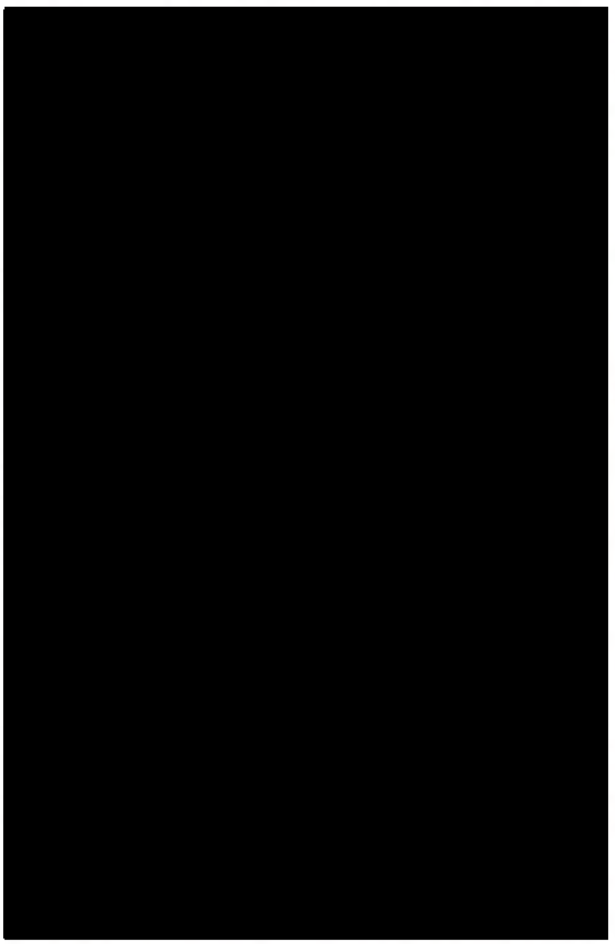


Plate 40: Stemmed Points

Top row: (1) IB: L. IV, F 29; (2) IA: bulldozed above L. I; (3) ID: 40-50L0, L. II, 6"-18"; (4) IA: 30L0, L. I

Bottom row: (1) IA: exploratory trenches above L. I; (2) IB: 10L0, L. I, disturbed premound features; (3) IB: 3' trench at base of high E-W profile (after bulldozing)

Plate 41: Lanceolate Points

Top row: (1) IIB: L. IA, clearing over E end of F 25; (2) IIA: L. IA, F 34; (3) IIA: no provenience; (4) IIA: 30L0, L. I; (5) IIA: 120L0, L. I, 6"-12"

Bottom row: (1) IIA: no provenience; (2) IIA: no provenience; (3) IIA: 150L0, L. I, F 4


0 1 2 3 4 5
CM

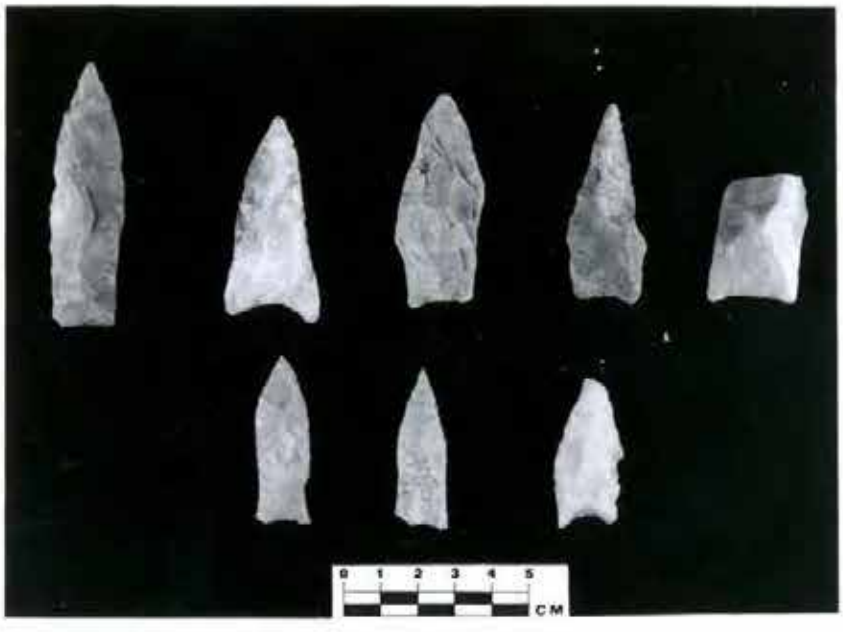

0 1 2 3 4 5
CM

Plate 42: Corner-notched Points

(1) IIIA: 30L0, 60"-72"; (2) IIIA: top of L. IV to top of red layer; (3) IIIA: 40-50L0, L. I, 0-6"; (4) IIIB: L. IV, F 29; (5) IIIA: 70R0-70R50 & 72.5R0-72.5R50

Plate 43: Expanded-stem Points

Top row: (1) IVA: 30L0, L. I; (2) IVA: no provenience; (3) IVA: no provenience

Bottom row: (1) IVB: 80-90L0, L. IV, 6"-12"; (2) IVB: 30L0, L. I; (3) IVB: scraping top of L. IV; (4) IVB: 40-50L0, L. I, 6"-12"


0 1 2 3 4 5
CM


0 1 2 3 4 5
CM

Plate 44: Miscellaneous Points, drills

Top row: (1) VA: trench between 80.0'-82.5' lines; (2) VA: 10L0, L. I, 0-6"; (3) drill: scraping top of L. IV

Bottom Row: (1) drill: 10L0, L. I, 0-6"; (2) IIID: L. IV, F 29; (3) VIA: 60-80L0, L. V, 6"-18"

Plate 45: Preforms

(1) no provenience; (2) 40-50L0, L. III, 15"-21"; (3) area near E-W profile, approx. 40R25.5


0 1 2 3 4 5
CM


0 1 2 3 4 5
CM

Plate 46: Scrapers

Top left: top of L. I

Top center: 20L0, L. I, 0-6"

Top right: 20L0, L. I, 6"-12"

Lower left: 40-50L0, L. I, below 12"

Lower center: 90-110L0, L. IIIA, 24"-36"

Lower right: 120L0, L. I, 6"-12"

Plate 47: Blades

Top row: (1) surface; (2) no provenience; (3) 90-110L0, L. IIIA, 24"-36"; (4) no provenience; (5) no provenience; (6) no provenience

Bottom row: (1) L. I, F 22; (2) no provenience; (3) 40-50L0, L. III, 6"-12"; (4) no provenience; (5) no provenience; (6) L. IV; (7) 120L0, L. I, 6"-12"


0 1 2 3 4 5
CM


0 1 2 3 4 5
CM

Plate 48: Steatite Platform Pipe

(photograph made from slide in Department of Anthropology, University of Georgia)

Plate 48: Steatite Platform Pipe

(photograph made from slide in Department of Anthropology, University of Georgia)

Plate 49: Mica

(1) and (2) 40-50LO, L. IIA, 0-12"
(3) and (4) south profile slump

Plate 50: Mica

(1) and (2) 80-90LO, L. V, 0-6"

Plate 51: Feature 25

(photograph made from slide on file in Department of Anthropology, University of Georgia)

A: Portion of E-W profile (Figure 6) showing feature 25

B: Same as above with feature 25 marked in red--dashed lines indicate portion of the platform bulldozed away

Plate 52: Mound B

(photograph made from slide on file, Department of Anthropology, University of Georgia)

Plate 53: Mound B Profile

(photograph made from slide on file, Department of Anthropology, University of Georgia)

Plate 54: Crooked River Complicated Stamped, Early Variety Vessel from Feature 1, Mound B

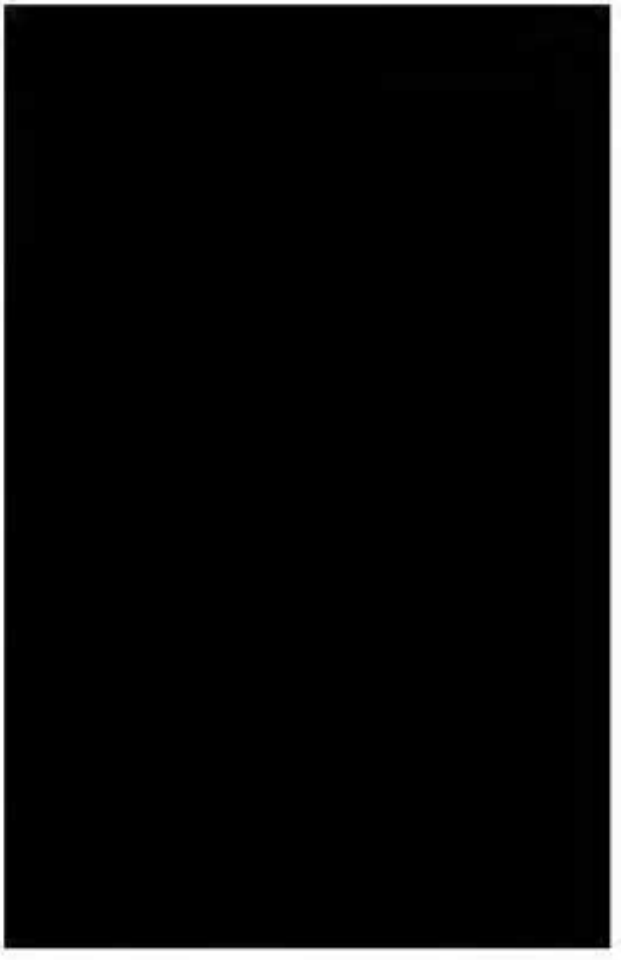


Plate 55: Early Swift Creek Complicated Stamped Compound Vessel from Feature 1, Mound B

Plate 56: Early Swift Creek Complicated Stamped Compound Vessel from Aspalaga (8 Gd 1) (from Moore 1903: Fig. 151)

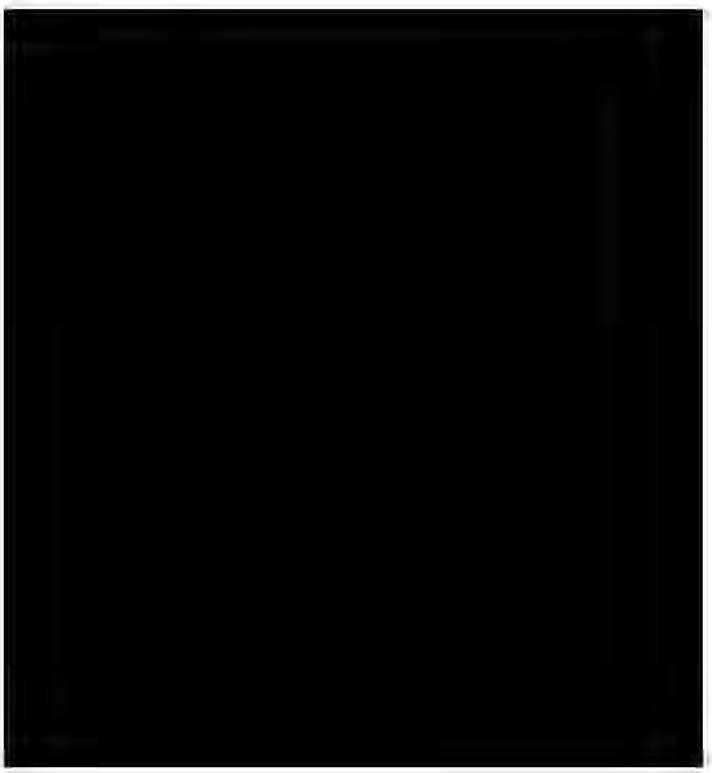


Plate 57: Mound B, Feature 5

(photograph made from slide on file in Department of Anthropology, University of Georgia)

Plate 58: Clay Platform Pipe from Feature 9, Mound B

(photograph made from slide on file in Department of Anthropology, University of Georgia)

Plate 59: Mound B, Feature 10

(photograph made from slide on file in Department of Anthropology, University of Georgia)

Plate 60: Figurine from Feature 10, Mound B

Plate 61: Copper-covered Panpipes from Mound B

Plate 62: Copper Earspools from Mound B

Plate 63: Early Swift Creek Complicated Stamped Ceramics from the Swift Creek Site (9 Bi 3)

(from drawings by James Jackson on file in Department of Anthropology, University of Georgia)

APPENDIX A

PROVENIENCE OF ANALYZED SAMPLES

Layer I

Blocks 0L0-50L0, 120L0
Features 1-5, 16-18, 22, 30-31, 50-53, 56

Layer IA

Blocks 40L0, 50L0, 120L0
Features 28, 34, 36

Layer II

Blocks 40L0, 50L0, 120L0

Layer IIA

Blocks 40L0, 50L0

Layer III

Blocks 40L0, 50L0
Features 27b

Layer IIIA

Blocks 60-110L0
Features 13b

Layer IV

Blocks 60-110L0
Features 14, 29

APPENDIX B

SHERD COUNTS

TABLE 24

LAYER I - SHERD COUNT BY LEVELS AND FEATURES

	0-6"	6"-12"	12"	1	2	3	4	5	16	17	18	22	30	31	50	51-53	56	Depth?	Total
Plain	126	113	54		3	1	4	10	10	1	2	3				5	1	39	372
Polished	29	28	9			2											1	14	83
Check St.	34	42	31	5	3	11	8	6	6		1	2	1		2	69	7	1	229
Simple St.	33	31	13			2	4		3			1			1	6	3	1	108
Cord M.	26	3	2						2		1	2				1		2	39
Swift Creek	13	80	9	1	1				3			2		1		4	2	42	158
Crooked River	5	14	3															10	32
St. Andrews		3																1	4
Punctate	4		3									3				1			1
Red Filmed		1																	1
Fiber t P	1	4														1			6
Fabric M			1																1
Punctate & Incised	2		1						1										4
Limest. P.	1		1																2
Unclassified Rims	3	8	3			1	1				1					1			18
Total	277	327	130	6	7	17	17	16	25	1	5	13	1	1	3	88	14	120	1068

TABLE 25

LAYER IA - SHERD COUNT BY LEVELS AND FEATURES

	0-6	6-12	F28	34	36	Depth ?	Total
Plain	17	10	138	127	45	9	346
Polished		1	16	6		2	25
Check St.	4	6	42	37	23	5	117
Simple St.	5	5	36	33	22	2	103
Cord M	4	2	22	28	5		61
Swift Creek	1	2	67	40	6		116
Crooked River			22	4			26
St. Andrews			1	2			3
Un. Rect. Punctate			2		3		5
Red Filmed Neg. Painted			2				2
Rocker St.			1			1	2
Fiber t P							
Fabric M							
Punctate & Incised					2	2	4
Pinched							
Limest. P		1			1		2
Limest. & Cord			2				2
Limest./Gt. P					1		1
Un. Rim			7	5	2		14
Total	31	27	358	282	110	21	829

TABLE 26

LAYER II - SHERD COUNT BY LEVELS

	0-6"	6"-18"	18"	Depth?	Total
Plain	35	42	3	2	82
Polished	18	24	1		43
Check St.	8	15	1		24
Simple St.	19	10	1	1	31
Cord M	6	2		1	9
Swift Creek	5	9		1	15
Crooked River				1	1
St. Andrews					
Un. Rect.					
Punctate					
Red Filmed					
Neg. Painted					
Fiber t P					
Fabric M					
Punctate & Incised			1		1
Pinched	1	1			2
Punched					
Limest. t P					
Un. Rim		1			1
Total	92	104	7	6	209

TABLE 27

LAYER IIA - SHERD COUNT BY LEVELS

	0-12"	12"-24"	Total
Plain	3	9	12
Check St.		6	6
Simple St.	1	4	5
Cord M		1	1
Crooked River		1	1
Total	4	21	25

TABLE 28

LAYER III - SHERD COUNT BY LEVELS AND FEATURES

	0-6	6-12	12-15	15-21	21-27	27"	F27b	Total
Plain	69	39	22	24	5	9	41	209
Polished	12	13	4	3	1	1	7	41
Check St.	11	15	9	6	3	5	2	51
Simple St.	7	9	7	4	1		2	30
Cord M	2	5	1	4	1		2	15
Swift Creek	13	11	9	2	7		27	69
Crooked River	19	8	5	1	2	1	1	37
St. Andrews	1	3						4
Un. Rect.							3	3
Punctate								
Red Filmed								
Neg. Painted								
Rocker St.								
Fiber t P	1					1		2
Fabric M								
Punctate & Incised								
Pinched								
Punched								
Limest. P								
Un. Rim		5	1	2	1			9
Total	135	108	58	46	21	17	85	470

TABLE 29

LAYER IIIA - SHERD COUNT BY LEVELS AND FEATURES

	12"-24"	24"-36"	F13b	Total
Plain		30		30
Polished		5		5
Check St.	1			1
Simple St.	1	4		5
Cord M		1	1	2
Swift Creek	3	35		38
Crooked River		7		7
St. Andrews		4		4
Punctate		1		1
Un. Rim	1			1
Total	6	87	1	94

TABLE 30

LAYER IV - SHERD COUNT BY LEVELS AND FEATURES

	Top	0-6	6-12	12-18	18-24	6-24	F14	F29	Total
Plain	32	135	112	57	28	11	110	378	863
Polished	4	10	7	1	5		25	73	125
Check St.	11	14	8	4	2		10	22	71
Simple St.	4	13	13	5	9	2	6	35	87
Cord M		4	3	4	1	1	7	22	42
Swift Creek	9	106	21	12	16	1	71	256	492
Crooked River	13	38	37	14	22	2	23	52	201
St. Andrews	2	3		2	3	1	1	4	16
Un. Rect.								17	17
Punctate			1				1		2
Red Filmed			1	1				1	3
Neg. Painted				1				1	2
Rocker St.								1	1
Fiber t P									
Limest. P	1	1						1	3
Limest. SS				1					1
Limest. Comp.								1	1
Un. Rim		11	3	6	4		5	18	47
Total	76	335	206	108	90	18	259	882	1974

APPENDIX C

RIM AND LIP TREATMENT

Table 31: Rim and lip morphology by pottery type

TABLE 31

RIM AND LIP MORPHOLOGY BY POTTERY TYPE

PLAIN

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	13	5	6	42	1		4	8			1	1	1							3				5
rounded	7		3	18	2	4	2	5	1		1	2	1			2				7				
notched	2		1	12				4																
scalloped	2			2				1																
flanged		1																						
sl. folded																								

TABLE 31 (continued)

POLISHED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	2	1		9	2	1													4					
rounded	3	1	1	5	1				1		1									1				
notched																								
scalloped			1																					
flanged																								
sl. folded																								

TABLE 31 (continued)

CHECK STAMPED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	4			1	1		1	2																
rounded	1	1		1	7	2		2																
notched				2	1			1																
scalloped								1																
flanged								1[1]																
sl. folded					1[2]																			

[1]Also notched

[2]Top of lip stamped

TABLE 31 (continued)

SIMPLE STAMPED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	2	1	3	1	1			3																
rounded					1	1	2		1															
notched				1				1																
scalloped																								
flanged																								
sl. folded																								

TABLE 31 (continued)

CORD MARKED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	1			2	1																			
rounded																								
notched																								
scalloped																								
flanged																								
sl. folded																								

TABLE 31 (continued)

SWIFT CREEK

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	2			4		2		7			1													
rounded	1			1				1																
notched	5		2	15	1		2	11				3												
scalloped								1																
flanged																								
sl. folded																			1					

TABLE 31 (continued)

CROOKED RIVER

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	1			4				2				1												
rounded																								
notched				5				1												1				
scalloped																								
flanged																								
sl. folded																								

1247

TABLE 31 (continued)

UNCLASSIFIED RIMS

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
flattened	5[1]		2	9	2		3	8	2		1	1												
rounded	1	1	1	2	4			7												1				
notched				12	3			6				1												
scalloped																								
flanged	1[2]	2[3]																						
sl. folded							2																	

[1]One sherd punched below the lip

[2]Also notched

[3]Both pinched below the lip

TABLE 31 (continued)

PLAIN

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	8		1		9	2			3		1													
rounded	5												1											
notched	1																							
scalloped									1															
flanged	1																							
sl. folded																								

TABLE 31 (continued)

POLISHED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	2																2							
rounded									1														1	
notched																								
scalloped																								
flanged																								
sl. folded																								

TABLE 31 (continued)

CHECK STAMPED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	6[1]				2		2		2															
rounded	1				1				2															
notched																								
scalloped																								
flanged																								
sl. folded																								

[1]Top of lip stamped

TABLE 31 (continued)

SIMPLE STAMPED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	3				2				1															
rounded	1								1								1							
notched	1																							
scalloped																								
flanged																								
sl. folded																								

TABLE 31 (continued)

CORD MARKED

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	3				1				1															
rounded							1																	
notched																								
scalloped																								
flanged	1																							
sl. folded																								

TABLE 31 (continued)

SWIFT CREEK

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	3		1		3		2		1				1											
rounded	2				1																			
notched	3		2				1		1												1			
scalloped	1						1																	
flanged																								
sl. folded																								

TABLE 31 (continued)

CROOKED RIVER

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	1				1						1													
rounded																								
notched					1																			
scalloped																								
flanged																								
sl. folded																								

TABLE 31 (continued)

UNCLASSIFIED RIMS

	straight				sl. flaring				flaring				everted				sl. inverted				inverted			
	IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA		IA	IIA	IIIA	
flattened	6				3				1				1											
rounded	1		1						1															
notched																								
scalloped	1																							
flanged																								
sl. folded																								

APPENDIX D

SHERD THICKNESS

Table 32: Thickness range, selected pottery types, midden layers

TABLE 32

SHERD THICKNESS BY LAYERS (IN mm)

	I	II	III	IV
	mm	mm	mm	mm
Plain	4.6-11.8	4.5-11.3	3.7-11.7	3.6-13.5
Polished	3.2-12.5	3.1-12.9	3.5- 9.7	3.0- 6.0
Check St.	4.9-11.1	5.4- 7.8	5.1- 9.4	4.6-11.4
Simple St.	3.7-10.2	5.4- 9.9	6.6-10.1	4.6-11.0
Cord Marked	3.0- 9.4	4.7- 9.0	5.3- 9.3	5.2- 8.7
Swift Creek	4.5-10.3	5.3- 8.4	3.7-12.8	3.6-11.4
Crooked River	4.2- 7.5		5.2-15.6	4.4-11.9

APPENDIX E

TETRAPOD MEASUREMENTS

TABLE 33

TETRAPOD MEASUREMENTS BY LAYERS

I	IA	II	III	IIIA	IV
	35.9				
	30.0				
28.0					
26.2					
	26.1				
	25.6	25.6			
25.5	25.5				
25.0					
		24.1			
			24.0		
		23.4			
	23.3				
	23.3				
				23.0	
	22.3				
	22.0				
21.7					
		21.6			
21.3					
	20.9				
		20.6			
					20.4
	20.0				
					19.9
	18.9				
18.7	18.7				
					18.6
					18.4

TABLE 33 (continued)

I	IA	II	III	IIIA	IV
	18.2				
					18.1
18.0	18.0				
	17.6				17.6
			17.4		
			17.4		
17.2					
			17.1		
					16.9
		16.7			
16.6					16.6
16.5					
16.2	16.2				
					16.1
					16.0
15.6					
					15.2
		14.6			14.6
				14.4	
					14.3
					14.2
					14.0 (2)
					13.9
					13.7
13.4					
	13.0				
					12.7
				12.3	
					11.6
11.0					

TABLE 33 (continued)

I	IA	II	III	IIIA	IV
					10.0
					9.6
7.5					7.5

TABLE 34

TETRAPODS, BROKEN DOWN BY SIZE

	mm	I	IA	II	III	IIIA	IV	Total
Small	7.5-14.9	3	1	1	-	2	13	19
Medium	15.0-19.9	7	6	1	3	-	10	27
Large	20.0-35.9	6	11	5	1	1	1	25

APPENDIX F

MOUND A, LITHICS

TABLE 35

MOUND A, PROJECTILE POINTS

LAYER I

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
white chert	1	IA	54.5	34.9[1]	10.0	x	
brown chert	2	IA	47.6	28.3[1]	8.3	x	
lavender/pink chert	3	IB	63.5[2]	35.0[1]	11.4	x	
white chert	4	IB	53.0	27.4[1]	9.6	x	
red chert	5	IC	35.0[3]	39.7[1]	10.1	x	
quartzite	6	IIA	40.0[2]	18.8	7.9		x
brown chert	7	IIA	broken			x	
purple chert	8	IIA	66.1	20.3	11.3	x	
brown chert	9	IIA	53.3	21.7	8.2	x	
brown chert	10	IIIA	53.3[2]	35.3[1]	7.9	x	
brown chert	11	IVA	46.2	25.9[1]	8.9	x	
white chert	12	IVB	40.0	29.0[1]	7.0	x	

TABLE 35 (continued)

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
Ft. Payne chert (med. gray)	13	IVB	42.7	25.0[1]	6.7		x
mottled red chert	14	VA	42.8	34.0[4]	3.8	x	

[1]Measurement made at the shoulder

[2]Tip broken

[3]Tip broken, reworked into scraper

[4]Measurement made at the base

TABLE 35 (continued)

LAYER IA

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
mottled pink chert	15	IC	broken			x	
red chert	16	IE	49.5[1]	39.6[2]	9.8	x	
white chert	17	IIA	37.4[1]	16.3[3]	6.6	x	
quartzite	18	IIA	54.2	25.7	5.5		x
gray chert	19	IIB	71.0	19.6	10.0		x
purple/pink chert	20	VA	45.7	31.0	6.3	x	
crystalline quartz	21	VB	40.1	17.8	4.7		x

[1]Tip broken

[2]Measurement made at the shoulder

[3]Measurement made at the base

TABLE 35 (continued)

LAYER II

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
red/white chert	22	ID	57.8	39.0[1]	11.5	x	
white chert	23	IIIC	42.0[2]	37.9	8.8	x	

[1]Measurement made at the shoulder

[2]Tip broken

LAYER III

white chert	24	IA	broken				
red chert	25	VC	62.2	34.6[1]	18.4	x	

[1]Measurement made at the base

TABLE 35 (continued)

LAYER IV

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
mottled brown chert	26	IA	57.0	37.0[1]	8.2	x	
red chert	27	IA	broken			x	
brown chert	28	IA	51.5	45.8[1]	9.3	x	
red/brown chert	29	IB	74.5	38.2[1]	9.5	x	
pink/white chert	30	ID	58.3	50.8[1]	8.7	x	
pink/yellow chert	31	IE	66.0	32.5	10.0	x	
tan chert	32	IIIA	68.5[2]	30.6[1]	8.4	x	
light gray chert	33	IIIB	57.3	24.4	10.3		x
brown chert	34	IIIB	56.6[2]	30.9[1]	8.5	x	
brown chert	35	IIIB	60.3	29.3[1]	7.4	x	
white chert	36	IIID	38.0	23.8[1]	6.3	x	

TABLE 35 (continued)

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
white chert (patinated)	37	IVB	39.8	25.1[1]	8.4	x	
Ft. Payne chert (med. gray)	38	IVB	31.9	23.5	7.3		x

[1]Measurement made at the shoulder

[2]Tip broken

TABLE 35 (continued)
PROVENIENCE UNKNOWN

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
purple chert	39	IA	62.1	45.3[1]	10.2	x	
quartzite	40	IA	56.4	43.0[1]	11.7		x
brown chert	41	IA	70.1	54.0[1]	9.9	x	
brown chert	42	IA	44.0[2]	26.7[1]	7.2	x	
white chert	43	IA	40.0	36.0[1]	8.0	x	
crystalline quartz	44	IB	57.6	27.3[1]	11.8		x
red chert	45	IB	59.2	25.3[1]	9.0	x	
purple/brown/ white chert	46	IB	57.0[2]	30.0[1]	8.5	x	
white chert	47	IC	56.2	39.4[1]	10.1	x	
red chert	48	IC	62.4	46.7[1]	11.0	x	
red chert	49	IC	54.3	38.0[1]	8.2	x	
white chert	50	ID	44.8	29.0[1]	7.2	x	
pink/white chert	51	ID	62.2	33.0	9.1	x	

TABLE 35 (continued)

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
white chert	52	IE	54.0	40.1[1]	12.3	x	
brown chert	53	IE	42.7[2]	23.2[1]	5.3	x	
brown chert	54	IIA	broken			x	
dirty white chert	55	IIA	57.0	22.7	11.8		x
tan chert	56	IIA	45.5	15.0	4.4	x	
tan chert	57	IIA	43.4	13.3	6.1	x	
white chert	58	IIA	broken			x	
dark brown chert	59	IIIA	67.8	30.4[1]	7.9		x
brown chert	60	IIIA	59.0[2]	33.2[1]	7.0	x	
white chert	61	IIIA	59.0	32.1	6.8	x	
dark gray chert	62	IVA	broken				x
white chert	63	IVA	broken			x	
Ft. Payne chert (med. gray)	64	IVB	43.2	22.0	7.1		x

TABLE 35 (continued)

	Point	Category	length mm	width mm	thickness mm	local material	nonlocal material
brown chert	65	VA	42.4	27.3[3]	4.8	x	
gray chert	66	VIA	42.1	19.2	8.2		x
dark gray chert	67	VIIA	61.6	24.2	6.7		x

[1]Measurement made at the shoulder

Tip broken

[3]Measurement made at the base

TABLE 36

PROJECTILE POINTS, SOURCE OF RAW MATERIAL

	local material	nonlocal material	
IA	10	1	
IB	5	1	
IC	5	-	
ID	4	-	
IE	4	-	
IIA	8	3	
IIB	-	1	
IIIA	4	1	
IIIB	2	1	
IIIC	1	-	
IIID	1	-	
IVA	2	1	
IVB	2	3	
VA	3	-	
VB	-	1	
VC	1	-	
VIA	-	1	
VIIA	-	1	
	52	15	67
	77.6 %	22.4%	

TABLE 37

BROKEN POINTS AND KNIVES

	I	IA	III	IV
distal	9	3	2	4
medial	1[1]			3
proximal				
stemmed	4	4	5	4
lancelate (concave)	2	1		1
squared	1		1	

[1]Serrated edges

TABLE 38

WASTE FLAKES

Raw Material	I	IA	II	IIA	III	IIIA	IV	Total	
brown chert	126	58	6	2	52	14	159	427	
white chert	153	20	6	2	44	5	69	299	
red chert	67	26	9	-	25	-	57	184	
pink chert	55	9	1	2	21	1	30	119	
purple chert	14	14	-	-	6	-	6	40	
gray chert	13	9	2	-	9	1	30	64	
opaque chert	1	-	-	-	7	-	31	39	
crystalline quartz	15	6	7	-	18	2	72	120	8.9%
other chert	10	19	4	4	8	-	18	63	
Total	454	161	35	10	190	23	472	1345	

TABLE 39

BLADES

	Blade	Provenience	length	width	thickness	triangular	trapezoidal	local	nonlocal
white/pink chert	1	L.I	51.4	16.9	6.2	x		x	
brown chert	2	L.I	67.3	20.0	4.5	x		x	
Flint Ridge chert	3	L.I F22	24.7[1]	8.4	2.0		x		x
med. gray chert	4	Lower levels	30.2[2]	15.5	3.0		x		x
purple chert	5	L.IA F34	53.5	27.1	16.0	x		x	
white chert	6	L.IA F34	24.0[3]	22.9	3.5	x		x	
med. gray chert	7	L.III	35.8[1]	12.1	2.4		x		x
gray/red chert	8	L.III	24.9[1]	7.3	1.8		x		x
dk. gray chert	9	L.IIIA	44.3	12.5	3.0		x		x
brown/purple chert	10	L.IV	65.5	19.8	6.4	x		x	
pink/white chert	11	L.IV	44.7[3]	20.0	3.6	x		x	
med. gray chert	12	L.IV F29	23.1[1]	10.5	2.3		x		x
med. gray chert	13	L.IV F29	36.0[1]	12.9	3.2	x			x
dk. gray chert	14	L.IV	25.5	16.4	4.3		x		x

TABLE 39 (continued)

	Blade	Provenience	length	width	thickness	triangular	trapezoidal	local	nonlocal
med. gray chert	15	np	37.0[1]	10.2	2.3		x		x
med. gray chert	16	np	37.3	10.5	3.2	x			x
med. gray chert	17	np	42.8	12.2	2.6		x		x
Flint Ridge chert	18	np	20.0[1]	9.9	1.8		x		x
pink chert	19	np	68.0	18.0	7.6	x		x	
med. gray chert	20	np	29.9[1]	10.3	3.0	x			x
crystalline quartz	21	np	32.2	12.0	3.1	x			x
red chert	22	np	39.9	9.9	7.0	x		x	
red chert	23	np	41.0	17.8	3.9	x		x	
red chert	24	np	80.0	21.5	7.2	x		x	
med. gray chert	25	np	44.0	4.0	2.8	x			x
med. gray chert	26	np	39.3	4.2	2.4	x			x
med. gray chert	27	np	46.8	9.5	2.0		x		x
med. gray chert	28	np	42.0[1]	14.0	3.9		x		x
med. gray chert	29	np	27.1[1]	8.7	1.8		x		x
med. gray chert	30	np	29.1[3]	9.4	3.5	x			x
Flint Ridge chert	31	np	36.8	12.9	3.2	x		x	
opaque chert	32	np	42.4	14.3	5.8	x		x	

TABLE 39 (continued)

	Blade	Provenience	length	width	thickness	triangular	trapezoidal	local	nonlocal
brown chest	33	np	59.4[1]	19.1	9.3	x		x	

[1]proximal

[2]medial

[3]distal

TABLE 40

SELECTED BLADES

Whole Blades Made of Local Materials

Point	Provenience	length	width	thick-ness	triangular	trapezoidal
1	L.I	51.4	16.9	6.2	x	
2	I	67.3	20.0	4.5	x	
5	IA F34	53.5	27.1	16.0	x	
10	IV	65.5	19.8	6.4	x	
19	np	68.0	18.0	7.6	x	
22	np	39.9	9.9	7.0	x	
23	np	41.0	17.8	3.9	x	
24	np	80.0	21.5	7.2	x	
32	np	42.4	14.3	5.8	x	
Average		56.55	18.36	7.17		
Whole Blades Made of Nonlocal Materials						
9	IIIA	44.3	12.5	3.0		x
14	IV	25.5	16.4	4.3		x
16	np	37.3	10.5	3.2	x	
17	np	42.8	12.2	2.6		x
21	np	32.2	12.0	3.1	x	
25	np	44.0	4.0	2.8	x	
26	np	39.3	4.2	2.4	x	
27	np	46.8	9.5	2.0		x
31	np	36.8	12.9	3.2	x	
Average		38.77	10.46	2.95		

APPENDIX G

MOUND A FEATURES

Table 41: Features, Mound A

TABLE 41

FEATURES, MOUND A

Feature	Layer	Dimensions	Depth	Probable Function
1	I	3' in diameter	2½'	cooking pit?
2	I	3' in diameter	4"	storage/refuse
3[1]	I	5' in diameter	3'	cooking pit
4[2]	I	7' in diameter	5½'	post mold
5[3]	I	a) 4' in diameter b) 6'+ long	a)3' b)1'	a) storage/refuse b) ?
6[4]	I	--	5"	refuse
7[5]	I	4' in diameter	1½'	?
8	I	4' in diameter	1'	storage/refuse
9	I	4' in diameter	2.7'	storage/refuse
10	I	3'+ in diameter	2'	storage/refuse
11[6]	I	2-3' in diameter	2-5"	storage/refuse
12	II	6' in diameter	3'	?
13a[7]	III	--	--	fire basin?
13b[8]	IIIA	--	--	?
14	IV	entire surface, Md. A	1'	midden layer - not a true feature
15	IIIA	widespread	½'	fired area

TABLE 41 (continued)

Feature	Layer	Dimensions	Depth	Probable Function
16	I	--	--	storage/refuse
17	I	--	1.6'	postmold
18	I	--	2.2'	postmold
19	I	--	1.8'	postmold
20[9]	III	--	--	intrusive Miss. pit
21	III	--	--	intrusive Miss. pit
22[10]	I	--	--	midden layer-not a true feature
23	I	--	2.4	postmold
24	I	--	2.6	postmold
25	IA	18' x 40'	2'	flat-topped platform
26[11]		1.5' x 1.4'	.3'	fire pit
27a[12]	IA	--	.1'	thin layer-not a true feature
27b	III	--	--	midden layer-not a true feature
28	IA	--	--	level of brown sand
29	IV	--	2.4'	?

TABLE 41 (continued)

Feature	Layer	Dimensions	Depth	Probable Function
30	I	--	1.3'	postmold
31	I	--	1.5'	postmold
32	I	.9' x .7'	--	postmold
33	I	.5' x .5'	9"	postmold
34	IA	--	--	layer of brown sand
35	IA	--	--	floor
36	IA	--	--	brown sand mantle over F25
50	I	--	--	storage/refuse
51[13]	I	--	--	cooking/refuse
52	I	--	--	cooking/refuse
53	I	--	--	cooking/refuse
56[14]	I	8' in diameter	3'	cooking pit

TABLE 41 (continued) - FOOTNOTES

[1]Feature 3.

> Within this pit there was definite evidence of an *in situ* fire, with much charcoal, and fire reddened sand and clay. Further, the pit was apparently used for a time, then filled with relatively sterile sand, then used again. At least three different times this procedure took place (Kellar, Kelly, and McMichael 1962b: 6).

[2]Feature 4.

> This hole is some 7 feet in diameter at the excavated floor, and extended straight down to a depth of 3 feet, thereupon it constricted to less than 2 feet in diameter and finally stopped 5½ feet below the excavated floor. The nature of this hole suggests it is likely that a large post stood here, and the large surrounding pit was utilized to facilitate the erection of the post. Most of the fill of the pit was yellow sand, which differed only slightly from the surrounding sterile subsoil. Toward the center, and especially at the bottom, the fill earth is much darker; another indication that this was a postmold. (*Ibid.*: 7)

Pottery, chert chips, and a bannerstone fragment were recovered from this feature.

[3]Feature 5. Feature 5, found in Block 20L0, below 12 inches, may have actually been two pits. The first was a circular pit about four feet across and three feet deep. The fill was a layer of black soil separated from a layer of disturbed yellow sand by a thin red clay band. The second

TABLE 41 - FOOTNOTES (continued)

pit was about one foot deep and at least six feet long. It intruded into the west wall of the square and was filled with dark mottled clay. Intruded into this pit and near it were several postmolds. This second pit may have been dug later than the first one (Ibid.: 5). A few pieces of pottery, a broken point or knife, a piece of worked chert, some chert chips, a small piece of mica, some animal bone, pebbles, charcoal, mussel shell, and a shark tooth were recovered from this feature. The unfossilized shark tooth is non-local, most likely from the Gulf Coast.

[4]Feature 6.

> Very little material was recovered, but arcing around the northside of the pit about 3 inches from the pit edge was a line of mussel shell which extended downward to nearly the bottom--probably just a load of refuse dumped into the pit (Ibid.).

[5]Feature 7. The exact provenience of Feature 7 is in question. McMichael's field diary locates it in blocks -10L0 and 0L0. Kellar, Kelly and McMichael (1962b: 5) place it in blocks 10L0 and 0L0. At any rate, it was a rather shapeless pit about four feet in diameter and one and one-half feet deep.

No lot numbers were labelled as being from either feature 6 or 7. However, lot number 7849 was labelled as 10L0 and 0L0 premound features and so may represent either

TABLE 41 - FOOTNOTES (continued)

one or both of these features. The pottery from this lot is included on Table 24 in Appendix B in the "below 12 inches" column. Pottery, chert chips, and a beaver incisor were included in this sample.

[6]Feature 11. Feature 11 was similar to Feature 5 in that it consisted of a shallow disturbed area and what appeared to be another linear pit extending into the east wall of Block 50L0. The shallow depression ranged from two to five inches deep. The linear pit was at least a foot deep (Kellar, Kelly, and McMichael 1962b: 6).

[7]Feature 13a. Feature 13a was apparently the remnants of a fire basin. "All that remained of it was a ring of fire hardened clay; apparently later a large posthold had been dug through it, and destroyed the bottom of the basin" (Ibid.: 10).

[8]Feature 13b. Feature 13b is so labeled because one number was assigned to two different features. No description of this feature has been located other than that written on the bag which indicates that it was a pit. The bag label also indicates that this feature was "probably" in Layer IIIA so that the exact provenience may be questionable. Feature 13b was in Block 70R10. All that was recovered from this pit was one large piece of a cord-marked vessel. The cord markings were vertical to the rounded, slightly-flaring rim.

TABLE 41 - FOOTNOTES (continued)

[9]Features 20 and 21. Features 20 and 21 were two adjacent pits intruding into Layer III from Layer V (see Figure 4). Woodland and Mississippian Rood Focus ceramics were found mixed in these pits (Ibid.: 74).

[10]Feature 22. Feature 22 was defined on the feature form as a black midden area below Feature 25 (Layer IA) and extending out from it. As such, it probably was a part of the Layer I midden rather than a feature. Pottery, one of the Flint Ridge chert blades described earlier, and a small amount of animal bone were taken from this feature.

[11]Feature 26. The exact provenience of Feature 26 is uncertain but the feature form seems to indicate that it was associated with Feature 28.

[12]Feature 27a. Feature 27a was defined on the feature form as a thin compact layer about 0.1 foot thick at the toe of Feature 28 on the east side of the mound. No artifacts were recorded for this feature.

[13]Features 51, 52, and 53. Features 51, 52, and 53 were three intersecting pits. Fill for these features was composed of brown-black sandy midden, charcoal, fire-cracked rocks, and pottery. An end scraper, some chert chips, and a sandstone nutting stone were also recovered.

[14]Feature 56. Feature 56 was a large, tub-shaped pit eight feet in diameter and three feet deep. It was filled

TABLE 41 - FOOTNOTES (continued)

with brown sandy midden. Several concentrations of charcoal were noted. Fire-cracked stones and charcoal were found in the bottom of the pit. Pottery, two points, chert chips, and a nutting stone were recovered from this feature.

APPENDIX H

VILLAGE TESTS - SHERD COUNT

Table 42: Village area sherd count

Table 43: Relative percentages of four ceramic categories from the village area

TABLE 42

VILLAGE AREA SHERD COUNT

	500W1000	600W1000	700W900	800W890	890W890	1100W1000	1300W1000	1400W1000	840W1200	900W1200	1100W800	1100W600	1100W400	1200W590	1300W600	1440W600	440W590 480W570 490W570
Chattahoochee Brushed		2			5	1			9	61				1	4		5
Chattahoochee Plain					5				2	12				1	4		
Plain, grit	16	17	142	5	7	16	4		4	4	2	5	4	32	1		106
Plain, shell	5	26		2	16	12	1	3	37	15		4		51	2		
Incised (A)	11	6	10		1	1			3	1				5	1	1	6
Punctate (A)	1			1	1	4				1							2
Zone-Punctate (A)					1				1					1	1		1
Comp. St. (A)						4								1			7
Check Stamp (A)						1											
Handles (A)	1	2	5		1												5
Plain (B)	262	276	126	60	480	579	299	47	279	218	66	61	114	354	64	20	2577
Roughened	5					5		1	4	1							153
Comp. St., curv.	25	24	20	4	52	187	61	7	119	77	12	3	15	6		4	1140
Comp. St., rect.		3	4		15	28	5		10	3	2		2				172
Check St.	13	6	3		2	7	1		2		1	5	2	72	6		179
Check St./ Inside Circle	1																
Simple St.	9	6	7	1	38	62	11		7	14	1		3	6		1	306
Cord Marked		1	1		2	11	3		2	1		1	1	6			161
Incised (B)		5				1	1							2			3
Punctate (B)					1												3
Line block					1		2		3								18

TABLE 42 (continued)

	500W1000	600W1000	700W900	800W890	890W900	1100W1000	1300W1000	1400W1000	840W1200	900W1200	1100W800	1100W600	1100W400	1200W590	1300W600	1400W600	440W590 480W570 490W570
Red film									1								8
Polished-burnished																	38
Santa Rosa series-(roulette)																	2
Fiber-tempered																	2
Cord-wrapped dowel																	4
Total	349	374	318	73	628	919	388	58	483	485	84	79	141	538	82	26	4898

TABLE 43

RELATIVE PERCENTAGES OF FOUR CERAMIC CATEGORIES FROM THE VILLAGE AREA

	500W1000		600W1000		700W900		800W900		890W900		1100W1000		1300W1000		1400W1000	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Chatt. Br. & Plain	-		2	2.22	-		-		10	7.14	1	0.32	-		-	
Rood focus*	32	40.5	49	54.44	152	81.72	7	58.33	24	17.14	29	9.24	5	6.02	3	30.00
Comp. st.	25	31.65	27	30.00	24	12.90	4	33.33	67	47.86	215	68.47	66	79.52	7	70.00
Check & Simple st.	22	27.85	12	13.33	10	6.41	1	8.33	40	28.57	69	21.97	12	14.46	-	
Total	79	2.28	90	2.60	186	5.36	12	0.35	140	4.04	314	9.06	83	2.39	10	0.29

	840W1200		900W1200		1100W800		1100W600		1100W400		1200W590		1300W600		1440W600	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Chatt. Br. & Plain	11	5.70	73	39.04	-		-		-		2	1.15	8	44.44	-	
Rood focus*	44	22.50	20	10.70	2	11.11	9	52.94	4	15.38	88	50.57	4	22.22	1	16.67
Comp. st.	129	66.84	80	42.78	14	77.78	3	17.65	17	65.38	6	5.45	-		4	66.67
Check & Simple st.	9	4.66	14	7.49	2	11.11	5	29.41	5	19.23	78	44.83	6	33.33	1	16.67
Total	193	5.57	187	5.39	18	0.52	17	0.49	26	0.75	174	5.02	18	0.52	6	0.17

TABLE 43 (continued)

	440W590 480W570 490W570	
	#	%
Chatt. Br. & Plain	5	0.26
Rood focus*	112	5.85
Comp. st.	1312	68.55
Check & Simple st.	485	25.34
Total	1914	55.21

*Plain, grit
Plain, shell
incised (A)