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MISSISSIPPI PERIOD ARCHAEOLOGY OF THE GEORGIA COASTAL PLAIN

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MISSISSIPPI PERIOD ARCHAEOLOGY OF THE GEORGIA COASTAL PLAIN

By

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March, 1993

PREFACE

This discussion of the Mississippi Period in Georgia between the Coastal Zone and the Piedmont was originally written in 1986 and part of 1987 as one of a series of studies to provide a strategy for archaeological cultural resource planning in Georgia (Crook 1986a).

The task proved to be difficult from two standpoints. First, with the exception of along the Lower Chattahoochee and at the Falls of the Ocmulgee very little had been published which can be easily identified with the Mississippi Period on the Georgia Coastal Plain. Secondly, it became increasingly apparent that much of the occupation on the Coastal Plain during the Mississippi Period was not "Mississippian." That is the archaeological phases in much of the interior of the Coastal Plain during the Mississippi Period were most closely associated with Woodland traditions. This proved to be both a problem and an opportunity, since it became necessary for us to carefully consider our preconceptions of time and cultural pattern.

This presentation is long overdue and is already dated, for just in the past five years there has been a great deal of new work conducted within the Coastal Plain of Georgia - much of it on sites of the Mississippi Period. It is tempting to suggest a rewrite, or at least an appendix providing an update. However, because of the scarcity of existing information and the present interest in the Coastal Plain and the Mississippi Period, as soon as that appendix was written, it would in all likelihood be out of date. Therefore, with the exception of editorial changes, this paper is essentially as it was completed in 1987.

The series of documents of which this is a part, is designed to be a step toward developing a comprehensive protection planning process for archaeological resources in Georgia (Crook 1986a: 3). That is the primary purpose of this presentation. There are other purposes as well. The authors hope that this work will serve as a stimulus for additional work on the Coastal Plain and a more careful examination of cultural concepts which have, as in this case, made the separation of chronological period and cultural manifestation so important. If these two goals may be accomplished, then the effort will have been worthwhile.

The research upon which this monograph is based was financed, in part, with Federal funds from the National Park Service, Department of the Interior, through the Georgia Department of Natural Resources. The contents and opinions do not, however, necessarily reflect the views and policies of the Department of the Interior or the Department of Natural Resources, nor does the mention of trade names or commercial products constitute endorsement or recommendation by either Department.

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INTRODUCTION

Georgia is fortunate to have within its borders some of the most outstanding prehistoric monuments in the Southeast. Rare is the native or tourist who has not seen or at least heard of the sites of Etowah, Ocmulgee, or Kolomoki. Many have located "arrowheads" and other Indian artifacts in the fields, along the shorelines, and within the construction sites of Georgia. Increasingly in the last few years professional archaeologists have redoubled their efforts - under government edict or through an attempt to answer specific research questions - to learn about the past. The reasons for this are many-fold. It gives us an understanding of the action and aspirations of unknown Georgians who although long dead are a part of our history; it allows us to better understand the fragility of nature and of human cultures; it speaks to us of the need for modern man to profit from past successes and avoid past follies and failures.

Partly because of an accident of archaeological research history, to an extent the concentration of the present state population, and until only recently the location of state colleges and universities with archaeological programs, much of the endeavors of archaeologists have been directed north of the Fall Line and along the coast. It is becoming increasingly apparent however, that prehistoric Georgians of the Coastal Plain have a story that is waiting to be understood.

A first step toward understanding a relatively unknown area is to summarize that which is known. Although knowledge of the archaeology of the Coastal Plain is at best spotty, we have endeavored to summarize as best we can knowledge of one of the prehistoric periods of the Plain and by so doing determine something of what we need to know. It is hoped that this alone will be of value to agencies and archaeologists in directing their planning and research.

A discussion of the Mississippi Period on the Coastal Plain of Georgia implies dealing with several questions. Archaeologists are not entirely in agreement on that which constitutes 'Mississippian'; therefore, a review of interpretations involving time, space and culture is appropriate.

In order to fall within the scheme of the studies of which this is a part, the title and structure of this discussion will be primarily temporal - i.e. the Mississippi Period. The temporal question is whether humans occupied different areas within the region between A.D. 900 and A.D. 1500. If this first question is answered positively, refined temporal, geographic and cultural questions follow. Where did they live? Did the inhabitants participate in a Mississippian culture? If the region was not inhabited by Mississippian peoples, what was their cultural affiliation? How did these cultures adapt to the environments of the Coastal Plain and how did Coastal Plain subsistence resources affect intrusive 'Mississippian' cultures?

What is 'Mississippian'? Willey (1966) has offered a traditional view utilizing a list of physical traits which will be present on Mississippian sites. For him, Mississippian was marked by rectangular, flat-topped mounds for temples or special domiciliary purposes, often around an open plaza. There is evidence of increasing permanency to the occupations, and subsistence was based on cultivation of corn, beans and squash, as well as hunting and collecting. New ceramic types occur; different in paste, temper and form from those preceding.

An alternative approach is presented by James B. Griffin (1985). He views Mississippian as the development of several different cultures which reached an equivalent social and technological level within a pan-southeastern interaction sphere. He stresses that the concept of the Mississippian must not include specific construction features, nor arbitrary categories of cultures, or habitat zones, but one that should reflect ideas and practices of people of Eastern North America which over a 1000 year period reached levels of development not previously achieved. The common characteristics included increased populations as a result of more efficient agronomy, permanent towns and ceremonial centers, villages and support hamlets, farmsteads and extractive camps. There were regional and temporal variations of a hierarchial, social, political, and religious structure, but all participated in area-wide belief systems which were ritualized through a widespread iconography. There was an extensive trade network through which ideas, raw materials, and finished products moved. All of these traits peaked in the time between A.D. 1200 and A.D. 1500, then slowly deteriorated in complexity until they were destroyed during the colonial period.

Bruce Smith (1985) offers another perception of Mississippian. He notes that much of the Eastern Woodlands between A.D. 850 and the european entradas were occupied by Indian groups which shared a number of similarities in material culture. The similarities include earthen mounds on which public building and/or the domiciles of leaders were placed. In addition, they all occupied a similar environmental zone; the river valley flood plain of aggrading streams which produced natural levees, meanders, and low elevation back swamps. This provided all the populations with naturally fertilized, sandy, well drained, easily worked soils which would support their cultigens of corn, beans and squash. The flood plains also provided quantities of wild food such as back-water fish, migratory waterfowl, deer, raccoon, turkey, nuts, fruits, berries and seed-bearing plants such as Plygonum and Chenopodium.

These definitions are in general agreement at the level of the site and artifact on the appearance of the Mississippian. The differences come at the level of significance and interpretation; for Willey the Mississippian is signaled by the presence in a site of a particular group of traits; for Smith it is an adaptive strategy; while for Griffin it is a complex social and technological interaction sphere. The merits and difficulties of these interpretations are worthy of continuing study, but for most of the Coastal Plain, interpretation of sites in the light of these characterizations is not yet a possibility because

of the paucity of information. Within the body of this work the major concentration will be upon identifying cultural manifestations within the time period specified and characterizing them as well as possible considering the existing information. It should be noted, however, that even with the limited information available it will become apparent that the Georgia Coastal Plain provides us with Mississippi Period cultures which are in variance enough with 'Mississippian' that significant questions are presented considering any of the three characterizations given above.

In a review of the Mississippi Period in Georgia written in 1975, Hally pointed out that for much of the state only the chronological framework had been established. He commented upon the theories of Mississippian 'invasion' and their problems, but noted that in only a few instances had researchers seriously concerned themselves with the significance and function of individual characteristics and traits within total cultural systems (Hally 1975: 46). This was a problem not limited to that period or only the Coastal Plain. In the same review Hally observed that with the exception of the mouth of the Savannah River and the Lower Chattahoochee, almost nothing was known of Georgia south of the Fall Line zone.

Little has changed in the intervening years concerning knowledge of prehistoric developments in general, and the Mississippi Period specifically, in the interior Coastal Plain. Exceptions to this statement are the result of work along the Ocmulgee (Snow 1977), the Okefenokee Swamp (Trowell 1984), along the Chattahoochee (Schnell, Knight, and Schnell 1981), and some isolated cultural resource reports.

With the background work of gross chronology established (for some sections of the Coastal Plain), Hally suggested that it was time to go on to more sophisticated questions. It is apparent from recent reports, CRM manuscripts and earlier products of this series (Crook 1986, Hally and Rudolph 1986) that progress has been made in some areas. However, as will become obvious, the majority of the interior Coastal Plain remains an enigma that awaits the most basic research of chronological refinement as well as more processual and cultural systems inquiry.

ENVIRONMENTAL BACKGROUND

Many factors are important in structuring the settlement patterns of humans and not least among these are environmental ones. The technology of cultural systems is closely associated with the effective environment from which subsistence is extracted. It is very important to review knowledge of former environmental systems when trying to understand past cultural systems. It is the central research question of this series: how did cultural systems adapt to the Georgia environment?

Several paleoenvironmental studies have been conducted in the southeast which are useful in reconstructing major climatic fluctuations (Watts 1970, 1971, 1973, 1975, Wright 1971, Carbone et al. 1982). Indications are that, during the last stadial of the Wisconsin, full glacial forests were present in Georgia. With the onset of Holocene conditions there was a warming trend and a rise in sea level which affected the flow of rivers. By 5000 B.P., rising sea level, decrease of stream gradient, and rising ground water table led to the establishment of basically modern conditions. Minor fluctuation in temperature and sea level are noted after this time; however, the data are inadequate to be useful in micro interpretations of a specific site (Watts 1971, Wharton 1978).

The Fall Line, the inland limit of a former marine submergence which reached from Mississippi in the west to Delaware, separates the Piedmont from the Coastal Plain (Shelford 1963). In Georgia, this runs from Augusta through Macon to Columbus. The Fall Line corresponds with the isotherm marking an average January temperature of 46F and 81F for July. There are approximately 225 days without frost. Rainfall is approximately 45 inches per year (Harper 1930). Further south on the Coastal Plain there is a gradual amelioration of climate until on the Florida border there is a January average of approximately 63 degrees F, to a high in July of 92 degrees with 245 frost free days.

The Coastal Plain of Georgia differs from the Piedmont in the origin and nature of its soil and therefore many of the characteristic fauna and flora. Northern Georgia is underlain by granites and other crystalline rocks. These stones have decomposed to form soils of sand and clay. The Coastal Plain is much younger and the history less complex. The deposits are largely waterlain sands and clay. The various coastal deposits are in bands which run approximately northeast-southwest.

The Coastal Plain is not a geomorphological or climatological entity, rather it consists of variations on environmental themes. There are several avenues to understanding past environmental features of the Coastal Plain. Harper was first followed in an earlier draft of this work because he relied on observations from the early twentieth century, which likely reflect more than do modern floral communities the primeval conditions. He divided the Coastal Plain into the Fall Line Sand Hills, the Blue Marl Region, the Southern Red Hills, the Red Lime Hills, the Lime Sink Region, the Wire Grass, the Hammock Belt, the Flat Pine Region, and the Coastal Strip (Fig. 1) (Harper

1930). The Coastal Strip of the Coastal Plain is discussed elsewhere (Crook 1986b), and will not be dealt with here.

Although much of Harper's information is used in the following discussion, the physiographic zones used will be those of Wharton 1978 (Figure 1). There is a great deal of similarity between Harper's and Wharton's schemes, but it has been decided to use Wharton because it most closely follows the boundary between the interior Coastal Plain and the Coastal Zone as used in earlier works in this series (Crook 1986a, 1986b) and the terms and areas most closely follow more recent evidence. Using this approach, the Flat Pine Lands (otherwise known as the Pine Barrens), which were covered in Crook's discussion of the Coastal Zone, are eliminated from this paper except in the effects that it has upon cultural manifestations within the interior of the Coastal Plain. The inhospitable Flat Pine Lands, except where penetrated by rivers, serve as a barrier between the interior and the Georgia coast.

At the interface of the Piedmont and Coastal Plain are found the Fall Line Sand Hills, a transition only few kilometers wide in most places. These hills attain a height of up to 215 meters, the highest area in the Coastal Plain. The forest was dominated by long-leaf pine (*Pinus palustris*), and black-jack oak (*Quercus marilandica*) on the uplands and black gum (*Nyssa sylvatica*), bay, poplar, and red maple in the low lying swamps. The Fall Line Hills are at their widest along the Chattahoochee.

The Fall Line Hills is largely a relic dune area, generated by a standstill of a former sea. These sandy hills are approximately 48 km in width and cover about 17,500 square kilometers (Shelford 1963). Of importance to the aboriginal inhabitants of the area are the occasional outcrops of chert, a valuable resource.

There is only a relatively small area of Blue Marl and in most of the Coastal Plain the marl is covered with sand and clays. The topography is hilly with relatively wide valleys. There is a great deal of entrenchment along the Lower Chattahoochee which cuts into this zone. The flora was dominated by loblolly pine (Pinus taeda), long-leaf pine, short-leaf pine (Pinus echinata) and sweet gun (Liquidambar styraciflua). The majority of the Blue Marl is to be found along the Chattahoochee.

As has been noted elsewhere (Schnell 1981) the Fall Line Hills, the Blue Marl Region and the Chattahoochee Red Hills, provides a tongue of uplands extending below the Fall Line which is bisected by the Chattahoochee River. Further investigation may suggest that it is this peculiar environmental situation which has allowed a much greater presence of Mississippian cultural adaptation on the Georgia Coastal Plain along the Chattahoochee.

There is a small area in the southwestern part of the state referred to by Harper as the Red Lime Lands. These are unusual but share traits with the area around

Marianna, Florida. The soil is unusually fertile for the Coastal Plain. The live oak is characteristic of the flora, a species that is usually found only near the coast. The Oak would be a valuable asset to indigenous inhabitants depending to some extent on natural resources.

The Southern Red Rills are found from South Carolina to Louisiana, and cover about 6000 square miles of Georgia in a band approximately 25 miles wide below the Fall Line. These consist of broad hilly uplands interspersed by swampy lowlands which lie on Eocene deposits containing limestone, chert and shale. As is common on the Coastal Plain, the flora is dominated by short-leaf pine (*Pinus taeda, Pinus echinata, Pinus palustris*) and minor amounts of Liquidambar sweetgum.

The Lime Sink region is found on both sides of the Flint River from Cordele to the southwest corner of the state (Wharton 1978, Harper 1930). This region is comprised of limestones which are often silicified near the surface but covered by several feet of clay and sand. The vegetation was principally long-leaf pine and wiregrass. On the drier ridges oak hammocks were present. Slash-pine, pond cypress, black gum with deciduous trees of various sorts are on river banks.

Bounding the Lime Sink region is an escarpment of up to 46 meters high that introduces the Wire Grass country which covers about 26,000 square kilometers of the Coastal Plain. The topography of this region varies from flat to moderately hilly lands. Streams and swamps are common. The area is on a base of red sandy clay overlain by one to two feet of sand. In addition, the left banks of streams have extensive sand deposits. Originally the flora of the area was dominated by long-leaf pine, with small oaks on the hills that followed streams. In places protected from fire, magnolia hardwood forests were found. Cypress, slash-pine and black gum occur in ponds, and black gum bay and other hardwoods are found in the swamps. The sandy soils are poor for agriculture.

In extreme south central Georgia, a small area of the Florida Hammock Belt is found. The soil and topography vary considerably from conditions similar to those of the Red Hills area to that indistinguishable from the Flat Pine region. The pristine forest consisted of long-leaf pine, short-leaf pine (*Pinus taeda*), bay (*Magnolia virginiana*), magnolia (*M. grandiflora*), slash pine and sweet gum.

Bordering the Wire Grass region is Flat Pine Lands marked in some areas by a low escarpment, while in others there is no visible boundary. The conditions in this area are similar to that of the Wire Grass region, but elevation is generally below 30 meters and there is little topographic relief. The lack of relief results in poor drainage except where rivers have cut below the surface. As a result of earlier standstill of the ocean, there are two ridges which parallel the present coastline. Trail Ridge is the innermost of

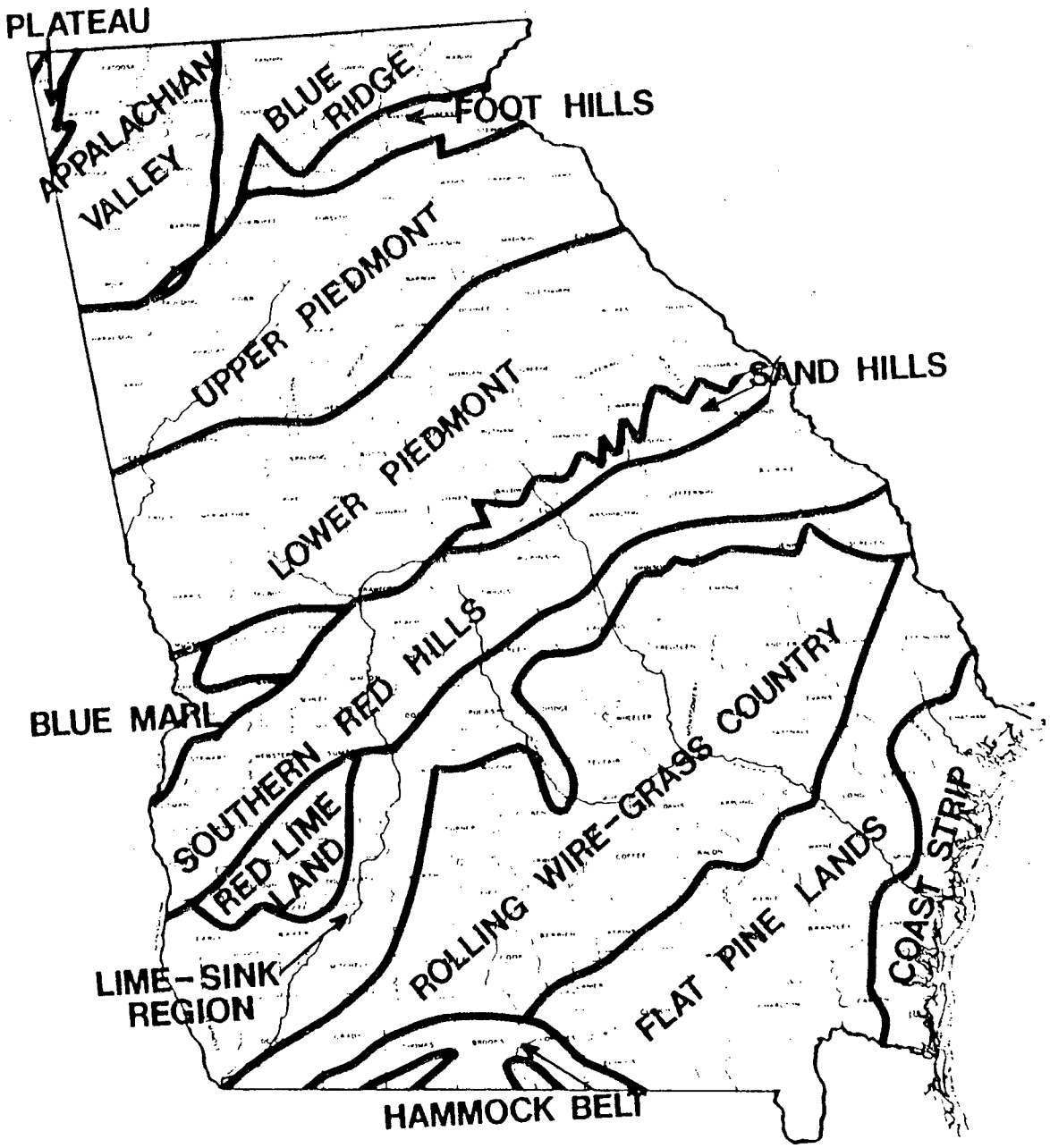

Figure 1
Regional Map of Georgia by Roland Harper (1930)
Copied from Wharton 1978:10

the ridges and acts as a dam on the east side of the Okefenokee Swamp. The other ridge west of the swamp affects the flow of the Satilla and the St. Mary's. Flora in the area is dominated by long-leaf pine, slash-pine, pond cypress, black gum, black pine, and bay.

The Flat Pine Lands are perhaps the least hospitable of the major areas on the Coastal Plain of Georgia. This was the first area encountered during the inland penetration of the Coastal Plain from the Atlantic coast. It is perhaps for this reason that the Coastal Plain quickly acquired a reputation for poor resources among early settlers - a reputation which it tends to retain today. One of the authors of this study was taught in high school geography that the Georgia Coastal Plain was best characterized by "pine trees and po' folks". The considerable diversity of the Coastal Plain and its potential for certain kinds of exploitation have remained largely unrecognized. One interesting exception to this is the development by a number of major corporations of hunting preserves within the Coastal Plain, particularly in Southwestern Georgia.

Originating in the Piedmont and crossing the Coastal Plain are several rivers. The Savannah, the Ogeechee, the Oconee, and the Ocmulgee drain to the Atlantic. The Flint and the Chattahoochee drain to the Gulf. The rivers which drain the Piedmont carry substantial amounts of suspended particulate matter capable of rejuvenating their flood plain with rich soil. Most of those rivers named above, however (the one exception being the Chattahoochee), have extensive swampland borders below the Fall Line, limiting their potential for prehistoric agricultural exploitation.

Rivers which originate in the Coastal Plain are less turbid than the above. They frequently contain decayed vegetable matter that gives them a dark color, but they carry little nutrients to supply their flood plains. These include the Suwannee, the St. Mary's, the Ochlocknee, the Withlacoochee, the Alapaha, the Aucilla, and their tributaries.

River and upland swamps are also an important feature on the Coastal Plain. River swamps are flood plains which are so near the normal water level that they are easily and often flooded. The largest upland swamp is the Okefenokee, an area of approximately 1600 square kilometers which drains southward into the St. Mary's and the Atlantic; however, the greatest flow is through the Suwanee to the Gulf. Within the swamp are numerous islands. The sandy interior of the islands support long-leaf and slash pine while the edge of the hammocks are characterized by live oak, water oak, magnolia, bay and sweet gum. The understory has saw palmetto, smilax, grapes, huckleberries, blueberries and gall berries. Numerous bays also exist which are too wet to support pines but feature pond cypress, black gum and bays (LaForge et al. 1925). Although not well suited for agricultural exploitation, they are well suited for the exploitation of a wide variety of wild plant and animal resources.

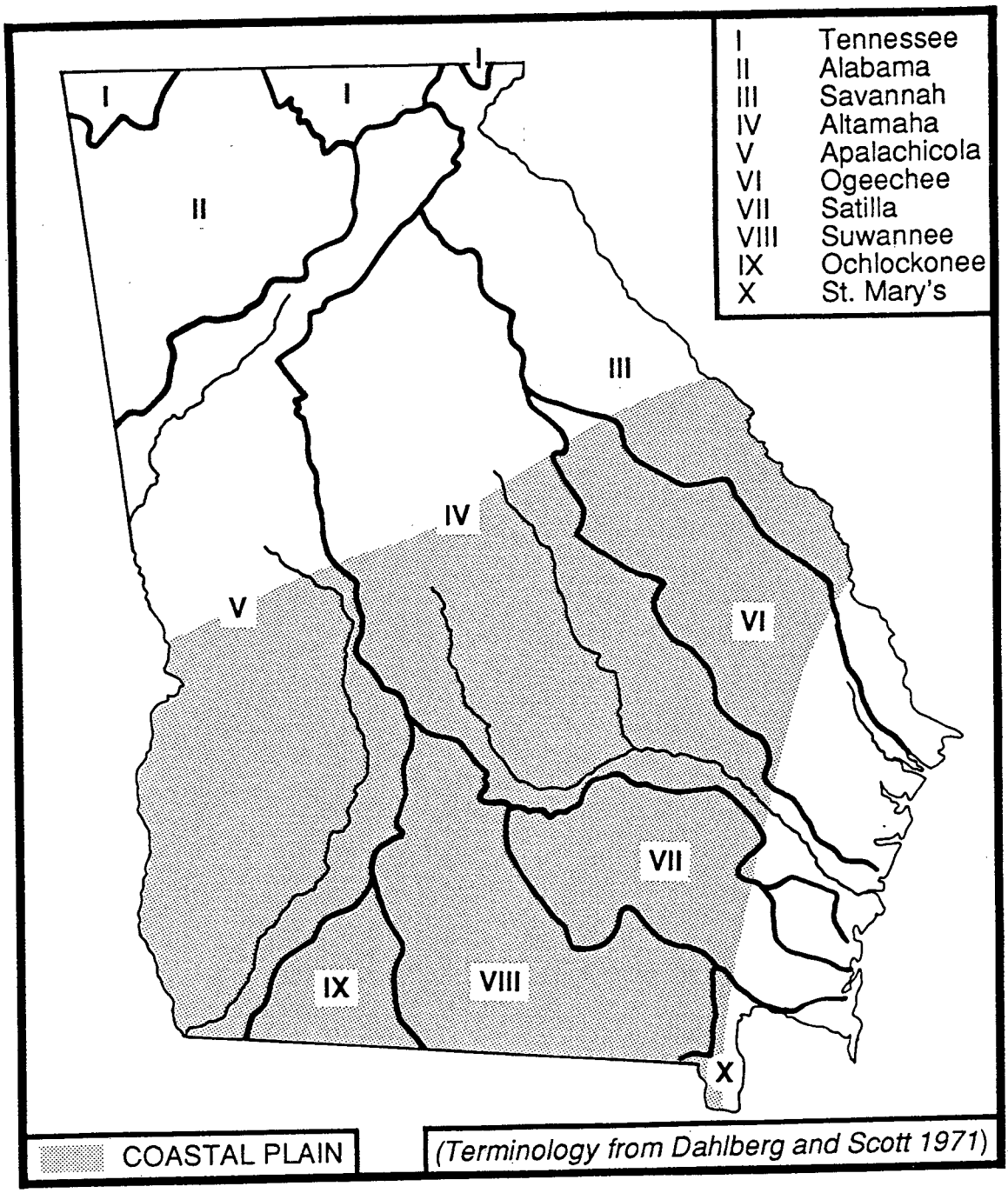

Figure 2
Major Drainage Systems of Georgia

The preceding review of the environment of the Coastal Plain is important for our understanding of the human settlement potential, but precise conditions of the time in which we are interested may not be represented. One avenue for suggesting the composition of the floral communities prior to European disturbance is through searching the land surveys for tree species which were observed during settlement 1733-1832 (Plummer 1975). The entire state was not surveyed, therefore the records are incomplete, but give an idea of the primeval conditions. There are other shortcomings to this approach as well, since the surveyors tended to be selective in the trees they used as mapping landmarks. Nevertheless, with this in mind, they do give some indication of species representation and diversity within a select portion of the floral communities.

An interesting observation is available from Bibb County at the interface of the Piedmont and Coastal Plain which gives insight to the differences between the two areas. In the northern half of Bibb County 36 tree species are reported, while in the southern half 17 species are recorded with 89-96% pines, a reflection of different soil characteristics. Piedmont soils (Cecil clay and loam) contained more varied nutrients than that of the Coastal Plain (Norfolk loamy sands) away from the influences of alluviation.

Farther to the southeast early forests had even fewer species. In Wayne County, only eight species were noted and 12 species are recorded near Alma. Where deciduous species are found they are best represented by lowland species. On uplands, pines are abundant, representing up to 99% reported species. In Tift County, pines are 97% of recorded species. Species on the southeastern Coastal Plain varied from 8 to 14. Pines of various sorts dominated the spectrum ranging from 71% to 99% with gum trees either black or tupelo second, followed by red bay and cypress. In the southwestern Coastal Plain up to 38 species are recorded but again pine was dominant followed by oak and hickory at a ratio of 91:1:0.5 on sandy soil and pines, sweet gum, hickory, at an approximate ratio of 42:20:7:6 on clayey soils. Soils in many areas are primarily sand, lacking many nutrients due to the low cation exchange capacities.

The above summary of the environment demonstrates that there is topographic and floral variation within the Coastal Plain. However it is obvious that there is a very low tree species diversity index in many areas. It has been suggested that this is an unattractive feature for those dependent on wild resources. The predominant form in these areas is pine of various species. These have little to offer those who depend on natural products of the land to provide or supplement their subsistence. Further, the pine forest did not provide a suitable dietary base to support faunal population that would have been attractive to Mississippian hunters (Larson 1980). The sandy soil of the Coastal Plain areas like the Pine Flat Lands is not a soil conducive to primitive agriculture. It is only with the development of soil supplement that the area has been able to support a farming economy and even today the Coastal Plain produces primarily forest products.

Summarizing evidence, it seems that the part of the Coastal Plain on the Atlantic slope supported primarily pine forests. The part on the Gulf slope was more diverse, with more hardwoods, although even here pine dominated, especially on the Flint. For several reasons the flood plain of most Coastal Plain rivers are not normally conducive to agriculture. There is a likelihood of flood at almost any time of the year because of low banks and unpredictable rains which would lead to frequent flooding and discourage planting. The type of flooding which characterizes much of the Coastal Plain is not one which normally results in the transportation of significant amounts of soil nutrients for an appreciable distance below the Fall Line. The pine forests produce a low quality highly acidic soil that is not particularly fertile nor regenerated by flood. Nutrients which are deposited in the sandy soil are soon lost due to leaching. Contradictions to this general pattern may be found on portions of the Coastal Plain where rivers which rise in the Piedmont are found and which therefore have greater potential for regenerating the soil.

The implication of this environmental review is that it allows the development of a model of potential aboriginal adaptation based on subsistence. Much of the Gulf slope of the Coastal Plain, particularly the Chattahoochee drainage, would present environments that would be more attractive to humans regardless of subsistence because of the higher diversity of flora and fauna. Also, the more fertile non-swampy soils would be more conducive to the development of horticulture.

It is assumed that the larger population which horticulture would allow during the Mississippi Period would result in the displacement of hunting and gathering populations to less desirable horticultural environments such as the Atlantic Coastal slope, or the entrenchment of already existing non-horticultural societies within that slope. It is thus predicted that the archaeological data will reflect the development of more complex food production strategies and adaptations on the Gulf Coastal slope. The Atlantic slope would likely support marginal populations of hunters and gatherers retaining much of their Woodland heritage somewhat influenced by the Mississippian peoples found on the Gulf slope and in the Piedmont.

ARCHAEOLOGICAL MANIFESTATIONS OF THE MISSISSIPPI PERIOD ON THE GEORGIA COASTAL PLAIN

When David Hally wrote that [Mississippi Period] "Cultural developments in interior Georgia south of the Fall Line are little known" (1975: 42), it was a result of a combination of factors. First, with the exception of some specific areas such as the Lower Chattahoochee, there was little which had been noted on the Coastal Plain of Georgia that could confidently be classified as "Mississippian" and therefore clearly of the Mississippi Period. Secondly, much of the Coastal Plain was (and is) archaeologically unknown. Since 1975, our understanding of Mississippian culture and the Mississippi Period on the Lower Chattahoochee has continued to expand, serious investigations have begun elsewhere, and we realize even more clearly that there may be much on the Georgia Coastal Plain which is not "Mississippian," but is of the Mississippi Period.

It is the intent of this chapter to outline, as best we can, the identified cultural manifestations of the Mississippi Period on the Georgia Coastal Plain utilizing the limited data which are available for much of the region. In order to accomplish this in a some logical fashion, it will be necessary to divide this chapter according to several areas which have been recognized during the organization of data for this study. These areas are, for the sake of convenience only, organized according to degree of perceived "Mississippianization." By that, we mean the degree to which the local cultures of each region appear to have been affected by stimulus and/or direct diffusion of cultural characteristics which have been defined as Mississippian by Willey, Griffin, Smith, or elsewhere in this study.

These areas are the Central Zone of the Lower Chattahoochee River, the Southern Zones of the Lower Chattahoochee and Flint Rivers, the Northern Zone of the Lower Chattahoochee, the Northern Zone of the Lower Flint, the Fall Line zones of the Ocmulgee, and the Oconee, the Savannah (with emphasis upon the Fall Line zone), the Okefenokee, the Central Zone of the Lower Flint, the Ocmulgee Big Bend region, and finally, the balance of the Georgia Coastal Plain (See Figure 3). Two of these regions are ones which are largely marriages of convenience.

Based upon what is known, it is probable that there are Mississippi Period occupations throughout this portion of the Coastal Plain, but little, if anything, can be said about this vast region which makes up a significant portion of that geographic province. The terms Northern, Central and Southern Zones of the Lower Chattahoochee have been previously defined (Schnell 1981) and similar zones are defined herein for the Lower Flint.

Before proceeding, conventions of geographical terminology need to be clarified, based upon the system developed for the Chattahoochee River (Ibid). Various writers have called certain portions of the Chattahoochee River "Upper", "Middle", and

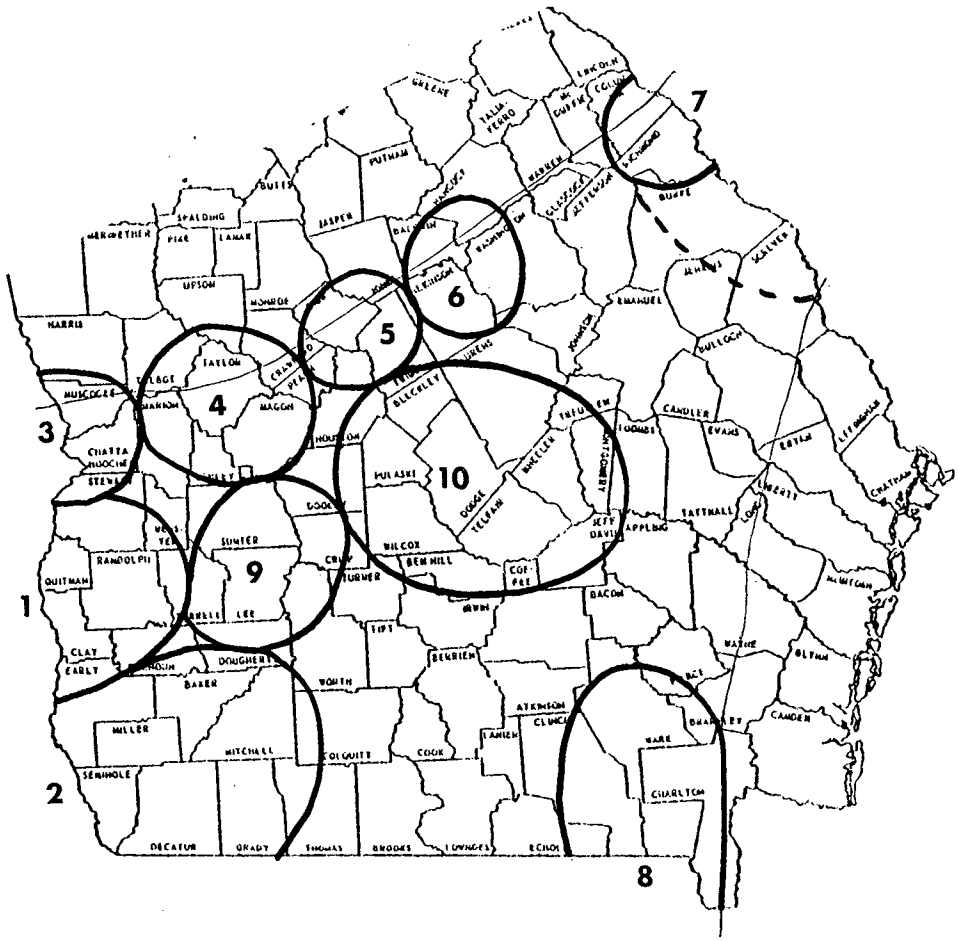

Figure 3
Archaeological Areas on the Georgia Coastal Plain

"Lower". As an example, for many writers in Florida (cf. Brose 1980), the Lower Chattahoochee appears to be only that very short section of the river which borders the state of Florida. For them the Middle Chattahoochee is that section south of the Fall Line and north of the Florida border. When the Chattahoochee as a whole is viewed, however, it is apparent that under this nomenclature, the "Lower Chattahoochee" and the "Middle Chattahoochee" make up only approximately one third of the total length of the river, rather than two thirds as would be expected. For this and other reasons, Schnell proposed that the Chattahoochee be viewed as a whole, with the southernmost third (that portion below the Fall Line) being called the Lower Chattahoochee, the central third (from the Fall Line to the Chattahoochee Palisades near Atlanta) called the Central Chattahoochee, and the upper third (from the Palisades to its headwaters) the Upper Chattahoochee.

Within this paper, this convention will be followed for the Chattahoochee, and, for the sake of consistency, also on the other Piedmont-originating streams which flow through the Coastal Plain. Therefore, when we speak of the Lower Flint, we mean that portion of the Flint which is below the Fall Line. As will be noted below, some of these river sections are further subdivided into zones, based upon environmental, or geomorphologic, or cultural criteria - or combinations of the three.

The Lower Chattahoochee - Central Zone

The zones of the Lower Chattahoochee were originally defined (Schnell 1981) based upon perceived differences in both physiographic and cultural manifestations along that stream in prehistoric times, particularly during the Mississippi Period. The Central Zone extends along the Chattahoochee from the lower edge of the Fall Line Hills at Omaha, Georgia to the southern end of the Chattahoochee Red Hills near Kolomoki Creek. This lower limit has long been recognized as significant - the Early map of 1818 at this point states "here the hilly ground commences." A portion of the Central Zone of the Lower Chattahoochee was first investigated with some intensity from a professional point of view by William H. Sears during his work at Kolomoki (at the southern terminus of the zone), beginning in 1948. Although Sears saw what he felt were "Mississippian" influences at the Kolomoki Site and consequently placed it within the Mississippi Period, the Kolomoki Culture will not be considered here, since subsequent radiocarbon dating (Belovich, et al. 1982: 413, Milanich and Fairbanks 1980) has placed this cultural manifestation well within the Woodland Period. We will return to the Kolomoki Site, however, in our discussion of the late prehistoric.

The number of Mississippi Period mound sites in the Central Zone of the Chattahoochee is far greater than in any other region of Georgia. Between Omaha, Georgia and Columbia, Alabama, there are at least twelve such sites, representing perhaps 30 Mississippi Period mounds or mound caps. Although this may or may not serve as a measure of the "Mississippianization" of a region or in defining a region

empirically (Scarry and Payne 1986), it does allow us to see that there is something here which bears further investigation.

In a conference on South Appalachian Mississippian at Ocmulgee National Monument in 1986, Schnell (1986) presented a new chronological sequence of Mississippi and Historic Period archaeological phases for the Central Zone of the Lower Chattahoochee, along with brief characterizations of these phases. Table I shows the sequence suggested. For the purposes of this study, we will only consider the first five of these phases: Standley, Rood, Singer, Bull Creek, and Stewart. The remaining three represent cultural manifestations which have some evidence of european contact, either direct or indirect. It should be noted that there are as yet insufficient radiocarbon and other dates available to establish the suggested prehistoric phase transition dates firmly, although it is felt by Schnell that these dates are reasonably precise.

In terms of separating the "historic" from the "prehistoric" on the Chattahoochee, we may with some justification select the date of A.D. 1528, when the expedition of Panfilio Narvaez foundered near the lower reaches of the Apalachicola, Chattahoochee, Flint river system (Covey 1961).

Table 1
Archaeological Phases in the Central Zone of the Lower Chattahoochee

A.D.	Phase Name	Comments
1836		Removal
	Lawson Field	
1715		Yamassee War
	Blackmon	
1650		Spanish missions
	Abercrombie	
1550		
	Stewart	Spanish entradas
1500		
	Bull Creek	
1400		
	Singer	
1300		
	Rood	
1150		
	Standley	also Cat Cave Creek Phase?
900		

Despite the amount of work that has been done on the Lower Chattahoochee, the Woodland-Mississippi periods interface has yet to be clearly delineated. This is particularly true in the Central Zone of the Chattahoochee. It is necessary to here again make a careful distinction between the terms "Mississippi" and "Mississippian" as applied in this study as applied to Georgia archeology.

The Mississippi Period as an artificial span of time, extends from A.D. 900, when it appears that the first significant Mississippian influences appeared in the region, to A.D. 1528, when apparently the first significant european contact was possible. Mississippian, on the other hand, is defined in three different ways elsewhere in this paper. For the immediate purposes, Mississippian refers to a life style which developed to the north and west of Georgia and which spread into the region through direct and/or stimulus diffusion. Although it is beyond the scope of this study to define the Woodland Period and the Woodland tradition, these terms will be used in a similar fashion. In Piedmont Georgia, where what has become known as South Appalachian Mississippian has been defined and refined (Ferguson 1971, Hally 1986), such a careful distinction is not quite so essential as on the Coastal Plain where, as we shall see, there are examples of a relatively "pure" Woodland tradition extending well into the Mississippi Period.

Standley Phase

In the Central Zone of the Lower Chattahoochee, it has never been entirely clear as to whether there were examples of the Woodland tradition which continued to exist into the Mississippi Period. Scarry (1981) and White (1981) have shown strong and consistent evidence for such a phenomenon on the Apalachicola River in Florida and in the confluence of the Chattahoochee and Flint Rivers at the southwestern tip of Georgia (see below). In the Central Zone, however, there are only suggestions of such interaction. Some sites, such as the Pataula Creek Site (9Cy7, Kelly et al. 1962: 13-16) and the Wylaunee Creek Site (1Br43, Schnell 1973: 25-27) suggest association of Mississippian style ceramics and Woodland style ceramics. Kelly et al. (1962: 19-25) identified what they referred to as the Cat Cave Creek complex, and although data are too few to offer a definitive statement, future research may reveal that this complex, redefined as a phase, may be of the Mississippi Period. None of these sites are identified as what will be considered in this study as Standley Phase.

Standley Phase ceramics were first recognized by Joseph R. Caldwell in his excavations at the Rood's Landing Site (9Sw1). Beneath Mound E at the site, Caldwell (1955: 40-41, 1958: 65) identified what he considered to be "Early Mississippian" based upon a high percentage of shell tempered, Mississippian style ceramics. Although his assumption was based upon a very small sample, it is assumed here that his characterization was accurate, particularly in the light of more recent evidence. When excavations were begun by the University of Georgia at the Mandeville Site in Clay County, Georgia (9Cy1), it was discovered that Mound A (the Standley Mound) was predominantly

composed of Woodland materials, but that it had a distinctively Mississippian cap. Because of the limited time and funds, it was decided to concentrate upon the Woodland evidence and only limited attention was paid to the Mississippian component.

The first season's report on excavations at the Mandeville site, and to a lesser extent the "final" report (reporting on the 1959 and 1960 seasons), summarized (McMichael 1959: 61-69; Kellar, Kelly, and McMichael 1961: 13, 37-40) the ceramic inventory of material recovered. It was noted that, as in the "Early Mississippian" component at Rood's Landing, there was a significant proportion of shell tempered ceramics (Ibid: Table 13).

It is interesting to speculate as to whether there may have been Wakulla ceramics intermixed with the Mississippian material at Mandeville. Unfortunately, this is not clear. Although in the discussion of the artifact analysis at the site, check stamping encountered in association with this material is referred to as Mercier Check Stamped (Ibid: 37), elsewhere in the report (Ibid: 13) at least the possibility is put forward that some of the check stamped material may have been Wakulla Check Stamped. This material definitely warrants reanalysis from a modern perspective.

At the Cemochechobee Site (9Cy62) only a few miles to the south of Mandeville, the Columbus Museum conducted extensive excavations in the late 1970's in order to recover information from an endangered Mississippian site (Schnell, Knight, and Schnell 1981). At that site, the investigators did not find a component which had a significant proportion of shell tempered ceramics. They did find, however, that the earliest components at the site had a measurable increase in the proportion of shell tempering (Ibid: 204, Table 4.20).

One Mississippian mound site may offer significant evidence toward an answer to the Woodland-Mississippian interface question in the Central Zone of the Lower Chattahoochee - if it has not been disturbed to the point that pertinent data recovery is impossible. This is site 9Cy87 (Belovich, Brose, Weisman, White 1982: Table 11), located at the mouth of Kolomoki Creek. Unfortunately, this site is predominantly beyond federal property boundaries and so is not protected. The area was being mined in 1987. Schnell (notes on file at The Columbus Museum) has identified what appears to be a Wakulla Check Stamped variety at this site in apparent association with Rood ceramic materials.

Rood Phase

The Rood Phase represents what may be called a mature Mississippian development in the Central Zone of the Lower Chattahoochee Valley. The Rood's Landing Site (9Sw1) is the type site for this phase (Caldwell 1955). Although the majority of Caldwell's excavations at this site concentrated upon a later, Stewart Phase

component, he did recover sufficient material to recognize this as a distinctive phase represented in more than one component, based upon a deep test excavation into Mound A (Ibid: 39-40). Using Caldwell's characterization of this material, McMichael and Kellar (1960: 213-215) defined in a preliminary manner what they referred to as the "Rood Focus" in the Oliver Basin on the Fall Line of the Chattahoochee.

The Rood Phase has most fully been defined based upon excavations by The Columbus Museum at Cemochechobee (9Cy62). At this site, two mounds were almost totally excavated, one was extensively tested, and the village area encompassed with federal government property boundaries was tested (Schnell, Knight, and Schnell 1981). There was very little evidence of non-Mississippi period occupation at the site, a total of only 11 sherds could be identified as not Mississippian (Ibid: Table 4.24) out of a total of more than 35,000 sherds analyzed.

Excavations at Cemochechobee concentrated upon two mounds which were washing into the Chattahoochee River (George W. Andrews Lake). Mound A was a burial mound with three distinct eras of interment. Mound B was a platform mound with ten distinctive stages of renewal. Beneath Mound B was a midden with several distinctive construction phases. It is beyond the scope of this study to completely recapitulate the results of these excavations, but they will be used to establish several characteristics of Rood Phase material culture beyond ceramics.

Four distinctive wooden structure types were identified at Cemochechobee. These are: 1) single post structure, 2) wall trench, open corner structures, 3) at least one semi-subterranean circular structure and, 4) "curtain" walls apparently designed to screen certain (sacred or elite) areas of the site from others. One other structural form identified at the site was the occurrence of at least one large individual post mold, possibly designed for holding a large post of sacred and/or ceremonial purposes.

Other than these structural types, there were the earthen monuments. As has been noted, Mounds A and B served quite different immediate functions. Mound A was a burial mound with a relatively complex construction history, suggesting that it was not the artifact of a single ceremony, as has been suggested for the burial mounds at Kolomoki, by Sears (1956: 95-96). Mound B was a substructural mound which had been enlarged in at least ten identifiable stages. One of the more obvious functions of this enlargement was that of increased size and impressiveness. Knight (1986) has pointed out that these enlargements also served as a physical example of cultural renewal.

At this site, a significant proportion of the vessel forms could be determined and could be correlated with other ceramic attributes. Due to this particular circumstance of ceramics recovery, a special typology was developed. Rather than basing the ceramic typology upon surface treatment - a system which grew out of the need for classifying small fragments (Phillips 1970: 28-29) - the typology for Cemochechobee was based

upon vessel form as the primary criterion. This form-oriented ceramic typology was based not only upon material recovered from this site, but also from other Rood Phase sites in the area. It was done because it was (and is) believed by Schnell that such a typology - essentially based upon function - comes closer to being an emic classificatory system. It should be pointed out that in recent years, Hally (1983) has extended beyond this classificatory concept toward developing techniques for making reasonable predictions of the specific function of forms and even of individual vessels.

Under this system of ceramic classification proposed in the Cemochechobee Site report, the superficial form of the classificatory scheme was almost identical to that of more conventional Southeastern typologies. It is a binomial system with specified varieties. In the case of the Cemochechobee system, however, the first part of the name (the identifier) is a more or less arbitrarily selected name intended to represent a particular form and/or function. As in more conventional typologies, the second part of the name is descriptive of the surface treatment. When the decoration is a particular technique ("incised"), then that name is used. When there are a variety of surface treatments, either on the same vessel, or different vessels of the same form and apparent function, then a generic term suitable to the variety ("decorated") is used. The specific surface treatments, when they may be grouped within type are defined as varieties.

This system found its origin in the recognition by Schnell that the more conventional classificatory schemes tended to obscure certain cultural characteristics which appear to be significant and that it was, in a sense, too etic. There was concern, for instance, that examples could be found where different fragments from the same vessel would be classified under different types according to what portion of the vessel the fragments came from, particularly when surface treatment varied on different parts of the vessel.

The ceramic classificatory system used at Cemochechobee was also used with success at the Singer-Moye Site (9Sw2) by Knight (1979), and it is likely to be useful in other analyses as well. There has apparently been some misinterpretation of the reasoning in designing this system (Scarry 1985: 206). It is for this reason that the rationale behind the system has been specifically delineated herein.

The Singer-Moye Site (9Sw2) appears to have at least two components and possibly three (Knight 1979: 147-149). There is no firm evidence identified as yet for a Standley Phase component, but Rood and Singer Phase components have been well established (Ibid). This site will be used to add another structure type to the Rood Phase inventory, to describe what may be a unique earthen monument type for Georgia, and as the type site example for the Singer Phase (see below).

Mound E at the Singer-Moye Site was tested in 1967 and then largely excavated in 1968 by The Columbus Museum (Schnell 1968, 1969). This low, dome shaped mound

was determined to be a special type of "earth lodge." This square structure had been constructed on ground surface with walls of wattle and daub, and then large earthen berms were placed against the walls. Apparently the roof at some particular time was destroyed or allowed to collapse. Immediately afterward, earth was piled into the resulting "square doughnut," changing it into a low, dome shaped mound which was never used again. The reason for "burying" this building was not apparent and exact parallels are difficult to identify, although Sear's description of the "earth lodge" at the Wilbanks Site (9Ck5) in north Georgia appears to be very similar (Sears 1953: 143-149). Sears also discusses other square and rectangular "earth lodges" in the southeast.

Mound D at the Singer-Moye Site appears to date to the Rood Phase. This large earthen monument is approximately 100 meters long on an east-west axis, and 50 meters wide on a north-south axis. This rather extraordinary sounding feat of construction was not as large an undertaking as it might appear, since it was formed by modifying an existing terrace edge into a regular form. As a result, the southern edge of this monument is approximately 3 meters high on the south side, but less than one meter high on its northern edge. Excavation of the top of this terrace mound revealed an as yet unexplained series of six evenly spaced pits in a row along the long axis of the terrace, each of which showed evidences of burning. Since they were approximately five meters apart, they were apparently too close together to have been within separate structures, but too far apart to have been encompassed within one structure (Schnell 1969:5).

Singer Phase

The Singer Phase only recently has been named (Schnell 1986), based upon analysis of village material from the Singer Moye site, and upon excavation of the terminal component on top of Mound A at the same site (Knight 1979). Ceramically, the Singer Phase is separated from the Rood Phase by the addition of certain ceramic forms and surface treatments. These forms and surface treatments are apparently derived from "Lamar" ceramic complexes elsewhere. The ceramic types derived from this complex, as represented at Singer-Moye, include types which have been referred to at Lamar Plain, Lamar Complicated Stamped, Lamar Bold Incised, and Fort Walton Incised (Ibid: 139). Because of the similarity of the paste to the paste for the predominating ceramics at the site, and the difference of the paste of these ceramics from the paste characteristic of the Bull Creek and Stewart Phases (see below for discussions of these phases), it was decided that this material represents a new complex rather than a simple mixture of two ceramic traditions. Reexamination by Schnell of some of the complicated stamped material from the Singer-Moye site suggests the possibility that at least some of this material is Savannah Complicated Stamped rather than Lamar Complicated Stamped. This possibility needs further investigation before anything definitive may be postulated.

What is apparently the primary structure of the terminal occupation of Mound A at Singer-Moye was excavated by Schnell (Schnell, Knight, and Schnell 1981: 239). This

structure was approximately 12 meters square and was constructed by inserting a series of eight roof supports surrounding a large fire place in the center of the structure. Apparently only a covered entrance-way was daubed. The outer walls were of individually placed posts, with no evidence of wall trenches. This structure burned and numerous details of construction were identified.

It is not clear whether there may or may not be a Singer Phase component at the Rood's Landing Site, but there are a number of other, smaller sites in the region which may fit the definition outlined by Schnell (1986). One of these is the Patterson Site (9Ce10), investigated by Chase (1957).

Bull Creek Phase

Originally, all archaeological components on the Lower Chattahoochee containing Lamar Complicated Stamped or varieties were classified as of the Bull Creek Phase, although Sears (1956: 55) had suggested that there appeared to be a difference between the South Appalachian Mississippian ceramic material recovered from the Bull Creek Site (9Me1) and that which was recovered at the Kolomoki Site (9Er1). In contrast to Sears original conclusion, Schnell (1986) has recently indicated that the South Appalachian Mississippian should be divided into two phases, but statistical comparisons suggest that the material from Bull Creek and from Kolomoki should fall under one phase.

Schnell demonstrated that there is an inverse ratio of plain to complicated stamped wares between these two phases, with material from Bull Creek and Kolomoki showing a predominance of complicated stamped to plain (60% and 63% respectively), whereas at the Rood's Landing Site (9Sw1), at site 9Cy51 (Broyles 1962: 37), and at site 9Tp41 (Hally and Oertel 1977) there is a predominance of plain over complicated stamped (65%, 50%, and 71% respectively). This latter grouping of sites also shows a higher percentage of incised and punctated wares than material from Bull Creek and Kolomoki. This second grouping, which has been subsumed under the Stewart Phase, will be discussed below.

For a more complete discussion of the Bull Creek Phase, see the section in this monograph on the Northern Zone of the Lower Chattahoochee.

Stewart Phase

The Stewart Phase has recently been named by Schnell (1986) based upon a perceived need to distinguish two identifiable categories within what had previously been subsumed under the Bull Creek Phase. It has been noted in the discussion of the Bull Creek Phase above, that the Stewart Phase has a higher percentage of plain, and incised and/or punctated ceramics than occurs in collections which have been analyzed from Bull Creek and from the Kolomoki Site. Other sites with analyzed ceramics which fall into

this category include site 9Cy51 (Broyles 1962), and the final component on the summit of Mound A at the Rood's Landing Site (Caldwell 1955) within the Central Zone of the Lower Chattahoochee.

It would appear that the primary reason for the inverse ratio between the Bull Creek Phase and the Stewart Phase of plain to complicated stamped wares is in the greater use of incising as a decorative technique, and the apparent change from incised rim carinated vessels with complicated stamped bodies to vessels with incising and/or punctating only.

Because the report by Broyles on site 9Cy51 is the best illustrated of all reports on South Appalachian Mississippian sites along the Lower Chattahoochee, this site has unfortunately been used (Hally and Oertel 1977) as an example of ceramics of the Bull Creek Phase. It was a recognition of the difference between this material and that which had been analyzed from the Bull Creek type site which prompted Schnell (1986) to originally make the distinction. A recent reanalysis of the Mound A material from the Rood's Landing Site by Gail Schnell (1986) demonstrated that this material also fit into this category. These excavations provide us with the best information concerning cultural aspects of the Stewart Phase other than ceramics.

Three structures were excavated by Caldwell (1955) on the top of Mound A at Rood's Landing. Each of these was an individual post structure, and each had Spanish moss-mixed clay daub plastered onto whole cane wattle. The floor plans for each of these structures were different, however. Structure 1 was a "teardrop" shaped structure with a covered entrance-way in one "corner", an open, unprepared fireplace in the center, and an inner partition. "Around the fireplace were 4 main posts, of which we found 3 ..."(Caldwell 1955: 28). Structure 2 was rectangular, with a covered entrance-way at one end, and with two equal-sized rooms. It was reminiscent of the modern "shotgun" house. Structure 3 was a conventional square building with walls approximately 8 meters long, four central roof supports, and a central, unprepared fireplace. A large, isolated post hole was also found on the top of Mound A, reminiscent of the post hole described above from the Cemochechobee Site.

The Southern Zones of the Lower Chattahoochee and Flint Rivers

The Southern Zones of the Lower Chattahoochee and Flint Rivers have been surveyed to a moderate extent. The confluence area of the Flint and Chattahoochee Rivers were surveyed with limited funding during the late 1940's and early 1950's. Survey work here was begun by A.R. Kelly in 1948 (Kelly 1950), and additional survey and testing was conducted by Joseph R. Caldwell (1978). At the same time, W.H. Sears was conducting excavations at Kolomoki (Sears 1951a, 1951b, 1953, 1956). A

Table 2
Archaeological Phases of the Upper Apalachicola and the Southern Zones of the Lower Chattahoochee and Flint Rivers (Time scale, phase names and comments after Scarry 1980)

A.D.	Phase Name	Comments
1500		
1450		Ceramics dominated by complicated stamped and incised/punctated, with
1400	Yon	coarse grit tempering.
1350		
1300		Lake Jackson Plain and Incised, and Fort Walton
1250	Sneads	Incised dominate, Wakulla, Pensacola almost disappear
1200		
1150		
1100		Lake Jackson Plain, Pensacola Plain, Lake Jackson Incised, Cool Branch Inc-
1050	Cayson	cised, et al.
1000		
950	Bristol	"Most closely resembles Rood"
900		
850	Chattahoochee Landing-High frequencies of Wakulla	
800	Wakulla	

considerable controversy arose concerning the chronological sequence of the Southern Zone of the Lower Chattahoochee. As has been pointed out above, evidence indicates that the question as to whether any of this material was of the Mississippi Period has been resolved, and it is therefore beyond the scope of this study to reexamine the controversy in detail.

The most recent intensive work in the area under consideration has been by Nancy M. White (1981, Belovich et al. 1982), describing an archeological resurvey of Lake Seminole. Much of her interpretation of the Mississippi Period in that area was based upon earlier work by White, Scarry, Percy, and Brose on the Apalachicola (Scarry 1978; Brose et al. 1976; Brose 1980; Brose and Percy 1978). Scarry (1980) has presented a chronology of Mississippi Period phases in the Upper Apalachicola Valley. His outline is followed in Table 2.

Mississippian sites have been located within the area which appear to be very significant, but insufficient work has been done to allow reasonable interpretation. Platform mounds are known in the Albany, Georgia area and at least one major Rood Phase or "Fort Walton" site is known along the Choctawhatchee River. Schnell has examined river redeposited material from the Flint River below Lake Blackshear which indicates at least one significant Lamar site.

According to Scarry (1980), based upon the work mentioned previously and upon the work of Milanich (1974), at the beginning of the Mississippi Period there is a continuity from the earlier Woodland Period, rather than a disconformity or "invasion and replacement" as had been suggested by earlier investigators for that region of Florida (Griffin 1950, Sears 1956).

Wakulla Phase

The "Wakulla phase is the earliest, and at the present, best known of the late prehistoric phases .." [of the Upper Apalachicola] (Scarry 1980: 39). The ceramic assemblages are marked by extremely high frequencies of the type Wakulla Check Stamped (Ibid: Table 1). Percy and Brose (1974: 6) note that Wakulla Phase assemblages also includes "...very limited representation of [Weeden Island types featuring] incising and punctating, and a minor occurrence of corn-cob marked pottery" (Scarry 1980: 39).

The radiocarbon dates which have been obtained for the Wakulla Phase cluster in the 9th century A.D., at the beginning of the Mississippi Period. Although Scarry suggests that the time span for Wakulla is limited from ca. A.D. 800 to 900, the great abundance of Wakulla Phase sites on the Apalachicola, Chattahoochee, and Flint Rivers (Ibid; White 1981b) would suggest either a very large population for an unusually short period of time, or that the time span may prove to be longer. For the purposes of this study, however, that time span will be utilized.

Milanich (1974) uncovered a Wakulla Phase structure at the Sycamore Site (8Gd13), only a few miles south of the present area of discussion. This structure was oval with a large, slightly off-center hearth, with indoor and outdoor storage pits or wells, and fire pits. A doorway was probably present on the north end where there were several postmolds suggesting a door tie post or similar device (Ibid: 13). The oval structure measured 8.9 meters north-south and 6.2 meters east-west. Two very deep postmolds with sharply pointed bottoms straddled a fire pit just northeast of the house, suggesting a drying rack or rack for smoking meat or fish. A storage pit within the structure containing charred food remains yielded a radiocarbon date of A.D. 955+/- 85 years (Ibid: 15).

Chattahoochee Landing Phase

This phase was established based upon data from the Chattahoochee Landing, Curlee, and Cayson sites and components of this phase contain the first indications of relationship to Mississippian cultures elsewhere in the Southeast (Scarry 1980: 39). The Chattahoochee Landing Site is located at the Georgia border of Florida, at the southwestern tip of the area involved in this study. Again, assemblages of the Chattahoochee Landing Phase are marked by very high frequencies of Wakulla Check Stamped, but whereas this type made up at least 75% of the decorated pottery during the Wakulla Phase, it is reduced to 55-80% of the decorated pottery in the Chattahoochee Landing Phase (Ibid: 40).

According to Scarry, Chattahoochee Landing Phase ceramics now include examples of Lake Jackson Plain, Cool Branch Incised, Point Washington Incised, and Marsh Island Incised (Ibid). It is not possible to determine from Scarry's characterization what percentage of this material is shell tempered. Therefore, it is impossible to determine, on purely ceramic grounds as to whether this phase more closely equates with the Standley Phase or the Rood Phase of the Central Zone of the Lower Chattahoochee. Nancy M. White, in a more recent discussion of the region (White 1981b: 26), indicates that most "Fort Walton period" sites produce shell tempered ceramics, but never account for more that 5% of the assemblage. White does not follow Scarry's phase designation scheme in her discussion, so it is impossible to tell if she is referring only to Chattahoochee Landing Phase sites.

Unfortunately, at the time of Scarry's characterization, no reliable radiocarbon dates were available for the Chattahoochee Landing Phase and none are offered by White (Ibid). However, based upon the 9th century dates of the Wakulla Phase mentioned previously, and upon dates from the Bristol Phase (see below), Scarry (1980: Figure 1) apparently would place the Chattahoochee Landing Phase in the 10th century A.D., equivalent to the Standley Phase.

Bristol Phase

According to Scarry, the Bristol Phase has been found only at the Yon Site. This is presumably as of 1978, when Scarry's paper was first presented at the Southeastern Archaeological Conference in Knoxville, Tennessee. Again, White (1981) does not use the phase terminology of Scarry so it is impossible to derive more recent data from that paper. According to Scarry, Wakulla Check Stamped, Northwest Florida Cobmarked (one of the markers for the Wakulla Phase), and cordmarked continue to appear as significant elements in the ceramic assemblages. Point Washington Incised, however, becomes the most frequently encountered decorated type, along with Marsh Island Incised, Fort Walton Incised, and an undefined engraved ware which may be related to Nunnally Incised of the Rood Phase in the Central Zone of the Lower Chattahoochee (Scarry 1980: 40).

Four radiocarbon dates from material associated with this phase yielded corrected dates ranging from A.D. 857 to A.D. 1056 (Ibid: Table 4). This would point toward an equivalency of the Bristol Phase to the Rood Phase as well.

Cayson Phase

The Cayson Phase is represented by components at the Cayson, Curlee and Scholz Parking Lot sites (Ibid: 40). The ceramic assemblages associated with this phase are marked by Lake Jackson Plain, Pensacola Plain, Lake Jackson Incised, Fort Walton Incised, and Cool Branch Incised. Marsh Island Incised, Point Washington Incised, Wakulla Check Stamped, and Northwest Florida Cobmarked appear, less frequently.

Five radiocarbon dates (Ibid: Table 6) range from A.D. 962 to A.D. 1175 (calendar corrected). Sites with Cayson Phase components are diverse in size, ranging from the large ceremonial center at Cayson (ca. 48.5 hectares) to ca. .1 hectare at the Scholtz Parking Lot Site (Ibid: 41).

Sneads Phase

The Sneads Phase is very closely related to the Cayson Phase and the ceramic assemblages share many features. The pottery types Lake Jackson Plain, Lake Jackson Incised, and Fort Walton Incised continue to dominate. Wakulla Check Stamped and Pensacola Plain almost completely disappear. Apparently, in the earlier Cayson Phase sand tempering was more predominant than in the Sneads Phase where grit tempering became more important. According to Scarry, this "trend, which actually began as the replacement of sand tempering in the Bristol phase continues through the Sneads phase and into the Yon Phase" (Ibid: 41).

Yon Phase

The Yon Phase is apparently the latest prehistoric phase on the Upper Apalachicola and in the Southern Zone of the Chattahoochee and Flint Rivers. As of 1978, it had only been identified at the type site, where it was found in the uppermost levels of the midden, and its ceramic assemblage represents a marked change from the assemblages of earlier phases. The ceramic assemblage is dominated by complicated stamped and incised/punctated types (Ibid).

The complicated ware occurs on a grit tempered paste, which separates it from the Jefferson Stamped ceramics of the later Leon-Jefferson Period. According to Scarry (Ibid), this type closely resembles Lamar Complicated Stamped as found in the Central Zone of the Lower Chattahoochee, but it is unclear as to proportion of plain to complicated stamping surface treatment, which would suggest whether the relationship is closer to the Bull Creek Phase or the Stewart Phase of the Central Zone of the Lower Chattahoochee.

In summary, the chronological sequence suggested by Scarry for the Upper Apalachicola Valley appears to parallel very closely the sequence which has been outlined above for the Central Zone of the Lower Chattahoochee, with certain significant differences. First, the place of Wakulla Check Stamped and the Wakulla Phase is much clearer here than it is in the Central Zone of the Lower Chattahoochee. Secondly, and related to this first comment, there appears, based upon the data which have been presented by Scarry, White, Percy, Brose, and others, to have been much greater continuity between Woodland Period cultures and those of the Mississippi Period.

Scarry presents very little evidence concerning aspects of these phases beyond ceramics. It was beyond the scope of recent reports on the archaeological resurveys of the Jim Woodruff (White 1981a) and George W. Andrews lakes (Belovich et al. 1982) to provide comprehensive synthesis. It is therefore clear that much more research and interpretation is needed in the Southern Zones of the Lower Chattahoochee and Flint Rivers, and on the upper Apalachicola.

The Lower Chattahoochee - Northern Zone

The Northern Zone of the Lower Chattahoochee River extends from the Fall Line at Columbus, Georgia to the southern edge of the Fall Line hills at approximately the location of Omaha, Georgia (Schnell 1981). This separation from the Central Zone of the Lower Chattahoochee is based on a more apparent cultural rather than physiographic change. Although the physiographic change is real, it is not nearly as dramatic as the changes between the Northern Zone of the Lower Chattahoochee and the Central Chattahoochee immediately above the Fall Line. Above the Fall Line on the Chattahoochee, the terrain shows elevations of as much as one thousand feet with hard rock

exposures. Below the fall line there is still moderate relief within the Fall Line Hills (Blue Marl on the Chattahoochee, see Figure 1) and the Southern Red Hills, but the underlayment is alluvial and elevations rarely exceed 350 feet. It should be pointed out, however, that the physiographic changes at the Fall Line on the Chattahoochee River are not as drastic as they appear to be on the major streams to the east of the Flint River where the Fall Line Hills (Sand Hills) are much narrower (see below).

The cultural chronology of the Northern Zone of the Lower Chattahoochee contains a cultural manifestation known as the Averett Phase which is very prominent, but little understood. This is particularly true in attempting to identify its antecedents and descendants. For this reason, it has been included as a large block on the following time chart (Table 3). Although the Rood Phase (called "Rood Focus") was originally named (McMichael and Kellar 1960a) based upon work on the northern edge of this zone, the name is not used here. Further work may allow the addition of the Rood Phase in this zone, but current evidence does not appear to justify such action at this time. It is also unclear whether the Stewart Phase is present in the Northern Zone of the Lower Chattahoochee. For that reason it has been excluded from Table 3 in this paper.

As in Table 1, the historic aboriginal phases have been included in Table 3 for reference only. It is beyond the scope of this paper to discuss these manifestations.

Table 3
Archaeological Phases in the Northern Zone of the Lower Chattahoochee

A.D.	Phase Name	Comments
1836		Removal
	Lawson Field	
1715		Yamassee War
	Blackmon	
1650		Spanish missions
	Abercrombie	
1550		
	Stewart	Spanish entradas
1500		
	Bull Creek	
1300		
	Averett	
900		

Averett Phase

The Averett Phase was first recognized by David Chase in the 1950's at several archaeological sites in the Northern Zone of the Lower Chattahoochee (Chase 1959; 1963). This particular phase, as primarily represented by its ceramic complex, appeared to have very little relationship with, or influence upon, prior or subsequent ceramic complexes in the area. There was, in fact, some question as to chronological placement until it became apparent that certain recognizable external ceramic types appeared to occur in relatively frequent and reliable association with this material. This was particularly true of Etowah Complicated Stamped and to a lesser extent, a variety of plain ware with characteristic Mississippi Period embellishments and form modes related to Lake Jackson Decorated (Schnell, Knight, and Schnell 1981: 171-173).

The majority of Averett ceramics are plain, expanded rim jars with four shoulder nodes. A minority are small, constricted rim vessels. Both vessel types are subconoidal, with a distinct "Woodland" appearance, both in paste and firing technology. No significant mound constructions have been noted (one possible exception being the core of the Kendrick Mound at the Abercrombie Site [1Ru61]). Corn has been found in good association with Averett ceramics (Kelly et al. 1961: 8).

Although Rood Phase ceramics have been found in some relative abundance within the Northern Zone of the Lower Chattahoochee, no clearly Rood Phase sites have been recognized. Wherever this material has been found in context, it appears to have been in association with Averett Phase site components.

It is also not known whether there is a clear delineation between the boundaries of the Rood Phase and the Averett Phase in a geographical sense. The southernmost known sites with Averett components (9Sw41 and 9Sw9) are just north of the southern edge of the Fall Line Hills - that is, the southern edge of the Northern Zone of the Lower Chattahoochee. Rood Phase sites have not been clearly identified north of Florence, Georgia, some 10 kilometers south of the northern edge of the Central Zone of the Lower Chattahoochee.

Recent excavations at the Caramouche Range on Fort Benning (9Me21) have yielded significant new information about the Averett Phase, particularly in relation to exploitation of the non-riverine environment. At this site there appears to be very little use of corn, with a much higher dependence upon hickory nuts, acorns, and other wild food resources (Gresham et al. 1985: 190). A comprehensive understanding of this enigmatic phase - particularly its predecessors and successors - is yet to be achieved.

Bull Creek Phase

The Bull Creek Site (Patterson 1950) is the type site for the Bull Creek Phase. It was partially excavated by Mr. Frank Lester with NYA and CCC crews in 1936, under the sponsorship of Mrs. Isabel Patterson. Although much of the work was concentrated upon the "Bull Creek Cemetery," and it is for this that the site is best known, other excavations were conducted as well. Portions of two structures were uncovered. These structures had individual posts and baked clay floors. There was no indication of a prepared clay fire basin. The walls were plastered with plant fiber tempered clay on cane wattle (Lester 1936).

The ceramic complex for the Bull Creek Phase has already been briefly outlined above. Based upon an analysis of material recovered from the Bull Creek Site by Schnell (1959), 37% of the ceramics were plain, 60% were stamped, and 3% showed incising and/or punctating. Much of the material shows washed, light surfaced, oxidation fired ceramics. One of the characteristic markers for Bull Creek ceramics is a coarse grit tempering. The Bull Creek Site has also produced three dog effigy vases of a variety which has been named by Stephen Williams (1979) as Nashville Negative Painted variety Columbus.

With at least five, and possibly six, phases defined for the Central Zone of the Lower Chattahoochee and only two for the Northern Zone, it is clear that further work needs to be done in the Northern Zone, simply in terms of phase delineation. Considering the widespread recognition of the importance of Fall Line ecotones in cultural development, it would seem more than likely that much more precision is possible.

It should be noted, however, that there is obviously a significant difference in the representation of "Mississippian" in the Northern Zone as opposed to the Central Zone of the Lower Chattahoochee, suggesting that the Chattahoochee once again does not follow the preconceived notion that the most significant Mississippi Period sites would be at or near the Fall Line where the presumed greatest diversity of natural resources would be expected to be present. Again using the number of a platform mounds of the Mississippi Period as a rough barometer of the "Mississippianization" of an area, the Northern Zone of the Lower Chattahoochee has had only two definite such mounds known - one other apparently existed (Hawkins 1916: 54). Compare this with the 30 platform mounds known for the Central Zone, a factor of ten.

The Lower Flint River - Northern Zone

The Northern Zone of the Lower Flint River is defined here as that area from the Fall Line to an as yet undefined point below Reynolds, Georgia and north of Lake Blackshear. An archaeological survey currently (Worth 1987) underway in that area may define this cultural boundary. This boundary may coincide with the southern edge of the

Fall Line Hills. Although there are no published archaeological reports for this area, investigations by Margaret Ashley in 1928 and R. Donald Gordy (1965, 1979, 1980) allow some speculation as to the archaeological significance of the area during the Mississippi Period.

In 1928, Margaret Ashley of Andover, Massachusetts conducted archaeological investigations at the Neisler Site (9Tr1) and the Lockett or Hartley-Posey Site (9Tr2). The Neisler Site consists of one large mound approximately 8 meters high, and a surrounding village area bordering on the Flint River swamps relatively close to the Flint River. Material from this site at the Columbus Museum and in a private collection suggest at least two Mississippi Period components are present at this site. The first and earliest of these appears to be an Etowah Phase component. Preliminary ceramic analysis indicates that this may be the dominating component at the site. The second, and later component appears to be a variant of the Lamar Phase found on the Ocmulgee River. There is not enough evidence to clearly define this, other than to state that the types Lamar Bold Incised and Lamar Complicated Stamped occur along with fluted rims. The Neisler Site may be best know as having produced a negative painted, dog effigy vase of the style found at the Bull Creek Site in Columbus, Georgia (see above).

Little can be said of site 9Tr2, other than that there is also a single mound at this site approximately 4 meters in height. Investigations now being conducted in this area should yield much more information.

Although there is very little known of the presumed Etowah Phase component at the Neisler Site, there is another archaeological site near the northern edge of the Northern Zone of the Lower Flint River which reveals much about this phase on the Lower Flint. The Bevins Bend Site (9Up1) is located just north of U.S. Highway 80 within a bend of the Flint River. This very large Etowah Phase site, covering in excess of 10 hectares (Gordy 1965) has not been fully investigated, but appears to represent a significant Mississippi Period village at the Fall Line of the Flint. Although no platform mound is known to be associated with this site, the meander which has taken place here suggests that such a feature could well have been present at some time in the past.

During 1986 and 1987, Mr. John E. Worth of the University of Georgia has been conducting an archaeological survey of this portion of the Flint River (Worth 1987). This survey is aimed at delineating the geographical and temporal distribution of Mississippian occupation. As of May 1987, eighty-six previously unrecorded archaeological sites had been documented, many of which display Mississippian components contemporaneous with the Neisler and Hartley-Posey mound sites. A test excavation in the Hartley-Posey mound suggests to Worth that mound construction and use occurred during "Savannah" and predominantly Lamar Periods (Ibid: 9-10).

The Ocmulgee Fall Line Zone

The area around the falls of the Ocmulgee River were the location of what has been perhaps the most intensive archaeological investigation in the history of Georgia. The majority of this work took place in the 1930's at Ocmulgee Old Fields (9Bi1) and the Lamar Site (9Bi2), although other investigations significant to an understanding of the Mississippi Period took place at Brown's Mount (9Bi5), the Stubbs Mound (9Bi12), and others within what may be called the Northern Zone of the Lower Ocmulgee.

A great deal has been written about the Macon Plateau and the Lamar Phases of this area (Kelly 1938, Fairbanks 1946, 1950, 1952, 1956, Williams 1975, Williams and Henderson 1974), including what has been stated by Hally and Rudolph in their recent discussion of the Mississippi Period of the Piedmont (1986). These discussions will not be repeated here.

It should be pointed out, however, that the Ocmulgee River follows the pattern of the Flint and not that of the Chattahoochee. By that, it is meant that the greatest abundance of "Mississippian" sites appear to be within the Fall Line Hills at and near the Fall Line, rather than further down the river as on the Chattahoochee. As will be seen below, there appears to be very little "Mississippian," or even "South Appalachian Mississippian" (Ferguson 1971) south of the Fall Line Hills on the Ocmulgee River. One exception may be a reputed relative abundance of Etowah Phase sites south of the Fall Line Hills on the Ocmulgee, as appears to be present on the Flint.

Bruce Smith has recently written (1984) concerning the question as to whether the Mississippian occupation at Ocmulgee Old Fields represents an invasion. He suggests that heavy sedimentation of bottomlands has buried many sites. As Hally and Rudolph (1986: 34-35) point out, although this may be true to some extent, recent surveys, including subsurface testing, have yet to reveal extensive Mississippian occupation.

It should be pointed out that one of the premises associated with the "Mississippian invasion" thesis has recently been discounted by Schnell (1984). In a paper presented at Ocmulgee National Monument, he demonstrates that the supposition that a Mississippian invasion represents the arriving Muskhogeans and the establishment of the Creek Confederacy cannot be supported when the ethnohistoric data are examined in detail. This "invasion" thesis is based primarily upon William Bartram's account of the establishment of the Creek Confederacy, an account based upon Bartram's misunderstanding of a recounting of the primary Creek origin myth. The importance of Schnell's conclusion here is not that it debunks this version of the Mississippian invasion thesis, but rather suggests that application of an Indian myth in developing an archaeological explanation on the Ocmulgee should be approached with great caution.

The Oconee Fall Line Zone

Little can be learned from the literature about the Fall Line Zone of the Oconee at this time. Mark Williams of the University of Georgia has been conducting research at the Shinholser Site (9Bl1) below Milledgeville, Georgia, which should shed light on this subject. Williams began work there in 1985 when he was able to determine that this site is the largest Mississippian site in the Oconee Valley (Williams 1987b: 8). During the summer of 1987, a major block excavation was being conducted in order to gain information on several houses and thus "yield the some of the best lifeway information recovered to date on the Lamar cultures in the Oconee Valley" (Ibid).

In 1987 Williams was also planning to conduct tests at the Shoulderbone site (9Hk1) to help define some suspected palisade ditches. The Shoulderbone site, located on Shoulderbone Creek, a tributary of the Oconee, is also in the Fall Line Zone of the Oconee. As noted elsewhere, nothing is apparently known of the Lower Oconee below the Fall Line Zone.

The Savannah River

Recent work along the Savannah and comparison with other areas of Georgia, South Carolina and North Carolina is beginning to develop a picture of the Mississippi Period and Mississippian of the Savannah River Basin. This along with the Works Progress Administration work during the Depression has allowed the development of a basic chronological and culture sequence for the mouth of the Savannah which offers temporal control, based on ceramic analysis, on the order of 100 to 150 year intervals (Caldwell and McCann 1941, Depratter 1986, Crook 1986b). In the Piedmont work by Wauchope 1966, Caldwell 1953a, 1953b, 1957, and Hally and Rudolph 1986 has produced a sequence with a similar grasp of time and culture. Unfortunately the historical sequence is not the same in the two areas, indicating that influences were different; therefore, one cannot extrapolate to the intervening area of the Coastal Plain through which the Savannah flows.

Important in the development of a culture sequence of the Savannah River valley of the Coastal Plain will be the dating and analysis of the material from Hollywood (deBaillou 1965, Reid 1965), a mound site just below the Fall Line, and Silver Bluff, a former mound on the South Carolina side of the river. Indications from typological analysis place the Hollywood material at approximately A.D. 1250 to 1350. In addition, a closer relationship to the Town Creek site of North Carolina is shown than with sites farther north on the Georgia Piedmont or with the Irene site on the coast. The presence of Southern Cult items shows some contact with sites to the west where this is more typical (Hally and Rudolph 1986, Anderson et al. 1986). How this material relates to earlier cultures is poorly understood.

The Hollywood Site (9Ri1) consists of a village of unknown extent and two platform mounds. Due to extensive alluviation, the surface of the site is archaeologically sterile (DeBaillou 1965: 6). The only ceramic samples available for analysis from the Augusta Museum research program consisted of sherds recovered in tests into Mound A, where the predominating type was Savannah Check Stamped (41.1%), followed by Plain (38.15%) and Savannah Complicated Stamped (13.91%). All of the remaining types or wares identified commanded less than 7% of the total. Reid concludes that the ceramics from the upper levels of the Hollywood Mounds "show striking similarities to the ceramics from the Town Creek Mound .." (1965: 25).

The most common ceramic type at Hollywood is Savannah Check Stamped. The Savannah ceramic wares are seen by Hally as developing directly out of the Etowah material; however, others (Fairbanks 1950 and Sears 1958) see this as a break in the complicated stamping tradition of northern Georgia and have sought a coastal origin. The absence of any late Lamar material and European trade items indicates that after approximately A.D. 1500, the central Savannah and perhaps the entire lower portion of the Savannah River was abandoned. This abandonment may have been related to the development of chiefdoms, the protohistoric provinces of Ocute in Central Georgia and of Cofitachequi in South Carolina. The unoccupied region could have functioned as a buffer zone between the two rival polities (see Anderson et al. 1986).

Work in South Carolina primarily at Groton Plantation gives some idea of what may have been happening on the lower portion of the Coastal Plain along the Savannah River (Stoltman 1974). Stoltman states that the susceptibility of the flood plain to mid-summer floods would discourage agriculture and therefore Mississippian habitation. From a perspective which relied on data recovered at Groton as well as other areas along the Savannah, he did note a change in occupation patterns through time. During Wilmington, considered a pre-Mississippian period, settlement at Groton was on the highlands away from the river. After Wilmington, during Savannah I and II Periods, the river flood plain saw activity at the expense of the highlands. To Stoltman, this demographic switch reflected an increasing interest in river traffic between major political centers and nucleation of population.

At the Mattassee Lake Site on the South Carolina Coastal Plain, a feature which was thought to date from the Mississippi Period, produced cord-marked ceramics. These were tentatively identified as representative of the Cape Fear or Santee series. One of the samples produced an entirely modern date while the other (DIC-1843) produced a date of 360 +/- 125 B.P. or A.D. 1590 (Anderson et al. 1982). The latter date is very close to those obtained for cord-marked ceramics on the Georgia Coastal Plain (see Appendix).

In April of 1987, Mark Williams of the LAMAR Institute joined Fred Cook of the South Georgia Archaeological Research Team for test excavations at the Red Lake Mound in Screven County, Georgia (Williams 1987a). This site is located on the

Savannah River half-way between the Hollywood site and the Irene site on the Georgia coast. It dates exclusively to the Savannah Period, and is apparently a companion town for the little known Lawton site, located on the opposite side of the Savannah and about five miles to the north. The single mound is about nine feet high but the summit was considerably damaged by looters 25 years ago (Ibid).

This review of the literature also answers one of the questions posed earlier. Some ceramics which are traditionally associated with the Mississippian in other areas are found on the Savannah River Coastal Plain. Therefore, we can say that the Coastal Plain was occupied during the Mississippi Period. Unfortunately, little else can be said of much of that region. Data are insufficient to determine if the manufacturers of the ceramic types participated in the Mississippian culture according to any of the definitions discussed. An exception to this statement may be seen at Hollywood, the ceremonial center which is just below the Fall Line on the Savannah River, where typical Mississippian features are reported.

Okefenokee Swamp

Chris Trowell of South Georgia College has been conducting a survey of artifact collections and surface exposures within and around the Okefenokee Swamp for several years (1978, 1979, 1984). The survey and test excavations are opportunistic; therefore, his data are not statistically representative. However, his efforts have extended over such a temporal and spatial distance that his discoveries are probably an accurate reflection of the cultures which occupied the swamp. Trowell's investigations of the many mounds in the swamp has determined that they are associated with Weeden Island ceramic types. A radiocarbon date of 955 B.P. +/- 105 (UGA 2136) was obtained from a trash pit at site 9We1 on Cowhouse Island which contained Weeden Island ceramics. This date places the site within the temporal limits of this review. However, Weeden Island sites are typically placed within the larger category of Woodland adaptations. As may be seen from the Central Zone of the Lower Flint and the Ocmulgee Big Bend, however, this does not necessarily exclude it from consideration.

In addition to the Weeden Island materials, Trowell reported other ceramic types from the Okefenokee. On six of the twelve sites which Trowell discusses (1984) he reports finding either Irene or Lamar ceramics which are traditionally associated with Mississippian. Also, what he calls Savannah CordMarked sherds are recorded from five of the sites. Actual sherd counts were not given, but relative frequencies running from rare to frequent were noted. While these statistics are not as precise as one would like, they are adequate to demonstrate that Mississippian ceramic types are much rarer than those of Weeden Island. This along with other work suggests to Trowell that there was a decline in aboriginal utilization of the paudian environment during the Mississippi Period (Trowell 1978, 1979, 1984). As discussed elsewhere, an alternative explanation

is that the Woodland tradition persisted into the Mississippi Period within the Okefenokee Swamp.

The Lower Flint - Central Zone

In the Fall and Winter of 1973-1974, Frank T. Schnell and R. Donald Gordy surveyed the exposed bottom of Lake Blackshear and the immediate lake perimeter. Lake Blackshear had been constructed in the early 1930's prior to the initiation of river basin surveys for archaeological resources. Although the lake level was lowered eleven feet, more than 80% of the reservoir remained unexposed. Nevertheless, more than 200 archaeological sites were uncovered either within the reservoir boundaries or on its border. No previous archaeological surveys had been conducted within this zone of the Flint River.

According to the DeSoto Commission Report (Swanton 1939), Hernando DeSoto was supposed to have crossed the Flint River within the bounds of this reservoir. Mississippian occupations were expected because of the population noted by members of the expedition. It quickly became apparent that there was little which could conventionally be called "Mississippian" within the immediate area of the lake. It should be noted that the latest estimates of DeSoto's route now suggest that his crossing of the Flint River probably occurred to the north of the Lake Blackshear area, in what has been called above the Northern Zone of the Lower Flint (Hudson et al. 1984).

Cord marking was by far the predominating surface treatment of material from the area, with folded rims occurring in significant percentages (Schnell 1975). This was unexpected, since the Chattahoochee (part of the same drainage system), the Northern Zone, and the Southern Zone of the Lower Flint produce very little cord-marked pottery during archaeological investigations. Within the Jim Woodruff Reservoir (Lake Seminole), Joseph R. Caldwell defines Fairchild's Cord Marked in his manuscript on the Fairchild's Landing site (9Se14), but it is only one to one and a half percent of the total amount of decorated pottery (Caldwell 1978). Gordy had reported no significant cord marking from the Northern Zone of the Lower Flint (Gordy 1965). It became apparent that the recovery of in situ information was important.

Unfortunately, it was determined that submersion within Lake Blackshear had apparently disturbed all features. No aboriginal charcoal was encountered within the lake basin. It was therefore decided to test an unsubmerged site (9Cp108, the Cannon Site) located directly adjacent to the reservoir. This site produced cord-marked pottery on the surface, and it was felt that a site yielding this cord-marked material might provide an associated dateable sample of charcoal. By careful reconnaissance of the surface of the site it was possible to locate an area where a few fragments of mussel shell were found on the surface. Removal of the plow zone revealed a large, rectangular pit 273 centimeters long and 182 centimeters wide. Mussel shell, animal bone, and charcoal were

found in the pit in direct association with cord-marked pottery. A radiocarbon date of A.D. 1225 +/- 65 years (Schnell 1975: 121) was obtained from charcoal within this context. Since it had been expected that the pit dated to the Woodland Period, the presence of a Mississippi Period date led to questions as to whether the date was to be discredited, or should this be considered an example of a Late Woodland enclave within an environmental niche not particularly suited for a Mississippian environmental exploitation system (Ibid)?

When the base of this feature was reached, it became even clearer that the cultural context of this feature could only be considered to be a product of Woodlands culture. The pit, although filled with occupational debris, was in actuality a log tomb, with five interments in a Woodlands fashion. The first of the burial furniture encountered was a thirteen strand necklace with slightly over 2200 shell disc beads. Close by this necklace were a number of other items, including flint knapping fragments, bobcat claws, a bone knife, a shallow cup made from a whelk shell, a turtle shell rattle, and a fragment of what was apparently an antler headdress. All of the preceding was associated with the central burial within the tomb.

In amongst two partially disarticulated burials were marginella beads and a complete flint-knappers kit, along with a ceramic pipe with a classic generalized Woodland style form. A very tightly flexed burial also had a large number of items including a graded disc shell bead necklace, still another flint knapping kit, a raccoon baculum, cut wolf jaws, a broken small shell pendant, and a sandstone abrader (Ibid).

As will be seen below, the question posed in that 1975 paper proved to be prophetic of some of the major questions to be faced in this paper. As will be seen below, the radiocarbon date obtained from this context now appears not to have been anomalous and the question of a Woodlands tradition lifestyle within the Mississippi Period appears to be a probability.

At least two major Etowah Period sites were discovered during the survey of Lake Blackshear. One of these (9Su(CM45))had been completely inundated and yielded little information beyond ceramics and site size. The other (9Cp(CM40) yielded a great deal of faunal and floral material during emergency testing due to tree planter activity after the survey was concluded. Unfortunately, this material has not been analyzed.

Ocmulgee Big Bend

Several workers have looked at prehistoric occupation of the Coastal Plain along the Ocmulgee River. In 1965 Lewis Larson and Jerry Nielsen conducted a cultural resources survey of Bleckly, Dodge, Laurens, Montgomery, Pulaski, Telfair, Treutlen, Wheeler, and Wilcox counties for the Heart of Georgia Planning and Development Commission of Eastman, Georgia (Neilsen 1966). The survey lasted eight weeks

followed by two weeks of testing at three sites. The survey was primarily the work of one individual, therefore the coverage must have been rather cursory. A total of seventy sites were discovered and some surface collections made. Nielsen states that Mississippian material was not found during the survey except for scattered artifacts on larger predominantly Woodland sites characterized by cord-marked sherds. The frequent flooding of the lowlands near the river banks and backswamps made them inaccessible to the survey and may explain the absence of Mississippian sites, according to the report. If "Mississippian" in this case was intended to mean Mississippi Period sites, recent discoveries of cordmarked ceramics within Mississippi Period components may lead to questions of the validity of the assignments made by Nielsen. However, Nielsen proposes that the narrow river levees and the excess of fine-grained clay silt selected against cultural systems dependent on agriculture.

Near Hawkinsville, Steinen (n.d.) surveyed approximately 4000 acres. Complimenting the survey data is a large collection of material from the area which had been collected, recorded and donated by Mr. Wayne Shelly to West Georgia College. Steinen's survey concentrated primarily in the uplands adjacent to the Ocmulgee River because of the swampy conditions of the floodplain. He discovered or relocated 131 sites; however, conditions were not good for visual survey and it is likely that more are present. Analysis is far from complete, therefore little can be gleaned from the material. Mississippian components were found on several of these sites and one midden was reported which Steinen identified as Etowah II or III. This was recognized as one of the few middens attributable to the Etowah culture reported south of the Fall Line. Steinen utilizes this occurrence of an extensive Mississippian occupation in an attempt to demonstrate that the manufacturers of Etowah ceramics were attempting to move out of their traditional habitat of the Piedmont perhaps due to population pressure. This seemingly isolated occurrence, however, may be more an accident of archaeological investigative history than of archaeological reality and if many more Etowah sites are present on the Coastal Plain as evidence along the Flint indicates, then this hypothesis may need revision.

Steinen records a substantial amount of cord-marked material in the survey area but feels that present definitions of cord-marked types are inadequate. He records his material only according to the orientation of the cord markings. Site WGC 1466 which he identified as a village, has cord-marked material intermixed with Weeden Island and early Woodstock sherds. Steinen suggests that this co-occurrence indicates a date of A.D. 800 to 900 for the occupation.

Frankie Snow of South Georgia College has for several years been investigating the prehistory of the Big Bend Region of the Ocmulgee River (Snow 1977). His survey has discovered 320 sites, ranging from Paleo Indian to the historic period. He reports that no mature Mississippian material has been recovered in the study area. However, small amounts of South Appalachian Mississippian ceramic types are found on 30% of

the sites. Four sites or 1% returned Etowah ceramics, primarily in the Hawkinsville area, while 29% of the sites contained some Lamar material. By comparison 58% of the sites contain a cord-marked component which is usually the dominant type on sites where it occurs. Snow attempts to identify this material as something different from other cord-marked wares such as that in the Savannah or Wilmington series. He defines three types of cord-marked: Ocmulgee I, II, and III based on variations in the markings. The placement of this cord-marked material is enigmatic temporally and culturally and will be dealt with later.

Recent excavations along the Ocmulgee (Bracken et al. 1985) have uncovered information that is applicable to the cord-marked pottery problem. Two sites were investigated in Telfair County, Georgia (9Tf73 and 9Tf2). 9Tf2 is known as the Telfair "Mound", a natural mound which had been tested by Snow (1972). In the initial tests, cord-marked ceramics and small triangular Hamilton-like projectile points were found, generally overlying Swift Creek, Weeden Island, and check-stamped material. This was much the same sequence that was recovered at Little Sandy Hammock (9Dg40), a natural mound in Dodge County, Georgia. The presence of cord-marked ceramics typologically placed the upper layers of the Telfair site in the Woodland era. Therefore, excavation of the site presented the possibility of obtaining information on the temporal placement of the Ocmulgee ceramic series as well as to determine associated subsistence activities.

In the absence of natural stratigraphy the 'mound' was excavated in artificial levels. The upper levels were dominated by cord-marked material but it was present in all, which suggested mixing of cultural material to the investigators. Cord-marked ceramics constituted 41% of the entire sample, but was more common in the upper levels at the expense of plain ceramics which were more popular in the lower levels (see Crook 1987). Several features were excavated, one of which was almost certainly associated with the cord-marked ceramic occupation. This feature contained pine wood, hickory shell fragments, an acorn and a fruit skin. Other features which are not as securely associated with a particular occupation added pokeweed and pigweed seeds to those food items utilized at some time by the site's inhabitants. In addition to the botanical information, the feature returned some bone material but only Odocoileus virginianus (white tail deer) was identified, the remainder was too small for species determination. Other loci at the site added cottontail rabbit and fox squirrel to those known to have been exploited by the site's inhabitants. While there was not enough faunal or floral material to indicate the complete dietary spectrum, anything suggesting the presence of agriculture was absent. Rather, it appeared that the site's inhabitants followed a typical hunting and gathering way of life representative of Woodland culture.

One of the goals of the excavation was to recover material in proper context for radiocarbon analysis. The mixed nature of the site and the absence of adequate charcoal or bone for such analysis forced the investigators to rely on thermoluminesence for indications of the age of the site. Samples of cord-marked pottery were submitted to

Alpha Analytic, Inc. of Coral Gables, Florida. One of the samples gave an age of 590 +/- 60 years B.P. or A.D. 1360, the other a date of 550 years +/- 50 B.P. or A.D. 1400.

Some problems were posed by the dates of the cord-marked pottery. They were much too late for the Woodland period. Secondly, if these dates were correct, according to traditional characterizations of the Mississippi Period, one would expect a subsistence based on agriculture and no supporting evidence was found. This along with evidence presented elsewhere in this monograph suggest continuity of Woodland traditions into the Mississippi Period.

The Hickory Ridge Site (9Tf73), is about one mile downriver from the Telfair "Mound". It is reported as a single component Late Woodland site, based on the artifacts recovered from two (1mx1m) test pits. Exactly 50% of all identifiable sherds were cord-marked, while the remainder were either plain or roughened. The one sherd from 9Tf73 which was submitted to Alpha Analytics for TL dating produced a date of 460 years B.P. or A.D. 1490. Some problems with the sample were reported but the proximity of the date to those from the "mound" suggest some validity.

Recently, Crook (1987) excavated at the Lowe site (9Tf139) on the floodplain of the Ocmulgee River in Telfair County. Artifacts revealed this to be a multi-component site with Paleo Indian, Early Archaic, Late Archaic/Early Woodland and Middle to Late Woodland periods apparently represented. The presence of cord-marked pottery in the upper levels makes the site important in placing these temporally. Several samples were submitted for radiocarbon analysis or thermoluminesence dating. One Linear Cord--Marked sherd provided a date of A.D. 1460 +/- 50, while the carbon sample which was physically associated with the sherd produced a date of A.D. 1050 +/- 50, 400 years older than the TL date. Another radiocarbon sample taken from the same context as a Cross Cord-Marked sherd, produced a date of A.D. 870 +/- 90, approximately 700 years earlier than the TL date of A.D. 1570 +/- 30. Crook explains the discrepancy by pointing out that although the material for radiocarbon and thermoluminescence analysis were in physical association, the context was not closed and therefore the association was possibly spurious. The TL dates are close to those obtained by Bracken et al. at the Telfair Mound which lends credence to Crook's explanation. It is also possible that there was a third, unrecognized factor skewing dates. As Crook states, more samples will have to be analyzed before the problem is laid to rest.

In his concluding discussion, Crook briefly defines a Middle Ocmulgee Phase dating ca. A.D. 200 - ?900, and a Late Ocmulgee Phase dating c.a. A.D. ?900 - 1600. He distinguishes the two by increased frequencies of indented-base triangular projectile points and Cord-Marked pottery for the Late Ocmulgee Phase. Crook characterizes the occupation at this site as having been associated with a "conservative" [quotation marks Crook's] cultural adaptation. This is described as one based upon hunting and gathering

within a marginal Coastal Plain environment, which exhibited little material change over long periods of time.

The relationship between this interior Coastal Plain cord marking tradition and that of the Georgia Coast (Caldwell 1971) is still unclear. Milanich, et al. (1976: 50-52) investigated what they called "inland Wilmington" on the Lower Ocmulgee, suggesting a close relationship with coastal Wilmington, a Mississippi time period date, and a relationship with the Alachua Tradition of central Florida.

Crook provides us with little discussion of the Wilmington Culture in his synthesis of the Mississippi Period within the Georgia Coastal Zone because he considers Wilmington to fall entirely with the Woodland Period (M.R. Crook, Jr., personal communication, August 24, 1987). However, he implies (1986b: 36-37) that Wilmington ceramics continue to occur after A.D. 900. He begins his discussion of the Mississippi Period with the beginnings of the development of the Savannah Phase on the coast ca. A.D. 900, and discusses cord marking in reference to the type known as Savannah Fine Cord Marked. He does note that a number of archaeologists recognize an intermediate phase between Wilmington and Savannah, which Caldwell (1971) named the St. Catherine's Phase, although he feels that the acceptance of such a phase may prove to be confusing. Since his discussion is restricted to the Coastal Zone, Crook does not address the problem of the persistence of cord marking on the interior and how it might reflect upon the interpretation of coastal cord marking.

As to the remainder of the Lime Sink, Wire-Grass, and Flat Pinelands regions of the Georgia Coastal Plain - perhaps 50% or more of the area under consideration - almost nothing can be found in the literature. David Anderson (personal communication) has conducted further archaeological investigations of the Savannah River valley below the Fall Line Hills and inland from the Coastal Strand, supplementing the recent work by Williams and Cook (1987), but there appears to be no published data available for this all important region. The same may be said for most of the Oconee, the Ogeechee, the Canoochee, the Altamaha, the Alapaha, and the Ocklocknee Rivers within the Georgia Coastal Plain.

DISCUSSION

The above review of the literature deals to the extent possible, with available data, the questions posed at the outset but generates many more than problems it answers. The data are best applied to the distribution of artifacts rather than with problems of culture process or adaptive strategies. On the Chattahoochee and portions of the Flint , sites are found which demonstrate fully Mississipianized cultures. At Hollywood, the ceremonial center which is just below the Fall Line on the Savannah, typical Mississippian features are also reported. Material is identified on the interior Coastal Plain which is traditionally associated with the Mississippi Period, almost exclusively ceramics. Does such material demonstrate the presence of the Mississippian culture? By Bruce Smith's definition it does not since the environmental features necessary for the adaptation are absent except on the Fall Line, and along portions of the Chattahoochee and Savannah drainages. For Willey's trait list approach, we can only say that with the exception of pottery, none of the other traits have been identified on much of the interior Coastal Plain. As for Griffin, we do not yet know how much the people of the Coastal Plain were involved in ideas and practices of a pan-southeastern interaction sphere. In fact, in most areas of the study area adequate data do no exist to test any definitions of the Mississippian.

In addition to the Mississippian ceramics, there is also a good case for the presence, during the same time frame, of artifacts which are traditionally associated with the Woodland Period. Cord marked wares, a defining feature of the Woodland Period, co-occur and generally are the dominant type on sites with Mississippian ceramics in much of the Coastal Plain. Woodland is assumed to separate the Archaic and the Mississippi periods and therefore has, to some extent, temporal connotations, i.e. between about 1000 B.C. and A.D. 900. The significance of the association of ceramic types characteristic of two different cultural periods is difficult to assess but presents problems to be addressed in future research.

Two recent reports provide additional information concerning this phenomenon (Bracken, et al. 1986, Crook 1987). Radiocarbon and thermoluminscence analyses were performed on samples from sites with cord marked ceramics. As noted above, the thermoluminescence dates are considerably younger than those which would be expected on a typological basis and from C-14 determinations. However, there does appear to be a certain internal consistency in the TL dates. The lack of agreement between the C-14 dates and TL dates suggest that either the two dating techniques do not provide comparable results or the physically associated carbon and sherd samples lack an actual temporal association. Crook prefers the latter explanation (Crook 1987: 60). A comparison of the radiocarbon dates from the Cannon and the Lowe sites complicate the problem.

The radiocarbon samples submitted by Crook yielded dates which are consistent with the one date which was derived from the charcoal sample in the tomb at the Cannon

Site. The two radiocarbon dates from the Lowe Site were A.D. 870 +/- 90 (associated with cross-cord marked ceramics) and A.D. 1050 +/- 100 (associated with linear cord marked ceramics). Although more work is required to clarify the problem of dating, particularly since the cord marking tradition appears to have some time depth, it is interesting to note that the later date from the Lowe Site, associated with linear cord marking, is closer to the date from the Cannon Site, which also had predominantly linear cord marking.

Research Questions

The above review has made it obvious that certain basic questions must be answered before any investigation of cultural process begins. The answering of these questions should be primary research goals on the Coastal Plain. These include: 1. What are the sound chronologies for all or most of the Coastal Plain? 2. What was the nature of activities of those left the isolated Mississippian pottery types? 3. What is the subsistence base of the Mississippian pottery producers and of the Mississippi period in various portions of the Coastal Plain where Mississippian cultures do not predominate? 4. What is the age of the cord-marked pottery? 5. What is the subsistence base of those who manufactured cord-marked pottery? 6. What is the relationship between the producers of the Mississippian wares and those who produced cord-marked ceramics?

Also apparent from the review is that co-occurring and generally the dominant type with the Mississippian ceramics in much of the Coastal Plain are other wares which are traditionally associated with the Woodland Period. The Woodland Period is often characterized by the presence of cord-marked and fabric-marked ceramics, the construction of burial mounds or other earthworks and by the latter stages at least incipient agriculture (Willey 1966). Further, Woodland is assumed to separate the Archaic and the Mississippi periods and therefore has, to some extent, temporal connotations, i.e. between about 1000 B.C. and A.D. 900. The significance of the association of ceramic types characteristic of two different cultural periods is difficult to assess but presents problems to be addressed in future research.

Other Research Problems

Most, but not all, platform mounds within the Coastal Plain appear to be associated with Mississippian cultures. Although data are still insufficient (Frankie Snow, personal communication), there may be at least one archaeological site on the Lower Oconee which finds Northern Tradition ceramics associated with platform mounds. If this is true, the relationship between these mounds and those of more 'typical' Mississippian sites need to be further investigated.

Other problems have already been addressed in the paper. One of these is simply the need to clarify just what 'Mississippian' is, and should there be more than one

definition. Should Willey's 'laundry list' approach be discarded completely or are there useful characteristics which should be retained? Can the environmental and cultural definitions proposed by Smith and Griffin respectively be rationalized or combined in a useful, unified definition of Mississippian? Particularly in the 'non-Mississippian' portions of the Georgia Coastal Plain, can it be said that there has been developed a sound chronology? Will the contrasting adaptations represented on the Georgia Coastal Plain during the Mississippi Period provide a suitable laboratory for clarifying the meaning of 'Mississippian'?

Are the isolated Mississippian ceramics sometimes found within the second area of the Coastal Plain examples of trade, or outlier settlements, or something else still not understood? What are the details of the subsistence base of the cultures within the 'non-Mississippian' areas of the Coastal Plain. Finally, what was the relationship between the producers of the Mississippian wares and those who participated in the Northern Tradition?

Adaptive Patterns

As may be seen in the body of this paper, any discussion of adaptive patterns must take into account the two very different environmental areas to be found within the Coastal Plain. The first of these areas is along the Lower Chattahoochee, the Northern and Southern Zones of the Flint, and the Fall Line Zones of the Ocmulgee, Oconee, and Savannah. At this point in time, data are insufficient to determine whether other portions of the Lower Savannah should be included within this environmental area.

The second environmental area essentially encompasses the remainder of the Coastal Plain. Perhaps the simplest way to characterize these two areas is to state that in the second of the environmental areas, extensive and temporally extended agriculture was not possible until the advent of modern agricultural principles and chemicals because of the frequency of flooding and/or the poor quality of the soil.

At the present, Mississippian sites appear to be largely restricted to the first of these environmental areas, perhaps providing some indication of the importance of suitable cultivable lands for the development or introduction of a Mississippian life style. On the other hand, consideration must be given to the adaptation apparently represented by the presence of a cultural tradition in the remainder of the Coastal Plain which seems to be well adapted to that environment.

Although this second tradition is little known other than the fact that the majority of the ceramics appear to be cordmarked, it would appear that it represents a lifestyle well adapted to a hunting and gathering economy. Further investigation may demonstrate that this cultural phenomenon will provide an excellent test of Caldwell's (1958) characterization of a Primary Forest Efficiency.

This second tradition also fits well into what Caldwell characterized as the Northern Tradition (Ibid). The relationship between the cultures represented in this area and other examples of the Northern Tradition (including the Wilmington Culture of the Georgia Coastal Zone) needs to be further investigated. Because of the diverse environmental areas within which the Northern Tradition is found represented, the adaptive mechanism needs to be better understood.

MANAGEMENT RECOMMENDATIONS

The Georgia Coastal Plain offers a special opportunity for a better understanding of cultural adaptation during the Mississippi Period. Because of the dual nature of this zone (that is, extensive environmental areas both conducive and restrictive to the development of horticulture within Mississippian horticultural techniques) there is an opportunity to examine what are in effect contemporary Mississippian and Woodland cultures interacting. It provides us with an opportunity to better understand both cultural traditions. This is contingent, however, upon there being sufficient and relatively unskewed samples of sites and components to examine.

Those Mississippi Period archaeological sites remaining which are representative of various aspects of cultural adaptation to the two kinds of environment within the Coastal Plain should be preserved whenever possible while there are still sufficient sites available to provide a comprehensive sample. As techniques and methods in archaeology improve, it is vital that there be suitable sites remaining to examine from these new perspectives.

There still remain very large areas of the Coastal Plain which are completely unknown archaeologically. This has led, and will continue to lead, to a biased view of the region. It is important that comprehensive surveys be undertaken in order to close this gap in our knowledge. It is a byproduct of archaeological history that the majority of archaeological surveys of any extent have been as a result of federally mandated investigation due to potential federal impact. There appear to have been relatively few federal programs potentially impacting archaeological resources on the Atlantic Slope of the Coastal Plain. Funding should be sought to conduct surveys in those areas with little federal impact.

Because of the extensive impoundment and proposed impoundment of much of the Chattahoochee and Flint River systems, and the Fall Line Zones of other rivers in Georgia, however, serious consideration must be made toward an assessment of the endangeredness of the remaining cultural resources within the 'Mississippian' area of the Georgia Coastal Plain. As in other sections of Georgia (Hally and Rudolph 1986, Crook 1986b), site disturbance and destruction has seriously damaged the data base available for answering new questions about the Mississippi Period cultures of the Coastal Plain.

There are a number of kinds of resources identified which need to be preserved, but it would seem incautious to attempt to formalize at this time a supposed "comprehensive" plan for the kind of sampling of the resource which should be preserved, since so little is known of what actually exists in majority of the Coastal Plain.

Our understanding of the widely contrasting adaptations to the two major environmental areas of the Georgia Coastal Plain is extremely limited. A complex set of

questions are being formulated, questions which will require the expenditure of much time, effort, and expense to properly answer. The answering of these questions may potentially reflect, however, upon modern successes and failures in our own attempts to exploit these environments.

Effective management of the archaeological resources of the Mississippi Period on the Georgia Coastal Plain will require not only additional research, but also a serious educational program to increase the level of awareness of the general public about the presence of these resources, and also about their significance and the need for their preservation. Early recognition by the public and development agencies of the presence and importance of archaeological sites can lead to efficient and cost effective means of preserving these significant cultural resources. With a greater participation by the public in the preservation of these archaeological resources, with a greater attention to one of the most neglected areas of the State of Georgia in terms of archaeological research and funding, it is likely that significant contributions will be made not only to the body of archaeological information, but also to the well being of our state and its people.

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APPENDIX

GEORGIA COASTAL PLAIN C-14 DATES FOR MISSISSIPPI PERIOD AND 'MISSISSIPPIAN' COMPONENTS

LAB IDENT.	SITE	PHASE/ CULTURE	UNCORRECTED A.D.	MASCA A.D.	REFERENCE
M981	9Bi1	MACON PLATEAU	1015 +/-110	1055	WILSON 1964
M940	9Bi5	MACON PLATEAU	980 +/-150	1030	WILSON 1964
BETA 8961	9Me21	AVERETT	900 +/- 80	960	GRESHAM ET AL. 1985
BETA 8962	9Me21	AVERETT	1520 +/- 50	1430	GRESHAM ET AL. 1985
BETA 8963	9Me21	AVERETT	1170 +/- 60	1220-1200	GRESHAM ET AL. 1985
BETA 8964	9Me21	AVERETT	1020 +/- 50	1060	GRESHAM ET AL. 1985
BETA 9551	9Me21	AVERETT	1430 +/- 70	1400	GRESHAM ET AL. 1985
BETA 9554	9Me21	AVERETT	830 +/- 60	910 - 890	GRESHAM ET AL. 1985
BETA 2267	1Ru9	AVERETT	1460 +/- 60	1410	MILANICH P.C. 1981
BETA 2270	9Sw1	STEWART	1260 +/- 60	1290 - 1260	MILANICH P.C. 1981
BETA 2271	9Sw1	STEWART	1690 +/- 70	1610 - 1530	MILANICH P.C. 1981
UGA 1847	9Cy62	ROOD	1555 +/- 60	1440	SCHNELL ET AL. 1981
UGA 1848	9Cy62	ROOD	1425 +/- 55	1390	SCHNELL ET AL. 1981

LAB IDENT.	SITE	PHASE/ CULTURE	UNCORRECTED A.D.	MASCA A.D.	REFERENCE
UGA 1946	9Cy62	ROOD	1320 +/- 125	1310	SCHNELL ET AL. 1981
UGA 1849	9Cy62	ROOD	1230 +/- 70	1240	SCHNELL ET AL. 1981
UGA 1942	9Cy62	ROOD	1200 +/- 60	1220	SCHNELL ET AL. 1981
UGA 1941	9Cy62	ROOD	1185 +/- 55	1200 - 1220	SCHNELL ET AL. 1981
UGA 1939	9Cy62	ROOD	1160 +/- 55	1190	SCHNELL ET AL. 1981
UGA 2001	9Cy62	ROOD	1080 +/- 90	1090	SCHNELL ET AL. 1981
UGA 1945	9Cy62	ROOD	1055 +/- 55	1070	SCHNELL ET AL. 1981
UGA 1707	9Cy62	ROOD	1010 +/- 55	1030	SCHNELL ET AL. 1981
UGA 1995	9Cy62	ROOD	995 +/- 55	1020	SCHNELL ET AL. 1981
UGA 1998	9Cy62	ROOD	990 +/- 80	1020	SCHNELL ET AL. 1981
UGA 2041	9Cy62	ROOD	980 +/- 55	1020	SCHNELL ET AL. 1981
UGA 1944	9Cy62	ROOD	945 +/- 70	980	SCHNELL ET AL. 1981
UGA 1943	9Cy62	ROOD	930 +/- 60	960	SCHNELL ET AL. 1981
UGA 2000	9Cy62	ROOD	895 +/- 65	930	SCHNELL ET AL. 1981

LAB IDENT.	SITE	PHASE/ CULTURE	UNCORRECTED A.D.	MASCA A.D.	REFERENCE
UGA 1996	9Cy62	ROOD	850 +/- 60	890	SCHNELL ET AL. 1981
UGA 1997	9Cy62	ROOD	710 +/- 95	700 - 730	SCHNELL ET AL. 1981
UGA 356	9Sw2	ROOD	1270 +/- 80	1290-1260	NOAKS &BRANDAU 1974
UGA 357	9Sw2	SINGER	1400 +/- 60	1390	NOAKS &BRANDAU 1974
SI 260	9Qu5	ROOD	1290 +/-280	1310	LONG &MIELKE 1967
SI 263	9Qu1	FT.WALTON (?)	1420 +/-120	1390	LONG &MIELKE 1967
SI 260	9Qu5	ROOD* (SW.CR?)	340 +/-140	410	LONG &MIELKE 1967
UGA 668	9Cp108	Blackshear (Corded)	1203 +/- 65	1230	SCHNELL 1975
BETA 16013	9Tf139	Ocmulgee (Corded)	870 +/- 90	910	CROOK 1987
BETA 16014	9Tf139	Ocmulgee (Corded)	1050 +/-100	1023	CROOK 1987

* There is a Swift Creek component to this site.