DEPOPULATION AND CULTURE CHANGE IN THE EARLY HISTORIC PERIOD INTERIOR SOUTHEAST

By

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To Charlie, who taught me
the art of anthropology,
and to Dave, who taught me
the craft of archaeology

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Chairman: Charles H. Fairbanks
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Many changes occurred in aboriginal chiefdoms in the interior Southeast as a result of depopulation caused by European contact. This study focuses on these changes, accepting the thesis of rapid depopulation presented by Ann Ramenofsky and Henry Dobyns. It tests the hypothesis that depopulation was causal in the changes which took place.

After reviewing the historical background on the study area, European trade goods recovered from archaeological contexts are seriated to provide fine chronological control for sites of the early historic period. This temporal framework is then used as a backdrop against which culture change is measured.

Evidence exists for depopulation in the study area. Although limited, these data do suggest that both site size and number of sites decreased. The frequency of mass and multiple graves and evidence of population movements are also discussed as measures of depopulation.

Evidence for political disintegration is much more dramatic. The end of the construction of public works, such as mounds and palisades, is shown to have taken place no later than the first third of the seventeenth century and elaborate hierarchies of sites disappeared at this time. Sociotechnic markers of elite status disappeared from use in the early seventeenth century and other specialized craft products also ended soon thereafter. There was apparently both population and political collapse by no later than the first third of the the seventeenth century and it is argued that the former caused the latter.

Various archaeological measures of acculturation are utilized on data from the study area. It is argued that "acculturation" had little effect on the study area during the early historic period, even though dramatic changes took place.

The remainder of the study discusses how the remnants of the once powerful chiefdoms were forced to band together to form the Creek Confederacy as a response to outside pressure from armed Indian groups from the North and English slave traders from the East. The Confederacy is seen as a late seventeenth century phenomenon.

CHAPTER I
INTRODUCTION

This study focuses on the changes which occurred in the aboriginal chiefdoms of a portion of the interior southeastern United States as a result of European contact. Throughout the New World, various types of culture change occurred among chiefdoms as a result of contact. Some coastal groups were conquered and used for agricultural labor and others were forced into mission systems (Hemming 1978; Service 1954; Geiger 1937). Aboriginal groups in the interior of the southeastern United States, however, largely avoided sustained, direct contact. Nevertheless, these latter societies underwent drastic culture change.

There are no direct historical accounts of these changes in the interior populations because no Europeans were present to document them. Understanding the processes of cultural disintegration thus becomes an archaeological problem, and it is this historically undocumented change which is investigated here. The central thesis to be demonstrated is that population collapse, resulting from European epidemic disease, was the major causal factor in change during the early historic period in interior areas. It will be argued that acculturation had virtually no influence outside of areas of prolonged European-Indian contact, such as the interior Southeast.

Definitions

The term "interior Southeast" is used to indicate that portion of the southeastern United States north of the fall line region and east of the Mississippi Valley. Thus the coastal plain and Florida are excluded from consideration. In coastal areas, contact between Europeans and Indians was much more intensive and continuous, and different patterns of culture change (acculturation) may have taken place because of the presence of European settlements such as St. Augustine and Santa Elena, and the presence of the Spanish missions along the Atlantic coasts of Florida, Georgia, South Carolina, and Virginia and across northern interior Florida. Acculturation in these settings was quite different from the indirect influences of disease investigated in this research.

The "study area" examined here is a portion of the interior Southeast (Figure 1). It consists of the Georgia and Alabama Piedmont and the Ridge and Valley Province of Tennessee, Georgia, and Alabama. Specifically the study area is bordered by the upper Alabama River on the west, across the fall line to the Savannah River on the east, and north of the present Bristol, Tennessee, area to the north. The mountainous regions of northern Georgia, eastern Tennessee, and western North Carolina are excluded. This area consists of the Tennessee River drainage, the Coosa River drainage, the Chattahoochee River drainage, the upper Ocmulgee River drainage, and the upper Oconee River drainage.

Rather than concentrate on a single site or a single locality (e.g., a reservoir), it was felt that a broad region was more appropriate

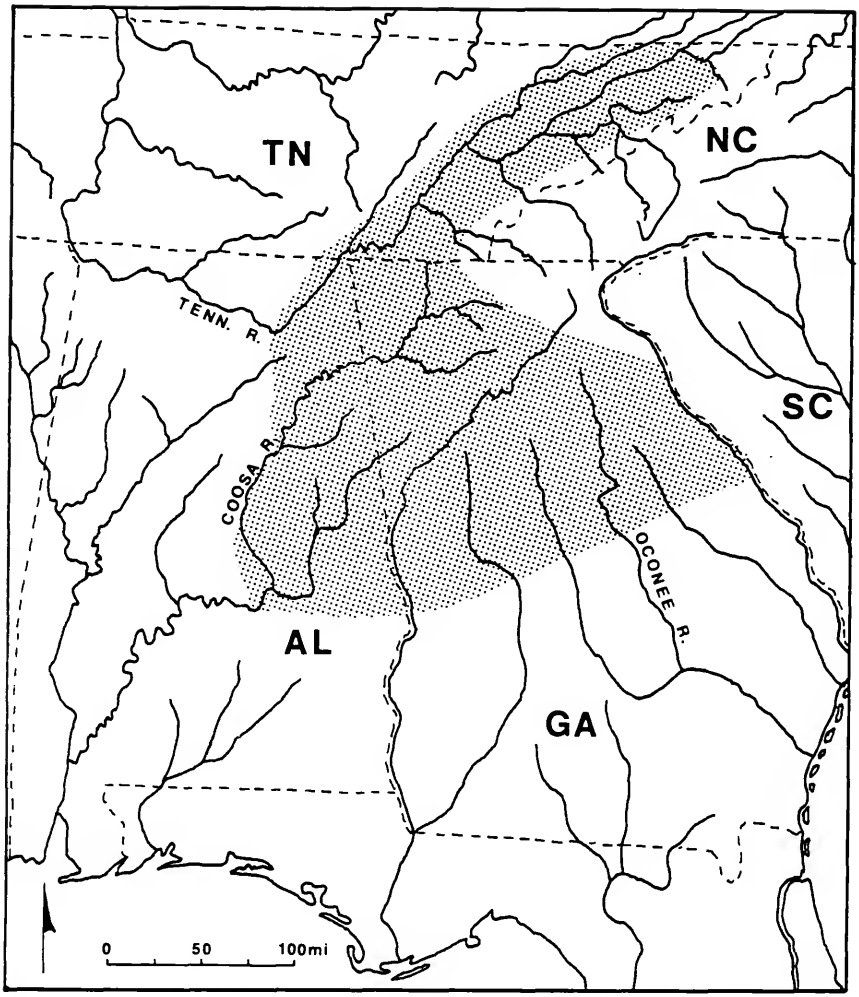


Figure 1. Location of the study area

for the hypotheses to be investigated. While a few individual sites containing evidence of early European exploration have been described, no one has tried to synthesize the effects of early European exploration within a relatively large area of the Southeast, at least not in archaeological terms. Historians and ethnohistorians have utilized the documentary record to interpret what took place in the interior, but these sources have had little to say about the interior Southeast. Only by combining the meager historical documentation with the archaeological evidence can we hope to gain a reasonably full understanding of the processes that reshaped the southeastern societies.

The "early historic period" is defined as that period when Spaniards made up the only European presence in the study area. It begins in 1540 with the expedition of Hernando de Soto and ends with the arrival of English traders from Virginia and South Carolina in the 1670s. Because this is a study of both direct and indirect European influence, it would be appropriate to begin the study somewhat earlier; European goods and diseases filtered into the interior in advance of Europeans (B. Smith 1968:63,64; Ramenofsky 1982).

Following Elman Service (1962:143), a chiefdom is defined here as a group with both a denser society and a more complex form of organization than a tribe. Chiefdoms have highly productive economies and they have centers "which coordinate economic, social, and religious activities." Service also argues that "chiefdoms are redistributional societies with a permanent central agency of coordination" (1962:144); however, Peebles and Kus (1977:423-424) argue that redistribution is not

necessarily an indicator of chiefdoms. All of these authors agree that chiefdoms are "ranked societies" in which there is "pervasive inequality of persons and groups in the society" (Service 1962:154). People are socially ranked according to their geneological nearness to the chief (Service 1962:155). The archaeological correlates of chiefdoms proposed by Peebles and Kus (1977) are utilized here, and these will be discussed in Chapter V.

George Foster's definition of acculturation is accepted in this study (1960). Foster views acculturation as a type of culture change in which long-term contact between a dominant donor culture and a recipient culture result in the latter becoming more like the former. Acculturation will be discussed in more detail in Chapter VI.

Background to the Problem

The demographic collapse of the inhabitants of the New World has been the focus of a number of recent studies. Henry Dobyns (1966,1983), William Denevan (1976), Sherburne Cook and Woodrow Borah (1960), Alfred Crosby (1972), and Ann Ramenofsky (1982) have demonstrated that a cataclysmic decline in population took place following the introduction of the Old World pathogens after 1492. Because we are just now coming to a full realization of the tremendous magnitude of this decline, few scholars have considered the effects of the decline on New World chiefdoms.

For example, in his study of sixteenth century culture change in Paraguay, Elman Service (1954) does not consider depopulation as a causal factor. In a later work, Julian Steward and Louis Faron

(1959:176) use the term "deculturation" to designate a type of culture change in which important cultural features are lost. Their best example of deculturation is the case of the Cuna Indians of present Panama.

> It became clear that the Cuna Indians, who are the modern descendents of the Indians buried at Coclé, had been so broken by the Spanish Conquest that their native chiefdoms were destroyed, their social classes eliminated, and their skills in producing art goods in textiles, ceramics, and metallurgy were lost. What remained was a primitive society much like that of the Amazonian Indians. That is, the Cuna retained the simple features of their native village life, but lost the institutions and skills associated with chiefdoms and social classes. (Steward and Faron 1959:176)

Although Steward and Faron have introduced a useful concept in "deculturation," they do not describe the process; rather, they contrast the Cuna as described in sixteenth century accounts left by Spanish explorers and archaeologically recovered evidence of prehistoric Cuna lifestyle with modern Cuna culture, demonstrating that virtually all "higher" levels of political, religious, and craft aspects of culture have been lost. Furthermore, they do not tie their process of deculturation to population loss. Indeed, in speaking of the chiefdoms of northern Venezuela, they point out that early Spanish conquest led to the area being greatly depopulated. "The surviving Indians retreated into the forests, where they were soon deculturated to an unstratified, simple village or folk level of society" (Steward and Faron 1959:241). That is, they seem to view deculturation as a later process after depopulation and dispersement, not a concurrent aspect of one overall phenomenon of change.

In what is basically an historical work, John Hemming (1978) has described the collapse of Brazil's native population. While recognizing the importance of the introduction of European disease, Hemming also stresses the effects of the slave trade and the mission system. He carefully documents the evidence for large Amazonian aboriginal groups described by sixteenth century explorers and contrasts this with later accounts of abandoned areas, but he does not analyze the process. The Amazon basin appears to be similar to many areas of the New World. It was quickly explored during the sixteenth century, but when no valuable commodities were discovered, it was forgotten and only revisited generations later. During that time lapse, vast changes in the aboriginal population took place. The interior southeastern United States underwent a similar experience.

Perhaps the only person to seriously consider the specific effects of depopulation on aboriginal cultural organization is Henry Dobyns. In his recent work, Their Number Become Thinned (1983), Dobyns suggests that depopulation was severe and that it caused much cultural change. He discusses settlement amalgamation—the banding together of survivors, settlement shifts to new locations, simplification of the social system, despecialization of economic structure, loss of skilled specialists, and new types of warfare, all resulting from depopulation brought about by European disease epidemics. Thus Dobyns presents a model for the changes brought about by disease.

Dobyns uses primarily secondary, translated, historiographic data to demonstrate his thesis that depopulation caused cultural change. His

main case study is the Timucuan Indians of Florida, a group that was under almost constant direct European contact beginning in the 1560s, first with the French (Bennet 1975) and later the Spaniards (Lyon 1976; Geiger 1937; Milanich and Proctor 1978). Thus, we cannot be certain that forces of acculturation were not responsible for much of the change that Dobyns documents. While Dobyns suggests that similar changes took place in the interior (1983:324), he does not demonstrate it. He does look at some archaeological data from the Seneca of western New York, but it must be pointed out that because of their importance in the fur trade, the Seneca were in direct contact with Europeans throughout most of the seventeenth century, so again changes might not be due to depopulation alone. Furthermore, Seneca society was not organized at a chiefdom level, and it is the effect of depopulation on chiefdoms that is the focus of this study. The goal here is to demonstrate that depopulation was the major cause of culture change in an aboriginal group removed from direct European contact. This approach requires the application of archaeological methods rather than the use of historical documentation because the latter does not exist.

Henry Dobyns has argued for far-reaching pandemics spread inland from initial coastal contacts (Dobyns 1983). Ann Ramenofsky (1982) also has argued forcefully that population collapse of interior groups preceded direct contact. This may well be the case. Almost certainly early European explorers penetrating the interior portions of the New World from Canada (Fenton 1940:175) to Brazil (Hemming 1978) also infected its aboriginal inhabitants with new diseases. Thus, for the

purpose of this study, it is accepted that severe depopulation followed European contact, and that even interior areas were affected. Evidence to demonstrate this collapse and to document its timing will be assembled, but the main goal of this researh is to demonstrate the effects that this depopulation had on aboriginal culture. Specifically, the collapse of the interior southeastern Indian chiefdoms will be demonstrated.

A Model of Early Historic Period Change

A model of change during the early historic period might be constructed as follows: As population declined through time, the number of sites would be expected to decline, and sites should become smaller and smaller over time. Tangible evidence of disease should be expected in burial populations, and several measures of disease are presented in Chapter IV. There is historical evidence that populations also moved following disease epidemics, and if this was so, archaeological evidence of migrations should be expected.

As the aboriginal population collapsed, it brought about changes in sociopolitical organization. The complex chiefdoms described by sixteenth century explorers (Ranjel and Elvas in Bourne 1922; Bandera 1569) gave way to eighteenth century tribal units of refugees described by later Europeans (discussed in Swanton 1922,1928,1946); however, the rate of this change is unknown. It is hypothesized that this change was rapid, closely following upon the population collapse, and, indeed, caused by it.

The changes brought about by depopulation were far reaching. It will be argued in Chapter VI that in the absence of prolonged direct European contact, these changes were not the result of acculturation.

Goals of the Study

Why has the decline of chiefdoms brought about by European contact received so little study? As noted earlier, it is basically an archaeological problem since virtually no European observers were around to record the process.

Archaeological sites in the Southeast which produced early European artifacts were frequently interpreted as dating to the eighteenth century; indeed, there is still a tendency on the part of some researchers to do this. The result is that only recently have the artifacts typical of the early historic period been recognized. This research should fill in a large void in the literature, and provide a chronological ordering of over fifty archaeological sites which have been excavated during the past century, as a background to looking at the cultural processes that took place during the early historic period. It is the measurement and assessment of these processes caused by depopulation, which form the real contribution of this work.

In addition, this research will make several other contributions to anthropology. First, it will contribute to our knowledge of culture contact, especially the critical timing of cultural and population collapse brought about by European/African contact with the New World. The results are expected to demonstrate that collapse was rapid,

probably occurring in less than sixty years. This idea of rapid breakdown has applicability throughout the New World.

The study also concentrates on a specific type of culture contact situation. In the study area, direct European short-term contact (exploration) was followed by over a century of indirect European influence, primarily the spread of disease. It can be demonstrated by historical and archaeological data sets that drastic culture change took place, yet it is argued that this was not acculturation. Certainly the processes of change were not the same as those in colonized or missionized areas where a direct European presence was maintained. There are other analogous situations throughout the New World, Amazonia being a prime example. This type of culture change has not been studied in detail. What are the indirect effects of a relatively distant European presence?

Questions of the comparability of historical vs. archaeological data will also be addressed. Carmack and Weeks (1981) have pointed out that ethnohistorical and archaeological data often appear to conflict. Do the archaeological data support the historical data for collapse in this case study? If not, why not?

The study will contribute to culture history, specifically the culture history of the Indians of the interior Southeast at a time of rapid change. A chronological scheme for sites of the early historic period in the interior has not previously been proposed. Thus, a portion of this work in a sense resembles Hale Smith's Florida Study, The European and the Indian (1956), in that it attempts to synthesize

scattered data into a coherent picture. The interpretations of tribal history proposed by John Swanton are questioned, and alternatives explored.

The study will also make methodological contributions, especially in the use of European trade items to set up a chronological scheme against which to measure culture change in very small time units. This methodology is discussed in detail in Chapter III.

Most importantly, this research explores the application of various archaeological methods to demonstrate the decline of chiefdoms associated with general population decline. The direct historic approach is shown to be invalid for the interior Southeast (and hence for many areas of the New World), and the concept of the "indirect historical approach" is introduced. This approach has applicability in areas where infrequent contact by literate Europeans and severe population decline combined to obscure the history of Native Americans.

Finally, two different techniques for establishing chronological control are compared. A seriation of sites based on European trade goods is used in the western portion of the study area, and a seriation based on aboriginal ceramics is used in the eastern portion of the study area.

Theoretical Orientation

Historical archaeologists have long recognized that the major strength of historical archaeology is that it combines multiple sources of evidence. Both historical data (written and oral) and archaeological

data are combined to obtain a better understanding of past events and processes (Fontana 1965; Hume 1969; Schuyler 1977). In a recent discussion of the interaction of the disciplines of archaeology, historiography, and ethnology, Jeffrey Brain and his colleagues (1974:232) have proposed the term "Ethnohistoric Archaeology," which they apply to "historic contact situations operating in a native context." They contrast it with much of traditional historical archaeology which they view as looking at our own Euroamerican past through archaeology. Like other historical archaeologists, they feel that by bringing the disciplines of archaeology, historiography, and ethnology to bear on a given contact situation, a much more valid interpretation is possible than one stemming from only one discipline.

The approach advocated by Brain and his colleagues seems closely allied to what Immanuel Wallerstein has called a "unified social science" (1979:vii-xii). This approach combines the disciplines of history, anthropology, sociology, geography, archaeology, etc. to solve a particular problem selected by the researcher. In some senses of the term, this is what Marvin Harris (1979:288-290) would call "eclecticism," although others would see it as the holistic approach used by anthropologists for decades.

In a recent article, Carmack and Weeks (1981) use what they call a conjunctive approach (not to be confused with that of Taylor 1948). Their conjunctive approach uses both ethnohistorical and archaeological data to give a full picture of Ulatlan. They point out that these data sets frequently contradict—an important warning for anyone doing

ethnohistoric archaeology. They believe that this conjunctive approach should be used to "downstream" from the historically known to the prehistorically unknown. Certainly their approach is quite similar to the one which will be applied here to data on the early historic period interior Southeast. But instead of "downstreaming" from the historically known to the prehistorically unknown, the approach here is to "upstream" from the historically known sixteenth century chronicled by the De Soto, Luna, and Pardo expeditions to the historically unknown interior of the seventeenth century.

Carmack and Weeks' conjunctive approach is in effect the Direct Historic Approach advocated by several authors (Strong 1935; Steward 1942). The methodology utilized in this research can be referred to as the indirect historic approach—working from the historically known to the more recent historically unknown to the even more recent historically known. It has been argued that it is almost impossible to use a direct historic approach to work backward from the well-documented eighteenth century tribal societies of the study area to their prehistoric chiefdom forebears (Smith 1976:45; Dobyns 1983:338,342). The only viable approach is to look at the southeastern Indians at the dawn of contact—through the eyes of the early Spanish explorers of the sixteenth century. Once an understanding of that period is reached, it can be used as a baseline to work both backward into prehistory and forward to link up with the documented societies of the eighteenth century. It is this upstreaming approach that will be used in this research.

The Data Base

Because this research is a synthesis of earlier research, using old data to answer new questions, it must be pointed out that the sites selected were not chosen for excavation specifically to test the research hypotheses. Rather, the sites utilized in this research include all sites thus far located in the study area which have produced European trade objects typical of the early historic period (Chapter III). Over fifty sites are represented in various degrees of completeness of data. Not all desired variables were collected by all past researchers at these sites. Thus, some hypotheses can be tested by a wide range of data from many sites, while others can only be tested with limited data from a few sites. Such are the problems arising from utilizing data collected by previous researchers for other purposes.

The archaeological data utilized in this work were collected over a century-long span from the late nineteenth century to the 1980s. Data from research by nineteenth century observers for the Smithsonian Institution and the Bureau of American Ethnology, other individuals, such as Clarence B. Moore and Warren K. Moorehead; numerous W.P.A. (Works Progress Administration) projects; postwar reservoir salvage projects; and modern contract archaeology are combined with data collected by avocational archaeologists to present the fullest possible picture of culture processes during the early historic period in the study area. This certainly is not a "sample" in the statistical sense, although it is the known complete population of excavated sites (recognizing that the excavated sites are not a sample of the total sites). Yet the areas

relied upon for the bulk of the interpretations, specifically the Tennessee River drainage and the Coosa River drainage, are among the most thoroughly investigated areas of the Southeast. It can be argued that random research, as well as W.P.A. and later surveys in these areas, probably has located the majority of the large early historic period town and village sites. During the early historic period, small hamlet size settlements are not characteristic of the Tennessee Valley (Richard Polhemus, personal communication) and they do not seem to characterize the Coosa drainage. Most people in these areas apparently lived in towns. While the sample cannot be justified on scientific grounds, the sample is adequate for the level of interpretation offered in this research.

Data collected in the Wallace Reservoir Salvage Project of the University of Georgia are used to serve as a check against the Tennessee-Coosa data. The Wallace Reservoir survey is easily one of the most thorough surveys systematically carried out in the interior Southeast. Over 1,500 archaeological sites were located by surface and subsurface techniques during the late 1970s. The sample of Wallace Reservoir sites is a scientific sample and should these data prove to support the same hypotheses confirmed by the "grab sample" from other areas, then we are on a firmer footing for interpretation of the cultural processes that took place during the early historic period.

Methodology and Organization of the Study

The study has been organized in the following manner: Chapter II presents the historical background for the interior Southeast in the

sixteenth century. The exploratory expeditions of Hernando de Soto, Tristan de Luna, and Juan Pardo are discussed, as well as a few subsequent entradas into the study area or indirect mentions of the study area in Spanish documents. A synthesis of recent attempts to locate aboriginal groups in the study area is presented. This chapter provides a baseline for the study; the powerful chiefdoms of the sixteenth century are described as a basis for documenting later culture change. A synthesis of recent attempts to identify specific archaeological sites with historically documented sixteenth century groups is presented.

Chapter III details the chronology established from European trade goods that is used as a fine time scale upon which to measure the significant disintegrative processes of the early historic period. The chapter begins with a discussion of the history of trade goods research and the various methods which have been used to construct chronological frameworks. Mechanisms of trade responsible for the introduction of European items into the aboriginal cultures are explored. Various European artifacts are discussed individually as chronological indicators, and then these artifacts are combined into artifact complexes believed to be diagnostic of four temporal subdivisions of the early historic period. These four subdivisions provide the chronological control—periods of 30-40 years—a scale much finer than would be possible by using aboriginal ceramic sequences or radiocarbon determinations. Chapter III continues with a discussion of some temporally diagnostic aboriginal artifacts which may also be used to date sites of the early historic period. The end product of Chapter III is a master

chronology table for all sites with datable complexes of early historic period European trade material in the study area.

Chapter IV details the demographic collapse that took place in the interior Southeast. The Dobyns and Ramenofsky thesis of depopulation is accepted and archaeologically derived, corroborating evidence for depopulation in the study area is assembled. The first section details the historical evidence for population collapse as a consequence of the introduction of European epidemic diseases. Historic evidence demonstrates that there were epidemics which severely reduced population, caused population movements, loss of culture, and social and political reorganization. The remainder of the chapter develops archaeological measures of European disease and its consequences, and applies these measures to data from the study area. Archaeological measures of depopulation discussed in this chapter include direct skeletal evidence, evidence from population curves, the presence of mass and multiple burials, decrease in the size and number of sites, and evidence of population movements.

It is clear that when discussing decrease in the number of sites over time as a possible result of European disease epidemics, a regional approach must be utilized to control for migration (Ramenofsky 1982). There is historical documentation of population movements of people fleeing diseased areas (discussed further in Chapter IV). Clearly if a small area is studied, the number of sites may decline drastically if people move away. By looking at larger regions, such as river drainage basins or the study area as a whole, the effect of migration is minimized.

Another methodological control utilized in this research comes from different types of chronological control utilized. In the western drainages of the study area, only those sites which have produced datable European artifacts were analyzed. This was done to produce the chronological control necessary to measure culture change in several distinctive archaeological culture areas. These areas do not have the fine scale ceramic chronologies that would make possible the control necessary to include sites which may be of the early historic period, but which have not yet produced European artifacts. It must be remembered that sites which have not produced a single European artifact could nonetheless have been occupied during the early historic period. Certainly European goods were not present at all sites in the sixteenth century and the kind of limited archaeological research that has been carried out at most sites is not always adequate to locate European artifacts even if they were present. Indeed, it is remarkable that there exists as much tangible evidence of the early European presence, direct and indirect, in the interior Southeast as there does. Nonetheless, circumstances require that only those sites which have produced European goods be used, since other sites lack the necessary chronological control.

Here again the Wallace Reservoir data are important as a check. While sites which produced European artifacts were scarce in the Wallace Reservoir, stratigraphic excavation and seriation techniques have allowed the construction of a fairly tight chronological sequence of native ceramics in the area. Thus the interpretation of the Wallace Reservoir data is based on chronological control provided by aboriginal

ceramics rather than on the chance recovery of European artifacts. It is possible to differentiate sixteenth century sites from seventeenth century sites with a great deal of confidence. The Wallace Reservoir data are drawn from all sites, from mound centers to specialized extractive sites (Shapiro 1983). These Wallace Reservoir data, then, provide a check for those data based on sites with European artifacts from the other drainages. This is an important methodological point. If both sets of data indicate that similar processes were taking place, then we can be more confident of the interpretations advanced.

Chapter V, "The Fall of Chiefdoms," discusses the collapse of the elaborate polities of the sixteenth century into the tribal groups encountered by European explorers of the late seventeenth and early eighteenth centuries. Again, historical evidence is recounted which supports such a collapse. Then the archaeological evidence is developed. Several archaeological characteristics of chiefdoms have been described by Peebles and Kus (1977) and the disappearance of these parameters will be used to document the loss of chiefly organization caused by depopulation and to show the timing of the political collapse. Specific measures to be employed include the end of construction of public works such as mounds and palisades, the disappearance of elaborate hierarchies of sites in a complex settlement plan, the end of support of part-time craft specialists and the accompanying long-distance trade networks, and the end of elaborate burial ritual signifying an ascribed status system. It is hypothesized that all of these characteristics disappeared during

the early historic period. It remains to be thoroughly demonstrated with data from the study area that these traits did indeed disappear and to document the rate of their disappearance. Again, it is suggested that disappearance was rapid. These hypotheses about the decline of chiefdoms and tests of the hypotheses are presented in more detail in Chapter V. Collapse of chiefly organization is shown to coincide with the demographic collapse discussed in Chapter IV.

Chapter VI examines the question of acculturation. After looking at various ethnological definitions of acculturation, several archaeological schemes for the measurement of acculturation devised by John White (1975), Ian Brown (1979a,1979b), and Jeffrey Brain (1979) are discussed. The archaeological data for the early historic period sites in the study area are applied to these models. It is argued that while drastic culture change took place in the study area during the early historic period, this change was not acculturation in the sense of the term as used by George Foster (1960).

The next chapter, "The Aftermath," summarizes the changes that took place during the early historic period, and examines the results of these changes. It is argued that vast population movements which took place near the end of the early historic period were the result of the introduction of firearms to the southeastern Indians, as well as the movement into the Southeast of Indian groups from outside the area. Using historical and archaeological evidence, it is argued that the Creek Confederacy was formed in the late seventeenth century as an aboriginal response to new pressures from Europeans and foreign Indian

groups. The deerskin economy and trade in Indian slaves centered in Virginia and particularly Charles Towne began a period of great culture change, including the beginnings of true acculturation. Historical and archaeological evidence for changes are discussed and an archaeological measure for the recognition of the founding of the Creek Confederacy is examined. John Swanton's views on the early location of several Creek groups are challenged. The final chapter examines the thesis in light of the data presented, and it provides a summary of conclusions and ideas for future research.

CHAPTER II
THE HISTORICAL BACKGROUND

The historic period in the interior Southeast began with explorations by Hernando de Soto in 1540. This was an historic period in the true sense of the word. There are four eyewitness accounts of the Southeast: Ranjel (Bourne 1922), Biedma (Smith 1968), A Gentleman of Elvas (Smith 1968), and the recently located Cañete account. Ranjel, De Soto's secretary, gives the most exacting account, while the Elvas account contains much detail. The Biedma account is short and lacks detail, but provides interesting information. Biedma was the King's Factor on the expedition and his account was his official report to the King. The Cañete account, or rather a synopsis of that account, was recently discovered by Eugene Lyon. This short document contains additional information about the Indians of the Southeast. Finally, there is the history of the expedition written by Garcilaso de la Vega some 50 years later (Varner and Varner 1951). Garcilaso interviewed participants in the expedition and wrote an account of incredible detail. While the Garcilaso account is over-embellished, it does provide much detail on the Southeast of the sixteenth century.

The De Soto expedition is important for several reasons. De Soto saw a Southeast never again seen (Hudson 1980). He saw southeastern chiefdoms while they were fully functional. He also saw many different southeastern cultures. The Southeast is a diverse region and De Soto observed and recorded much of it as he trekked from Florida to New Mexico.

De Soto's primary goal was to obtain wealth in the form of precious metals. He searched near and far and high and low (literally as he entered both the Appalachian and Ozark mountains). He hoped to find a second Mexico or Peru, but his efforts failed and he died on the Mississippi River.

Later the expedition of Tristan de Luna entered the study area with another motive. Luna had come to the Southeast in 1559 to colonize, bringing families of Mexican farmers instead of a massive military force. Luna was to set up colonies on the Gulf and Atlantic coasts and establish communications overland between these areas (Priestly 1928). While the Luna expedition was excellently prepared to meet these goals, it was foiled by a storm which wrecked several vessels before they could be unloaded. With most of the food supplies lost, the colonists faced starvation. Most of Luna's force moved inland to the Indian town of Nanipacana. When food grew short there, another group headed north to Coosa. Luna's force included several veterans of the De Soto expedition and they remembered Coosa as a fertile place (Hudson, Smith, Hally, Polhemus, and DePratter 1983). When they arrived at Coosa, they were disappointed, but were well fed. In return for food, the people of Coosa asked the Spaniards to help them with a dispute with their neighbors the Napochies, who refused to pay tribute. A large force consisting of the Coosa warriors and Spanish allies set out to the Napochie towns, which they quickly brought under control. The flow of tribute to Coosa was restored. Later the Spaniards left Coosa to return south to their main force. Meanwhile Luna's command was

falling apart, and by 1561 the entire colony was rescued and returned to New Spain.

The Luna attempt was important because it gives us a glimpse of the interior in the aftermath of the De Soto expedition. In the intervening 20 years, Coosa had lost some of its size and glory and it was having trouble collecting tribute from one of its nearest neighbors. It does appear that Coosa of 1560 was still in its 1540 location (Hudson, Smith, Hally, Polhemus, and DePratter 1983). Coosa had no doubt lost population to European disease, but the population had apparently stabilized in the period between De Soto and Luna. The Luna accounts do give us some idea of the location of named groups at ca. 1560.

The last major expedition into the study area during the sixteenth century was led by Captain Juan Pardo. Pardo actually made two trips into the interior from 1566-1568 (DePratter, Hudson, and Smith 1983), setting out from the newly founded settlement of Santa Elena, located on the present Parris Island, South Carolina (South 1980). There were multiple motives for the Pardo expeditions. Most pragmatically, there was a shortage of food in the new colony and Pardo's men were sent out to live off the land. Secondly, Pardo was sent to discover an overland route to Zacatecas, Mexico.

Unlike the earlier De Soto and Luna expeditions, Pardo's force had no horses. While it was a purely military force, Pardo's expedition was given specific orders not to upset the local Indian populations. Indeed, Pardo was given large quantities of trade goods to distribute

to the Indians to secure political alliances and food for his troops (DePratter and Smith 1980).

Marching into the interior of South Carolina, Pardo soon came upon the same route taken by Hernando de Soto approximately 30 years earlier. Again Pardo appears to have gone to the exact same towns in the same locations visited by De Soto (DePratter, Hudson, and Smith 1983). He marched through present South Carolina, North Carolina, Tennessee, and some of his force apparently reached Coosa in northwestern Georgia.

The Pardo expedition is extremely important in helping to locate aboriginal groups in the Southeast. Pardo had a scribe, Juan de la Bandera, who recorded excellent information on the location of Indian groups. It is through the Pardo expedition that we are able to reconstruct much of the route of De Soto. The Bandera document has become a key to unlocking the sixteenth century Southeast.

Using information from these exploration accounts, the distribution of southeastern chiefdoms in the mid-sixteenth century can be reconstructed. Using an ethnohistoric archaeological approach (Brain et al. 1974) combining data from the accounts with archaeological data such as settlement distribution and the distribution of European trade items, sixteenth century chiefdoms can be located with some degree of accuracy.

What was the sixteenth century southeast? Charles Hudson (1980) has characterized it as an "unknown South"—a time of flourishing complex chiefdoms, large towns, dense populations, high levels of military organization, complex religion, and elites marked by sumptuary rules.

The Southeast described by the early Spanish explorers was a far cry from that described by later explorers of the late seventeenth and eighteenth centuries. By that time, the large populations had been reduced by disease, the chiefdoms had been reduced to tribal or town units, some of which were beginning to form confederacies. Patterns of warfare were changing as firearms were introduced and the English demand for slaves increased (Perdue 1979; Wright 1981). The problem becomes one of filling in the gap—explaining the processes that transformed the Southeast of the sixteenth century to that of the eighteenth.

The first step is to understand the political organization of the Southeast at the time of initial contact. At this time, the study area was made up of several complex chiefdoms and perhaps a few simpler ones. Complex chiefdoms are made up of two or three tiers of political hierarchy (Steponaitis 1978). A good example of such a polity in the study area known from archaeology is the "Great Oconee Province" described by Smith and Kowalewski (1980). The Oconee Province settlement hierarchy consists of a capital with five mounds (Shoulderbone mound group), three multiple mound sites (Shinholser, Scull Shoals, and Little River), at least two single mound centers (Dyar and 9Ge35), and countless villages, hamlets, and special purpose sites (see Shapiro 1983; Rudolph and Blanton 1980). The settlement density of this "province" is impressive and there seems to be a large, unoccupied buffer zone surrounding the province. Recent work on the route of Hernando de Soto (Hudson, Smith, and DePratter 1980) has identified this province as the Ocute mentioned in the De Soto narratives. Thus the

Shoulderbone site is the principal town of Ocute, Scull Shoals may be the town of Potofa, and Shinholser appears to be the Altamaha of the narratives.

The analysis of the routes of Hernando de Soto, Tristan de Luna, and Juan Pardo have allowed us to locate many of the towns mentioned in the exploration narratives. By using descriptions, travel times, and distances in the narratives and combining these data with archaeological evidence of contemporary Indian sites (based on ceramic seriations and/or presence of diagnostic European material), we have been able to locate many sixteenth century Indian polities (Hudson, Smith, and DePratter 1980; DePratter, Hudson, and Smith 1983,1984; Hudson, Smith, Hally, Polhemus, and DePratter 1983). These locations are shown in Figure 2. Named towns of the narratives which can confidently be associated with archaeological sites are listed in Table 1. These identifications provide the baseline for looking at population decline and movement in the subsequent century, and political restructuring. For example, the narratives frequently identify the political alliances of the various towns. Again there is evidence of multiple levels of political organization between the various towns in the chiefdoms. A small village may be said to be under a larger village which is in turn under yet another principal town of a chiefdom. These political relationships are tabulated in Table 2.

As previously stated, the study area was virtually terra incognita from 1568-1673. Only one expedition appears to have actually entered the study area during that time, while two others visited the

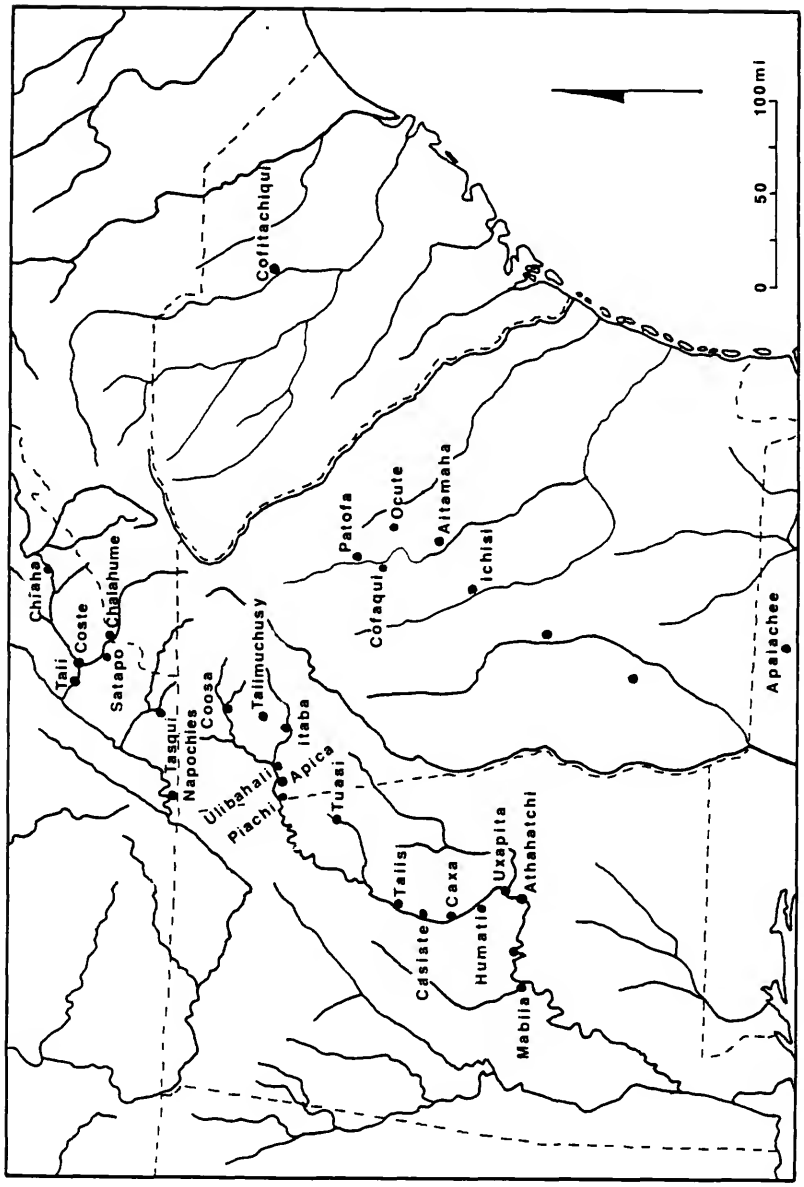


Figure 2. Location of sixteenth century towns

Table 1. Correlations of towns mentioned in sixteenth century narratives with archaeological sites in the study area based on research by Charles Hudson, Chester DePratter, and Marvin Smith

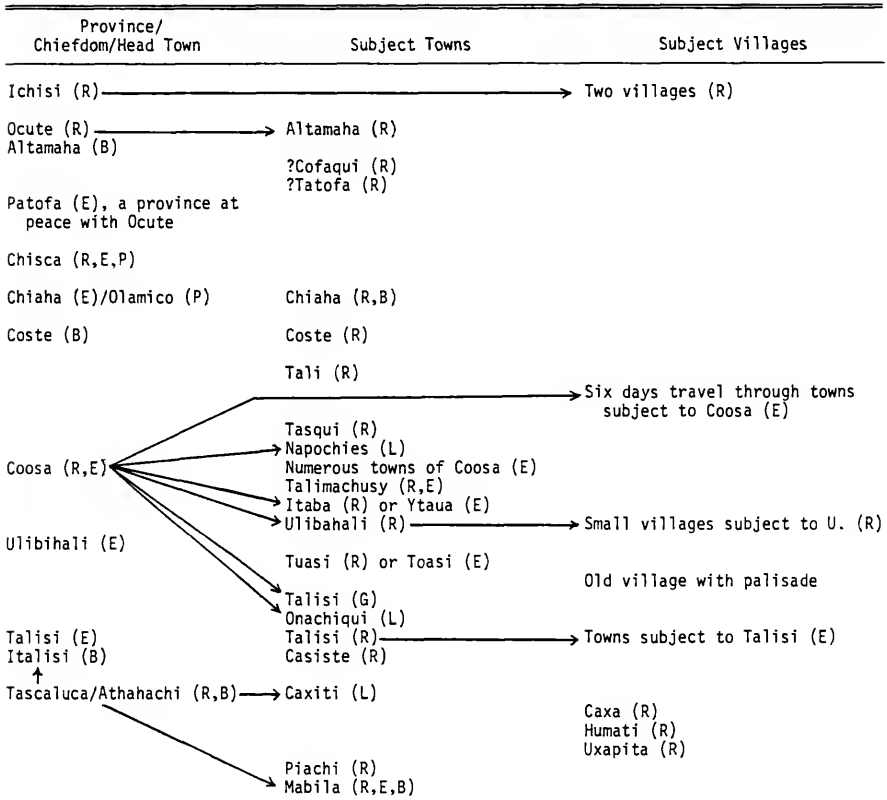
Province	Town	Archaeological Site	Source
	Ichisi	Lamar[a]	De Soto relations
Ocute	Altamaha	Shinholser[a]	De Soto
	Ocute	Shoulderbone[a]	De Soto
	Cofaqui	Dyar[a]	De Soto
	Patofa	Scull Shoals	De Soto
	Chiaha	Zimmerman's Island[a]	De Soto, Pardo
	Chiscas	Plum Grove area	De Soto
	Coste	Bussell's Island	De Soto
Coosa	Tali	Henry Site[a]	De Soto
	Coosa	Little Egypt	De Soto, Luna
	Napochies	Audobon Acres and Citico	Luna
	Itaba	Etowah	De Soto
	Ulibahali	Unnamed site at Rome, Ga.[a]	De Soto, Luna
	Village subject to Ulibahali	King or Johnstone	De Soto
	Apica	Johnstone	Luna
	Piachi	King	De Soto
	Tuasi	1Ce308	De Soto
	Abandoned town	1Tal72?	De Soto
	Talisi	One of Kymulga sites	De Soto

Table 1—Continued

Province	Town	Archaeological Site	Source
Tascaluza	Uxapita	Taskigi	De Soto
	Athahatchi	Charlotte Thompson	De Soto
	Piachi	Durant's Bend?[a]	De Soto
	Chalahume	Chilhowee	Pardo
	Satapo	Citico 40Mr7	Pardo

[a]Sites without early historic period European trade goods (most are unexcavated)

Table 2. Sixteenth century political relationships according to the De Soto, Luna, and Pardo narratives



Note: P = Pardo; E = Elvas; R = Ranjel; B = Biedma; G = Garcilaso; L = Luna.

interior on the margins of the study area. These expeditions are poorly known, but require discussion.

In 1596, a soldier named Gaspar de Salas and two Franciscan fathers, Pedro Fernandez de Chosas and Francisco de Veras, left Guale (St. Catherines Island) for the interior (Swanton 1922:181-182,176). In testimony given four years later, Salas reported the expedition. Leaving St. Catherines Island, the three reached Tama by traveling eight days, the first seven of which were through deserted land. Tama was no doubt the Altamaha of the De Soto relations (Swanton 1946:208). Salas leaves no doubt that they had reached the Piedmont. ". . . there is very good brown soil, which, when it rains, clings to one's feet like marl. There are in certain regions many barren hills where he saw many kinds of minerals" (in Swanton 1922:182). This is clearly a description of Georgia red clay and piedmont mineral resources. The straight line distance from St. Catherines Island to the presumed site of Altamaha of the De Soto period, the Shinholser Mound site near Milledgeville, Georgia, is 155 miles. It is certainly possible that three men traveling lightly could make the necessary twenty miles per day. From Tama, the party continued inland one day to Ocute (it took the De Soto expedition one day and part of a second, but they traveled about fifteen miles per day (DePratter, Hudson, Smith 1984). Thus it appears likely that Ocute was still in the same general area as De Soto found it, perhaps still at the Shoulderbone site. The cacique of Ocute convinced them that it would be dangerous to continue and the party returned via a different route to the coast.

Later in 1606, the chief of Tama traveled to Sapelo Island to meet with Governor Ibarra (Swanton 1922:182). Thus there was at least two documented cases of occasions when European presents were probably given to the Indians of the Province of Ocute around the turn of the century. Indeed, European artifacts of this period have been found at two archaeological sites in the area, site 9Ge948 (Smith 1979a) and the Joe Bell site (Williams 1983a). Both sites produced glass beads and the Joe Bell site also produced peach pits.

In 1628, Pedro de Torres visited Cofitachiqui (Swanton 1922:220), believed to be located near the present Camden, South Carolina (DePratter, Hudson, and Smith 1983). Almost nothing is known of this expedition. Torres noted that the area was rich in pearls and that all the chiefs in the area were politically aligned under the chief of Cofitachiqui. While Cofitachiqui is east of the present study area, it is in the interior on the fall line and it serves to show the extent of Spanish influence in the interior. This will be discussed further when early English penetration into the interior is considered.

One final Spanish expedition into the interior of the Southeast to the west of the study area remains to be discussed. This is the expedition of Captain Alonzo Baca in 1634 (Thomas 1982:33-34). Baca set out from Santa Fe, New Mexico, and headed east with some soldiers, eventually reaching the "Great River." Thomas identifies this river as the Mississippi. The Baca party did not cross the Great River, but returned to New Mexico. The directions given in the Baca account are vague and the identification of the "Great River" with the Mississippi

cannot be considered proven, yet the possibility remains that this expedition had some effect on the Southeast.

There are no documented entradas into the study area after the Salas expedition of 1596 until the founding of Charles Towne in 1670. This does not mean that a great deal of Spanish activity was not taking place around the periphery of the area. The Spanish mission system was spreading all along the Georgia coast (Lanning 1935) and through northern Florida (Gannon 1965a; Geiger 1937). Intensive missionary activity began among the Potano of north central Florida in 1600 and a permanent mission was established in 1606 (Milanich 1978:78). By 1633, missions were established in the Apalachee country of the present Leon and Jefferson counties of Florida (Boyd, Smith, and Griffin 1951). As Spanish influence spread throughout the northern Florida and coastal Georgia areas, the Indians of the interior were undoubtedly affected. These effects are plainly seen when we next get glimpses of the interior from the English and French in the 1670s.

In 1670 when the English first reached Cofitachiqui in the interior of South Carolina (Baker 1974), it was still a very important political unit. A letter from William Owen to Lord Ashley in September of 1670, gives clear indication that the natives of Cofitachiqui were acquainted with the Spaniards. They told Owen of a land to the west, with bells and friars, which he interpreted as being the Spaniards. They also mentioned people to the north who rode upon great deer (horses) which Owen interpreted as Virginians (Baker 1974:IV-4). Clearly, they were acquainted with Europeans.

Later, in 1673, when the Virginia traders James Needham and Gabriel Arthur penetrated the Tennessee Valley, they reported that the natives (Cherokee) were well equipped with European commodities (Williams 1928:29). They were armed with about 60 guns, which were not of English make and they had brass pots and kettles. From Tennessee, Gabriel Arthur traveled with the Cherokee down to the South Carolina coast where he saw Spaniards (Williams 1928:34). This would indicate that the Cherokees were quite familiar with the Spaniards. However, it should be noted that the guns and kettles were probably not Spanish trade goods. The guns might have been from French or Dutch sources in the Great Lakes area, or perhaps they really were of English make, and Arthur's denial was simply a political expedient.

Almost simultaneously, the French were entering the lower Mississippi Valley from the Great Lakes region. Again, we have reports of European trade items arriving ahead of the explorers at the periphery of the study area. At a point below the confluence of the Ohio and Mississippi rivers, Marquette and Joliet reported meeting an Indian group armed with muskets and posessing other European goods such as axes, hoes, knives, beads, and glass bottles (Sauer 1980:139,141). These Indians said that the goods were obtained from Europeans on the coast some ten days away. Among the Arkansas, watermelons were grown (Sauer 1980:141).

In 1682, when LaSalle returned to explore the lower Mississippi, he reported peaches and chickens at the Arkansas villages at the mouth of the Arkansas River. Further south LaSalle reports that the Taensas

had shields of yellow copper in the chief's house and the chief had attendants who preceded him "carrying a sheet and round plaque of copper" (Sauer 1980:154). The "yellow copper" sounds like European brass, but the "sheet and round plaque" might be native copper.

Sauer (1980:241-243) produces adequate evidence that peaches, watermelons, and chickens were doubtlessly obtained from the Spaniards in the Southwest. He says specifically of the watermelon, "It was taken from one farming people to another ahead of Spanish advance" (Sauer 1980:241). If such European foods and other trade goods, including muskets, had reached the lower Mississippi Valley, perhaps from the Southwest, then there is little doubt that such items could just as easily have reached the study area of the interior Southeast from the relatively nearby settlements in northern Florida and the Atlantic coast.

When LaSalle attempted to establish a colony on the Gulf coast in 1684, the Spaniards responded by sending Marcos Delgado into the interior to investigate (Boyd 1937). Marcos Delgado provides us with the first glimpse of the southern portion of the study area since Tristan de Luna in 1560. Delgado departed from San Luis (near present Tallahassee) and traveled to the northwest to the lower Tallapoosa-Coosa river area. He mentions the Tiquipache (identified by Boyd as the Tuckabatchee; Boyd's identifications are placed in parentheses below) and other groups known to be in the area in the eighteenth century. More importantly, he mentions several groups that had fled from the north "because of persecution from the English and Chichimecas and another

nation called Chalaque (Cherokee). These groups include the Qusate (Koasati), the Pagna, the Qulasa of the Province of Pagna Nation, and the Tubani of the Qusate Nation and the village of Tuave which is a village of Cosate (Koasati)." It is unclear how long these people had been present in the Coosa-Tallapoosa confluence area, but Delgado mentions the "five (chiefs or groups) that are settled and settling after fleeing from the English to the north" (Boyd 1937:21). The fact that some of the refugee groups were still settling suggests a recent arrival. This is a question for archaeological research.

The mention of the English to the north as well as the Cherokee and the Chichimecas (identified by Boyd as the Yuchi, following Swanton) suggests that pressure was coming from native groups in the northern end of the Ridge and Valley Province. It is even possible that the Chichimecas were the displaced Erie who later appear on the Savannah River as the Westo (Crane in Swanton 1922:291). Since the date of the inception of this pressure is unknown, it is useless to speculate. The Indian slave trade did not really begin until after the founding of Charles Towne (Wright 1981), so it is quite possible that these movements were post-1670 in origin. Delgado makes no reference to a Creek Confederacy and indeed its existence as late as 1700 has been questioned (Knight and Adams 1981:48). With this briefly accounted historical background as a basis, the next chapter will establish temporal divisions for the early historic period.

CHAPTER III
CHRONOLOGY FROM EUROPEAN TRADE GOODS

In order to measure culture change in situations where historic documentation is lacking, it is necessary to establish chronologies based on stylistic changes in various archaeologically recovered material categories. The study of European introduced trade goods has been chosen in this case for several reasons. They were mass produced in Europe for trade all over the world and thus certain diagnostic artifacts can be used as horizon markers over broad areas. When this situation of worldwide utility is contrasted with the restricted utility of seriating local native manufactures such as pottery, the results can provide a means of chronological placement for otherwise undated material. For example, the area chosen for study in this research includes several regional ceramic style areas; yet European goods, coming primarily from Spanish sources, remain constant (by temporal unit) across the area. Since these European materials were used in a wide area of the world, they have another advantage. They are more likely to have been found on archaeological sites with historically documented dates of occupation than the more geographically restricted native products. Thus, for example, glass bead varieties found at the site of Nueva Cadiz, Venezuela, a site of known occupation span, can be used to crossdate Indian sites in the Southeast where they are found.

Research on Euorpean trade goods extends back to the 1930s (Woodward 1932; Brannon 1935). Arthur Woodward was the first person to

seriously consider stylistic change in trade goods as a means of chronological placement for archaeological sites. Kenneth Kidd (1954) advocated searching documents for references to goods manufactured for trade with primitive cultures. He hoped to be able to establish dates of manufacture. Unfortunately, this method has so far proven fruitless, at least for the early period studied in this work. The method typically employed is the comparative method. Either goods from sites of known date are compared with those from undated sites, or seriations based on stylistic changes are established. These two techniques are not necessarily mutually exclusive. A methodology developed over the years in the Northeast of North America should be considered. This will be called the "Iroquois Method" for purposes of discussion. This method as used in the Northeast seeks to arrange contact period aboriginal sites in chronological order by studying the relative frequency of the occurrence of European trade items compared with items of native manufacture. Either midden deposits or grave goods can be seriated in this manner. Sites with high frequencies of aboriginal manufactured goods and low frequencies of introduced European goods are believed to be early contact sites, while over time the frequency of imported European items increases and the frequency of native manufactured items decreases. Once a series of sites is seriated, absolute calendrical dates are assigned based upon a number of factors: approximations of length of occupation of sites based on the amount of accumulated midden or rebuilding of structures, and when possible, tying the sequence to historically dated events, such as visits of Europeans, first evidence of missionary

influence, etc. This methodology has been successfully applied to many groups, including the Seneca (Wray and Schoff 1953; Wray 1973), Oneida (Pratt 1976), and Onondaga (Bradley 1979). Recently William Fitzgerald has further refined this method by assigning absolute dates to the relatively dated series of historic Neutral Iroquois sites. He examines changes in trading companies in Europe and coordinates these changes with abrupt changes in European trade items found in Neutral sites (Fitzgerald 1982:41-44). This "Iroquois Methodology" has established estimated dates for several archaeological sites in the Northeast. While the actual calendrical dates for each site may be questioned, there is no doubt that the sites are correctly dated in a relative fashion, and there is little doubt that the dates assigned vary only slightly, if at all, from the actual occupation dates. Thus these sites in the Northeast provide an abundance of well-dated European trade material for cross-dating sites in the Southeast. The Iroquois Method also provides a useful model for the relative dating of aboriginal sites in the Southeast, if certain historical factors are considered.

In the Northeast, there was an almost constant demand for furs by Europeans. In 1524, Verrazzano found a native group in present Maine already experienced traders (Sauer 1971:61). From then on, European demand for furs increased and more and more European goods entered the native economy.

European contacts in the Southeast differed. The earliest contacts were usually for the slave trade—Native Americans were captured and shipped to the Caribbean (Wright 1981:129-131). Few European

goods reached Indian hands in this manner, but shipwrecks along the coast of Florida did provide European goods to enterprising Indian salvors, and to Indians who ransomed European shipwreck victims back to other Europeans. Early coastal colonizing efforts, such as those by Juan Ponce de León (1521) and Lucas Vázquez de Ayllón (1526) undoubtedly spread European goods into the Southeast, but these must have been scarce. Later expeditions, such as those of Hernando de Soto in 1539-1543 (Swanton 1939) and Juan Pardo in 1567-1568 (DePratter and Smith 1980) are known to have spread European goods by trading them directly into the interior. Nevertheless, until the founding of Charles Towne in 1670, there was no regular trade for furs or deerskins with the interior of the Southeast, and European goods must have been fairly rare. It must be considered possible that Indian groups contacted by De Soto and Pardo may have obtained more European goods than their immediate descendants. Thus archaeological sites in the interior of the period 1540-1570 may potentially have more European goods than slightly more recent sites. The "Iroquois Method" must be used with caution in the Southeast. Despite these potential hazards, there does seem to be a fairly steady increase in the amounts of European items reaching the Indians of the interior Southeast. This point will be considered in more detail below.

Before moving on to consider specific European trade items that are chronologically sensitive, it is necessary to consider the mechanisms by which these items entered the aboriginal economy. Two basic mechanisms must be considered: direct trade by Europeans and indirect trade

through native middlemen. Aboriginal trade was widespread throughout the Southeast in precontact times (Swanton 1946:736; Hudson 1976:313; Goad 1978; Walthall 1981); and it is quite probable that European items reached Indian groups in the interior long before the expedition of Hernando de Soto. Indeed, members of the De Soto expedition reported finding European beads and axes in the mortuary temple at Talomeco (Bourne 1922:100); they attributed these items to the Ayllón colony of 1526. Ayllón remained on the coast, yet Talomeco is now believed to be in the South Carolina piedmont near the present town of Camden (Hudson, Smith, and DePratter 1980). A well-organized trade in marine shell had existed througout the Southeast since the late Archaic and it is likely that European items, probably viewed as exotic status symbols by the natives, rapidly entered this network (Smith 1975). Portentially European items could be found anywhere in the Southeast shortly after coastal contacts began. At first these items were probably controlled by the elite as sociotechnic items (Smith 1977:153).

Recently Mary Helms has proposed a model of chiefly trade in Panama (1979). In this model, members of the elite, usually those destined to become chiefs under a system of ascribed status, went on long journeys to obtain esoteric knowledge. With the control of such knowledge, they were able to validate their status as chiefs. When they went on these quests, they obtained exotic goods to serve as tangible displays of their new esoteric knowledge. Thus, trade in information and elite goods may have taken place via a few people moving long distances, either to the coast, perhaps accounting for the goods

that De Soto saw at Talomeco, or long distances in the interior to see firsthand the European invaders. In connection with this latter possibility, it should be noted that Juan de la Bandera, scribe of the Juan Pardo expedition of 1568, reports that chiefs came from long distances to see Pardo and receive gifts (DePratter and Smith 1980:71). Using this model, it is possible to suggest that European goods spread quickly throughout the Southeast in the sixteenth century, while remaining in the hands of the elite. Visits to the coast to Spanish and French settlements of the sixteenth century by interior Indians may have been commonplace. This model of trade could account for the spread of European goods long distances and in places not directly contacted by Europeans.

Direct trade by Europeans also introduced many European objects. The U.S. DeSoto Expedition Commission prepared a list of European items given to Indians (Swanton 1939:55). The later expedition of Juan Pardo also gave away many European objects, especially chisels, wedges, axes, cloth, and necklaces (DePratter and Smith 1980). De Soto and Pardo traveled directly to the largest settlements that they could find, searching for wealth, food, and political alliance. Since these were the main towns of powerful chiefs, who no doubt controlled trade in elite status goods (probably including European items), it might be assumed that European items would be concentrated directly along the line of march of these expeditions. This is not necessarily the case. During the Pardo expedition of 1568, the scribe, Juan de la Bandera, reports that Indian political leaders came great distances to see Pardo

and receive gifts (DePratter and Smith 1980:71). It is also likely that Tristan de Luna, in his colonizing effort, distributed many European items. While many of his stores were lost on the coast, Luna no doubt bartered everything that he had when starvation set in. Thus Luna may have traded items which were not the usual Indian trade goods.

What happened to all this European material? Elsewhere it was suggested that European items were considered wealth items (elite status goods) and were rapidly taken out of circulation. The best evidence for this is the mortuary deposit of Talomeco found by De Soto. European items were buried in the mortuary temple (presumably as grave goods) less than fifteen years after their arrival on the coast via the Ayllón expedition of 1526 (Smith 1976:28). European objects at the King site in northwestern Georgia appear with burials usually also accompanied by exotic aboriginal artifacts, again suggesting their role as socio-technic status markers (Smith 1975; see further discussion in Chapter V). Thus on the earliest sites, it appears likely that European material was quickly consumed as grave goods and thus should be excellent chronological markers. There is no evidence suggesting heirlooming of this material.

Evidence from the Pardo expedition of 1568 also suggests that the aboriginal elite were still in control of exotic European goods. The Pardo expedition left detailed records of the distribution of trade items. These were invariably given to chiefs, "commanders" (war chiefs?), and "principal men" (DePratter and Smith 1980:70). The only possible exception to elite control of European items was gifts to translators whose social status is unknown.

However, by about 1600, there appears to be a real change in the distribution of trade material. Trade material is much more abundant and does not appear to be restricted to elite burials (Smith 1977:157). This change is hypothesized as reflecting the breakdown of powerful chiefdoms. Apparently achieved status systems were replacing ascribed status systems at least this early. European items were becoming abundant and no longer served sociotechnic functions. Iron axes, once considered elite status symbols much as the earlier copper axes, were increasingly being utilized and worn out. This hypothesis will be considered further below. It is also possible that as this breakdown was taking place, some heirlooming of European goods may have taken place.

The possibility of heirlooming is an important factor to be considered when using European artifacts as dating devices. Evidence has been presented that during the mid-sixteenth century, European goods were quickly consumed as high status grave goods, but during the seventeenth century, this may no longer have been the case. Thus it is important to look at the total assemblage of European material at any given archaeological site. It will be argued below that certain artifacts can act as "index fossils" for certain time periods, but it is always important to consider the total assemblage before assigning a date. Any artifact supplying an accurate terminus post quem for an assemblage must be heavily weighed when dates are assigned.

Dating the Artifacts

The following section will discuss glass beads, brass ornaments, iron axes, miscellaneous hardware, and firearms. These artifact classes will then be arranged in hypothesized assemblages which will be assigned approximate calendrical ranges. This chronology will be used to measure culture change for the discussions in the remainder of this study. Four temporal stages will be assigned; these represent a refinement of earlier attempts (Smith 1976,1977). Much reliance is placed on the previous seriation of Cossa river sites which relied heavily upon comparisons with trade material in the Northeast United States (Smith 1977). The methodology of seriating historic sites in a relatively small area has worked quite well for Iroquois sites and the initial attempt at seriating sites along the Coosa River drainage in Alabama and Georgia (Smith 1977) appeared successful. More evidence is now at hand to further refine that chronology. Archaeological sites discussed in the text are illustrated in Figure 3.

In the earlier attempt, archaeological sites were broken down into the periods 1540-1570, 1570-1600, 1600-1630, and 1630-1670 (Smith 1977). The type site for the early period was the King Site (Hally 1975; Smith 1975). Recently clearing operations at the site revealed a sword in a burial which was exposed by collectors. An avid student archaeologist, Keith Little, found out about the discovery and began research to identify and preserve this important find. Through his efforts, the sword is now on loan to the Etowah Indian Mounds Museum and it has been identified by Dr. Helmut Nickel of the Metropolitan Museum

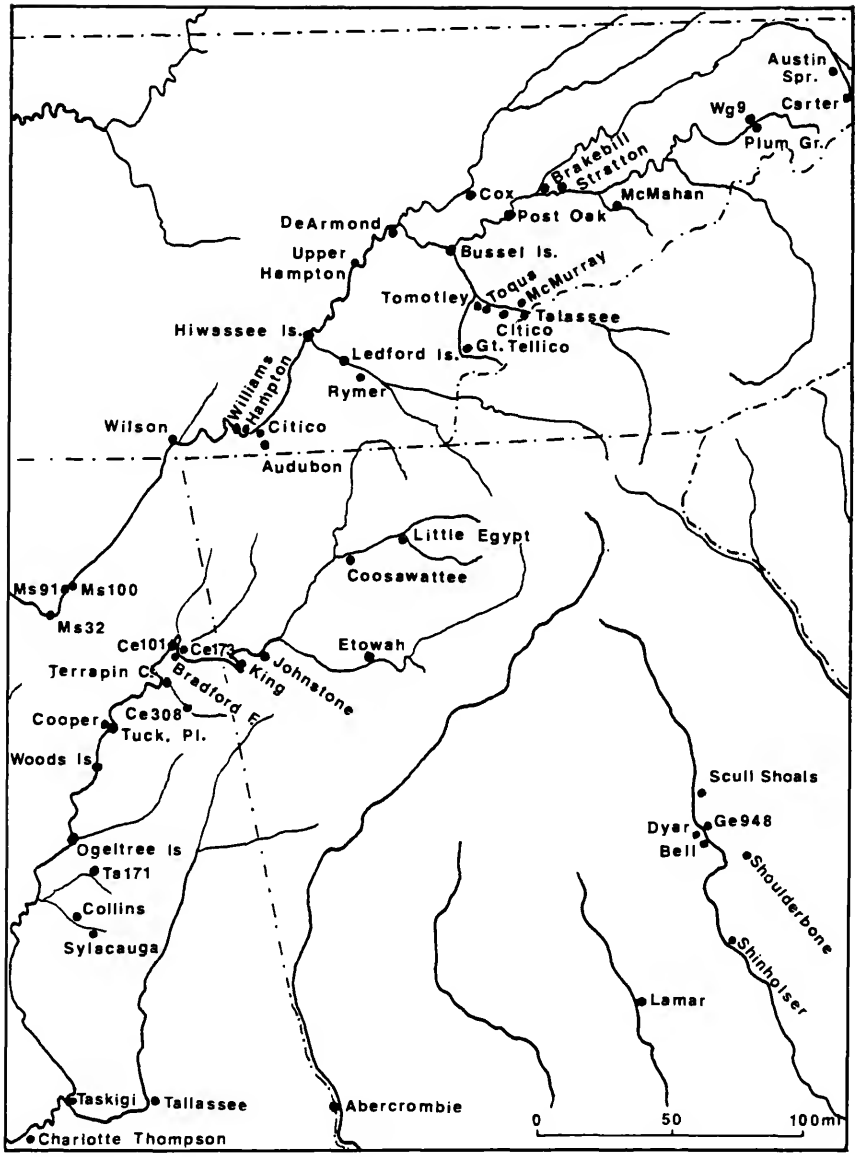


Figure 3. Location of archaeological sites

of Art as being of the mid-sixteenth century (Keith Little, personal communication). Thus the early end of the seriation is given a firm date.

The 1570-1600 period in the 1977 formulation was represented by only one site: Terrapin Creek, 1Ce310. This site was quite similar to the subsequent occupation at the nearby Bradford Ferry site, with estimated occupation span of 1600-1630. Later research by Keith Little and Cailup Curren (1981) located a site, 1Ce308, with an assemblage of trade goods clearly intermediate between that of the King site and the Terrapin Creek site. It is entirely possible that the Ce308 site, Terrapin Creek (just downstream from Ce308) and the nearby Bradford Ferry site all form a continuum of occupation by one group. The suggested dating sequence for the Coosa River is now King (1540-1570), Ce308 (1570-1590), Terrapin Creek (1590-1600), Bradford Ferry (1600-1630), Cooper Farm (1630-1670), and finally Woods Island (1670-1700; reported by Morrell 1965). These dates of occupation were based on comparisons of European artifacts with those from sites with estimated occupation dates in the Northeast (Smith 1977) and on the knowledge from excavacated sites such as King and Bradford Ferry that the sites appear to be of short duration. This sequence forms the basis of comparison for trade good assemblages from other areas of the interior Southeast.

Glass Beads

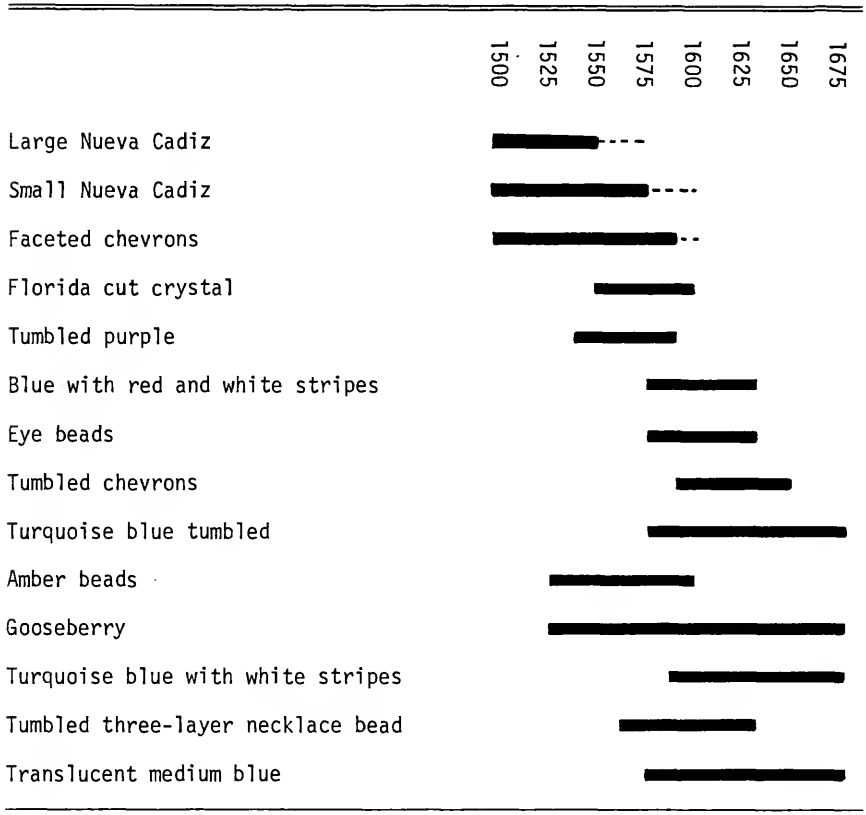
Earlier research on trade goods has resulted in the presentation of a seriation study of glass beads from sites of the period 1513-1670

(Smith 1984). This section is based largely on that research, which will not be presented in detail. Table 3 lists glass beads believed to be temporally diagnostic. The reader is referred to Smith (1984) for illustrations of these beads. Using glass beads, four periods, roughly dated 1513-1560, 1560-1600, 1600-1630, and 1630-1670 can be recognized.

The period 1513-1560 bead assemblage is made up primarily of long tubular Nueva Cadiz beads and faceted chevron beads (Fairbanks 1968). Several additional types are present (see Smith and Good 1982, for descriptions and color illustrations of beads diagnostic of this period). The subsequent period, 1560-1600, sees the disappearance of the long tubular Nueva Cadiz types, which are replaced by spherical tumbled beads—especially turquoise blue, transparent medium blue, translucent green, and navy blue beads. Faceted chevron beads are still common and some striped spherical beads appear. A few short varieties of the Nueva Cadiz style persist and a few eye beads appear (Smith 1982). Beads of cut crystal (Fairbanks 1968) and amber also occur in contexts suggesting late sixteenth century placement (Smith 1984). Tumbled purple glass beads also occur.

The period 1600-1630 is characterized by a new style of chevron bead. The chevron bead with ground facets is replaced by a spherical, rounded chevron with green or blue exterior. Eye beads are most common during this period. This represents a change from an earlier assertion that eye beads primarily date to the last quarter of the sixteenth century (Smith 1982). New evidence from the Northeast (Kenyon and

Table 3. Estimated date ranges for selected bead types



Kenyon 1984; Fitzgerald 1982) suggests that they last into the first third of the seventeenth century and an eye bead from the post-1606 mission of San Francisco de Potano (Florida State Museum collections; Smith 1984) substantiates a seventeenth century placement in the Southeast. Eye beads are not known from the Apalachee missions established in 1633, so that terminal date is still considered valid. Other beads diagnostic of this period are tumbled compound beads of three layers, tumbled navy blue beads with red and white stripes and turquoise blue beads with three or four white stripes. Seed beads are commonly of compound construction.

There appear to be no glass bead types diagnostic of the period 1630-1670. Indeed, the period is remarkably free of polychrome beads. The most common beads are the common turquoise blue necklace bead, the navy blue necklace bead, and seed beads of several varieties. Eye beads disappear and chevron beads are unknown from the interior, but are found on Apalachee missions in Florida postdating 1633. A few sites produce occasional necklace beads of types that appear to be manufactured in Holland (Karklins 1974; Bradley personal communication). They are common in the Northeast during the first half of the seventeenth century. These beads probably indicate indirect trade with English colonies to the northeast. Some of these same sites produce an occasional gun part, further suggesting indirect English contact.

Iron Axes and Knives

Iron axes and knives were always important trade items. Members of the De Soto expedition reported finding "Biscayan hatchets" in

the mortuary temple at Talomeco (Bourne 1922) and an iron dagger near the fall line in Alabama (Smith 1968:242) documenting that iron tools were being obtained by aboriginal groups of the interior Southeast prior to 1540. De Soto himself distributed iron implements (Swanton 1939:55) and Juan Pardo is known to have traded some 61 chisels, 77 wedges, 72 hatchets, and 30 knives (DePratter and Smith 1980:71) in 1568. It is likely that more iron material reached the interior via aboriginal trade with sporadic European coastal visitors and, after 1565, with Spanish colonies such as St. Augustine and Santa Elena. Later the expanding Spanish mission system probably supplied some European goods into aboriginal exchange systems. Finally, the two little known expeditions into the interior undoubtedly carried additional goods. In 1596 a small group of missionaries visited Ocute and in 1528 Pedro de Torres visited Cofitachiqui (Swanton 1946:143).

Iron hatchets and Biscayan axes were probably small, eyed axe forms (DePratter and Smith 1980) while chisels and wedges were small, celt-like blades, probably manufactured for the Indian trade. These celt blades readily replaced the stone celts of native manufacture and probably also replaced the sociotechnic native copper axes. The De Soto expedition saw numerous copper axes at Cofitachiqui (Varner and Varner 1951:321), but they have not been found on contact period archaeological sites. Iron chisels quickly replaced them as status display items, judging from the fact that they have been found in high status burials and also from the fact that Pardo only gave out axes and chisels to high ranking natives.

Eyed axe forms are quite rare on archaeological sites of the interior predating 1630. The one exception is a small hatchet from the Seven Springs site (1Cel01) on the Coosa River in Alabama (DeJarnette et al. 1973; Smith 1977). Eyed axe forms are more common after 1630, but even through 1670, celt form iron axes are preferred. Fleming and Walthall (1978:31-32) present evidence that eyed axes were modified by native craftsmen to produce two iron celts—one from the axe blade and one from the eye which was flattened and sharpened. The scarcity of eyed iron axes on archaeological sites prior to 1630 suggests that most were modified in this manner.

At least four major types of iron celts have been recognized: those with rectangular outline, those with trapezoidal outline, those with triangular outline, and a form which is round in cross section with a blade formed on one end. To date, no chronological significance has been attached to these types. The small sample size hinders analysis. Iron knife blades have been found at sites which range through the complete time span being considered, but most are so poorly preserved that no meaningful typological study can be made. Occasionally other forms of iron artifacts are encountered on early contact period sites. Iron spikes are found on sites believed to date prior to 1600. Juan Pardo carried 34 pounds of nails into the interior for the construction of forts (DePratter and Smith 1980) and these should appear on Indian sites as they were no doubt quickly salvaged by the natives.

Brass Ornaments

Artifacts made from European copper or brass (both designated "brass" here for ease of discussion in the face of lack of detailed analysis and to avoid confusion with artifacts of native copper) became quite popular trade items. Apparently brass ornaments were not constructed from worn-out brass kettles as is usually suggested for such artifacts in the Northeast. Lack of brass scrap, bail hinge fragments, and bail fragments suggests that brass ornaments were produced specifically for the Indian trade by European entrepreneurs (Smith 1977). Representative "types" of brass ornaments found widespread in the Southeast also suggest European manufacture.

The earliest form of brass ornament found in the interior is the brass bead constructed from rolled sheet metal. They are occasionally found on sites believed to date to the mid-sixteenth century, but become more popular during the early seventeenth century (Smith 1977).

Brass bracelets also became popular during the early seventeenth century. Bracelets could be manufactured either from sheet brass rolled into a tube and subsequently bent in a "C" shape, or from a simple wide band of sheet brass with holes punched in each end to attach ties. Both types were found at the Bradford Ferry site, with an estimated date span of 1600-1630 (DeJarnette et al. 1973; Smith 1977).

Brass gorgets, either circular or rectangular (rare) in outline were also popular trade items. Both shapes are illustrated in sixteenth century engravings of coastal Indians by De Bry (Fundaburk 1958), but such artifacts are only found on interior sites believed to date in the

very late sixteenth century (Terrapin Creek, Alabama) or later. Indeed, brass gorgets remained popular into the eighteenth century or at least later than 1680. Since it is known that such gorgets were in circulation as early as the 1560s, some sites producing these may date to the sixteenth century. They appear to be most popular in the early seventeenth century. Sites such as Terrapin Creek (terminal sixteenth century) and Bradford Ferry (1600-1630) produce numerous examples (Smith 1977), but similar gorgets are also found on mid-seventeenth century sites such as Cooper Farm (Smith 1977). A late form of brass gorget was a large, thin, crescent-shaped ornament (Lindsey 1964:Figure 9). These occur at Cooper Farm (1630-1670) and on later sites such as Woods Island (Morell 1965). Their popularity is estimated at ca. 1660-1690.

Brass animal effigy pendants are a form of ornament not previously studied in detail. These pendants are cut from sheet brass in the profile of an indeterminant quadruped. The animal represented may be a beaver, turtle, buffalo (Battles 1969) or even an otter. There is some variation in form: some pendants have exaggerated ears or horns (Lewis 1960) and some appear more slender than others. Table 4 lists known occurrences of these pendants. These pendants are fairly widespread over the Southeast, occurring from extreme northeastern Tennessee to Mississippi. Only one example has been found in the Northeast, that at the Blowers Oneida Iroquois site, ca. 1600-1630 (Bennet 1979). This is also one of the earliest dated contexts for these pendants, although one from the Talassee site in Tennessee is associated with an eye bead of a type generally out of circulation by the 1630s. Most of

Table 4. Distribution of brass animal effigy pendants

Site	Date	Reference
Cooper Farm, AL	1630-1670	Smith 1977; Battles 1969
Ms91, AL	1630-1670	Webb and Wilder 1951
Ms100, AL	1630-1690	Webb and Wilder 1951
Big Tallassee, AL	1660-1830	Auburn University Collections, Mary Elizabeth Good, personal communication
Hampton Place, TN	1600-1630	Tennessee Archaeological Society 1982
Plum Grove, TN	1600-1670	Smith n.d.
Talassee, TN	1630-1690	McClung Museum Collections
Settaco (Citico), TN	1540-1670+	Lewis 1960
Ocoee, TN	1690-1715	McClung Museum Collections
Leflore, MS	1630-1670	Grenada, MS Museum Collection
Blowers, NY	1600-1630	Bennett 1979

these animal effigy pendants seem to date to the period 1630-1690 and they appear to be reliable time markers. Their widespread distribution suggests manufacture by Europeans. The earliest southeastern examples are associated with glass beads believed to be traded by the Spaniards, while later examples appear with beads typical of those traded by the English and French (and possibly the Spaniards) afer 1670. A few of the sites producing them also have a very few gun parts, again suggesting English contact. It could be suggested that these pendants were the result of aboriginal trade with the Spaniards in Florida (including Spanish expeditions to the Indians such as that by Marcos Delgado in 1686); however, it should be pointed out that none of these pendants have been found on seventeenth century Spanish mission sites in Florida or along the Georgia coast or at unmissionized aboriginal sites in Florida. The possibility that they were obtained via aboriginal trade with the English in Virginia cannot be discounted and they may have been manufactured by aboriginal craftsmen. Their main concentration appears to be up and down the Ridge and Valley Province—a main artery of aboriginal exchange.

Firearms

Exactly when firearms were first obtained by southeastern Indians remains an important consideration for dating aboriginal sites. It is known that in 1673 when Marquette and Joliet descended the Mississippi River, they found aborigines armed with muskets (Sauer 1980: 139) in the vicinity of Memphis. The Indians said that they had acquired the firearms from Europeans on the sea coast (presumably the

Gulf Coast, but perhaps the Great Lakes?). Similarly, when Needham and Arthur reached east Tennessee crossing the Blue Ridge from Virginia in 1673, they also found the natives armed with "a bout sixty gunnes" which were not English arms (Williams 1928:29). In 1674, Henry Woodward visited the Westo on the Savannah River and found them armed with 50 or 60 guns (Swanton 1922:306). Woodward reported that the arms came from "the north" which could refer to Virginia; however, Crane has suggested that the Westo were a remnant of the Erie Iroqois who were forced to flee their homes in 1654-1656 (Crane 1981:6). If this is true, the guns could have come from the Great Lakes area and been of Dutch or French manufacture.

It is clear that native groups around the periphery of the study area were armed by the early 1670s. Can it be inferred that groups throughout the area were similarly armed? When Marcos Delgado visited the Upper Creek towns in 1686, he found refugee groups fleeing well-armed Indians in the Tennessee Valley (Boyd 1937). Apparently groups on the Coosa and Tallapoosa drainages were not well armed at the time. Aboriginal warfare, mostly for slaves to be sent to Charles Towne, was rampant. Indian groups quickly acquired firearms or banded together in formidable groups for protection.

There is no ready answer to the question of when southeastern natives acquired firearms. Probably some firearms were in the study area by the 1660s. By this time the chiefdoms were defunct due to disease and depopulation (see Chapters IV and V). Aboriginal patterns of acquired status had largely been replaced by a system based on status

achieved by prowess in warfare, hunting, and trading. Ownership of firearms was open to those who could obtain them and being valuable means of self-preservation, they were probably passed down. Most early sites with firearms parts such as Woods Island (Morrell 1965) and some of the Guntersville Reservoir sites (Webb and Wilder 1951) do not have firearms as grave goods, rather gun parts are found scattered in the midden. Guns were too valuable to be buried and parts in the midden probably represent worn-out refuse. It is likely, therefore, that firearms were in use some time before direct evidence of them occurs on archaeological sites. Other forms of evidence, such as worn-out gun flints and lead shot, could be expected. Lead shot alone is not sufficient for dating purposes. Juan Pardo took 323 pounds of lead balls into the interior to supply his chain of forts in 1567-1568 (DePratter and Smith 1980:73) and these were no doubt salvaged by the Indians soon after the forts were abandoned. Gunflints should provide adequate evidence of the presence of firearms. It is suggested that archaeological sites in the study area producing firearms parts probably postdate the period in question, i.e., they are later than 1670. A few sites with firearms parts may date to the 1660s.

Bells

Bells can also be excellent chronological markers. A typology of trade bells has been worked out by Ian Brown (1979c). The earliest bell variety is the Clarksdale Bell (Brown 1979c:204) a distinctive sheet brass bell which Brain (1975) believed was closely associated with the

expedition of Hernando de Soto. While this bell form was in use in the De Soto period, it is now known that it has a much wider temporal distribution, lasting well into the first third of the seventeenth century (Smith 1977:156).

The next bell form, designated the Flushloop Bell by Brown (1979c:201) first appears during the first third of the seventeenth century. It remains popular throughout the seventeenth and eighteenth centuries.

Finally Brown has identified several varieties of cast brass bells (1979c). He believes most of these were traded during the early eighteenth century, but cites Noel Hume who states that such bells were produced in England in the seventeenth century. Cast brass bells first appear on Seneca Iroquois sites about 1640 (Wray 1973), and they probably also circulated in the Southeast at about that same time. Bishop Calderón mentions "Cascabeles grandes de bronce" in his letter of 1675 (Wenhold 1936:13) and these are probably the large harness bells of cast bronze. This reference seems adequate proof that such bells were traded by the Spaniards in the seventeenth century.

Discussion of Assemblages

While there are some very diagnostic trade goods that can act as "index fossils" for dating archaeological sites of the early historic period, it is more important to use entire assemblages of trade materials for this purpose. Using the entire assemblage acts as a safeguard against "heirlooming" and may also help provide an estimate of length

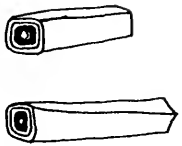
of occupation. The period 1525-1670 has been divided into four assemblages of trade materials to which have been assigned approximate dates: Assemblage A, 1525-1565; Assemblage B, 1565-1600; Assemblage C, 1600-1630; and Assemblage D, 1630-1670. These assemblages represent Periods A-D (Table 5).

Assemblage A (Figure 4) includes types of trade goods brought in by the earliest Spanish explorers. In the interior, this would include only De Soto. It is suggested that the later Luna and Pardo expeditions of the 1560s carried different merchandise to a large degree, but is admitted that this cannot be proven with the available historical evidence. Archaeological evidence comes from a seriation of sites and the recognition of a distinctive assemblage which is intermediate between what is designated A and C.

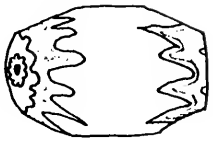
The most diagnostic artifact of Assemblage A is the long, tubular Nueva Cadiz style bead. Historical references to these beads and archaeological evidence from historically dated early sixteenth century sites provide accurate dating of this style (Fairbanks 1968; Smith and Good 1982). Other artifacts in Assemblage A included faceted chevron beads, iron chisels and wedges, Clarksdale style bells, tubular sheet brass beads (rare), and odd pieces of military hardware salvaged from the expedition of De Soto (such as large spikes, bits of swords, armor, etc.). Eyed axe forms could be expected. One of the most diagnostic artifact forms of this period would be iron chain, but to date chain has been recovered only rarely. De Soto carried much chain to enslave the Indians and the narratives mention Indians filing off their chains to escape.

Table 5. European artifact assemblages

Artifact	Assemblage			
	A	B	C	D
Nueva Cadiz beads	X			
Faced chevron beads	X	X		
Iron chisels and wedges	X	X	X	X
Clarksdale bells	X	X	X	
Tubular brass beads	X	X	X	X
Tumbled turquoise blue beads		X	X	X
Tumbled chevron beads			X	
Eye beads			X	
Eyed axes			X	X
Brass disc gorgets			X	X
Conical bangles			X	X
Flushloop bells			X	X
Brass animal effigy				X
Brass crescent gorget				X
Brass clips				X
Cast brass bells				X

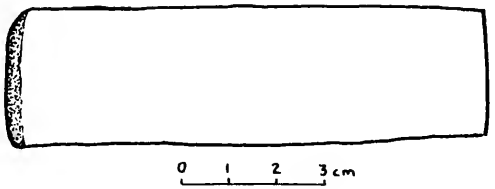


Nueva Cadiz beads, A

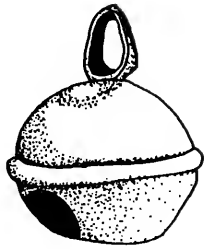


Faceted chevron bead, A-B

Turquoise blue bead, B-D



Iron celt, King site, A-D



Clarksdale bell, A-C

Figure 4. Assemblage A and B

As there is good evidence that Luna and Pardo visited the same towns in the same locations as those visited by De Soto, there is a good chance that artifacts from two or even three of these expeditions might occur on the same site. It is quite possible that artifacts from the individual expeditions might be detected. For example, the De Soto and Luna expeditions had horses, while the Pardo expedition did not. Glass bead styles are believed to have changed about the time of the Pardo expedition and it is probable that he traded spherical blue beads instead of the long Nueva Cadiz styles. The De Soto expedition was one of conquest and military gear was predominant. The Luna expedition was a colonizing venture, so farming tools were no doubt more common. Luna also brought several hundred Medican farmers and distinctive Mexican ceramics may have been carried inland. The Pardo expedition was largely a political venture and alliances were sealed with frequent gifts (DePratter and Smith 1980). It is also probable that some new sites were established after the disease/famine disruption of the De Soto expedition. Thus some Assemblage A sites may be short-term occupations. The King Site is an example.

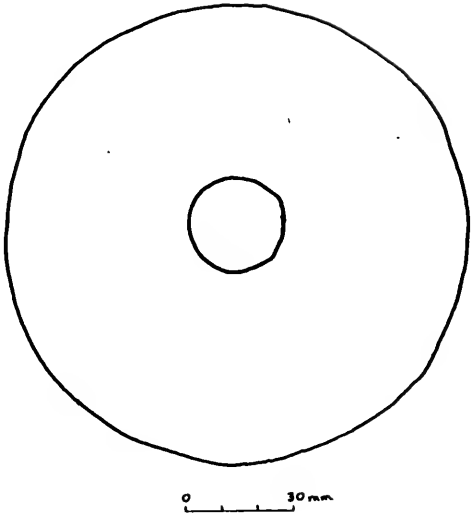
Assemblage B (1565-1600) is virtually identical to Assemblage A except for a change in glass bead styles (Figure 4). The long, tubular Nueva Cadiz styles were replaced by spherical blue beads of several shades (especially turquoise blue, navy blue, and a transparent medium blue). Faceted chevron beads continue to occur and iron chisels, wedges, spikes, and Clarksdale bells are found. Again eyed axes are a potential find, although no site with an Assemblage B has produced one at this

time. Florida sites of this period produce cut crystal, silver, and amber beads, although such beads are not commonly found inland. European material is in general more common during Period B (see Chapter V).

Sites of Assemblage B are hypothesized to represent new villages established after the first epidemics brought about by De Soto, Luna, and Pardo. Early trade material on these sites probably derives from Luna and Pardo, while later occupants of sites of this time span probably obtained trade goods from the new Spanish settlements along the Atlantic coast of Georgia, Florida, and South Carolina via aboriginal trade.

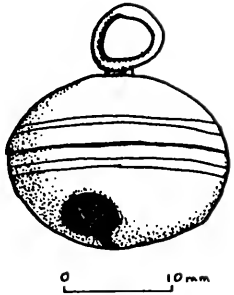
Assemblage C (1600-1630) is quite distinctive when compared with the earlier assemblages (Figure 5). European material is commonplace and is no longer restricted to the elite. Perhaps the best known site of this period is the Bradford Ferry site (Smith 1977). This is a period of very distinctive glass bead styles. The most popular bead is the common, spherical turquoise blue bead introduced in Period B, but medium blue and navy blue monochrome beads are also common. The most diagnostic beads of this assemblage include chevron beads, now rounded by reheating to a spherical shape instead of being faceted on the ends, "eye beads" (Smith 1982) and tumbled compound beads of three layers. There are a great many varieties of striped beads and small "seed beads" and faceted "pony-size" (ca. 3 mm) beads appear in large numbers.

Iron chisels or celts are known from this period and eyed axes also occur. The real hallmark of this period is the proliferation of brass ornaments. Disc-shaped gorgets become very common, as do conical

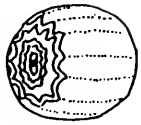


Brass disc gorget,
Terrapin Creek

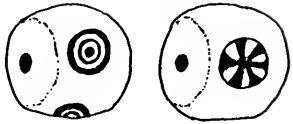
Brass bangle



Flushloop bell



Tumbled chevron bead



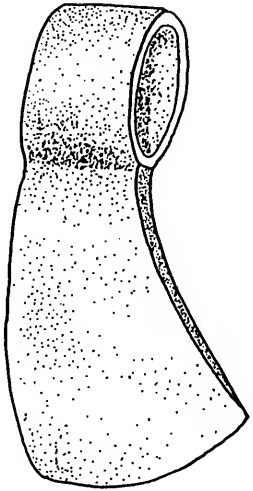
Eye beads

Figure 5. Assemblage C

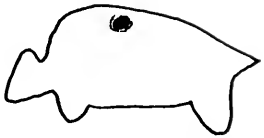
bangles, bracelets of rolled or sheet brass, and rolled tubular brass beads. The combination of the distinctive brass ornaments and particular glass bead styles is unmistakable. Clarksdale bells have been found on several sites of this period, but the first flushloop bells appear in this period. Aboriginal shell work is largely replaced by glass beads and brass gorgets.

Trade material found in the interior at this time virtually all comes from aboriginal trade with the Atlantic coastal settlements of the Spaniards. The amount of material found in the interior is quite unexpected, considering the absence of direct contact (the exception being the 1596 expedition to Ocute) and absence of an organized deerskin trade. The Spanish mission system was well established on the Atlantic coast and was spreading into the interior of Florida to the Potano, but on the other hand, Santa Elena was abandoned and the Apalachee missions had not yet been established. Apparently aboriginal trade carried many more European items into the interior than might have been expected for a society on the decline. Apparently the survivors of the epidemics of the sixteenth century were now firmly established and in the absence of direct European intervention, were thriving in the interior. Certainly aboriginal commerce was most successful.

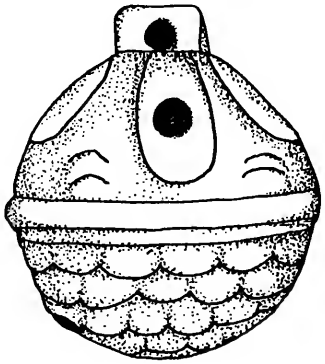
Assemblage D, 1630-1670 (Figure 6), is much like its predecessor. A number of items disappear, including Clarksdale Bells and various glass bead styles (especially eye beads, chevron beads, and multiple layer beads). Iron celts are still found, but eyed axes are increasingly common. Brass ornaments are still popular and three new forms become



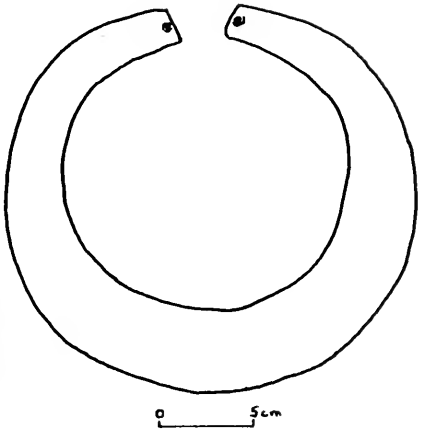
Eyed axe



Brass effigy pendant,
Talassee, TN



Cast brass bell,
Cooper Farm



Brass crescent gorget,
Cooper Farm

Figure 6. Assemblage D

important: the animal effigy pendant, "crescent" gorget, and small brass clips used to decorate leather clothing. Aboriginal engraved shell gorgets are no longer manufactured in the study area. Cast brass bells become very common, while flushloop bells are still present. While these were no doubt manufactured in England (Brown 1979c:200), it is believed many were traded by the Spaniards. Spain was not a manufacturing center and had to purchase its trade goods from many areas (Wolf 1982: 113). Cast brass bells first appear in the Northeast ca. 1640 (Wray 1973:23) and there is no reason to doubt their similar occurrence in the Southeast. By the end of this period, firearms were probably utilized but were not common in the study area. Any quantity of firearms on sites in the interior Southeast generally places them later in time (post-1670). A few sites of this period produce unusual glass beads of types made in Holland and traded by the Dutch and English in areas from North Carolina northward. I suggest that by this period, aboriginal trade networks were expanded to the northeast to obtain a greater variety of European goods. This alternative explanation may also explain the presence of British bells in the area before Carolina or Virginia explorers reached the area.

Aboriginal Materials

As discussed above, the "Iroquois Methodology" looks at the ratio between aboriginally produced materials and European trade goods. Let us briefly consider the aboriginal component, using the periods establshed by the seriation of European goods, stressing aboriginal manufacturing decline.

Period A is largely the pristine aboriginal period with the addition of European artifacts functioning in a sociotechnic mode (see Chapter V). Sites of Period A still have native copper work—so-called Southern Cult material (although it is quite rate). Aboriginal stone-working, shellworking, and ceramic manufacture show no decline.

Period B is much like Period A, but evidence of native copper working is on the decline. Sociotechnic chipped flint knives are less important, although sociotechnic forms of ground stone axes (especially the spatulate form) are still quite common. Shellworking is still important; beads and rattlesnake gorgets are found.

By Period C, there is no longer evidence of working of native copper. Shell beads and gorgets are soon replaced by glass and brass counterparts. Ground stone celts are almost nonexistent, being replaced by iron celts and eyed axes.

In Period D, there is some return to native shellworking, especially for beads and ear pins, but engraved gorgets are unknown. It should be noted that there is no decline in ceramic manufacture during the early historic period. The Spaniards never traded brass kettles during the early historic period, so ceramics were as important as ever. Similarly, chipped stone projectile points remained important throughout the period, as firearms did not become important until after 1670.

Table 6 presents a list of archaeological sites in the study area which have produced European artifacts which allow them to be dated. The table includes diagnostic European artifacts, the assigned Complex, References, and estimated dates of occupation. Note that the dates are

Table 6. Master chronology of sites of the early historic period

Site	Diagnostic Artifacts	Complex	Reference	Date
Coosa River Drainage				
Little Egypt, GA	Nueva Cadiz bead, chisels, rattlesnake gorget, blue beads	A,B?	Smith 1979b	1540-1575
Coosawattee, GA	Iron celt	A	Smith 1977	1540-1560
Etowah, GA	Iron celt	A	Smith 1977	1540-1575
Johnstone, GA	Iron celts, sword fragment, brass bead	A	Smith 1977	1560-1575
King, GA	Iron celts, wedges, sword, rattlesnake gorgets	A	Smith 1975,1977	1540-1560
Ce101, AL	Blue beads, Clarksdale bells, eyed axe	C	Smith 1977; DeJarnette et al. 1973	1600-1630
Ce173, AL	Blue bead	C	DeJarnette et al. 1973	1600-1630
Bradford Ferry, AL	Flushloop and Clarksdale bells, brass gorgets, iron celts, tumbled chevron, and eye beads	C	Smith 1977; DeJarnette et al. 1973	1600-1630
Terrapin Creek, AL	Brass gorgets, faceted and tumbled chevron beads, eye beads, native shell beads	B-C	Smith 1977	1590-1600
Ce308, AL	Faceted chevron bead, blue beads, iron celts, aboriginal shell gorgets, native copper	B	Little and Curren 1981	1560-1590
Cooper Farm, AL	Eyed axes, animal pendants, brass ornaments, cast brass bells, flushloop bells, leather clips	D	Lindsey 1964; Battles 1969; Smith 1977	1630-1670
Tuckabatchee Plate Site, Al	Iron axe, brass arm bands, brass neck band, Dutch bead, buttons	D	Greer 1966, personal communication	ca. 1660
Ogeltree Island, AL	Nueva Cadiz bead, iron	A	Morrell 1964; Smith 1977; Vernon J. Knight, personal communication	1540-1575
Ta171, AL	Four blue beads only	B	Vernon J. Knight, personal communication	1570-1600
Collins Farm, AL	Blue beads, possible native copper	B	Vernon J. Knight, personal communication	1570-1600
Sylacauga Water Works, AL	Chevron bead, blue beads, rattlesnake gorgets	B?	Vernon J. Knight, personal communication	1570-1600
Taskigi, AL	Tumbled chevron, blue beads	C	Smith 1976,1977	1600-1630
Charlotte Thompson, AL	Nueva Cadiz beads, faceted chevron beads, eye bead	A-C	Curren, Little, and Lankford 1982	1540-1630
Oconee River Drainage				
9Ge948, GA	Eye bead, blue beads	C	Smith 1979a	1600-1630
Joe Bell, GA	Blue beads, peach pits	C	Williams 1983a	1600-1630
Scull Shoals, GA	Navy blue bead	A or B	Williams 1983b	1540-1600
Miscellaneous Drainages				
Tallassee, AL	Brass animal effigy pendant	D	Auburn collections; M. E. Good, personal communication	1660-
Abercrombie, AL	Faceted chevron, blue beads, silver beads, native copper	B	Frank Schnell, personal communication	1575-1600

Table 6—Continued

Site	Diagnostic Artifacts	Complex	Reference	Date
Tennessee Drainage				
Carter House, TN	Iron axe, brass gorget, blue beads, copper bead	C	Polhemus 1982	1630-1670
Austin Springs, TN	Faceted chevron, iron axe	A	Polhemus 1982	1540-1570
Wg-9, TN	Miscellaneous iron, gold inlaid buttons	A	Smith n.d.	1540-1570
Plum Grove, TN	Blue beads, brass gorget, rattlesnake gorget	C,D	Smith n.d.	1600-1670
McMahon, TN	Blue bead, plain majolica	B	Polhemus 1982	1570-1600
Stratton Mound, TN	Iron celt, iron spike, blue bead	B	Polhemus 1982	1570-1600
Brakebill Mound, TN	Iron celt, sword blade, blue bead	B	Polhemus 1982	1560-1580
Post Oak Island, TN	Circular gorget, blue bead	C	Polhemus 1982	1600-1630
Cox, TN	Iron awl or spike	A	Polhemus 1982	1540-1570
Bussels Island, TN	Iron celt, copper beads, blue beads, iron bracelet	A,C	Smith 1976; Polhemus 1982	1540-1630
Tomotley, TN	Brass gorget, brass bead, musket ball, blue beads	C	Polhemus 1982; Guthe and Bristline 1978	1600-1630
Toqua, TN	Clarksdale bell, animal pendant, lugged hoe	A,D	Smith 1976; Polhemus 1982	1540-1570; 1660-
Citico Mr7, TN	Nueva Cadiz bead, iron celt, Clarksdale bell, and various seventeenth century material	A-D	Brain 1975; Smith 1976; Polhemus 1982	1540-1670+
McMurray Mound, TN	Iron celt, brass bead	A	Smith 1976; Polhemus 1982	1540-1570
Talassee, TN	Eye bead, animal effigy pendant	C-D	University of Tennessee Collections; Richard Polhemus, personal communication	1630-1690
Great Tellico, TN	Nueva Cadiz bead, cut crystal bead, blue beads, copper bead	A,B,C	Rice 1977; Polhemus 1982	1540-1800
DeArmond, TN	Blue beads, iron celt	B	Polhemus 1982	1570-1600
Upper Hampton, TN	Blue beads, brass beads, horsehoe celt, awl, circular gorget	B	Polhemus 1982	1570-1600
Hiwassee Island, TN	Brass ornaments, blue beads, seal top spoon	D	Lewis and Kneberg 1946; Polhemus 1982	1630-1680
Ledford Island, TN	Sword blade, iron chain	A	Polhemus 1982	1540-1570
Rymer, TN	Horseshoe celt, musket ball	A	Polhemus 1982	1540-1570
Citico Ha65, TN	Blue beads, iron celts, brass ornaments	B	Smith 1976; Moore 1915	1560-1600
Audubon Acres, TN	Faceted chevron, iron celts	A	Evans, Hood, Lautzenheiser 1981; Smith 1976; Polhemus 1982	1540-1570
Williams Island, TN	Eye beads, brass ornaments	C	Smith 1976	1600-1630
Hampton Place, TN	Brass ornaments, animal pendants, iron celts, Clarksdale bell, iron axe	C	Tennessee Archaeological Society 1982; Smith 1976; Moore 1915; Polhemus 1982	1600-1630
Wilson, TN	Copper tubular bead	A?	Polhemus 1982	1540-1570
Ms32, AL	Dutch beads, brass gorgets, cast brass bells, brass clips, brass crescents, iron wedge, iron axe	D	Webb and Wilder 1951	1630-1670
Ms91, AL	Cast bells, animal pendant, iron axe, brass ornament	D	Webb and Wilder 1951	1630-1670
Ms100, AL	Brass gorget, crescent, arm bands, animal pendant, cast bells, gun parts in midden	D+	Webb and Wilder 1951	1630-1690

based solely on the European artifacts. Many sites dated 1540-1575 have a long prehistoric occupation and some of the late sites continue to be important into the eighteenth century.

CHAPTER IV
THE DEMOGRAPHIC COLLAPSE

Anthropologists and historians have long recognized the fact that early European explorers introduced European and African diseases to the New World (Crosby 1972; Milner 1980; Fish and Fish 1979; Hudson 1980; Dobyns 1983). Native Americans had no natural immunity to these new diseases, and death rates soared. What had become over the ages little more than childhood diseases, such as measles, in the Old World, became horrible plagues in the New World, literally exterminating populations of New World natives. For example, the Arawaks of Santo Domingo numbered an estimated 1,000,000 in 1492, but by 1548 only about 500 survived, according to Oviedo (Crosby 1972:45).

While historical accounts of the effects of European disease have long existed, it is only recently that its devastating effects have been truly appreciated. Research by Henry Dobyns in particular has made us aware of the massive destruction of the epidemics (Dobyns 1963,1966, 1983). Other research by Carl Sauer (1971), Alfred Crosby (1972), Suzanne and Paul Fish (1979), George Milner (1980), Charles Hudson (1980), and Ann Ramenofsky (1982) have further described the process in the southeastern United States.

Historical Background

What is the history of epidemic disease in the Southeast? We still do not really know, but the ethnohistorical literature provides

some clues. It is, of course, possible that the first explorers who visited the Southeast introduced disease. It is well documented that one carrier of smallpox who served with Cortés' conquering army was responsible for a massive epidemic in Mexico (Crosby 1972:48-49). Thus, one sick European or African could easily spread new diseases to a vulnerable aboriginal group.

Ponce de León has been credited as being the first European to "discover" the southeastern United States. After he explored the coast of Florida in 1513, Ponce returned to Florida in 1521 with 200 colonists, livestock, and horses and landed somewhere in Florida, probably at Charlotte Harbor. Continued Indian attacks forced them to retreat. Significantly, many of the colonists fell ill from an unidentified disease. It is quite possible that the Indians also contracted this disease (Hudson 1980).

Pedro de Salazar visited one of the barrier islands of the Atlantic coast sometime between 1514 and 1516 and contacted Indians (Hoffman 1980). In 1516, Diego Miruelo is believed to have traded with the Florida Indians for gold somewhere on the Gulf and in 1517 Francisco Hernández de Córdova visited the same harbor, possibly Charlotte Harbor, previously visited by Ponce de León. In 1519, Alonzo Alvarez de Pineda coasted the entire Gulf of Mexico from southern Florida to Panuco. He stopped at a great river believed to be Mobile Bay, where he noted some 40 villages (Swanton 1946:35). It is not known if these voyages spread any disease, but it certainly is possible.

In 1521, Lucas Vázquez de Ayllón sent a slave-raiding expedition to the Atlantic coast, where they managed to capture several Indians.

Later in 1526, Ayllón himself traveled to the Atlantic coast in a colonizing venture. The colonists became ill and many died, including Ayllón himself. It thus appears likely that the Ayllón colony was also responsible for the introduction of European disease (Hudson 1980), as shall be seen later.

Pánfilo de Narváez attempted to settle Florida in 1528, but his attempts failed and a few survivors reached Mexico. Again there is specific mention of disease among Spaniards of this expedition (Fish and Fish 1979:31).

With the De Soto expedition of 1539-1543, we gain our first glimpse of the interior and it is clear that epidemic disease has preceded the expedition. The chroniclers of the De Soto expedition note that there had been an epidemic at Talomeco on the South Carolina fall line. Hundreds of bodies were stacked up in four of the houses according to Garcilaso, while Elvas reports that several towns were depopulated and survivors had moved to other towns (in Milner 1980:43-44). Hudson notes it is significant that in the mortuary temple, De Soto's men discovered European items that they believed to have come from the Ayllón colony (Hudson 1980).

In 1559, Tristan de Luna attempted to found a colony on the Gulf coast, probably at Pensacola Bay. With his food supply failing, he sent a contingent of troops inland to Coosa. Swanton (1939) and Charles Hudson (Hudson, Smith, Hally, Polhemus, and DePratter 1983) maintain that the Luna expedition reached the same Coosa town site as De Soto, but the Coosa they describe was changed. Instead of a powerful chiefdom,

some seven small villages are mentioned (Priestly 1928). Milner (1980: 44) maintains that the discrepancy is due to demographic collapse. While generally agreeing, Hudson (1980) notes that the evidence is not as clear as could be wished.

Later coastal colonizing attempts by the French and Spaniards in Florida and South Carolina in the 1560s culminated in the founding of St. Augustine and Santa Elena (Bennett 1975; Lyon 1976). Coastal mission stations were soon set up and the expeditions of Juan Pardo were sent into the interior in 1566-1568, retracing a segment of the De Soto expedition from the Carolina fall line into eastern Tenneessee (DePratter, Hudson, and Smith 1983). Spanish missions were established as far north as Chesapeake Bay (Lewis and Loomie 1953). Again, opportunities for the spread of disease were many.

Once Europeans were firmly entrenched in the Southeast, historical documentation of European disease epidemics became more frequent and more reliable. In 1585, Sir Francis Drake's men contracted a highly contagious fever in the Cape Verde Islands, which Crosby believes was typhus, and they brought it to Florida when they attacked St. Augustine (Crosby 1972:40). Indians in the St. Augustine region died rapidly.

The English colony at Roanoke Island in 1587 left an impressive account of the effects of European disease on the local Indians. Thomas Hariot noted that "within a few days after our departure from everies such townes, that people began to die very fast, and many in short space . . ." (in Crosby 1972:40; Fish and Fish 1979:32).

Later English accounts in Virginia and the Carolinas document further epidemics. John Smith in early seventeenth-century Virginia

noted that for every 100-200 Indians previously observed, only about 10 remained. Smallpox epidemics are recorded for 1667 and 1696-1698 (Milner 1980:46). John Lawson wrote in 1709 that smallpox had destroyed entire towns, without leaving even one survivor. He estimated that only one-sixth as many Indians remained in the area as had been there 50 years previously (in Milner 1980:46).

Spanish missionaries also dutifully recorded reduction of population due to disease in seventeenth-century Florida-Georgia. In their 1617 report, it was noted that half of the missionized Indians had died in the previous four years. Other epidemics were noted for 1659 and 1672 (Swanton 1922; Milner 1980:44). Recently Henry Dobyns has documented European disease epidemics in Florida (1983) and his findings are summarized in Table 7.

Clearly there was ample opportunity for the spread of epidemic disease during the early historic period. Certainly epidemics raged in coastal areas, but did they enter the interior in general and the present study area in particular? The evidence from De Soto and the Luna expeditions suggests that they did, although Milner suggests that disease epidemics were largely geographically circumscribed within Indian sociopolitical units (Milner 1980:47). Certainly De Soto's chroniclers report evidence of disease only in the province of Cofitachiqui.

On the other hand, it is entirely possible that pandemics swept the Southeast, a fact that Milner (1980) and Hudson (1980) consider. Henry Dobyns make a strong case for pandemics sweeping coastal North

Table 7. Disease epidemics in Florida, 1512-1672

Date	Disease	Probability	Mortality
1513-1514	Malaria (?)	Likely	Unknown
1519-1524	Smallpox	Nearly certain	50-75%
1528	Measles or typhoid	Nearly certain	About 50%
1535-1539	Unidentified	Documented	High
1545-1548	Bubonic plague	Nearly certain	About 12.5%
1549	Typhus	Very probable	Perhaps 10%
1550	Mumps	Possible	Unknown
1559	Influenza	Nearly certain	About 20%
1564-1570	Unidentified and endemic syphilis	Documented	Severe
1585-1586	Unidentified	Documented	Severe
1586	Vectored fever	Probable	15-20%
1596	Measles	Documented	About 25%
1613-1617	Bubonic plague	Documented	50%
1649	Yellow fever	Documented	About 33%
1653-	Smallpox	Documented	Unknown
1659	Measles	Documented	Unknown
1672	Influenza (?)	Documented	Unknown

Source: After Dobyns 1983:Tables 25,27

America and suggests these epidemics spread inland (1983:319,24-25). Looking at analogous situations elsewhere proves interesting.

Crosby (1972:48) notes that a 1518-1519 smallpox epidemic in Santo Domingo could have spread to the continent before Cortés' invasion of Mexico. Smallpox has been reported in the written records of the Maya themselves during the second decade of the sixteenth century (Crosby 1972:48).

Again in Peru there is good evidence that European disease preceded the Spaniards. The Inca Huayna Capac was apparently killed by an epidemic, probably of smallpox, along with many of his subjects in the province of Quito before Europeans landed in Peru (Crosby 1972: 51-52). It is clear that Huayna Capac had heard of the Europeans and Crosby notes, "Such is the communicability of smallpox and the other eruptive fevers that any Indian who received news of the Spaniards could also have easily received the infection of the European diseases" (1972:51). It thus seems safe to infer that Indians of the southeastern United States probably underwent multiple epidemics during the sixteenth century. Ann Ramenofsky (1982) and Henry Dobyns (1983) have recently argued that European disease epidemics often preceded direct European contact in North America.

Mary Helms' model of chiefly trade in Panama has been mentioned previously in the discussion of long-distance trade networks. Such long-distance movements by traders probably insured the rapid spread of disease vectors even across sociopolitical units.

Given the strong arguments amassed by Dobyns and Ramenofsky and the pattern of rapid spread of disease historically documented in other

parts of the New World, for the purpose of this study it is assumed that disease rapidly spread inland. The remainder of this chapter will discuss the effects of disease and archaeological measures of disease in the study area.

Documented Effects of Disease

What were the effects of European disease epidemics recorded in historic sources? Clearly depopulation was the major effect. Figures from Santo Domingo have already been cited and they are no doubt representative. Henry Dobyns (1966) cites historical evidence from several New World locals to arrive at an overall depopulation ratio of 20 to 1. This means that for every 20 people in the New World in 1492, by the nadir (low point of the population of a group—the time varies) that only one remained. Smallpox, one of the worse killers, has a mortality rate among "virgin soil" populations (those with no natural immunity) of some 30% (Crosby 1972:44). Hudson suggests that introduced diseases such as smallpox, measles, influenza, etc. may have killed up to 90% of the population (1980). Considering John Lawson's remarks that entire villages were destroyed, even that figure may have been low in some areas.

In addition to the terrible depopulation, epidemic disease had many effects on the survivors. Survivors of the disease may have been weakened enough to later die of starvation (Fish and Fish 1979:32; Crosby 1972:47), especially if everyone were sick at critical times of planting or harvest and subsistence activities were interrupted.

Social and political relations were also affected by epidemic disease. Crosby discusses the effects of disease on the Aztec power structure (1972:54). As the leaders were struck down by disease, the processes of government were disrupted and conquest by the Europeans was assured. Milner notes that the long-term effects of disease "attributable to an insufficient labor force, including specialists, probably necessitated societal reorganization and coalescence of formerly discrete groups in order to remain as viable social and economic entities" (1980:47). Such population movements are well documented. Dobyns discusses such a reorganization in Amazonia. During the twentieth century, surviving Sabane "have joined forces with survivors of other Nambikwara groups, so an amalgam social unit may eventually survive" (Dobyns 1966:413). Thus banding together of survivors is one type of documented population movement caused by epidemic disease. Another response was simply to flee from disease areas. Perhaps the best account is that of the Gentleman of Elvas discussing the effects of disease on the province of Cofitachiqui in piedmont South Carolina just east of the present study area. Elvas reports that after a plague, survivors removed to other towns (Smith 1968:63; Milner 1980: 43). Clark Wissler reports a shift in tribal territory following a 1780 epidemic that swept western North America. This shift resulted from differential survival (in Dobyns 1966:441). The Cakchiquel Mayas of Guatemala kept their own record of an epidemic of 1520-1521 and they noted that half of the people fled (Crosby 1972:58). Henry Dobyns also discusses simplification of social systems and settlement shifts as a response to disease (1983:313-328).

Perhaps the most serious effect of epidemic disease is an overall loss of elements of culture. Charles Hudson cites Akiga, a Tiv, who told of depopulation so swift and so devastating that ancestral traditions were lost. Hudson suggests that such was the case in the Southeast. "We can be sure that our understanding of southeastern Indian knowledge, philosophy, religion, and art symbolism is the merest fragment of what existed at the time of De Soto's entrada" (Hudson 1980). Bruce Trigger similarly suggests the loss of much traditional religious lore among the Huron following the epidemics of the 1630s (1976:601). The loss of religious and genealogical lore on a traditional aboriginal group must not be underestimated. This must be an important factor in culture change and it surely paves the way for acculturation. Hudson further suggests that a heavy loss of life in the chiefly lineage "would probably have led to the segmentation of chiefdoms into several smaller, less centralized social entities" (1980).

The historical record documents several results of epidemic European disease that can be expected to have occurred in the southeastern United States. These include massive depopulation, population movement, social and political reorganization, and loss of many elements of culture.

Archaeological Parameters

It is clear from historical accounts and work by ethnologists and ethnohistorians that European epidemic disease had a devastating effect on the New World. To date, few anthropologists have made an effort to correlate these historically known phenomena with the

archaeological record. It is the purpose of the remainder of this chapter to investigate ways that archaeological data can be operationalized to fit the model of drastic population decline. Some of the hypotheses offered can be tested with available data, while others are proposed to promote future research.

The most obvious way to search for the effects of European-introduced epidemic disease would appear to be to study skeletal remains. Unfortunately, such epidemic diseases are usually quick killers in virgin soil populations and, therefore, leave little evidence on bones (Milner 1980:49). Survivors of epidemic disease may show the formation of Harris lines or enamel hypoplasia, but these are simply markers of stress and cannot be positively correlated with specific diseases (Milner 1980:49). Such stress markers might also be associated with famine—which may or may not be a secondary result of epidemic disease (Fish and Fish 1979:32; Milner 1980:47).

Hudson (1980) suggests that the first disease epidemics may have been so devastating that no one was left to bury the bodies. The historical accounts of epidemic disease suggest that a few people will always survive; however, it is possible to envision a scenario in which bodies are left exposed for some time before burial. If this is the case, then there are several pieces of evidence which could be hypothesized for the archaeological record. Bones left exposed might show gnawing marks from dogs or rodents. To my knowledge, no such marks have been reported in the literature. Burial at a later time might be only of disarticulated or partially disarticulated remains; portions of the

body might have been removed by scavengers. An enquiry was directed to Dr. Robert Blakely who is currently studying the King site skeletal series under a National Science Foundation (NSF) grant. Blakely reports that there is evidence of gnawed bones. Seckinger (1975:67) notes missing elements, but it is not clear if preservation, or delayed burial, or some other factor is to blame.

Burial at a later date might take the form of a mass interment (Milner 1980:48). Milner does caution that mass burial may be the result of other factors, such as retainer sacrifice, so the context of such mass graves must be carefully considered. Mass burial is not a common form in the prehistoric Southeast; however, at the sixteenth-century King site a mass grave was found that would appear to be a strong candidate for a post-epidemic mass burial. The Period A and D Toqua site excavated by Richard Polhemus for the University of Tennessee's Tellico Reservoir project contained three mass burials of 3, 5, and 7 individuals, again suggesting European disease (Richard Polhemus, personal communication). Other evidence of depopulation at Toqua will be considered below. Mass grave features should be encountered on other early sites when they are finally excavated.

Milner also suggests that multiple burials could be expected to result from European disease epidemics. Here multiple burials are differentiated from mass burials solely in terms of numbers. Multiple burials consist of the remains of two individuals, while mass burials are of three or more individuals. There is historical documentation that multiple burial can be the result of European epidemic disease. St. Cosme

in describing the Arkansas in 1698, noted, "Not a month had elapsed since they had rid themselves of smallpox, which had carried off most of them. In the village are now nothing but graves, in which they were buried two together, and we estimated that not a hundred men were left" (Kellogg 1917 quoted in Philips, Ford, and Griffin 1951:410).

There does appear to be a rapid increase in multiple interments in the study area during the sixteenth century (Periods A and B). Again, the King site provides the best documented examples. Nine of 210 burials at the King site were multiple burials (Seckinger 1977; Hally 1975).

In eastern Tennessee, Lewis and Kneberg note that multiple burials were numerous on sites of the Mouse Creeks culture: "In numerous instances two bodies had been interred at the same time, one directly superimposed above the other, usually both individuals being of the same sex. There is little likelihood that the second body was placed in the grave at a later time than the first since the bones were in actual contact and often without the slightest trace of soil between the points of contact" (1941:8). Both the Ledford Island and Rymer sites, which have been assigned to Period A, are Mouse Creek sites, as is the Period B Upper Hampton Place.

Available data on mass and multiple burials are summarized in Table 8. Unfortunately there are several biases in these data that must be discussed. Several of the sites have long, prehistoric occupations. Assuming the mass and multiple burials do measure European disease epidemics, then earlier prehistoric individual graves dilute their

Table 8. Frequency of mass and multiple burials

Site	Number of Burials	Number of Mass Graves	Number of Multiple Graves	Mass + Multiple %	Reference
Period A					
King	213	4	9	6.0	Hally 1975
Ledford Island	459	6	16	4.8	McClung Museum notes
Rymer	168	0	6	3.6	McClung Museum notes
Toqua[a]	433	3	6	2.0	Richard Polhemus, personal communication
Citico Mr7[a]	194	0	0	0.0	Richard Polhemus, personal communication
Citico Ha65[a]	106	0	1	0.9	Moore 1915
Period B					
1Ce308	14	1	0	7.0	Little and Curren 1981
Upper Hampton	56	0	1	1.8	McClung Museum notes
DeArmond Village[a]	52	0	0	0.0	McClung Museum notes
Period C					
Bradford Ferry	47	1	1	4.3	DeJarnette et al. 1973; M. Smith notes
Tomotley	92	1	7	8.7	Guthe and Bristline 1978
Hampton Place	31	0	0	0.0	Moore 1915
Period D					
1Ms100	74	1	1	2.0	Webb and Wilder 1951
1Ms32	68	0	0	0.0	Webb and Wilder 1951
1Ms91 Unit 1	56	0	1	1.7	Webb and Wilder 1951
Cooper Farm	25	0	0	1.0	Lindsey 1964; Battles 1969,1972; Humbard and Humbard 1965

[a]Includes prehistoric component

frequency. It is also possible that victims of particularly horrible epidemics may have been disposed of in some other fashion than the normal village burial.

The King site provides probably the best set of data for the evaluation of European disease epidemics. The King site was occupied less than 50 years (Hally 1982), probably all within Period A (including a possible prehistoric founding). While only 6% of the graves were mass or multiple interments, these graves account for at least 15.5% of the people. While this may not seem to be a very high percentage of the people when up to 90% may have been affected by disease epidemics, it must be remembered that there is no reason to expect that all victims received multiple or mass burial.

In Period B, the late sixteenth century, data are hard to find. While site Ce308 has a high frequency of mass and multiple burials, its low sample size makes this figure suspect. The better sample from Upper Hampton suggests that disease was less a problem in the late sixteenth century after Spanish exploration was over. Clearly more data are needed.

Period C, 1600-1630, again shows evidence of mass and multiple burials. Both the Bradford Ferry and Tomotley sites appear to be single component sites and they have fairly large samples of burials. Again, the interpretation is that disease was again a problem in the early seventeenth century and this is precisely the period which sees a tremendous influx in European goods. Ramenofsky (1982:257) has noted that smallpox virus can be transmitted in a dry state on artifacts and

thus anyone coming into contact with European goods could potentially be exposed to smallpox.

Period D again appears to be relatively disease free, using frequency of mass and multiple burial as an indicator. Clearly for all these periods, more data are needed. It is possible that mass and multiple burial are not directly associated with European epidemics, but are the result of another factor.

Other forms of burial, possibly reflecting the presence of European disease epidemics, are urn burial and bundle burial. Again, these secondary forms of burial may represent burial of victims of epidemics where burial was delayed due to lack of healthy individuals to perform the burial ritual.

Urn burial certainly has a long history and definitely occurs in the study area in the prehistoric period. Urn burial is rather common for children during the Early Dyar Phase (ca. 1450-1500) in the Oconee River drainage (Smith 1981). By the time of European contact, urn burial was no longer practiced in the Oconee area. However, urn burial becomes important along the western margin of the study area at precisely the period under discussion. The Alabama River Phase, located along the margins of the Alabama River and up the Black Warrior drainage has urn burial as a common treatment of the dead (Sheldon 1974). European trade goods are occasionally found in urn burials, allowing a dating to Period C (Curren 1982:107). There is little doubt at this time that the Alabama River Phase is primarily a seventeenth-century phenomenon.

A similar practice (without the pottery vessels) is reflected in the bundle burials of the Tennessee River area. The best reported series of bundle burials come from the Hiwassee Island site (Lewis and Kneberg 1946:150-151). Lewis and Kneberg date all Hiwassee Island burials with trade goods to the early eighteenth century, but the trade material illustrated in Plates 86-88 appear to date ca. 1650-1700, or Period D and later. The brass discs, lugged hoes, seal top spoon, brass tubular beads, and some of the glass beads appear to be diagnostic of the seventeenth century. Lewis and Kneberg report European objects with both flexed and bundle burials. The flexed burials do appear to date to Period D, while the bundle burials date slightly later, but perhaps still in the terminal portion of Period D. That the urn reburials of the Alabama River and the bundle reburials of the Tennessee River reflect seventeenth-century responses to European disease epidemics is an hypothesis worth pursuing.

While on the subject of individual burial evidence, it seems appropriate to digress from discussions of European epidemic disease to discuss other evidence for early European contact that might be expected from burial analysis. Perhaps the most obvious evidence would be to find the burial of a European. This would not be unexpected, given the number of people who died on the De Soto and Luna expeditions. Burials of mixed European (or African) and Indian genetic types should also be expected on sites of the early historic period. To date, no such burials have been found (or recognized) within the study area, but one has been recognized from the Georgia coast (Zahler 1976:27-28, 50-51)

and from the early seventeenth century Neutral Iroquois Grimsby site in Canada (Kenyon 1982:39). Most of the skeletal series from sites of the early historic period have not been subjected to analysis by physical anthropologists and this would be a useful area of inquiry.

Another form of burial analysis for the detection of European disease involves looking at population curves for large skeletal series. This type of analysis has been advocated by Milner (1980) and Hudson (1980). Since disease is hardest on the very young and very old, these two groups would be disproportionately represented in an epidemic mortuary series. There is even some evidence that adolescents and young adults would also be affected to a greater degree than the remainder of the population (Milner 1980:49). Obviously this type of analysis must be performed on large skeletal series. To date only the King site sample of 213 burials have been analyzed, but an unusual population curve suggestive of European epidemic disease was noted (Tally 1975; Hally 1975:34). However, reanalysis by Gary Funkhouser (1978) disputed Tally's conclusions. The major reanalysis of the King site skeletal series currently being conducted by Robert Blakely of Georgia State University should help resolve the dispute.

While analysis of burials might potentially offer the best opportunity for studying the effects of European disease, it is clear that these data have not been developed to any extent. Fortunately, there are other archaeological parameters which will enable us to study the effects of European epidemic disease/depopulation over time. These include site size data and settlement data (Hassan 1981; Ramenofsky 1982).

The idea that sites would become smaller and fewer over time as population is reduced is quite obvious, but measuring such changes must be attempted with caution. It is clear from the ethnohistoric literature that much population movement was taking place during the latter portion of the early historic period and the effects of such movements and banding together of refugee groups must be taken into consideration. A model of the expected changes in settlement might be expressed as follows: In the period around initial contact (including the pre-De Soto interior) populations would be expected to decline rapidly (Ramenofsky 1982). New sites established during this period by people fleeing diseased areas should probably be considerably smaller and for at least a limited time should grow smaller and smaller. When town populations reach a certain lower level, population movement and possible regrouping of populations could be expected to take place. Milner (1980:47) has noted that long-term effects of European epidemic disease and ensuing famine would lead to an insufficient labor force, including specialists, and would probably necessitate reorganization of the society and coalescence of formerly discrete groups in order to remain as viable social and economic entities (see also Dobyns 1983: 303). Thus, there should be a detectable movement in population and a decrease in the number of sites through time. It now remains to determine appropriate archaeological measurements of this hypothesized process.

Site Size

Site size is a recognized parameter of population size (Hassan 1981:66-672; Ramenofsky 1982). Certainly site size can be simply measured, but a number of factors must be considered. A village size can fluctuate over time, either growing larger or smaller, varying with many other factors in addition to European disease. Since we are not really interested in the size of a site, but its population, the best approach would be to count the number of houses in a site and multiply that number by an estimated family size (Hassan 1981:72). Another estimate which can be used in the archaeological record is to measure the floor area of domestic structures and estimate the population using Raoul Naroll's estimate of 10 square meters (107.6 square feet) of floor area per person (1962). This is probably the most accurate means of assessing population for comparative purposes but it requires extensive archaeological excavations to determine the number of contemporary houses present on a site and their dimensions. At this time such data are only available for the King site (Table 9) and then only for approximately one-half of the site. Assuming the unexcavated half of the site to be a mirror image of the excavated half (Hally 1975), we can estimate a population (rounded) of 300 for the King site which has a habitation area of 138,300 square feet (calculated from figures in Hally 1975), not including the open plaza in the center. This yields a figure of 461 square feet per person of habitation area in the village. It could be argued that this figure of 461 square feet of habitation area per person reflects a normal proximic situation for this specific

Table 9. King site structure data

Structure Number	Dimensions in Feet	Area in Square Meters	Population at 1 per 10 m^2
1	32 x 32	95.130	9
2	27 x 29	72.740	7
3	20 x 22	40.880	4
4	18 x 18	30.100	3
5[a]	24 x 27	60.200	6
6	25 x 25	58.060	5
7	21 x 22	42.920	4
8	27 x 26	65.220	6
9	24 x 24	53.510	5
10[a]	26 x 30	72.460	(7)
11	26 x 21	50.720	5
12	26 x (26)[b]	62.800	6
13	30 x 31	86.400	8
14	27 x 29	72.740	7
15	29 x 31	83.520	8
16	21 x 20.5		Not domestic structure
17	49.5 x 49		Not domestic structure
18	21 x 20	39.020	3
19	21 x 23	44.870	4
20	21 x 23	44.870	4
21	30.5 x 30	85.010	8
22	25 x 24	53.510	5
23	29 x 31	83.520	8
24	32.5 x 27	81.520	8
25	24 x 30	66.890	6
26	27 x 27	67.725	6
27	31 x 31.5	90.720	9
28	21 x 21	40.970	4
			148

[a]Only structure 5 or 10 occupied at same time

[b]Incomplete excavation

archaeological culture (Barnett Phase) or this ethnohistorically known province (Coosa). If this assumption is made, it will be possible to estimate populations for a number of other sites when site size and sacred precinct size (plaza and mound area) are known. The population estimate will equal the site size minus the plaza size (which equals the habitation area) with the resulting figure divided by the constant 461 square feet per person. Table 10 presents such data for sites believed to be closely related politically to the King site.

A cruder measurement, but useful when sacred precinct area is unknown, is the overall area of site per person. Again, using the King site data as the base (220,800 divided by 300), we calculate that each person has about 736 square feet of site area. This cruder figure will allow us to include additional sites (Table 10). This estimate is considered less accurate because the relationship of habitation area vs. sacred precinct is not known. There may not be a linear relationship between site size and plaza size and, therefore, between site size and population size. It is possible that politically important towns have a much larger sacred precinct in relation to their site size than do sites further down the hierarchy.

While it is apparent that there are very few data for comparison, the two Period A sites, Etowah and Little Egypt, probably the towns of Itaba and Coosa, respectively, which have long prehistoric occupations and multiple mounds, are much larger than sites which probably originated during the historic period, such as the King site. It is certainly possible that the King site simply is lower down in a size hierarchy of

Table 10. Site size/population data: Coosa province

Site	Site Size (sq. ft.)	Sacred Precinct	Habitation Area	Habitation Population at 461/sq. ft.	Site Area Population at 736/sq. ft.	Reference
Period A						
King	220,800	82,500	138,300	300	300	Hally 1975,1982
Little Egypt	600,000[a]	126,400	473,600	1,027	815	Hally 1980:8
Etowah	2,265,120[a]	295,425	1,969,695	4,272	3,078	Larson 1972
Audobon Acres	152,460 (3.5 acres)	---	---	---	207	Evans, Hood, Lautzenheiser 1981
Ogeltree Island	200,000	---	---	---	271	Alabama site files
Citico Mr7	111,000	3,200	107,800	234	151	Richard Polhemus, personal communication
Rymer	210,000	---	---	---	285	McClung Museum files
Toqua	180,000 (latest)[a]	26,250	153,750	333	245	Richard Polhemus, personal communication
Period B						
1Ce308						
Upper Hampton	476,000	---	---	---	647	McClung Museum files
DeArmond	315,000[a]	---	---	---	428	McClung Museum files
Period C						
Bradford Ferry	70,000	---	---	---	95	DeJarnette et al. 1973
Hampton Place						
Tomotley	135,000	---	---	---	183	Guthe and Bristline 1978
Period D						
1Ms100	45,000	---	---	---	61	Webb and Wilder 1951
1Ms32	264,000	---	---	---	359	Webb and Wilder 1951
Post Period D						
Woods Island	180,000	---	---	---	245	Morrell 1965

[a]Prehistoric occupation present; size of historic component unknown

sites, but other sites occupied during the historic period, such as Audobon Acres and Ogeltree Island, are also of similar size. Data are not presently available to allow a determination of whether or not these sites originated during the early historic period or had long occupations. With present data we can only suggest a trend toward smaller sites. Later sites, such as the Period C Bradford Ferry site, are considerably smaller.

Some sites deserve additional mention since they do not appear to fit the hypothesized pattern. The exact culture history of the Upper Hampton site is not known. It may or may not have a long prehistoric component. Its long, thin settlement area may indicate a transition to the dispersed settlement type discussed below, but the site does have a series of palisade ditches. Its large population estimate (Table 10) remains anomalous. The DeArmond site definitely has a long prehistoric occupation, so the total site size may not have any bearing on the area occupied in Period B. The site size for Citico, 40Mr7, seems too small for a mound center, but this is the best estimate that was available (Richard Polhemus, personal communication). There is some archaeological evidence that Citico was first occupied in Period A, so perhaps the small size does reflect early epidemics. Finally, 1Ms32 appears to be a large site with a high population, but it is a dispersed linear settlement and there is no reason to believe it was as densely populated as the earlier palisaded towns (see discussion below).

The Toqua site deserves special mention, since it was carefully excavated during the University of Tennessee's Tellico Reservoir Project

(Schroedl and Polhemus 1977; Richard Polhemus personnel communication). This Dallas mound center was occupied from ca. 1215-1620 based on radiocarbon dates from Mound A and was carefully fortified by palisade lines. Interestingly enough, the size of the site shrank during its lifespan. The earliest village covered some 420,000 square feet with houses neatly dispersed. Later in the occupation, the area occupied shrank to 210,000 square feet and houses were densely packed into the fortified area. This reorganization of the settlement took place between 1350 and the sixteenth century. Later (perhaps 1580-1600 according to Polhemus) the fortified area again shrank to 180,000 square feet and this area contains all burials with European trade goods (both Period A and D). All three mass burials excavated were within this last palisade, strengthening the argument that they represent victims of Euorpean disease epidemics. Mound B is excluded by this last palisade. However, it should be noted that two of the six multiple burials do fall outside of this latest Palisade line. The overall impression is that after the initial reorganization of Toqua settlement into a densely nucleated town the size of the King site, there is further shrinkage perhaps due to disease (the mass burial evidence). Clearly the site is on the decline, because Mound B is abandoned. The evidence from trade goods, both the types and scarcity, suggests that Toqua was abandoned in the sixteenth century. The Period D occupation probably signals the arrival of the Cherokee into the valley during the mid-late seventeenth century.

Number of Sites

Another obvious measure of depopulation would be a decrease in the number of sites occupied over time. Interestingly, the number of sites occupied at one time is not considered by Hassan (1981) as a measure of population, probably because he does not consider a regional approach. However, Ramenofsky does consider settlement counts as a method of measuring population decline (1982). If only a small area is looked at with this in mind, then it must be strongly considered that population movement (migration) could be an explanation for any observed decrease in the number of sites. However, if large areas, such as the study area as a whole, are considered, then the effects of migration should be minimized. Ramenofsky also advocates a regional approach. Table 11 presents data by drainage system and as totals for the western study area (Tennessee and Coosa River drainages). In both the Coosa and Tennessee River drainages, there is a decrease in the number of sites from Period A to Period B, followed by a stabilization or increase from Period B to C, and a subsequent decrease to Period D. There is no evidence that populations were living in small hamlets or farmsteads in the Tennessee Valley, either in the late prehistoric or early historic periods (Richard Polhemus, personal communication). The data in Table 11 might be interpreted as follows: major European disease edpidemics reduced populations during Period A. By Period C, populations were stabilizing or even growing to some extent. Finally, by Period D, the number of sites again diminishes, perhaps reflecting the beginning of population consolidation and the beginning of the Creek Confederacy, as well as renewed contact with Europeans.

Table 11. Decrease in number of sites in western study area

Number of Sites	Period A	Period B	Period C	Period D
Coosa River Drainage	7	6	6	2
Tennessee River Drainage	12	8	10	7
Miscellaneous Drainages	—	1	2	1
Total	19	13	17	10

The Wallace Reservoir provides additional data. Few Wallace Reservoir sites produced European trade goods, primarily due to lack of extensive excavations. Nonetheless, a detailed ceramic chronology has been established (Smith 1981) and radiocarbon determinations and some European trade goods provide tight chronological control.

Work in the Wallace Reservoir located approximately 800 Mississippian sites (Rudolph and Blanton 1980:14), ranging in size from large towns to small special purpose sites, clearly a large sample. The largest site, at 229,273 square feet, the Dyar Mound and village, was occupied from approximately A.D. 1000-1550 (Smith 1981) and is the type site for the Dyar Phase—an archaeological construct which overlaps with the period of early Spanish exploration. The Dyar site may well be the Cofaqui of the De Soto chronicles, as discussed previously. The site shows a gradual decline and abandonment during the sixteenth century, suggesting the effect of European disease (Smith 1981:256).

The subsequent indigenously developed occupation of the reservoir is the Bell Phase. The largest known site of the Bell Phase is the

type site, Joe Bell, 9Mg28 at 65,340 square feet (Williams 1981). The Bell site has produced European trade materials and radiocarbon determinations (Williams 1981) which date it to Period C. There is obviously a great reduction in site size from the Dyar Phase to the Bell Phase when the largest sites are compared. This suggests drastic population decline.

In order to more fully consider the effects of disease on the Wallace Reservoir area, a large sample of sites was investigated for data on number and size of components of the Late Dyar and Bell Phases. This sample consisted of four transects which were selected to cross the reservoir area in specified ecological niches. Both broad alluvial valley uplands and narrow valley shoals areas were selected as sample strata (Siegel n.d.). Within these sample strata, 253 Lamar period components were recognized (see Appendix for ceramic dating methodology). Of these, 63 were Bell Phase components (seventeenth century) and 101 were Late Dyar Phase components (sixteenth century). Since the Late Dyar Phase and the Bell Phase durations are for all practical purposes identical [both have a minimum of 50 years and a maximum of 100 years duration by current estimates (Smith 1981; Williams 1983; Gary Shapiro, personal communication)], these two phases will be considered directly equivalent temporal units. Differences between the settlement of these two phases can be attributed to the effects of European disease or migration. Since no heavy Bell Phase occupation is known outside the reservoir, the migration explanation appears unlikely.

Are there differences between the settlement of the two phases? It is obvious that numbers of sites decreased dramatically from 101 to 63. What about site area? In order to test for differences in site area, it was necessary to remove multicomponent sites from consideration since the size of each individual component was not calculated by Wallace Mitigation Survey personnel. Indeed, such identification would have been impossible, since the phase designations utilized here were developed in the laboratory after the survey was completed. The removal of multicomponent sites results in a sample consisting of 38 Bell Phase sites and 80 Late Dyar Phase sites. Site area in square meters had been calculated in the field (David J. Hally, personal communication) and these figures were compared with a "T" test. A two-tailed test was used to test the hypothesis that mean site size for each phase was equal. Even though the mean site size for the Bell Phase was only 4,648.4 square meters as compared to 6,807 square meters for the earlier Late Dyar Phase, the T test indicated that these sizes were not significantly different ($T = 1.075$; $DF = 116$; significant only at 0.02 level). How is this to be interpreted?

The largest single component site of the Late Dyar Phase in the transects covered 61,286 square meters, while the largest Bell Phase site was only 42,394 square meters. There were fifteen Late Dyar Phase sites with areas over 10,000 square meters compared to only five Bell Phase sites of this size, indicating the larger sites are dropping out of the settlement hierarchy; at least very few large sites are established during the Bell Phase.

Nonetheless the T test indicates that mean site size is not significantly different in the two phases. The most likely explanation is that both phases have large numbers of smaller sites which are about the same size. While there is a great decrease in numbers of sites, it is apparent that an attempt was made to maintain certain site size units for economic and/or social reasons. It is suggested that Bell Phase epidemic disease survivors regrouped into basic socioeconomic units which were approximately the same size as those units of the Late Oyar Phase. Thus site size remained roughly constant, but numbers of sites decreased dramatically. This interpretation fits the historically expected processes described by Milner (1980:47) discussed previously. Henry Dobyns also discusses the notion of a culturally defined model of a proper settlement size (1983:303). Ramenofsky (1982:267) notes that "Residential instability and/or village reduction coupled with amalgamation processes which occur when the population of villages falls below a threshold necessary for defense and maintenance are attempts to maintain adaptations that developed when the population base was much larger." This process is hypothesized as the best explanation of the Wallace Reservoir data.

Population Movement

Another historically documented effect of European disease is population movement. Again, two types of movement are mentioned in the documents: rapid fleeing of areas of epidemic disease and slower movements brought about as tribal balances of power shift with changing demography.

As we understand the documentary evidence from the earliest Spanish explorers, there does not appear to be much evidence of rapid movement away from sites due to disease in the study area. While the De Soto narratives mention the abandonment of Talomeco just east of the study area, interpretations of the routes of De Soto, Luna, and Pardo by Charles Hudson and his associates (Hudson, Smith, Hally, Polhemus, and DePratter 1983; DePratter, Hudson, and Smith 1983,1984; Hudson, Smith, and DePratter 1980) indicates that the later Luna and Pardo expeditions visited the same towns as De Soto. It is possible that these towns may have been abandoned for short periods and then subsequently reoccupied, but this would be very difficult to demonstrate archaeologically.

What can be demonstrated, at least in some portions of the study area, are more gradual population movements. It is assumed that these population movements are the result of European disease since a great deal of residential stability can be demonstrated in the study area prehistorically. Some major mound centers were occupied for hundreds of years (see Chapter V and Table 12). It is, of course, possible that other factors caused population movements.

The Coosa River drainage provides the best evidence for gradual population movement. This is an area in which intensive archaeological research has taken place (Wauchope 1966; Smith 1977; DeJarnette, Kurjack, and Keel 1973; Little and Curren 1981; Curren, Little, and Lankford 1982; Morrell 1964,1965; and data gathered from several private collectors) and it can comfortably be assumed that there is a good sample of the

archaeological sites of the early historic period—perhaps even all of them of village size. Smaller sites do not appear to characterize the settlement hierarchy of the area. In an earlier article, Smith (1977) demonstrated that the area of the Upper Coosa drainage in the present state of Georgia appears to have been totally abandoned during the sixteenth century (Period A and B in the present terminology). Since that time, more data have been collected, but the conclusion remains much the same. Figure 7 presents data on changes in settlement over time for the Coosa River area north of the present Childersburg, Alabama. This is believed to be the area of the sixteenth century province of Coosa known from the De Soto narratives (DePratter, Hudson, and Smith 1984; Hudson, Smith, Hally, Polhemus, and DePratter 1983).

With the exception of the Ogeltree Island site, all sites with a demonstratable Period A placement are located along the upper reaches of the Coosa River drainage system in present Georgia.

Sites that fall within Period B are all downstream in present Alabama; no sites of Period B are known from northwestern Georgia (with the possible exception of the Little Egypt site), suggesting that the area was abandoned before the seventeenth century and not subsequently occupied until much later. There is a real concentration of sites of Period B and C in the Weiss Reservoir area of Cherokee County, Alabama. Excavations at these sites demonstrate that they do not have late prehistoric components, but are relatively short occupations during the early historic perid (DeJarnette et al. 1973; Smith 1977). There is another concentration of Period B-C sites along creek drainages in

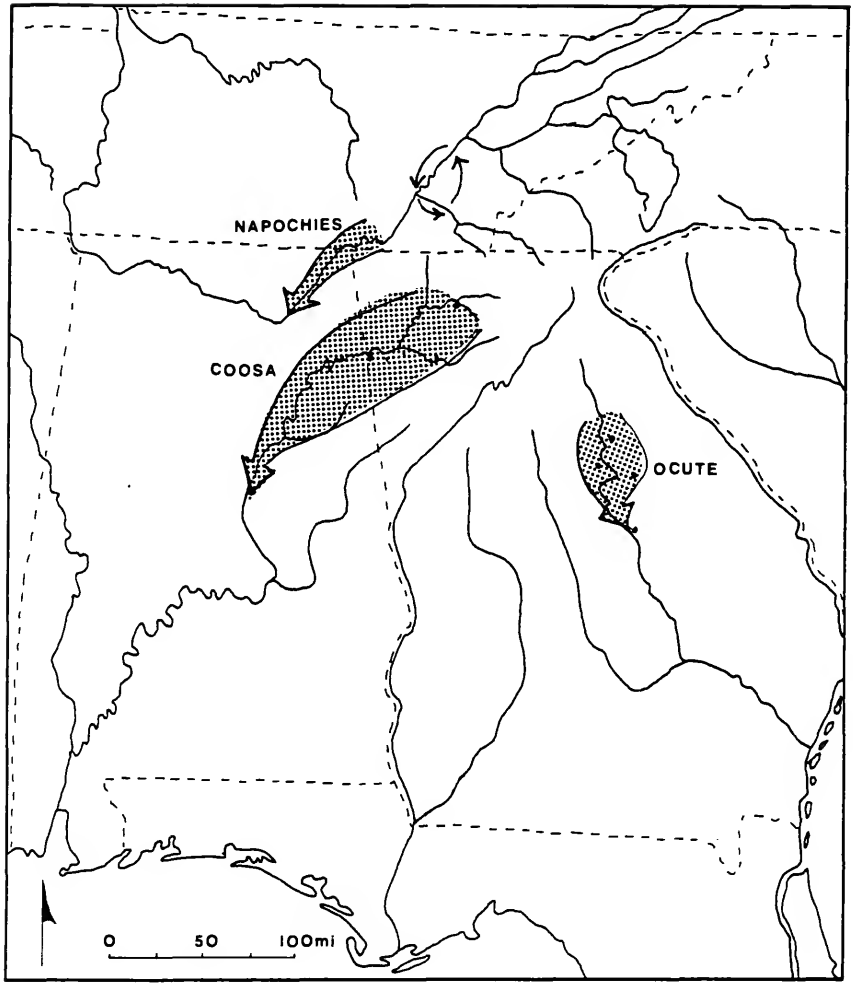


Figure 7. Suggested population movements

Talladega County, Alabama, south of Ogeltree Island. This area is probably the province of Talisi mentioned in the De Soto narratives (Hudson et al. 1983). Several Period D sites are known from the Gadsden, Alabama, area such as the Cooper Farm site. Finally, the Woods Island site (ca. 1670-1700) is located slightly further south of the Gadsden site cluster.

These distributional data indicate a gradual population movement down the Coosa River Valley of a cluster of sites (the Coosa Province). If we ignore Ogeltree Island and sites southward as a separate cluster (the province of Talisi), then we have five Period A sites in Georgia, two Period B sites in northeastern Alabama, four Period C sites in Alabama (probably only three of which are contemporary—the Terrapin Creek site was probably abandoned early in Period C) and two period D sites further south, with the post-early historic period Woods Island site located still further south. The eighteenth century location of the town of Coosa is the Childersburg site (DeJarnette and Hansen 1960) located still further south. The sixteenth century site of the main town of Coosa is believed to be the Little Egypt site (DePratter, Hudson, and Smith 1984; Hudson et al. 1983), the farthest northern site. It thus appears that the core of the chiefdom of Coosa shrank from a minimum of five towns to one or two towns and constantly moved southward during the period 1540-1740.

Recently Henry Dobyns has suggested that major European epidemics may have been responsible for settlement shifts among aboriginal populations (1983:313-327). He illustrates this suggestion by comparing

a sequence of historic Seneca Iroquois sites developed by Charles Wray and Harry Schoff (1953) from archaeological seriation with a list of documented and probable disease epidemics that he has found through analysis of historical records. There is a very strong correlation between the archaeologists' estimated dates of occupation and known occurrences of epidemic disease, suggesting to Dobyns that sites were abandoned because of specific European disease epidemics. The issue of relevance to this study is how the disease epidemics documented by Dobyns match the occupation dates of archaeological sites in the present study area.

To test the hypothesis that disease epidemics resulted in the abandonenment of archaeological sites, the tightly clustered group of sites on the Coosa River drainage near the present Georgia-Alabama border has been chosen to compare with Florida disease epidemics documented by Dobyns (1983:270,285). Since Dobyns strongly argues that most of these Florida epidemics were pandemics, it does not seem unreasonable to compare the interior sites to the Florida epidemics. Table 12 presents the site sequence presented in Chapter III and compares it with documented disease epidemics. Note that while Dobyns also lists possible epidemics, this application considers only those definitely documented.

Again, just as Dobyns found with the Seneca, there appears to be a high correspondence between some settlement shifts and specific occurrences of epidemic disease. The King site, known to be of short occupation (suggested at 1540-1570), and perhaps identified in the De Soto

Table 12. European disease and Coosa River settlement

Coosa River Sequence		Documented Florida Epidemics (After Dobyns 1983:270,285)	
Site	Estimated Date	Date	Disease
King	1540-1570[a]	1535-1359	Unidentified
		1564-1570	Unidentified and syphilis
Ce308	1570-1590		
		1585-1586	Unidentified
Terrapin Creek	1590-1600		
		1596	Measles
Bradford Ferry	1600-1630	1613-1617	Bubonic Plague
Cooper Farm	1630-1670	1649	Yellow Fever
		1653	Smallpox
		1672	Influenza
Woods Island	1670-1700	1686	Unidentified (Typhus?)
		1716	Unidentified

[a]Luna apparently found natives in the same location as De Soto, so movement after 1560 is suggested.

(1540) and Luna (1560) documents (Hudson et al. 1983), is a good case in point. Dobyns documents an unknown epidemic during the period 1535-1539 that is just pre-De Soto. This is the same epidemic that hit the province of Cofitachiqui in South Carolina. It appears highly likely that the King site was founded just after this epidemic, but before the appearance of De Soto in 1540. Similarly, another unidentified epidemic of 1564-1570 suggested by Dobyns may account for the abandonment of the site and perhaps for the occupation at site Ce308 to the south. Again, a documented epidemic of 1585-86 closely matches the estimate of 1590 suggested for the end of the occupation at Ce308 and the beinning of the historic component at the Terrapin Creek site, located some eleven miles downstream. A 1596 measles epidemic may account for the abandonment of Terrapin Creek and the subsequent movement to the Bradford Ferry site, again closely matching the estimate of 1600.

Unfortunately, no documented disease epidemic closely matches the 1630 estimate for the end of the occupation at Bradford Ferry. Dobyns does list an occurrence of Plague in New Mexico in 1630 and a measles outbreak in New England in 1633 (1983:315), but he has no documented evidence of these diseases in Florida. Nevertheless, the archaeological evidence suggests that there was a population shift further south on the Coosa River at this time to the Cooper Farm site. Finally, the estimated abandonment of the Cooper Farm site ca. 1670 is closely matched by a documented influenza outbreak in 1672.

There is apparently a high correspondence between diseases and settlement shift in the Coosa area. Only the abandonment of the Bradford

Ferry site does not correlate with a documented epidemic. Obviously this is an area requiring further study. Analysis of large skeletal populations might add a further dimension to the archaeological and historical evidence for settlement shift due to disease. It should also be noted that Dobyns does document other epidemics which do not correlate with Coosa River settlement shifts, so clearly factors in addition to disease caused population shifts.

Population movement can be seen in the Oconee River drainage (Figure 7). During the pre-contact sixteenth century, a powerful chiefdom, consisting of three multiple mound sites, two single mound sites, and numerous smaller sites occupied the Oconee Valley for a distance of some 60 miles north to south (Smith and Kowalewski 1980). This is the archaeological Dyar Phase and the historically known province of Ocute (Smith 1981) mentioned in the De Soto narratives.

The subsequent Bell Phase began about 1600 and lasted until ca. 1675 (Williams 1983). Two sites from the Wallace Reservoir, located approximately in the center of the province, produced European trade material enabling a placement in Period C. Several additional sites have produced nondiagnostic European goods. Bell Phase sites are small villages or smaller special purpose sites and none have mounds (Williams 1983:54).

While clear downstream movement cannot be demonstrated for the Oconee drainage from the available data, it is clear that the large mound centers were abandoned. No European artifacts were recovered from relatively extensive excavations at the Dyar mound site and no ceramics

characteristic of the Bell Phase were recovered (Smith 1981). Recent test excavations at the Scull Shoals mound group (Mark Williams, personal communication) did recover one spherical navy blue bead, a type of little use as a chronological marker since it was in use from Period A through D. Nonetheless some historic occupation is noted for Scull Shoals, but the scarcity of Bell Phase ceramics (Mark Williams, personal communication) argues that the occupation was probably terminated by 1600.

The only known eighteenth century site on the Oconee drainage is the Oconee Old Town site located near the fall line near Milledgeville, Georgia. Research was carried out at this site by A. R. Kelly with a W.P.A. crew. To date, no report has been made of the findings, but the collections are stored at the Southeastern Archaeological Center in Tallahassee, Florida. This material has been inspected by Mark Williams who reports that the ceramics are not like the Bell Phase material, but consist of brushed types typical of those from the Ocmulgee and Chattahoochee drainages (Williams 1983, personal communication).

John Swanton (1946:165; 1922:179-181) has described the known history of the Oconee. In 1602 the Timucua missionary Pareja mentions that the Ocony were three days journey from San Pedro (Cumberland Island). In a letter dated April 8, 1608, Ibarra speaks of the chief of Ocone as marching against the province of Tama. Swanton states that this reference could refer to either of two Oconee groups: one in Florida or one on the Oconee River in Georgia. It appears most likely to have been a reference to the latter, as the Tama of interior Georgia are no

doubt the Altamaha of the De Soto narratives (Swanton 1946:208). Other references to the Oconee noted by Swanton include a 1655 reference to a mission station called Santiago de Ocone, which Swanton places near Jekyll Island, which is relatively close to the mouth of the Oconee River—Altamaha River drainage system. Confusion arises since there is an Oconee mission among the Apalachee Indians of Florida in 1680 and by Swanton's interpretations as early as 1655. There are references to Oconee Old Town near Milledgeville around the turn of the eighteenth century (Swanton says it was abandoned just after the Yamassee War of 1715) and later references to them on the Chattahoochee River in the eighteenth century. Their later movements into Florida do not concern us here.

Swanton's interpretations of Oconee movements are as follows: they were probably on the Chattahoochee River until 1695, when they moved over to the Oconee Old Town site on Oconee River near Milledgeville, Georgia. After the Yamassee War, they moved back to the Chattahoochee (Swanton 1946:165).

The interpretation offered here differs. There are references to the Province of Ocute in 1540 and 1596, in which Altamaha or Tama are also connected. The 1602 and 1608 references noted by Swanton for the Ocone are also closely tied to the Tama. It is suggested here that the sixteenth century Province of Ocute became known as Ocone during the seventeenth century. There is an early English reference to Chief Altamaha, a powerful Yamassee head man, in 1690 (Wright 1981:158), suggesting that the earlier Spanish province of Altamaha became the Yamasee of the English. If viewed in this way, there is population continuity along

the piedmont Oconee Drainage between the De Soto expedition and the Yamassee War. The Oconee drainage was heavily populated during the sixteenth century (Dyar Phase), but there was population decline during the subsequent seventeenth century (Bell Phase). It seems more parsimonious to show continuity between the groups.

What is suggested, in short, is that the huge province of Ocute, with its allied town of Altamaha described in the De Soto narratives, shrank due to European introduced disease into one town, Oconee Old Town, by ca. 1700. While Williams (1983:440) has rightfully pointed out an apparent ceramic discontinuity, an alternative explanation of that phenomenon will be offered in Chapter VII. The location of Oconee Old Town was no accident. It is located at the fall line ecotone and adjacent to the Lower Creek Trading Path (Goff 1953) which led to Charles Towne.

The Tennessee River drainage system settlement distribution is far more complex. It is perhaps most profitably looked at in small segments (Figures 7, 3).

The area around Chattanooga, Tennessee, is identified with the Napochies of the Luna narratives of 1560 (DePratter, Hudson, and Smith 1984). The present archaeological and historical evidence suggests the following interpretation of population movements: Of sites producing European trade goods, both Citico and Audobon Acres were occupied during the sixteenth century. Audobon Acres appears to have Period A trade material only, while Citico has at least some Period B material (a few blue beads) and iron chisels which could date to Period A, B, or even C. The overall scarcity of trade goods as well as their

nature suggests a Period A to early B placement for Citico. The Citico site is a major mound center which has produced Southern Cult material (Hatch 1976), while the Audobon Acres site is a village (Evans, Hood, and Lautzenheiser 1981) located up South Chickamauga Creek. It is likely that both sites are contemporaneous, although Citico was undoubtedly occupied longer. According to the Luna narratives, the first Napochie village was located two leagues from the great river, and another village was located on the banks of the river itself. These Napochie villages have been identified with the Audobon Acres and Citico sites (DePratter, Hudson, and Smith 1984). The present archaeological evidence, admittedly weak, suggests that Audobon acres was abandoned before Citico. This makes sense if European epidemics struck the Napochies and they fell back to their old capitol of Citico. The Citico site itself was probably abandoned by 1600. Two Period C sites (1600-1630) are known from this area and no doubt represent later villages of the Napochies. These are Williams Island and Hampton Place (Smith 1976). While these sites may be contemporary, the wider variety of trade material at Hampton Place suggests it is the most recent site in the area, but it does not appear to have a true Period D assemblage. What happened to the Napochies after 1630? It is suggested that they migrated downstream to the big bend of the Tennessee River in Alabama, settling at the Period D sites of 1Ms32 and 1Ms91, and finally being responsible for the occupation at 1Ms100 late in the seventeenth century (Figure 7).

The Hiwassee River drainage situation is not as clear cut. There are two Period A sites, Rymer and Ledford Island in the middle

reaches of the river and a Period D component on Hiwassee Island at the mouth of the river. Sites of the intermediate Periods B and C are unknown for that river, the closest being DeArmond (B) and Upper Hampton Place (B) located on the Tennessee River to the northeast. Data to tie in all these sites as one sociopolitical group are not available at this time. The suggested population movement based on dating of sites with European goods is from the Hiwassee River northward to the Tennessee River and then downstream to Hiwassee Island at the junction of the Tennessee and Hiwassee rivers. Later early eighteenth century components are known from up the Hiwassee River drainage, so there was an apparent upstream movement near the turn of the century. These hypothesized movements acquire further archaeological demonstration. The sites must be shown to be closely related in aboriginal culture.

The Little Tennessee River drainage also presents a complex situation. The Great Tellico site, located up the Tellico River, apparently was occupied from the prehistoric period through Periods A, B, and C. This site was also an important eighteenth century Cherokee site. Although it is known only from surface collections and amateur excavations, a considerable amount of information on Great Tellico is available. It is suggested that Great Tellico was occupied continuously from the early sixteenth through late eighteenth centuries.

Moving to the Little Tennessee River proper, there is a great concentration of sixteenth century European trade goods (Period A) on four sites (Smith 1976; Brain 1975; Polhemus 1982). The mound centers Toqua, Citico, and McMurry were apparently abandoned at this early

period, again probably due to disease. No sites with a definite Period B component are recognized in the archaeological record (although Citico may have been occupied), but again there is a cluster of Period B sites located to the northeast on the Tennessee—French Broad river drainage. While at first glance, this distribution suggests a movement from the Little Tennessee to the larger river paralleling the hypothesized movement from the Hiwassee, it should be noted that all three sites (Stratton, Brakebill, and McMahon) have mounds and at least some have long-term occupations in the prehistoric period (especially McMahon, which has a documented long shell gorget sequence—see Kneberg 1959). This suggests that they may have already had long occupations.

Period C components do occur on sites on the Little Tennessee River proper, including Bussel Island, Tomotley, and perhaps Talassee. This latter site continued to be occupied into Period D. It is thus possible that the Little Tennessee was abandoned during Period B, or right after the Spanish entradas of the sixteenth century. The four sites with Period A components are reduced to three sites of Period C and three sites of Period D, again suggesting population decline; however, it is possible that a sampling bias was introduced by only using sites which have produced European goods. The sudden florescence of period D trade goods at sites such as Toqua, Citico, and Talassee may reflect the entrance of the Cherokee into the Little Tennessee Valley. Specific data indicating European disease in the area have been discussed above in conjunction with the Toqua site.

Some data have been collected on historic occupations on the Clinch, Holston, and Nolichucky rivers (Figure 3), but do not allow

discussions of population movements. The cluster of sites on the Nolichucky River quite possibly represents the Chiscas of the De Soto narratives (DePratter, Hudson, and Smith 1983).

DePratter, Hudson, and Smith (1983,1984) have identified the Chiaha of the De Soto and Pardo relations with the archaeological site on Zimmerman's Island. Limited archaeological research was conducted on this site before it was inundated by reservoir construction. While no European artifacts were recovered, aboriginal materials, especially shell gorgets, were recovered (Kneberg 1959) demonstrating a sixteenth century occupation. While we do not have the archaeological data necessary to document the timing of the demise of this site of Chiaha, it is interesting to note that they had settled among the Lower Creeks on the Ocmulgee River by 1713, and in 1715 they moved to the Chattahoochee River with the Creek towns (Swanton 1946:115-116). While it cannot be proven that there were not two different groups with the same name, it appears likely that the Chiaha fled northern Tennessee sometime in the seventeenth century, possibly to escape other Indian groups armed with firearms from Virginia or the Great Lakes area.

Discussion

Archaeological evidence for depopulation in the study area is not particularly strong. Both mass and multiple burials are present in the study area during the early historic period, but it cannot be demonstrated that they were not also present in the prehistoric period. Unfortunately, most of the Period A and many of the Period B sites in the study area also have prehistoric components and it is thus impossible

to clearly contrast protohistoric sites with early historic sites. Indeed, they are frequently the same site and it is impossible to assign all burials to one component or the other. It can be suggested that mass and multiple burials indicate the presence of Euorpean disease epidemics, but it cannot be proved at this time.

Evidence from population curves might be relevant, but to date such analysis has not been carried out on a number of sites. Only the King site skeletal series has been studied and results from the multiple analyses are conflicting. It must be conceded that population curves suggestive of disease epidemics could also be the result of famine or other causes.

Indirect measures of depopulation have proven only slightly more useful. There does seem to be a trend toward a decrease in site size over time during the early historic period, but data are available only for a limited number of sites. A large sample of site sizes is necessary. While it can be argued that most sites of the early historic period are known from the Tennessee and Coosa drainages, more intensive survey would generate more confidence for the assertion. The location of additional sites might severely alter the argument presented in this research.

Population movements can be documented within the study area and historical evidence suggests such movements may result from reactions to disease epidemics. But certainly other explanations may account for population displacements. Ecological disasters or warfare are two obvious possibilities. At this time, population movement can only be seen as circumstantial evidence of disease.

Carmack and Weeks (1981) point out that archaeological and ethnohistorical data sets often conflict. While the view of Dobyns and Ramenofsky that southeastern Indian societies underwent drastic depopulation following the introduction of Euorpean disease epidemics is accepted in this study, the archaeological evidence that can be assembled at this time is admittedly weak. Fortunately, the result of this depopulation on the political structure of the aboriginal Southeast can be more fully documented. This political breakdown is the subject of Chapter V.

CHAPTER V
THE FALL OF CHIEFDOMS

There is little doubt that the once powerful chiefdoms described by the De Soto narrators in the interior Southeast were reduced to the small societies which banded together to form the Creek Confederacy by the early eighteenth century. Service (1962:154) has noted that this was a common consequence of the influence of foreign civilizations on chiefdoms. He states, "depopulation, defeat, and dislocation, if they are severe enough, reduce the chiefdom to its tribal-like constituent parts or even to the band level or outright extinction. These were consequences most saliently recorded in the history of the Circum-Caribbean chiefdoms after the coming of the Spaniards to the New World (Steward 1948) and for refuge-area Turkic groups in Central Asia."

It is doubtful that anyone would argue that such a process was not acting on the sixteenth century chiefdoms of the study area. Historical sources from the sixteenth and eighteenth centuries clearly stand in contrast when describing political organization (see discussion below). But what remains to be done is to demonstrate this process of transformation archaeologically, to devise means of measuring this process which have applicability to other areas. The archaeological correlates of chiefdoms proposed by Peebles and Kus (1977) will be used in this study and their disappearance demonstrated. Finally, using an archaeological approach, what can be said about the timing of the changes from chiefdom level societies to less-organized groups and confederacies?

Historical Background

First, it is necessary to look at the data which can be obtained from historical sources. There is no doubt that the chroniclers of the De Soto expedition described powerful chiefdoms in the present study area. A few examples will suffice. The town of Ichisi is described as having a mound by Ranjel, and Elvas mentions the mound at Tascaluca. Large mounds, of course, imply a centralized power able to direct large groups of laborers. The chief of Ocute sent 2,000 Indians to take presents to De Soto and later gave De Soto 400 carriers (Elvas in Smith 1968:55-56). At several points, towns are mentioned as being subject to a chief; there also were hierarchies of sites under the command of a central chief. Tribute was being paid to chiefs; Camuno, chief of Altamaha, asked De Soto if he should continue to pay tribute to Ocute (Ranjel in Bourne 1922:90). Sumptuary laws were clearly in effect: the chief of Coosa came out to receive De Soto carried on a litter borne on the shoulders of 60 or 70 of his principal subjects (Ranjel), and Tascaluca was seated on a cushion on a mound, wearing a feather mantle and a fancy headdress (Ranjel), and was attended by many people, one of whom shaded Tascaluca with a fan of plumes (Biedma). Control of stored food surplus is also mentioned on occasion. For example, the cacique of Chiaha had 20 barbacoas of maize ready for De Soto (Elvas in Smith 1968:69). These powerful chiefs had advanced knowledge of De Soto and they frequently sent messengers out to De Soto as he entered the chief's territory. Finally, Tascaluca commanded a powerful army at Mauvilla. All in all, we have a picture of a very centralized form of government at the 1540 dateline.

Again, the Luna and Pardo documents still suggest the presence of powerful chiefs, but there are hints that the situation was deteriorating. Luna was asked by the chief of Coosa to aid in a war with the Napochies, who were no longer paying tribute. It is clear from the Luna expedition's accounts that Coosa has lost much of its former glory and the failure to command tribute from the Napochies may be one manifestation. Nonetheless, with the assistance of the Spaniards, the Napochies were brought back in line (Priestley 1928).

As late as the 1568 expedition of Juan Pardo, it is clear that highly centralized chiefdoms still existed in the Southeast in the study area. Pardo cemented political alliances by giving gifts to chiefs, "commanders" (war chiefs?), and to "principal men" (DePratter and Smith 1980:70). In the Bandera account of the second Pardo expedition, mention is made of chiefs controlling large quantities of grain, hierarchies of chiefs, and the use of a sumptuary litter. Little seems to have changed (Bandera 1569).

Seventeenth century accounts of the study area are virtually nonexistent. All available references discuss Ocute/Oconee and Tama. The Spaniards' journey to Tama and Ocute in 1596 has been previously discussed and gives no good information on the state of affairs in the Georgia piedmont. However, in 1608, Governor Ibarra mentions that the chief of Ocone was marching on the province of Tama (Swanton 1922:179), suggesting that the previous tribute paying status of Altamaha to Ocute had been disrupted, much as the Napochies had revolted from tribute to Coosa in the 1560s. This probably indicates a deterioration of the previous political organization.

By the time we again get a good picture of groups in the study area through eighteenth century documents, the Creek Confederacy has appeared and the ancient, powerful chiefs have been replaced by Mikos. Swanton states, "Theoretically, the miko was little more than the head of the tribal council and spokesman of his tribe, but his actual power varied with his individual ability" (1928:279). Furthermore, the miko only acted after conferring with his council. The miko was normally chosen from a particular clan, probably a vestige of the chiefly conical clan organization. Nonetheless, the position of miko was not hereditary like the earlier position of chief; the miko was chosen by a group or council, whose membership varied between different Creek towns (Swanton 1928:281). The miko could be replaced, or he could resign on his own (Swanton 1928).

The miko governed a town, or talwa. Swanton equates the term talwa with "tribe" in its usual sense. "Some bodies which the Creeks called talwa were once independent, and anciently it is probable that the term applied only to distinct tribes and that in later years it was used for those same tribes as constituent parts of the Creek Confederation . . ." (Swanton 1928:276). In more modern terminology, it seems certain that Creek talwas may have been the remnants of the once powerful chiefdoms. Where complex chiefdoms—that is chiefdoms built up of a hierarchy of towns (Steponaitis 1978), usually called provinces in the parlance of the sixteenth century Spaniards—existed, the notion of talwa is perhaps best equated with major towns of the province, rather

than the province itself. A province or complex chiefdom of the sixteenth century probably "devolved" into several Creek talwas by the eighteenth century. We can demonstrate that a change took place from highly organized chiefdoms, some of which were complex chiefdoms in Steponaitis' terminology, to a confederation of individual tribal groups or talwas, each led by a miko and town council. What are the archaeological correlates of this process of disintegration, and can we determine when the change took place?

Before proceeding, it must be noted that the fall of the chiefdoms is closely tied to depopulation from disease and famine and the loss of culture which ensued. It seems certain that the loss of manpower had much to do with the changes in political organization.

Archaeological Correlates

What are possible archaeological correlates of the fall of the once powerful chiefdoms? Several factors in the demise of chiefdoms will be considered here, including the end of public works, such as mounds and palisades; the loss of a settlement hierarchy, or at least its simplification; the breakdown of status systems as reflected in grave goods; and the breakdown in organized, part-time craft specialization. These are precisely the correlates of ranked socities (chiefdoms) proposed by Peebles and Kus (1977:431-432).

Public Works

Mound building was an important activity among the protohistoric groups of the study area. The numerous temple mounds found there served as platforms for chiefly residences and mortuary temples. Presence of

the mounds serves as testimony to the coercive power of the chiefs to conscript labor for large construction projects. Some of the mounds in the study area are quite large [Mound A at Etowah (Itaba) is approximately 60 feet high; Shinholser Mound A (Altamaha) is approximately 17 feet; Shoulderbone Mound A (Ocute) is approximately 35 feet high; and many others were over 20 feet], but it must be remembered that they were all built in several stages over a period of hundreds of years. Thus these mounds serve as reminders of the stability of these chiefdoms. While it is true that some chiefdoms rose and fell and territories contracted and expanded (DePratter 1983), it is suggested here that the archaeological evidence of long occupations for many of the sites indicates that the chiefdoms in the present study area were relatively stable. Table 13 presents estimates of the occupations of some of the major mound sites discussed in this area. Some appear to have been occupied for as long as 500 years and thus the cessation of moundbuilding appears to reflect the political, social, and demographic collapse brought about by European contact.

Table 14 presents data on mound construction for the sites in the study area. Unfortunately the archaeological data are not as complete as could be wished. Almost all of the mound sites with European artifacts characteristic of Period A can be shown to have had prehistoric components. This factor could not be determined with the available evidence for Charlotte Thompson, Bussel's Island, McMurray Mound, Wilson, and Cox. Of these sites, all but Wilson and Cox have burials with European artifacts clearly not intrusive into the mound according to the

Table 13. Mound occupation span

Site Name	Historic Name	Height of Largest Mound (in Feet)	Ceramic Complex	Estimated Date	Reference
Lamar	Ichisi	24	Early and late Lamar	1400-1550	H. G. Smith 1973
Shinholser	Altamaha	17	Lamar		Wauchope 1966:430
Shoulderbone	Ocute	35	Lamar		Georgia site files
Dyar	Cofaqui	35	Etowah-late Lamar	1000-1550	Smith 1981
Scull Shoals	Patofa	35	Etowah-late Lamar	1000-1600	Williams 1983b
Toqua	—	24	Dallas	1215-1620[a]	Richard Polhemus, personal communication
Citico Ha65	Napochies	25-27	Dallas	1250-1600	Hatch 1976:95
Little Egypt	Coosa	12+	Little Egypt and Barnett Phase Lamar	1400-1600	Hally 1980
Etowah	Itaba	60	Etowah-Lamar	1000-1560	Wauchope 1966:251-259
Brakebill	Chalahume	20	Dallas	1400-1600	Willey et al. 1978:165
Wilson		20	?	?	Moore 1915:335
Abercrombie		15	Lamar-Ocmulgee Fields	1565-1685	DeJarnette 1975:154

[a]Based on radiocarbon determinations

Table 14. Mound construction

Site	Period	Village Burials with European Goods	Inclusive Mound Burials with European Goods
Little Egypt	P[a] - B		X
Etowah	P - A	X	
Taskigi	P + C	X	
Charlotte Thompson	A - C		X
Abercrombie	B	X	
Dyar	P[b]		
Scull Shoals	P - B?	unassociated bead	
McMahon	P - B		X
Stratton	B		?
Brakebill Mound	B		X
Bussels Island	A,C		X
Toqua	P - A	X	
Citico Mr7	P? - A	X	X
McMurray Mound	A		X
Great Tellico	P - C	X	
DeArmond	P - B	X	
Citico Ha65	P - B	X	
Williams Island	P - C[c]	X	
Wilson	A	X	
Tallassee, TN	C - D[c]	X	
Cox	A	X	

[a]P = prehistoric component

[b]No European goods excavated, but appears from ceramics to have been occupied in mid-sixteenth century

[c]Not known if mound is contemporary with historic village

excavators and it is entirely possible that these sites were occupied for the first time during Period A. If the Charlotte Thompson site is indeed the Athahatchee of the De Soto chronicles, then this fits well with the available documentation. Athahatchee was noted by Ranjel to be a new town when De Soto visited (Bourne 1922:120).

Many of the mound sites in Table 14 have produced European trade material from the village area only, and so the precise date of the final stages of mound construction cannot be demonstrated. Analysis is further complicated by the fact that a century of farming and erosion often destroys the terminal mound stages. With these limitations, nonetheless, a few statements can be made (see Table 14). Virtually all of the sites with historic burials in the mounds have been assigned to Period A or B based on the artifacts present. Only Charlotte Thompson (definitely) and Bussells Island (possibly) have artifacts which have been assigned to Period C located within the mound. Both of these sites were excavated about the turn of this century (Moore 1915; Thomas 1894) so it can never be certain that some of the materials were not intrusive. Clearly mound construction had ceased by the end of Period C (1630), since no mound contains Period D material that cannot be shown to be intrusive. Many Period A sites which can be shown to be of short term occupation (i.e., they were probably founded during Period A) do not have mounds (examples include King, Rymer, Ledford Island). Sites of Period B which contain trade materials in the mounds again are known primarily from early excavations. These sites include McMahon, Stratton Mound, and Brakebill Mound, any or all of which may have been contacted

by the Juan Pardo expeditions of the late 1560s. Thus they may well have received their European goods early in Period B, or very late in Period A. The occupation span of most of these sites is unknown, due to lack of excavation. It is possible that the mounds were begun prehistorically.

The data indicate that no new mounds were begun after Period B, perhaps not even after Period A. There is some weak evidence that Charlotte Thompson received some mound construction in Period C; however, no other site shows evidence of mound construction after Period B. Charlotte Thompson definitely has Period C materials in the mound, but they may be intrusive.

Some mound sites have produced historic artifacts only in the village area, so the relation of mound building to village occupation cannot be demonstrated. Most of these sites cannot be demonstrated to have been occupied after Period B, with a few exceptions (Table 14). The Great Tellico site appears to have been continuously occupied from prehistoric times through Period C and was obviously an important place. This site also has a large eighteenth century component and may have been continuously occupied. The Period C occupation at Taskigi may well represent a reoccupation of a prehistoric mound site, as the mound is considerably earlier (Vernon Knight, personal communication). Williams Island is a complex site which may have been continuously occupied. The relation of village recovered trade goods to the mounds on the island are unknown, because the site was looted by amateurs. The Post Oak Island site is also poorly known (Richard Polhemus, personal communication). At the Talassee site in Tennessee, Period D artifacts were

recovered from a village area downstream from a "prehistoric substructure mound" (Cornett 1976:11). The relation of this mound to the village area excavated is unknown. The mound may be considerably earlier than the historic burials in the village area.

Period D artifacts have been recovered from the villages of Toqua and Citico sites in the Tellico Reservoir. The extensively investigated Toqua site does not show evidence of Period B or C occupation and the Period D occupation is here considered a reoccupation by later Cherokee arrivals. The Citico site cannot be dismissed as readily. It is possible that Citico was occupied throughout the early historic period, although the evidence is tentative. Again, the later historic burials all come from the village area, thus the relationship between the village occupation and mound construction is largely unknown. It is clear that early Spanish trade material was recoverd from the mound (Thomas 1894; Brain 1975), which probably dates from Period A. Although Clarksdale bells are found in sites of Periods A-C, their context at Citico as well as the lack of any other European artifacts in the mound, argue for a Period A placement in this case.

While no European artifacts diagnostic of Periods A or B have been found in the Wallace Reservoir, mound sites, such as Dyar (Smith 1981) can be shown to have been abandoned during the sixteenth century based on radiocarbon determinations and ceramic seriation. The two sites which produce Period C European goods in the Wallace Reservoir are small village or hamlet sites with ceramics characteristic of the succeeding Bell Phase. Thus we can confidently place cessation of mound building in the Wallace Reservoir area of the Oconee River prior to 1600.

The nearby Scull Schoals mound, tested in the summer of 1983 by Mark Williams, has produced one blue glass bead from the village area indicating that the site was occupied during the historic period. Unfortunately, this bead variety was in use throughout the early historic period. More excavation is needed to carefully document the historic occupation of Scull Shoals, but at this point the evidence from the European bead and from ceramic seriation indicates little, if any, occupation in the seventeenth century.

To summarize, it appears that no new mounds were begun after 1600 (perhaps even 1570), although a few mounds may have been added to as late as 1630 in the study area. By Period D, no mound centers were even occupied by the group which can be archaeologically demonstrated to have built the mounds. Thus, if mound construction is taken as a measure of chiefly organization, we can infer that such organization began to deteriorate in the late sixteenth century.

Another possible measurement of the loss of chiefly authority is the end of another type of public works: defensive palisades and ditches. Just as with mounds, the construction of palisades and ditches shows a tremendous investment of labor. From the De Soto narratives, we learn that fortifications were commonly constructed in the Ridge and Valley Province, but were not constructed in the Piedmont during the sixteenth century. For that reason, we will concentrate on the Ridge and Valley Province.

Archaeological identification of fortification systems can often be difficult. Fortification systems with ditches are the easiest to locate. Often the ditch will remain visible, even after plowing or

silting. Aerial photography often will assist in the identification of fortifying ditches or even palisades, but such identification is a site specific problem. What is blatantly obvious on some sites is totally obscured on others, so that only through excavation can these features be recognized. Since extensive excavations are rare on most sites and since small excavations are usually conducted in more centralized areas of the sites, data on the presence or absence of palisades are had to obtain.

Another problem is the dating of palisade features which on sites of long occupation is very difficult. Often even with extensive excavations, dating palisades can be difficult and palisades recognized from ground level or aerial observation cannot be dated. Therefore, sites with long occupations that are known to be palisaded must be viewed with suspicion when trying to determine when such fortification systems ceased to be constructed.

While it can certainly be demonstrated that groups on the tribal level construct fortifications, let us continue with the hypothesis that a sudden end to palisade construction signals a loss of political authority of once powerful chiefs. Table 15 presents data on presence of palisades for sites in the study area. It would be very difficult to argue that any given site was not palisaded due to lack of excavation and this will not be attempted in this section (but see below).

At this time, eight sites in the study area which can be dated with European artifacts can be demonstrated to have been palisaded. Six of these are Period A, including some sites of brief occupation like the

Table 15. Presence of palisades

Site	Palisade Present?	Period	Reference
Etowah	Yes	A	Larson 1972
King	Yes	A	Hally 1975
Austin Springs	Yes	A	Richard Polhemus, personal communication
Toqua	Yes	A	Schroedl and Polhemus 1977
Citico Mr7	Yes	A - ?D	Salo 1969:31
DeArmond	Unknown		
Upper Hampton	Yes	B	McClung Museum field notes
Hiwassee Island	Yes, but prehistoric	D	Lewis and Kneberg 1946
Ledford Island	Yes	A	McClung Museum field notes
Rymer	Yes	A	McClung Museum field notes
Hampton Place	Said to be present	C	
Ms32	No	D	Webb and Wilder 1951
Ms91	"Possibly a Palisade"	D	Webb and Wilder 1951:115
Tomotley	No	C	Guthe and Bristline 1978

King site where it is clear that the fortifications were constructed during the historic period. The Period B Upper Hampton Place site also has a definite palisade which probably cannot be attributed to an earlier component. Finally, the Period D site, Ms 91, has a double wall trench feature, "possibly a palisade" (Webb and Wilder 1951:115). This latter feature provides a problem in the analysis, but (1) it may not be a palisade and (2) this site is late enough that some groups armed with firearms may have impacted it making extraordinary defensive measures necessary.

While data are not always available on the presence or absence of palisades, there is an indirect measure available to suggest their absence. Most palisaded towns are circular, oval, or square (usually with well-rounded corners) in shape. Houses are usually closely spaced, often around a central courtyard (for example, the King site, Hally 1975). By the eighteenth century, town settlement plans were more dispersed and palisades were not constructed around entire towns, although smaller forts may have been constructed in central areas for protection in times of emergency (for example, see the Chickasaw forts, Jennings 1941). The historian Leitch Wright has discussed this process of decentralization, "In English Virginia, and to a lesser extent in Spanish Florida, a trend developed among the natives of living in a less compact fashion. Villages built during the seventeenth century and later tended to be spread out over 1, 2, or 3 miles and not enclosed by a palisade and the percentage of Indians living in isolated houses increased" (Wright 1981:81). Wright believed this change was due to new warfare patterns—"aboriginees grew tired of being trapped behind palisades, then burned to

death within or shot as they fled" (1981:81). How do the available archaeological data relate to this change in settlement in the study area? Table 16 presents available data on site size, in length vs. width terms. It must be remembered that heavy silting, the natural outcome of flooding compounded by culturally accelerated sedimentation (Trimble 1969) has obscured the size of many sites in the study area.

Table 16 shows that Period A sites, several of which are known to have been palisaded, all have a length: width ratio of less than 2.5:1, while all sites after Period C, except the small Ms100, have length:width ratios exceeding 2.5:1. The suggestion is that these sites are not palisaded and reflect a dispersed settlement strung out along a river. Many of these sites are quite long, for example Ms32 at 2,640 feet and Woods Island at 900 feet; nevertheless, they are not especially large in occupied area.

Hierarchical Settlement Systems

Another measure of the fall of chiefdoms is the loss of hierarchical settlement systems. Complex chiefdoms have been identified in the study area from both historical and archaeological sources previously discussed, but these systems were even collapsing during the sixteenth and early seventeenth centuries. Historical evidence comes from the Luna expeditions' account of the Napochies refusing to pay tribute to Coosa (1560) and the evidence that Oconee was going to fight its previous vassal Tama (1608).

The loss of hierarchical settlement can be demonstrated in the intensively studied Wallace Reservoir area and the surrounding Oconee

Table 16. Site shape data

Site	Size in Feet	Length:Width Ratio	Palisade?	Reference
Period A				
Little Egypt	1,200 x 500	2.4:1		Hally 1980:8
King	480 x 460	1.04:1	Yes	Hally 1975:17
Etowah	3,000 x 1,500	2:1	Yes	Moorehead 1932:1
Ogeltree Island	500 x 400	1.25:1		Alabama site files
Rymer	700 x 300	2.33:1	Yes	Lewis n.d.
Oyar	180 x 150 m	1.2:1		Smith 1981
Toqua	500 x 350	1.43:1	Yes	Richard Polhemus, personal communication
Citico Mr7	370 x 300	1.2:1		Richard Polhemus, personal communication
Period B				
Upper Hampton	1,400 x 340	4.1:1	Yes	McClung Museum files
DeArmond	900 x 350	2.6:1		McClung Museum files
Abercrombie	ca. 300 x 300	1:1		DeJarnette 1975:154
Period C				
Bradford Ferry	700 x 100	7:1		Alabama site files
Tomotley	500 x 270	1.85:1		Guthe and Bristline 1978
Period D				
Ms100	300 x 150	2:1		Webb and Wilder 1951
Ms32	2,640 x 100	26.4:1		Webb and Wilder 1951
Post Period D				
Woods Island	900 x 200	4.5:1		Vernon Knight, personal communication

drainage. This was a large province which has been observed archaeologically (Smith and Kowalewski 1980) and has been identified with the Province of Ocute mentioned in the De Soto relations (Smith 1981; Hudson, Smith, and DePratter 1980). The prehistoric site hierarchy consisted of one site with five mounds, three sites with two or three mounds, two sites with one mound, and hundreds of villages, hamlets, and special purpose sites (Smith and Kowalewski 1980; Rudolph and Blanton 1980; Shapiro 1983).

To date, only two of the mound sites have been investigated archaeologically (in modern times) and neither were occupied in the well-defined Bell Phase (1600-1675). That is, both were abandoned during the sixteenth century. Sites of the seventeenth century Bell Phase do not have mounds (Williams 1983) and all known sites of that phase are small villages or special purpose sites. Clearly in the Oconee area, the larger politically integrative sites were no longer operational. Population dispersed into small villages and hamlets.

Sites along the Coosa River drainage follow much the same pattern. It has already been demonstrated that by ca. 1600 mounds were not constructed and by that date mound centers on the Coosa appear to have been abandoned. Site size has been shown to decrease after 1600, perhaps starting as early as Period A (1540-1570). Again the hierarchy of large mound centers, smaller non-mound villages, hamlets, etc., appears to have "devolved" into small villages and possibly hamlets.

The same pattern holds for the Tennessee River drainage. Most of the mound centers ceased to function, suggesting a fall from powerful chiefdoms to less centralized groups.

Mortuary Practices

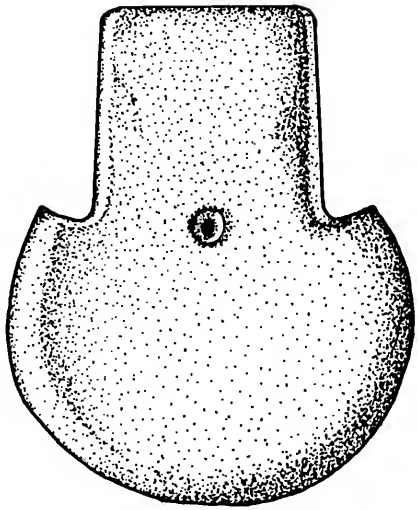
Another index of cultural complexity is reflected in the burial programs of various southeastern Indian groups. Both Lewis Larson (1971) and James Hatch (1975; Hatch and Willey 1974) have noted that aboriginal groups within the present study area symbolize the status of important individuals in their burial ritual. Both locational (mound vs. village) and associational (specific artifact accompaniments) attributes were used to symbolize status in prehistoric chiefdoms of the study area. Artifacts indicating high status were also found with burials of all ages and both sexes and both Hatch and Larson suggest that the status symbolized by these artifacts was ascribed at birth. Peebles and Kus (1977:431) note that "the test for ranking is not merely the presence of richly accompanied child or infant burials." There must be two clearly defined dimensions of mortuary ritual; the superordinate dimension which is ordered by symbols and energy expenditure but not ordered on the basis by age and sex, and the subordinate dimension which is ordered on the basis of age and sex.

James Hatch has identified artifacts in the prehistoric Dallas culture of Tennessee and northern Georgia (now considered the Barnett Phase of the Lamar culture which includes such sites as Little Egypt and King) which symbolize the highest status positions. These symbols include ceramic bottles, massive columella beads, conch shell vessels, copper headdress, copper earspools, ceremonial celts, and bone pins. Some artifacts, which appear to be exotic, nonetheless apparently symbolize age or sex status. For example, flint bifacially chipped "blades" apparently signify adult male status while rattlesnake gorgets usually

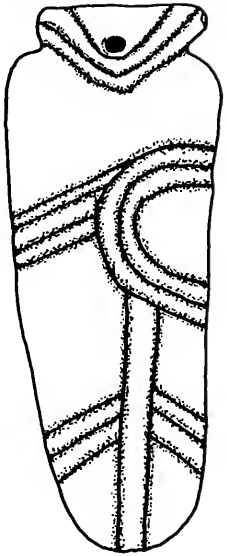
accompany subadult burials (Hatch 1975:133). The apparent high status artifacts are also characterized by their spatial location in a site; that is, they are confined to mound or adjacent to mound contexts. In his analysis of the Etowah burials, Larson also discusses copper plates, monolithic axes, stone palettes, and copper celts as symbols of high status. Some of these symbols apparently went out of fashion before the early historic period (or at least have not been observed in excavated burials). Some of the other symbols, however, do persist into the early historic period and may be taken as aboriginal markers of high status, but not necessarily implying a chiefdom level of organization. To interpret a chiefdom level of organization, the context of these symbols must be analyzed and not enough data are currently available for such an analysis. Specifically, to infer a chiefdom level the archaeologist should be able to demonstrate spatial separation of the chiefly lineage burials and direct evidence of ascribed status rather than only achieved status (cf. Hatch 1975).

Exotic display items which persisted into the early historic period include spatulate stone axes and native copper headdress badges (sometimes used as necklace pendants; Figure 8). Both of these are sociotechnic display items and their distribution through time may indicate the demise of the aboriginal status categories. Table 17 lists sites by period that have produced these status symbols either in direct association with European trade material, or just on the site in general (could come from earlier occupation of multicomponent sites).

Ground stone spatulate axes have the longest span of use. Such axes have been found in direct burial association with European trade



Spatulate axe, Ledford Island
(After Lewis and Kneberg 1941: Plate III)
No scale—approximately half size



Native copper pendant, King site
Actual size

Figure 8. Aboriginal status markers

Table 17. Presence of aboriginal status markers

Site	Spatulate Axe	Associated with European Item?	Embossed Native Copper	Associated with European Item?	Reference
Period A					
King	X	X	X	X	University of Georgia files
Etowah	X		X		Larson 1971; Moorehead 1932
Citico Ha65			X		Hatch 1976
Toqua	X		X		Richard Polhemus, personal communication
Citico Mr7			X		Richard Polhemus, personal communication
Rymer	No		No		McClung Museum files
Ledford Island	X		No		McClung Museum files
Charlotte Thompson	X		X	?	Moore 1900
Period B					
Ce308	X	X	X		Little and Curren 1981
Abercrombie	X	X	X		Brannon 1930; Frank Schnell, personal communication
Terrapin Creek			X		Hunter collection; M. Smith notes
DeArmond	No		No		McClung Museum files
Upper Hampton	No		No		McClung Museum files
Great Tellico	X	X			Rice 1977
Period C					
Tomotley	No		No		Guthe and Bristline 1978
Bradford Ferry	No		No		DeJarnette et al. 1973; M. Smith notes
Terrapin Creek	X	X	X		Jon Peek Collection; M. Smith notes
Carter House	X	X			Hunter Collection
Hampton Place	X				Polhemus 1982; Tennessee Archaeological Society 1982

material at the King site (Period A), site Ce308 and Abercrombie (Period B), Great Tellico (in a probable Period B context), Terrapin Creek (early Period C), and Carter House (Period C). Thus, it is apparent that spatulate axes, which reach popularity as early as the southern cult burials at Etowah (Larson 1971:63), probably around A.D. 1350, remain as valuable markers of status until the early seventeenth century. Terrapin Creek and Carter House are the only Period C sites which have produced a spatulate ax. It was noted above that the Terrapin Creek site was apparently occupied very early in Period C, perhaps being abandoned by 1610. The Carter House site is poorly known and may reflect occupation early in Period C (Polhemus 1982). Sites such as Bradford Ferry and Tomotley with good samples of burials (47 and 92, respectively) have not produced spatulate axes. Thus, with the present evidence, we can determine that spatulate axes, as elite sumptuary goods, were no longer being used after circa 1610. That the idea persisted somewhat longer is shown in the brass cutout in the shape of a spatulate axe recovered from a mid- to late seventeenth century context in Alabama (Greer 1966; see also the Tuckabatchee plates described by James Adair in the eighteenth century, Adair 1930:188).

The evidence for the use of native copper is not as clear (Table 17). Many of the sites produce native copper, but only at the King site has it been found in direct association with European artifacts (burial 92). Here the native copper artifacts were arrowhead shaped pendants of the type Larson found used as headdress elements in Mound C burials at Etowah (Larson 1959). However, at the King site, these ornaments were used as elements in a necklace of shell beads.

This might suggest that these were heirloomed items reused in a new context. Moore (1900:332) reports similar objects from the Charlotte Thompson Place, but it is not clear that the native copper was associated with European artifacts. It is quite possible that the native copper items from all other sites were in prehistoric components. The latest site with native copper is the Terrapin Creek site (early Period C) which also has produced the arrowhead shaped pendants, but not in direct association with European goods. Since all data from the Terrapin Creek site have been derived from collectors, the length of occupation of Terrapin Creek is unknown; it may well have a prehistoric component. Thus, with the available data, again we can estimate that the use of embossed native copper ornaments, believed to symbolize the chiefly lineage, is almost entirely limited to the sixteenth century.

The implication drawn from the study of the distribution of native copper and spatulate axes, already demonstrated to be markers of the chiefly lineage prehistorically, is that the sumptuary goods symbolic of chiefly power were no longer being used by early in the seventeenth century at the latest. It is thus inferred that chiefly power was severely eroded by this time and the chiefdoms of the sixteenth century were probably well on their way to disintegrating into the societies contacted by Europeans in the late seventeenth century.

Another method for viewing the breakdown in the chiefly prestige system is to consider the frequency of grave goods among the burials.

It could be hypothesized that in a highly ranked chiefdom, access to mortuary goods would be limited to only those of considerable power, while in a more egalitarian society, everyone would have equal access to goods and that only the ability to achieve status would limit the ability to accumulate wealth items for later funerary display. It has already been suggested that in the sixteenth century European material was both rare (scarce) and exotic and was probably controlled by the chiefs. If chiefly power eroded and as European goods became more plentiful over time, the frequency of burials with such objects should increase. Similarly, if highly ranked organization was giving way to a more egalitarian system, then achieved status systems were replacing the importance of ascribed systems, thus more burials should contain aboriginal grave goods also.

Table 18 presents data on the frequency of grave goods from sites of the early historic period. Sites of Period A have less than 5% of the burials accompanied by European grave goods. The King site is the best example. While it could be argued that European items were simply scarce in Period A, it should be noted that two of the five burials which contained European goods had multiple examples. These burials were precisely the ones which also contained native copper and a shell dipper (burial 92) and a spatulate axe (burial 117), the proposed high rank native sumptuary goods. Thus, it is clear that European goods were hoarded by the elite.

In Period B, data are lacking to make a definite statement. Data from Ce308 are limited to burials reported by amateurs, all of which contained grave goods. The Upper Hampton Place burials in Tennessee

Table 18. Grave goods data

Site	Number of Burials	European and Aboriginal Goods	Aboriginal Grave Goods		European Grave Goods		Burials with Grave Goods		Reference
			Number	%	Number	%	Number	%	
Period A									
King	210	5	102	48.6	5	2.4	102	48.6	Seckinger 1977
Rymer	168	0	39	23.0	0	0.0	39	23.0	McClung burial forms
Ledford Island	459	0	134	29.2	0	0.0	134	29.2	McClung burial forms
Toqua	433	2	104	24.0	7	1.6	109	25.2	Richard Polhemus, personal communication
Citico	194	4	76	39.0	8	4.1	80	41.2	Richard Polhemus, personal communication
Period B									
Ce30S	14	4	13	92.8	5	35.7	14	100.0	Little and Curren 1981
Upper Hampton	56	2	4	7.1	3	5.4	5	8.9	McClung burial forms
DeArmond	52 (village)	0	19	36.5	0	0.0	19	36.5	McClung burial forms
Period C									
Bradford Ferry	47	13	18	38.3	31	66.0	36	76.6	DeJarnette et al. 1973; Smith notes
Ce101	17	3	4	23.5	3	17.6	4	23.5	DeJarnette et al. 1973
Hampton Place	31	5	9	29.0	12	38.7	16	51.6	Moore 1915
Tomotley	92	2	25	27.0	5	5.4	28	30.4	Guthe and Bristline 1978
Period D									
Cooper Farm	25	13	17	68.0	16	64.0	20	80.0	Lindsey 1964; Battles 1969,1972; Humbard and Humbard 1965
Ms32	68	9	16	23.5	24	35.3	31	45.6	Webb and Wilder 1951
Ms91 (unit 1)	56	5	10	17.9	7	12.5	12	21.4	Webb and Wilder 1951
Ms100	73	11	19	26.0	24	32.9	32	43.8	Webb and Wilder 1951
Post Period D									
Woods Island	12	5	5	41.7	12	100.0	12	100.0	Morrell 1965

probably represent a reliable sample and here we see a slight increase in the percentage with European grave goods. None of the 52 village burials excavated at the DeArmond site produced European goods, but DeArmond has a prehistoric component, making interpretation difficult.

In Period C, we begin to see an increase in the frequency of European grave goods. This is a period when there are no documented European-Indian contacts in the Coosa-Tennessee drainage system, yet European goods dramatically increase both in frequency and in number. The northernmost site, Tomotley, has only a 5.4% occurrence of European grave goods, while the southernmost site, the Bradford Ferry site, has a 66% occurrence of European grave goods. This fact may suggest that sites further south were better supplied being nearer coastal areas of Spanish influence.

In Period D, the occurrence is similar, ranging from 12.5 to 64%. If the frequencies are averaged for Periods C and D, then an increase in Period D is clearly seen (31.9 vs. 36.2%). But the dramatic shift comes after the early historic period. The best evidence is from the Woods Island site (Morrell 1965) which probably dates to the period 1670-1700 and reflects early English trade out of Charles Towne. At Woods Island, 100% of the burials contained European goods.

Although the frequency of European artifacts as burial accompaniments does increase in a fairly steady manner, the data do not support the hypothesized increase in the frequency of aboriginal materials in burials which was suggested to reflect the change from ascribed to achieved status systems (Table 18). Most of the sites have 23 to 48% of the burials accompanied by aboriginal grave goods, with a

few exceptions. There is no real pattern discernable in the data, except that the sites on the Coosa River generally have a higher frequency of aboriginal grave goods than the sites on the Tennessee drainage per time unit. This fact may reflect the political importance of the core area of the Coosa Province. There are a number of possible explanations for the failure of the hypothesis to be confirmed. The increase in European artifacts in burials suggests that these were the desired status markers which were available as the status system changed from ascribed to achieved. Apparently the ancient symbols went quickly out of fashion as the new system and new goods became available. It is also possible that the hypothesis is incorrect.

Perhaps it is incorrect to expect a greater number of burials to contain grave goods as the status system changed from ascribed to achieved. There are only so many upper level positions in any system. Perhaps a better test would be to see if status markers (European or aboriginal) shift from one social unit to several social units. Unfortunately, such data are not available for a range of sites and so this hypothesized measure cannot be tested at this time.

Craft Specialization

Peebles and Kus (1977:432) propose "organized, part-time craft specialization, usually coupled with intersocietal trade" as an archaeological correlate of ranked societies. By extension, the loss of craft specialization and/or the breakdown of long distance trade networks should be a measure of the breakdown in ranked social systems, or chiefdoms.

The identification of specialized craft production items is frequently difficult. For example, archaeological evidence from the King and Little Egypt sites suggests that flint knapping activity was carried out in individual households (Hally 1980), yet there are exotic forms that were probably manufactured by specialists, for example, the Duck River Cache (Brehm 1981), or long "swords" excavated at Etowah (Moorehead 1932). Ceramics pose another problem. There is very little evidence of ceramic production in the study area, but it could be suggested that ceramics were a common household activity. Yet there are specialized ceramic forms that must have been produced, or at least decorated, by craft specialists. The same could be said of ground stone; people could produce a utilitarian celt, but only specialists manufactured monolithic axes.

One type of artifact that was surely a specialized craft production item, certainly manufactured by a limited number of people, is the engraved Citico Style rattlesnake gorget of marine shell (Muller 1966; Figure 9). This artifact was not considered under the discussion of elite status markers because analysis by Hatch (1975:133) indicated that it was consistently associated with subadults, i.e., it apparently symbolized an age status in Dallas (including the present Barnett Phase of Lamar) culture. Table 19 presents data on the presence or absence of Citico Style rattlesnake gorgets in the study area on sites with early historic period European trade materials. These gorgets are rarely found in direct association with European trade goods (Table 19). Again, there are several possible explanations for this observed distribution.

Figure 9. Citico style rattlesnake gorget, Citico site

Source: After Kneberg 1959:25

Table 19. Distribution of Citico style gorgets

Site	Gorget Present	Associated with European Goods?	Reference
Period A			
King	X		Smith 1976:33
Etowah	X		Moorehead 1932:65
Little Egypt	X		Hally 1980; Moorehead 1932
Coosawattee	X		Smith 1976:33
Johnstone	X		Smith 1976:33
Ogletree Island			
Charlotte Thompson	No		Moore 1900
Scull Shoals			
Austin Springs			Polhemus 1982
Wg-9			
Cox	X		Kneberg 1959
Bussels Island			
Toqua	No		Richard Polhemus, personal communication
Citico Mr7	X	X	Lewis 1960:96
McMurray Mound			
Great Tellico			
Ledford Island	X		Kneberg 1959
Rymer	No		McClung Museum notes
Audubon Acres	X		Evans et al. 1981
Wilson			
Period B			
Terrapin Creek	X		Smith 1976:33
Ce308	X	X	Little and Curren 1981
Collins Farm			
Sylacauga Water Works	X		Steele and Hullender 1960
Abercrombie	X		Frank Schnell, personal communication
McMahon	X		Polhemus 1982
Stratton Mound	X		Polhemus 1982
Brakebill Mound	X		Willey, Guagliardo, and Bass 1978:150
DeArmond	X		Kneburg 1959
Upper Hampton			
Citico Ha65	X		Moore 1915
Period C			
Ce101	No		DeJarnette et al. 1973
Ce173	No		DeJarnette et al. 1973
8radford Ferry	No		DeJarnette et al. 1973; Smith notes
Taskigi	X		Smith 1976:33
9Ge948	No		
Joe Bell	No		
Carter House			
Plum Grove	X		Howard Earnest, personal communication
Post Oak Island	X		Polhemus 1982
Tomotley	No		Guthe and Bristline 1978
Talassee (TN)	X		Kneberg 1959
Williams Island	X (variant)	X	Smith 1976:33
Hampton Place	X		Tennessee Archaeological Society 1982

Many of the gorgets may be prehistoric. In Period A, European artifacts are restricted to the elite and rattlesnake gorgets are not symbols of elite power, as Hatch has demonstrated. Most Citico style gorgets that are accompanied by European artifacts are found on sites of Period B or C; but it should be noted that the one gorget definitely in association with Period C glass beads is a unique variant of the style; however, its technical sophistication does not suggest that it is a "degenerate" form.

While grave lots do not tell us much about the temporal dimensions of the gorgets, associations with specific sites which have also produced datable European artifacts provides a cruder estimate of the duration of the style. As shown in Table 19, nine Period A sites (most of which also have prehistoric components), nine Period B sites (some of which have prehistoric components), and six Period C sites produce Citico Style rattlesnake gorgets, while no Period D sites have produced one at this time. Several Period C sites with fairly large samples of burials have not produced rattlesnake gorgets (such as Bradford Ferry with 47 burials and Tomotley with 92 burials). Thus, it appears likely that the gorget went out of style, or was no longer manufactured by craft specialists supported by the elite of the study area aboriginal populations, during the period 1600-1630. They were clearly gone by 1630, as no Period D site has produced one. The interpretation that craft specialists were no longer subsidized to manufacture engraved rattlesnake gorgets is supported by the fact that no other type of engraved gorget took the place of the Citico Style. The manufacture

of this craft specialty (engraved gorget manufacture), with a long history of various styles in the area (Kneberg 1959) spanning perhaps 500 years ceases abruptly during the early seventeenth century. Thus, organized, part-time craft specialization can be shown to have ended at precisely the same time that public works were no longer constructed. The disappearance of native copper sociotechnic display items, described previously, also serves as an example of the loss of specialized craft items.

A breakdown in long distance trade networks cannot be demonstrated. Just the opposite appears to be true. While there is little historical evidence for Europeans in the interior between 1568 and 1673, there is a constant flow of European trade materials into the study area during this interval. Aboriginal trade networks from coastal areas seem to be the most likely explanation for this influx of material. There is a possibility that aboriginal trade networks were collapsing, but material was spread by more long distance traveling to coastal areas frequented by Europeans. The chief of Tama did visit the coast in 1606 as noted above, but one documented trip is little evidence from which to generalize about a widespread phenomenon.

This chapter has suggested various measures of the disintegration of chiefly power following European contact. The end of the construction of public works, changes in burial programs, and the breakdown in craft specialization have been used to determine when chiefly power distintegrated into the political organization described by European travelers in the late seventeenth century-early eighteenth century. All

these measures suggest that chiefly power was severely eroded by the beginning of the seventeenth century, perhaps during the last quarter of the sixteenth century.

CHAPTER VI
THE QUESTION OF ACCULTURATION

While it is beyond the scope of this chapter to review all of the literature on acculturation, certain contributions in this area are directly relevant to this study. The question to be considered is whether or not changes in the aboriginal cultures during the early historic period were the result of acculturation between the Europeans and the Indians?

Acculturation has been defined as "culture change that is initiated by the conjunction of two or more autonomous cultural systems. Acculturative change may be the consequence of direct cultural transmission; it may be derived from noncultural causes, such as ecological or demographic modifications induced by an impinging culture; it may be delayed, as with internal adjustments following upon the acceptance of alien traits or patterns; or it may be a reactive adaptation of traditional modes of life" (SSRC 1954). This is a very broad definition of acculturation; most authors define acculturation as a consequence of direct contact. For example, Alfred Koerber states, "Acculturation comprises those changes produced in a culture by the influence of another culture which result in an increased similarity of the two" (in Foster 1960:7). George Foster goes so far as to emphasize that acculturation is the product of "continuous and prolonged contact between people of different traditions" (Foster 1960:6). Foster also distinguishes

between formal and informal processes of acculturation. Formal processes are intentionally directed (as by governments or missionaries) while informal processes are by chance. Foster's idea of acculturation involves a dominant donor culture and a recipient culture. He also uses the term "conquest culture" to describe what he views as an "artificial, standardized, simplified, or ideal" culture consciously designed and created to cope with recognized problems (Foster 1960:11-12). Clearly, Foster's view of acculturation as resulting from prolonged contact is much more restrictive than the SSRC definition which would appear to accommodate indirect changes such as those which took place in the interior Southeast in the seventeenth century.

Even Foster's restrictive definition is subject to interpretation. How long is "continuous and prolonged contact?" Do the thirty days De Soto spent at Chiaha or the twenty-five days spent at Coosa (Elvas in Smith 1968) constitute continuous and prolonged contact? Probably not in Foster's sense. What about Europeans and Africans from the De Soto expedition who stayed in the province of Coosa (Ranjel in Bourne 1922:113)? It is more likely that the Old World people "went native" than changed the Indian's culture. What about the forts that Juan Pardo established in the East Tennessee Valley (DePratter, Hudson, and Smith 1983)? The evidence is conflicting; the forts may have fallen almost immediately or may have persisted for years (Gannon 1965b: 351-352). Whether or not a true "prolonged contact" acculturative situation developed is not known.

If a narrow definition of acculturation proposed by ethnologists, such as Foster, is accepted, then most researchers would agree

that no true acculturation took place in the study area during the early historic period. The broader definition proposed by the SSRC allows for more indirect interaction, and as has been shown, such interaction, evidenced by trade, was indeed taking place. Archaeologists, on the other hand, have developed their own ways to study acculturation.

Archaeological studies of acculturation can be traced back to museum studies of material culture items which showed the influence of foreign (in this case—European) elements on aboriginal items (Quimby and Spoehr 1951). Out of this initial attempt to classify artifacts, John White (1975) developed a model for measuring acculturation which will be fully discussed below.

Later, the Society for American Archaeology developed a classification system for culture contact situations which has relevance here (Wauchope 1956). This scheme, presented in Table 20, deals with site unit intrustion—the intrusion of a completely different archaeological culture into an area and Trait Unit Intrusion—the adoption of a new trait into an area. Obviously this scheme was devised for archaeologigists looking at specific archaeological sites or traits. The real issue of acculturation, i.e., the process of change in a cultural system, is never really addressed. Despite its limitations and the fact that it does not differentiate between diffusion and acculturation, the scheme does have some obvious applicability to the interior Southeast of the early historic period.

The only site unit intrusions to take place during the early historic period are the European forts erected by Juan Pardo in the

Table 20. The Wauchope model of culture contact situations

Situations	Example
A. Site Unit Intrusion	
A1. Retention of cultural identity with little trait change	Norse-Eskimo 14th and 15th century
A2. Fusion with dominance of the resident culture	Macon Plateau, Tiahuanaco horizon sites in Peru
A3. Fusion with dominance of the intruding culture	Spanish missions in Southeast; Lamoka-Laurentian at Frontenac Island site; Roman sites in Britain; intrusion of Inca culture on Peru Coast
A4. Fusion followed by revival of the resident culture	Inca conquest of Ica Vallye gives way to Ica revival
B. Trait-Unit Intrustion	
B1. Adoption of the trait-unit without modification and without fusion of the introduced trait-unit with corresponding elements in the receiving culture	Trade objects—glass beads, shells, obsidian; also includes local imitations
B2. Fusion with dominance of the corresponding part of the receiving culture	Chinese influence in Britain in 18th and 19th century; Weedin Island-French Fork incised ceramics
B3. Fusion with dominance of the intruded trait-unit in the aspect of culture involved	New burial practice introduced; Southern Cult
B4. Fusion with emergence of new traits which have no obvious antecendents in the trait units of the receiving culture	Sumerian influences in Egypt lead to crystallization of Dynastic Egyptian Culture

Source: Wauchope 1956

Carolinas and Tennessee (DePratter, Hudson, and Smith 1983). These forts apparently did not last very long and the resulting contact situation is best classified as A1: Retention of cultural identity with little trait change. Toward the end of the early historic period, more and more aboriginal population movements took place as discussed above, perhaps resulting in A2 contact situations.

Trait-Unit intrusion clearly took place during the early historic period in the form of European manufactured trade items. These will be discussed more fully below, but let it suffice to note that they were probably subsumed by the category B-1 (Table 20).

Working with the classification scheme for ethnographic material developed by George Quimby and Alexander Spoehr, John White (1975) developed a classification scheme for archaeological remains on European-Indian contact period sites. White's scheme is presented in Table 21. This scheme classifies new types of introduced artifacts as well as old types modified because of contact. Each numbered category of the two divisions (New Types and Old Types) shows increasing levels of acculturation from low numbers to high. "By determining the relative proportion of each of these artifact types in a contact situation, the archaeologist may provide himself with a rough indicator of the degree of culture change in both material and non-material spheres" (White 1975:159-160). Thus, sites producing abundant artifacts which fit the low numbered categories display a small amount of acculturation, and vice versa. Note that White assumes that the acceptance of material items indicates changes in the non-material (mental) realm.

Table 21. The John White model

	Category	Description	Example
New Types	A.1	New Types of Artifacts Received for Which There Is a Native Counterpart	Trade beads. European clothing (in some cases). Iron knives. Ceramic containers where there is a pottery tradition
	A.2	New Types of Artifacts Received Where There Is No Native Counterpart	Bottles Firearms Skillets
	A.3	New Types of Artifacts Made from Native Materials but Copying Introduced Models	Pottery-making
		a. Where the techniques are introduced along with the new artifact	
		b. Where the techniques come from within the recipient group	Where there is a change in the material of manufacture making a new set of techniques necessary
	A.4	New Types of Artifacts Where the Introduced Model Is Decorated after the Native Manner	Carved handles. European clothing modified in Native manner
	A.5	New Types of Artifacts Where the Manufacture Is Local but the Maker Employs Imported Material and Techniques	Knives converted from raw iron or a less useful article. Clothing made by importing cloth and sewing devices
Old Types	B.1	Old Types of Artifacts Where There Is a Substitution of an Imported Material for a Local One	Glass projectile points Porcelain gaming pieces Glass or porcelain scrapers
	B.2	Old Types of Artifacts Where There Is a Substitution of Material and Technique	Metal projectile points Substitution of metal for traditional bone tools
	B.3	Old Types of Artifacts Modified by the Introduction of a New Element of Subject Matter	Foreign designs on pottery, basketry, petroglyphs

Source: White 1975

In an earlier work, it was argued that the artifacts found in early historic period sites on the Coosa River drainage in Georgia and Alabama fall into White's Categories A.1 and B.1 (Smith 1977). Before expanding the present discussion to include the larger present study area, it is necessary to review additional archaeological studies of acculturation.

Ian Brown (1979a,1979b) has taken the White model one step further. He notes that White implies that "historic Indian sites can be arranged according to the degree of acculturation solely on the basis of material modifications" (Brown 1979a:113). Brown's criticism is that the White model fails to consider the function of the artifact and Brown points out that the same artifact may have a different function in two different cultures. Brown advocates the use of ethnohistoric documents to determine the function of introduced artifacts before the degree of acculturation is assessed. Brown points out that some items such as beads, bottle glass, and guns, which were merely substitutive in the White model, actually functioned in a socioreligious context in Indian cultures in the Lower Mississippi Valley—a context gleaned from ethnohistoric accounts that suggests a different picture of acculturation than the White model. Brown goes on to stress the importance of determining the "role of the transmitters of material culture, the nature of the contact situation, and the use and value of the transmitted materials to the Indians themselves." He also mentions that the archaeological context of the finds is very important in helping to determine their function (Brown 1979a:119).

Another major attempt to measure acculturation through archaeological research is that presented by Jeffrey Brain (1979). Like Foster, Brain views acculturation as one possible process of culture change; one that requires a dominant culture. He stresses that in determining the degree of acculturation, two major dimensions must be measured archaeologically: the artifacts and their contextual configurations. Brain believes that a rough measure of material culture replacement (acculturation in a simple form) is the proportion of traditional aboriginal vs. introduced European items (compare to the "Iroquois method" for seriation of sites discussed in Chapter III).

A more accurate measure of culture change can be made by determining what Brain calls the "Innovation Value" of each artifact. The innovation value is determined for five attributes: material, form, technique of manufacture, technique of use, and function. Artifacts are scored 0 for old and 1 for new attributes. The total is the artifact's innovation value (never more than 4 due to overlapping categories). The higher score equals the greater degree of culture change. Innovation values are then averaged for all artifact classes on the site (not individual artifacts or types). In addition to studying the artifacts themselves, Brain also advocates looking at the "configurations" of those artifacts (1979:272). The configuration is determined by the context and associations of the artifact. Brain uses the example of a European nail. A nail used in an aboriginal manner as an awl would have a low innovation value of 2, but a concentration of nails in a rectangular pattern, suggesting a European style house, would have an innovation value of 4. Thus points are also given depending on the configuration.

Both artifact points and configuration points together archaeologically document the degree of culture change in a given situation. This point total then represents a locus on a relative scale of aboriginal to acculturated to assimilated conditions. These are labeled Pristine State 0; Acculturation 1, 2, 3 points; or Assimilation 4.

Brain's artifact categories in actual use borrow heavily from White (1975). Unfortunately in this case (Tunica treasure) there is little context (the Tunica treasure was recovered by an amateur without documentation) so it is hard to see how the complete Brain scheme for measuring culture change is operationalized. Like Brown, however, Brain does stress the importance of considering the archaeological context to interpret the function of the artifact in question before using that artifact to ascertain the degree of acculturation.

How then can these techniques for measuring acculturaton in the archaeological record be used for the early historic period in the interior Southeast? First it is necessary to define acculturation as used in this study. Acculturation is suggested here to refer to the process of accepting foreign ideas, concepts, material culture, etc. from another culture. It explicitly includes modifying the first (in this case aboriginal) culture toward that of the second (European) culture. This modification must come from within the receptor culture. Thus, for reasons which will become clear by the end of this chapter, that portion of the SSRC definition that includes changes due to secondary causes such as demographic or ecological modifications caused

by the impinging culture is rejected. Clearly, this is an important process in culture change in the study area, but one which might be excluded from the label "acculturation." Acculturation, then, is the process by which one culture accepts and integrates elements of a second donor culture. Eventually if the two cultures become identical; that is, if the receptor culture rejects all its aboriginal elements to accept the elements of the donor culture, then assimilation takes place. This is a theoretical point, because in the real world it is doubtful that total assimilation ever has, or ever will take place. Aboriginal cultures appear to always retain some elements of their core belief system, even though they may wholeheartedly accept elements of foreign material culture and utilize them in the same manner as the donor culture.

How can these archaeological measures of acculturation be applied to data from the early historic period interior Southeast? Using the John White model (Table 21) as a take-off point in the discussion, how can the early historic period artifacts found in the study area be fitted into his scheme? And considering the archaeological context of the introduced goods, as suggested by Brown and Brain, what additional information may be inferred?

Artifacts typical of Period A, 1513-1565, include glass beads, metal beads, brass bells, axes, chisels, wedges, and miscellaneous military hardware. On the surface, it would appear that glass and metal beads simply subsituted for shell beads, brass bells were not unlike aboriginal rattles made from turtle shells or gourds, and metal tools were simply substitutes for stone tools.

But, what can we learn from the context of the finds? As discussed in the previous chapter, all European artifacts are very scarce during Period A and when archaeological provenience data are available, these European artifacts are usually interred in what appear to be elite graves. For example, the five burials with European goods excavated at the King site all had additional aboriginal grave goods, some of which were quite exotic—including a shell dipper and the only instance of native copper. Based on the context of such items, it is suggested that iron chisels, wedges, and axes were not substituted for useful stone tools, but for sociotechnic display weapons such as copper celts or ritual forms of stone axes (Smith 1977). Indeed, burial 117 at the King site contained a sociotechnic spatulate stone axe in association with iron implements. Thus, while metal tools were probably substitutive (i.e., fit White's category A.1 indicating virtually no culture change), it is important to determine their function in the aboriginal culture based upon their context. Sword blades occasionally found probably also had the same symbolic value. Instead of being substitutes for functional weapons, they were probably substitutes for the sociotechnic chipped flint knives.

Small tubular beads of rolled European copper or brass occur rarely on Period A sites, but deserve further discussion. These beads probably acted as substitutes for exotic shell beads. The question is, were they manufactured by Europeans or Indians, and, if by the latter, does their presence imply new technology and thus a higher level of acculturation (White's category B.2)? Even assuming that the beads were

made by the Indians, the techniques were not new. While aboriginal metalworking had reached a peak earlier probably during the thirteenth and fourteenth centuries (see, for example, Hamilton, Hamilton, and Chapman 1974) and was definitely on the decline when De Soto explored the Southeast, it is clear from finds at several of the sites dealt with in this study that native copper working was still practiced, unless all the pieces were heirloomed. The argument against heirlooming lies in the large amount of native copper the De Soto chroniclers reported seeing, for example, in the Province of Cofitichiqui (Elvas in Smith 1968:72; Garcilaso in Varner and Varner 1951:311,317). It appears that we can confidently place tubular metal beads into White's category B.1, again implying very little acculturation. It thus appears that using the White model, there was very little acculturation during Period A.

Period B artifacts are virtually the same as those of Period A, with the exception of new glass bead styles. European artifacts appear to be more common, probably reflecting the additional material available from coastal trade following the establishment of St. Augustine, Santa Elena, and the Guale missions and additional European goods traded by the Luna and Pardo expeditions at the close of Period A. Unfortunately, we cannot adequately quantify European material from Period B, since many of the sites producing these materials have not received scientific excavation.

A few points can be made, however. Comparing the European artifacts recovered by amateurs as grave goods from site 1Ce308 on the Coosa drainage in Alabama (Little and Curren 1981) with the professionally excavated Upper Hampton Place site on the Tennessee River (notes on file

at McClung Museum, University of Tennessee), it can be suggested that European artifacts were more common in the southern portion of the study area. At least five burials (of an unknown total "over 35") excavated at Ce308 produced European grave goods—some having several, while only 3 of 56 burials at Upper Hampton had European objects (usually one per burial) and 0 of 52 village burials at DeArmond (a site of long prehistoric occupation, however) had European artifacts (notes at McClung Museum).

That European artifacts were becoming more common is clearly demonstrated by the fact that several Period B sites produced European artifacts from general midden areas, while all European artifacts from Period A sites came from burial contexts. Apparently European artifacts were beginning to lose some of their value as exotic items perhaps marking a shift from elite status markers to everyday items of adornment or functional tools.

European artifacts of Period C are much more plentiful and include large quantities of glass beads, iron celts and axes, and a sudden proliferation of brass items: beads, disc gorgets, conical bangles, bracelets, and bells. Nevertheless, they appear to be largely substitutive, falling into White's categories A.1 and B.1, implying very little acculturation. Glass beads completely replaced shell beads and brass gorgets completely replaced shell gorgets at the Bradford Ferry site in Alabama. However, regarding the White model, it should be noted that no new technology was adopted, nor were European artifact types which had no aboriginal counterparts adopted. Clearly the

aboriginal population was not changing its culture, certainly not changing to a European form. Acculturation was minimal.

The assemblage of European artifacts of Period D is more diverse. Glass beads and brass bells are numerous. Iron celts are still found, but eyed axe forms become more common. Indeed there is some evidence that the Indians converted iron eyed axes into smaller chisel blades (Fleming and Walthall 1978:31-32). This was accomplished by sawing and grinding, aborignal techniques again suggesting no new technology. The fact that they converted eyed axes to celt blades either implies that metal was scarce and they wanted to extend its use, and/or that they rejected the European hafting technique and preferred to use their aboriginal style haft, which suggests little acculturation. The fact that iron axes were beginning to show up in refuse at this time, as well as the fact that some axes are quite worn from heavy use, indicates that they no longer functioned in a purely sociotechnic realm, but had been accepted as everyday tools.

New styles of brass ornaments appeared, but again they do not really represent a new technology. Small glass "seed" or embroidery beads, which first appeared in some number in Period C, become more common, suggesting the presence of sewn beadwork. Unfortunately, the reported occurrences do not usually specify how the beads were found in a burial. If beadwork is simply a substitute for quillwork, then it would be subsumed under White's category B.1 and still would not indicate much culture change.

Perhaps the only European artifacts to occur on Period D sites that indicate some real changes in the aboriginal culture are firearms

and these are very rare, if present at all on true Period D sites. John White uses firearms as an example of his category A2: New Types of Artifacts Received when There Is No Native Counterpart. He suggests that the presence of such artifacts "implies a greater degree of culture change since a context must be developed to give the artifact function and meaning" (White 1975:161). This implies a slightly higher level of culture change than a simple replacement artifact or a new raw material. Nonetheless, this is only Category 2 out of 5 and still implies relatively little culture change.

Ian Brown cautions that in the late seventeenth century lower Mississippi Valley, firearms were reportedly kept in the temple. He suggests that they served a religious function (Brown 1979a:117). It is entirely possible that at this early period the Indians were unable to obtain powder or shot and these firearms were kept in the temple as exotic items symbolic of the esoteric knowledge of the priest-chief (cf. Helms 1979) and did not function as hunting or war related weapons at all.

It may be concluded, then, that following the model proposed by John White, even considering the modifications proposed by Ian Brown and Jeffrey Brain, that European artifacts present on aboriginal sites throughout the early historic period suggest that there was only very limited culture change (acculturation). Although more far-reaching changes were taking place, they cannot be measured using the techniques proposed by White.

While trade material has been adequately considered, what about other realms of material culture? Specifically, what about the

introduction of European plants and animals? De Soto carried pigs inland and even left some with various Indian groups, including Ichisi and Altamaha in the present study area (Swanton 1939:91). There is some evidence that the pigs multiplied while under the care of the Indians. After the death of De Soto, Moscoso attempted to take the force overland to Mexico. Failing, he returned to the Mississippi River where he found that some pigs left with the Indians of Gauchoya had multiplied (Swanton 1939:91). Swanton does not believe that pigs were raised by the natives after the De Soto expedition. He notes that there is only "one doubtful reference" to pigs in the area of De Soto's march when Europeans again ventured inland. He says that swine were rapidly spread over the country by this second wave of European exploration. It does seem very unlikely that the farming and hunting southeastern Indians could be converted to stock raising by the brief De Soto contact. A shift to stock raising would imply a high degree of acculturation which no doubt would have required Foster's "prolonged and continuous contact" to achieve. It is possible that some of the Spanish pigs multiplied in the wild and were hunted by the Indians, but this would imply virtually no acculturation. The zooarchaeological record remains silent; no pig bones have been found (or recognized) from early historic period sites in the interior Southeast.

On the other hand, there is both archaeological and historical evidence that new species of plants were rapidly accepted among aboriginal groups in the Southeast. While the historical accounts all come from areas that are peripheral to the present study area, they seem

relevant in light of the archaeological evidence to be presented below. The two plants to be considered are the watermelon and the peach.

The peach is a native of China and was brought to Rome during the first two centuries B.C. and to the New World as early as Columbus' second voyage, along with melons (Sheldon 1978:28). In 1521, Ponce de León carried "diverse seeds for planting" to southern Florida (Sauer 1971:35). His colonizing attempt received hostile reception from the local Calusa and the colony was aborted. Nonetheless, it is possible that the Indians obtained seeds at this time. It should be noted that Goggin and Sturtevant claim that the Calusa were nonagricultural (1964) and if they are correct (a point here considered debatable; see also Dobyns 1983), then it is doubtful that European plants were introduced at this time.

A 1525 voyage to the Atlantic Coast sent by Ayllón cruised 250 leagues along the coast, contacted four linguistic groups, and left the seeds of European plants with aboriginal groups in the Santee River area of South Carolina (Hoffman 1980). The Luna colonizing venture in the Gulf coast in 1559-1561 undoubtedly carried seeds to the New World, however, most supplies were lost in a bad storm and it is not known if any seeds were salvaged by colonists or Indians (Priestly 1928).

The French garrisons of the 1560s apparently did not successfully grow much food. They were constantly bartering with the Indians (Bennett 1975) and it is thus unlikely that they introduced Old World plants.

Later when Spanish colonies were firmly established at St. Augustine and Santa Elena and mission efforts began among the Guale in

the 1560s, many European plants were introduced. "By the late 1560s, mutual agricultural interchange had taken place between North America and Iberia. Fruits and vegetables from Spain and the Canary Islands—oranges, figs, squash, and other items—had been successfully introduced" (Lyon 1981:288).

It is clear that peach trees were grown at most, if not all, Spanish-Indian missions in the Southeast. Sheldon (1978:28) notes that a 1602 mention is the earliest written record of the Spanish introduction of the peach to continental North America—the Franciscan mission garden at St. Augustine was producing peaches and many other European plants. It should be noted that Governor Oñate (ca. 1601) saw watermelons growing in the pueblos of the Southwest.

There is no doubt that European introduced plants quickly spread throughout North America. In 1663 the English explorer Hilton saw peaches growing in coastal South Carolina (Sheldon 1978:28), as did Henry Woodward some three years later near Port Royal (Wright 1981:105). These were no doubt introduced by Spanish missionaries.

By the late seventeenth century, French explorers found peaches, watermelons, and even chickens among native groups along the Mississippi Valley. In 1682 LaSalle saw abundant peach trees and chickens at the mouth of the Arkansas River and in 1687 both peaches and watermelons were mentioned in the same area and watermelons were also seen at Ft. St. Louis in Illinois. LaSalle had earlier reported watermelon vines among the Cenis of eastern Texas (Sauer 1980:241-242). Sauer believes that these were introduced via the Spanish occupied Southwest, but it is

also possible (but less likely) that they came from the Apalachee missions in western Florida. Clearly, whatever their origin, the plants had been spread by aboriginal farmers far from their point of introduction.

What about archaeological remains? Here we are dealing entirely with the remains of peach pits. Peach pits are common finds in seventeenth century Spanish mission villages in Florida. For example, at Fig Springs, nearly a bushel of peach pits were recovered from the post-1650 Utina site (Deagan 1972:39). Peach pits have also been recovered from the Apalachee mission San Francisco de Oconee (Boyd, Smith, and Griffin 1951:124).

Peaches have also been recovered in St. Augustine in a ca. 1580 context (Deagan 1978:135) and from the sixteenth century town of Santa Elena (Scarry 1983:118). Within the study area, peach pits have been found in the Joe Bell site in the Wallace Reservoir on the Oconee River. This site has corrected radiocarbon determinations of 1620 and 1630 (Williams 1983) and trade material appropriate to Period C (blue beads). Several other sites in the Wallace Reservoir have produced peach pits. All are assigned to the Bell Phase. These sites include 9Ge958 and 9Mg185 (Ledbetter n.d.) and 9Ge237 (Wallace Mitigation Survey North Survey Rough Analysis manuscript on File at the University of Georgia). These peaches may have been brought in by aboriginal traders from the Guale missions near the mouth of the Oconee-Altamaha river system, or they may have been brought in by the actual missionaries who visited Ocute in 1596.

Another possible instance of early historic period peaches was recovered at the Citico site 40Mr7 in the Tellico Reservoir in eastern Tennessee (Richard Polhemus, personal communication). Here, a burial accompanied by an aboriginal shell gorget with drilled pit decoration was intrusive on a feature which contained peach pits. Gorgets with drilled pit decoration have been recovered from the Period B Ce308 site (Little and Curren 1981:130) and the Period A-C Charlotte Thompson Place (Curren 1983). The Citico burial is tentatively placed in Period B or perhaps Period C. That these eastern Tennessee peaches are potentially as early as those from the Joe Bell site in Georgia suggests the rapid spread of peaches across the interior Southeast.

It is thus apparent from both historical and archaeological sources that European plants were introduced across the Southeast during the early historic period. Most early (W.P.A. and earlier) excavations did not recover floral remains; therefore, archaeological evidence is scant. Clearly more archaeological research needs to be done to determine when peaches were introduced. At this point, an early seventeenth century date can be supported through archaeological evidence. It is possible that peaches spread into the interior South shortly after the founding of St. Augustine, Santa Elena, and the Guale Missions in the 1560s. But what does this say about acculturation?

Since the southeastern Indians had been horticulturalists for centuries, it is not surprising that they rapidly accepted new plants such as watermelons. Planting melon seeds is just as easy as planting the squashes or corn grown aboriginally. Planting peach pits is also

just as easily accomplished, but it must be noted that the southeastern Indian did not plan orchards prehistorically. While it might be argued that planting peach trees and waiting several years for a harvest is a quite different type of agriculture than planting annual plants, it can be argued that it is only a difference of degree, not of kind. Is it that much different to plant a seed and wait for a period of months rather than years? Again, peach cultivation is basically a substitutive process analogous to White's example of the substitution of glass beads for shell beads.

To break away from materialistic evidence of acculturation, what about more ideological realms of acculturation? Specifically, what was the impact of Spanish Catholic religious teachings on the Indians of the interior?

Hernando de Soto carried missionaries into the interior as he traversed the Southeast in the 1540s. Crosses were erected at several sites in the study area (Ichisi, Altamaha, and Ocute, for example) and no doubt religious instruction was delivered to the natives. It is unlikely that this brief encounter with Christianity had any real effect on the natives, at least not immediately. If we accept the hypothesis that European disease quickly reduced population and that Indian religious specialists were dying off faster than their teachings could be passed down (Hudson 1980), it could be hypothesized that the natives would be more willing to accept new teachings. The sudden appearance of the technologically superior Europeans, with their control of horses, might be enough to allow the Indians to question their belief system

which did not explain such things. As coastal Indians began to die of European introduced disease, they no doubt noted that the Spaniards were immune and this word must have spread quickly into the interior. The Huron in Canada noted the apparent immunity of their Jesuit missionaries to the disease epidemics that ravaged them (Trigger 1976) and they attributed this immunity to witchcraft. It would be unusual if the natives did not have some interest in the religious beliefs of the invaders under these circumstances.

Juan Pardo took missionaries into the interior in 1566-1568 and at least one, Sebastian Montero, may have remained in the interior of North Carolina for some four years until 1572 (Gannon 1965b). While Montero was far to the east of the present study area, the natives may have received some religious instruction from Spaniards at Pardo's other forts, some of which were located in the study area in eastern Tennessee (see DePratter, Hudson, and Smith 1983). These forts may have fallen as early as 1568, or may have been occupied as late as 1576 (Gannon 1965b:352). Apparently, these forts did not have resident priests; Montero had been the chaplain of the Pardo expedition and he elected to continue on with the expedition moving out of the study area.

The 1596 expedition of Gaspar de Salas and two Franciscans, Fathers Pedro Fernandez de Chosas and Francisco de Veras, visited Tama and Ocute, but they returned almost immediately when they were warned of hostile Indians. In 1606 the chief of Tama traveled to Sapelo Island to meet with Governor Ibarra (Swanton 1922:181-182). These two documented occurrences of contact suggest that the Indians on the Oconee

drainage may have been in close contact with the Spaniards (missionaries) on the coast. Given the hypothesized loss of elements of the aboriginal belief system, it is quite possible that many converts to Christianity were made in this area. Indeed, by 1655, there is an Oconee mission, San Francisco de Apalache among the Apalachee in western Florida and another, Santiago de Ocone, perhaps on Jekyll Island on the Georgia coast (Swanton 1922:179).

Again, how is this limited evidence to be interpreted when measuring acculturation in the interior Southeast during the early historic period? It seems clear that at least the Indians of the Oconee Valley had been subjected to, and probably accepted, Christian training by the first half of the seventeenth century. It is difficult to determine to what extent Christian beliefs were accepted. If the Indians only took portions of the Christian religious system to supplement their aboriginal beliefs, then a lesser degree of acculturation is implied than if the Indians wholeheartedly accepted Christianity as a replacement for their aboriginal system. This latter extreme seems unlikely. Clearly, the acceptance of Christianity, however restricted, did represent a fairly high degree of acculturation, certainly more than the replacement of aboriginal shell beads with glass beads. But how did this affect the study area as a whole? In general, the evidence indicates that the study area as a whole was affected very little. Indeed, perhaps even the Oconee Valley was relatively little affected. It seems likely that the Christianized Indians were quickly relocated on the Georgia coast or with the Apalachee in western Florida. Thus,

the traditional southeastern Indians were left living a relatively unacculturated existence in their homeland. There was probably little ideological change toward the European world view in other areas of the interior Southeast until Europeans again invaded the area and continuous contacts were resumed.

Based on historical evidence and archaeological schemes designed to measure acculturation, it seems clear that little acculturation took place in the study area during the early historic period. Conversely, as argued in Chapters IV and V, a great deal of culture change did take place. It is perhaps a fine line to differentiate this culture change from acculturative change, particularly considering the broad definition of acculturation proposed by the SSRC, but it is a distinction that is important. The change that took place during the early historic period was basically a loss of culture—deculturation to use a controversial term used by Julian Steward (Steward and Faron 1959: 176). As this study has demonstrated archaeologically and as has been demonstrated historically, populations declined drastically, chiefdoms disintegrated, settlement patterns were disrupted, and, as Charles Hudson argues, it is quite probable that elements of the belief system were lost. It is likely that this left the Indians of the interior in a sort of cultural "impoverishment" relative to their aboriginal state. Their own culture was changing, but they had not yet been directly exposed to the European alternatives that the Spanish, French, and English were to provide after 1673. It is thus the thesis of this study that the drastic changes which took place during the period 1540-1673 in the

interior only served to place the natives in a position to accept more easily elements of European culture presented to them after 1673. That is when true acculturation began.

CHAPTER VII
THE AFTERMATH:
FORMATION OF THE CREEK CONFEDERACY

In 1894, J. N. B. Hewitt stated, "No league or confederation of peoples was perhaps ever formed without a sufficient motive in the nature of outside pressure." It is the central thesis of this chapter that the Creek Confederacy was formed out of the tribal remnants of once powerful chiefdoms which had disintegrated under indirect European influence (primarily disease) as a response to new outside pressures of the seventeenth century. A specific attempt will be made to demonstrate that the Confederacy was formed in response to armed incursions of northern native groups and pressure from European slave traders in the mid- to late seventeenth century.

In 1922, John R. Swanton suggested that the Creek Confederacy was in existence at the time of De Soto (1922:257). Unfortunately, Swanton never really understood the political reality of the sixteenth century Southeast. What he mistook for the Creek Confederacy was in actuality one or more complex chiefdoms (i.e., those with several tiers of a multi-town hierarchy). Similarly, David Corkran discusses the Upper and Lower Creeks in the sixteenth century (1967)—terms which would not be in use for well over a century. Vernon J. Knight correctly points out that the term Creek was not in general use even in 1700 (Knight and Adams 1981:48). John Swanton did report that William Bartram recorded a

traditional belief that the Creek Confederacy had originated at the old town of Ocmulgee in Central Georgia (1928:262). Finally, Verner Crane believed that the Yamassee War and the subsequent migration of Indians away from the South Carolina border "promoted a further amalgamation of tribes, Muskhogean and non-Muskhogean, into that remarkable league, the Creek confederation" (1981:254). It will be attempted here to demonstrate an earlier formation of the Creek Confederacy and demonstrate an archaeological correlate of the process of confederation.

In his recent book, Europe and the People without History, Eric Wolf points out that there were broad connections across large segments of the world. Europeans had economic ties with China; and there were broad, long-range connections operating in the New World. Given this viewpoint, it is no longer appropriate to look at the Southeast as an isolated area in the seventeenth century. To understand the formation of the Creek Confederacy, it is necessary to look at the interior Southeast as a part of a larger, highly dynamic system. Paraphrasing Hewitt, then, the Creek Confederacy was formed as a response to external pressures. To understand the formation, it is necessary to set the stage.

First, let us consider the European presence in the New World during the mid- to late seventeenth century. In the Southeast, the Spaniards occupied St. Augustine and a chain of missions up the Georgia coast and across northern Florida. In 1686, Marcos Delgado was sent into the interior to look for LaSalle and in 1689 the Spaniards constructed Fort Apalachicola on the Chattahoochee River just south of the fall line in present Russel County, Alabama (DeJarnette 1975:200-203).

The English had settled further north, founding Jamestown in 1607. Jamestown quickly became important in the Indian trade and the Virginia traders Needham and Arthur reached the Tennessee Valley by 1673 (Williams 1928). With the founding of Charles Towne in 1670, the English-Indian trade intensified and slave trading almost immediately became important (Wright 1981). The founding of Charles Towne would have a serious impact on southeastern Indians (Crane 1981).

Further north, the English also founded the Plymouth colony in 1620 and took over New York from the Dutch in 1664, ending over fifty years of Dutch influence in that area which had begun in 1609 with the voyage of Henry Hudson.

French history in the New World was somewhat different. After failing to establish colonies in South Carolina and Florida in the sixteenth century, French interest centered on the St. Lawrence river area and spread throughout the Great Lakes region during the seventeenth century. By 1673, Marquette and Jolliet were descending the Mississipi and later LaSalle continued their explorations, discovering the mouth of the river and even attempting to colonize the coast of Texas. Arkansas Post and Illinois settlements were established in the 1680s (Sauer 1980).

Thus, by the 1680s, the Indians of the interior Eastern Woodlands were surrounded by the ever-tightening noose of the European presence. The differing colonial interests of these European groups exerted severe pressure on native American groups.

As has been discussed in Chapters IV and V of this work, the Indians of the interior Southeast had declined in number and their

political organization had disintegrated from highly organized complex chiefdoms to smaller units. Population movements resulted from the native desire to flee diseased areas and from shifts in the balance of power among aboriginal groups. But as this chapter will demonstrate, some of the major changes were yet to come. Remembering that the overall picture of colonial North America is of importance in understanding the dynamics of the study area, we must first turn to the Indians of the Northeast in order to gain a proper perspective.

To grossly oversimplify a very complex picture, the seventeenth century Northeast can be viewed as a struggle between France's Indian allies and those of the Dutch (or the English after 1664). The major antagonists of this struggle were the French-supported Huron of Ontario and the Dutch-supported Five Nation Iroquois (Seneca, Onondaga, Oneida, Cayuga, and Mohawk) of New York. These were large confederacies of tribal groups, probably banded together because of the political necessity of dealing with Europeans. To the south lay the powerful Susquehannocks in Pennsylvania. They were supplied by the Dutch in New York, the Swedes, and the English in Chesapeake Bay.

The Iroquois wars are perhaps best viewed as a basically European fight (fought through Indian allies) over valuable furs (Trigger 1978:352-354). Trade in furs had been going on along the coast of the northeast in the early sixteenth century and by 1535 Jacques Cartier had sailed down the St. Lawrence well into interior Canada. With explorations by Champlain and Henry Hudson in 1609, competition became intense. Champlain aided Indian allies against the Iroqois (Mohawk) in 1609 and 1610, and later in 1615 aided the Huron on a raid against one of the

central tribes of the Iroquois confederacy (Trigger 1978:348-349). From this point onward, the struggle intensified. The Dutch, who were a more industrial group than the French (Wolf 1982:115-120) were better able to supply their Indian allies with firearms and by around 1640 the Seneca, farthest west of the Five Nations, had acquired guns (Wray 1973:9). Soon thereafter, the Iroquois began to overrun their neighbors. The details of the Iroquois wars are not important here (see Trigger 1978; Hunt 1940), but the results are. In 1638 the Wenro were forced to move to Huronia, in 1648-1649 the Huron were destroyed and forced to move, in 1649-1650 the Petun were dispersed, followed by the destruction of the Neutral in 1652, the Erie in 1654-1656, and the Susquehannocks in 1675 [actually brought about by an attack from Europeans from Maryland and Virginia (Trigger 1978:356)].

What is important to this study are the population movements caused by the Iroquois wars. It is central to this argument that several groups moved south. Part of the Neutral apparently moved south into the Ohio River valley (Trigger 1978:355) and, as will be more fully developed below, the Erie moved south in a number of steps, eventually ending up in Georgia. The Susquehannocks also moved to the south, many settling in Maryland. However, a group of Susquehannocks moved all the way to Ocaneechi Island in the Roanoake River near the Virginia-North Carolina border (Jennings 1978:366).

The Erie are a special case that demands detailed consideration. Their travels have been much debated in the past. The Erie originally were located along the southeastern shore of Lake Erie in the present

states of New York and Pennsylvania (White 1978:412-413). Following their dispersion by the Iroquois in 1654-1656 (the exact date is unknown due to a lapse in the Jesuit Relations), the exact location of the Erie is unknown. A group of some 600 surrendered to the Iroquois near Virginia according to the Jesuit Relations, and Marian White notes that "Virginia" of the time meant to the French "an uncharted region down the Ohio across the mountains and below Pennsylvania" (1978:416).

Other authors believe that the Erie (or part of the tribe) moved further south where they show up as the Richahecrians, a strange Indian group who appeared briefly to menace western Virginia in 1656 (Hunter 1978:588; Hoffman 1964; Wright 1981:6,87). This identification is based on the coincidence of the date and the closeness of the name Rickahecrian as recorded by the English to the Erie name Riqueronnons or Riquehronnons recorded by the French. This identification seems quite reasonable, especially when combined with the information from the Jesuit Relations that the Erie moved south. But this was only a temporary stop on their travels.

Both Crane (1981:6) and Mason (1963) identify the Westo who settled on the Georgia side of the Savannah River near the present Augusta as the Rickohockans of Virginia fame (there are several variations in spelling) and consequently as the Erie. They first appear in the deep south as "Chichimecas" who attacked Guale in 1661 from the north (Crane 1981:5) and are subsequently mentioned in early records of the Carolina colony as the Westo as early as 1670 (Swanton 1922:66). Crane believed that the Westo had been armed with firearms while in

Virginia (1981:12), but it is likely that they had obtained firearms while they were still in the Northeast; their defeat by the Iroquois was blamed on the fact that they ran out of ammunition (White 1978:412). Whatever their source of firearms, they terrorized the local southeastern Indians who did not have firearms for several years.

Part of Crane's identification of the Westo as a northern group rests on the description of their settlement recorded by Henry Woodward in 1674. The town was described as a palisaded village of long bark houses. This community plan is not native to the Southeast and definitely suggests a northern origin for the Westo, although it does not necessarily demonstrate that they were the Erie.

From this contact in 1674 until 1680, the Westo were strongly allied with South Carolina, who provided guns and ammunition to raid Spanish Indians, and by 1680 raids were being made into Guale under English incitement (Crane 1981:17). Eventually relations between South Carolina and the Westo deteriorated leading to the Westo War and by 1683 the Westo were defeated and scattered, a remnant finally settling as a town in the Lower Creek country (Crane 1981:20).

Because the Westo operated on the western fringe of the new Carolina colony, they are documented. Probably there were numerous other groups in the interior which had an equally disruptive effect. Unfortunately, without a direct European presence, such activity is hard to document. Fortunately, there is some additional evidence for such movements, both historical and archaeological.

After the French descended the Mississippi River in 1682, the Spaniards began to worry about the invasion of their territory in the

Southeast. In 1686, Marcos Delgado was sent into the interior to meet this perceived French threat (Boyd 1937). He went no further than the area of the junction of the Coosa and Tallapoosa rivers where he stayed with various native groups. He leaves us a remarkable record of the aboriginal settlement dynamics of the area.

Delgado reports that five groups of Indians had recently settled in that area fleeing from the English and Chichimecas from the north (Boyd 1937:21,26). It should be noted that "Chichimeca" is a term used to designate wild, warlike tribes in general, being used (actually originating) in northern Mexico as well as the Southeast. That is, Delgado's Chichimecas were not necessarily the same group by that name that was terrorizing the Guale area at about the same time; i.e., they may or may not have been the Westo. What is important is that they came from the north: the awesome power that caused drastic population movements is attributable to their possession of firearms, while the refugee groups they forced south were unnamed. This is suggested by their association with the English.

In addition to the "Chichimecas," Delgado also mentions another nation called Chalaque which was also responsible for forcing groups south. Boyd (1937:32) equates the Chalaque with the Cherokee, but it should be noted that Chalaque is probably a corruption of the Muskogean word čilo·kkita which means "people of a different language" (Hudson, Smith, and DePratter 1980) and therefore is not necessarily the Cherokee. On the other hand, archaeological evidence from the Tellico Reservoir shows a sudden influx of Period D European artifacts at sites such as

Citico and Toqua and it is suggested that this influx marks the entrance into the Little Tennessee River valley of the Overhill Cherokee. There is little doubt that the Overhill were latecomers to the valley, because the names recorded by the chroniclers of the De Soto and Pardo expeditions in this area are all Muskogean (Hudson, Smith, Hally, Polhemus, DePratter 1983; Charles Hudson, personnal communication).

Delgado mentions that five northern groups had recently settled near the junction of the Coosa and Tallapoosa fleeing the English from the North (Boyd 1937:21). However, he only mentions two by name. These were the Quasate (whom Boyd equates with the Koasati) and the Tubani of the Quasate Nation. He also mentions the Pagna, the Qulasa of the province of Pagna and the Aymamu. These latter groups were said to have fled the Chata (whom Boyd equates with the Choctaw) suggesting a western origin (Boyd 1937:26). If these latter three groups are part of the five groups that Delgado had previously mentioned, it is clear that English influence had reached the "Chata." Since the Choctaw were never heavily influenced by the English, it is unlikely that the "chata" of Delgado were the later Choctaw. Nonetheless, the Aymamu can be identified with the Alabamu of the De Soto period and later eighteenth century as Boyd notes and these people were definitely located to the northwest of the Coosa-Tallapoosa junction area. Delgado's report also makes it clear that the English had been in the province of Apalachicola and that the people of the Coosa-Tallapoosa area were at war with the Mobile Indians further down the Alabama River.

The important thing is to see the overall pattern that these two isolated cases documented by chance indicate. First, many northern

groups usually armed with firearms obtained from the French, Dutch, and English, were moving toward the south. Historical evidence that Huron, Susquehannock, and Erie all moved to the south has been mentioned and it is quite probable that these armed groups then caused displacements of unarmed groups even further south, causing a chain reaction of serial movements further to the south. Thus, Delgado recorded refugees from the north in the area of the junction of the Coosa and Tallapoosa and the Westo were attacking the Guale in the 1680s. It is these late population movements during the last third of the seventeenth century of refugee groups—the remnants of once powerful chifdoms, that eventually became the Creek Confederacy known during the eighteenth century. Thus, the outside pressure responsible for the formation of the Creek Confederacy can be summed up in two concepts: firearms and the slave trade.

Firearms were the main catalyst in the process which, for our purposes, culminated in the formation of the Creek Confederacy. Firearms, usually matchlocks, were brought into eastern North America from Florida to Canada with the earliest explorers in the sixteenth century. However, it was not until about 1625, with the perfection of the flintlock, that guns became practical for use in the New World as everyday tools and as material for the Indian trade (Hamilton 1980:9). It is clear that Indians always wanted firearms and they were obtaining guns in Virginia by 1623 (Wright 1981:69,303) either through trade or warfare and the Indians were said to be as skilled in their use as the English colonists. However, the real center of the gun trade was the northern fur producing areas of New York and Ontario. Here the Dutch,

English, Swedes, and French all competed for valuable furs. While trade in firearms was frequently against the law, there was always some enterprising trader who was willing to sell guns to the Indians. The Dutch were one of the most industrialized nations of the time (Wolf 1982) and they provided an abundance of firearms to their Iroquois allies. Even the farthest western group of the Five Nation Iroquois, the Seneca, were heavily armed by the 1640s (Wray 1973) and, as discussed above, they were able to destroy virtually all of their neighbors by 1675, causing population displacements.

What about firearms in the South? Here things were different. There was no competition between European nations for valuable furs during the sixteenth and seventeenth centuries. The Spaniards did not have a heavily industrialized nation (Wolf 1982) and simply made it their policy not to trade guns to the Indians (H. Smith 1956:106). Thus Indians in the deep south were unarmed and at the mercy of armed Indian groups from the North. Once population movements were set into motion by the Iroquois wars and as more and more groups were armed by Virginia traders and, after 1670, Carolina traders, the shock wave effect of increased warfare moved across the South.

This was a new kind of warfare, based on access to goods desired by European traders: deerskins and slaves in the Southeast. During the late seventeenth century, slaves were probably the most important commodity. The English wanted Indian slaves to be transshipped to Caribbean islands for plantation labor (Wright 1981). By arming Indian groups on their western frontiers, Virginia and Carolina traders could be assured of a steady supply of slaves.

Thus, the desire for slaves and the military advantage conferred by firearms combined to terrorize the Indians of the study area by the last third of the seventeenth century. This pressure caused vast population movements and forced the birth of the Creek Confederacy, a political expedient of unarmed refugee groups banding together for survival. While population movements during the early historic period have been demonstrated, these were usually of relatively short distance, probably to escape diseased areas. Population movements in the late seventeenth century, however, were long-range movements either to escape armed groups (the earliest major movements, such as those noted by Delgado) or to move closer to English traders to obtain firearms the Spaniards refused to trade (such as the movement of several towns from the Chattahoochee to the Ocmulgee in the 1680s (Swanton 1946:143).

Figure 10 illustrates some of these long-distance movements. Migration routes which seem secure are shown as solid lines, while dashed lines link documented locations of different time periods when the route of migration is uncertain. The movement of Coosa down the Coosa Drainage is fairly secure (Figure 7), but the movement of Chiaha and Coste is not as well understood (Figure 10). We know their locations in the sixteenth century and the beginning of the eighteenth century, but intermediate steps are not clear. It might be suggested that these two groups moved in the late seventeenth century in rather large leaps to flee armed groups coming from the north and east. This fact is verified in the Delgado document for Koasati (= Qusate = Coste). Chiaha is known to have been on the Ocmulgee in 1713, and soon

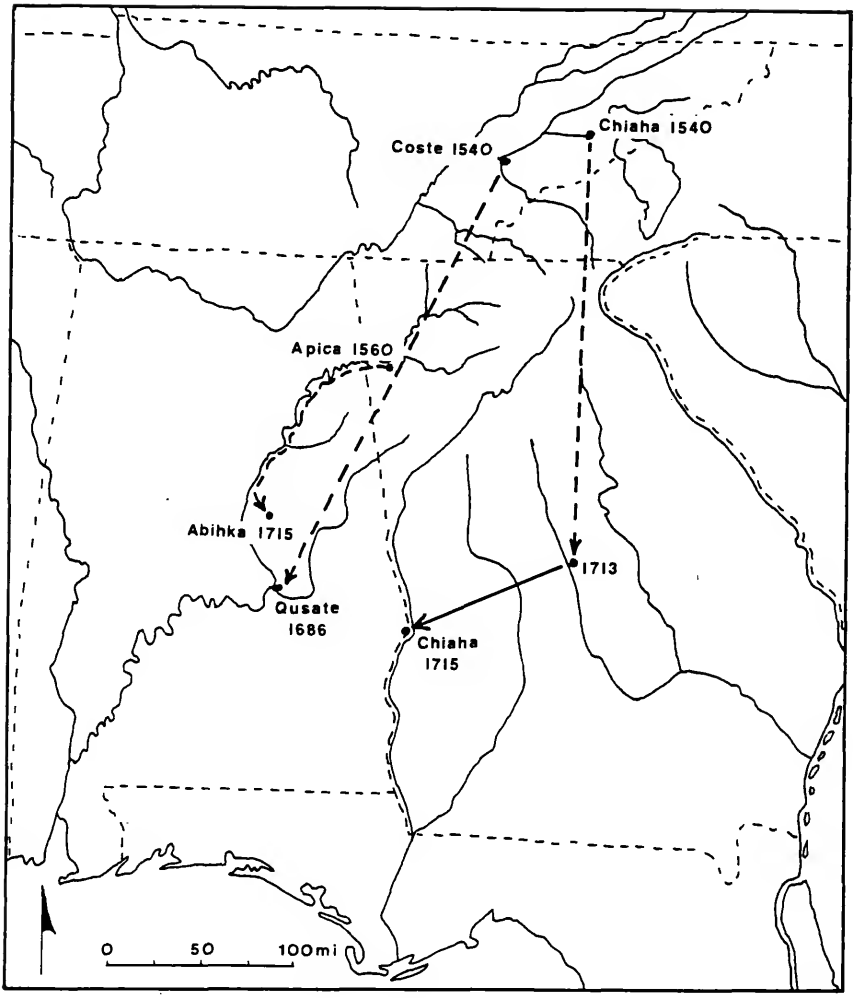


Figure 10. Seventeenth century population movements

thereafter moved to the Chattahoochee (Swanton 1946:115-116). The leap from northern Tennessee to the Ocmulgee is not known. It is even possible that they had originally settled on the Chattahoochee and moved east with the Coweta and Kasihta.

The movement of the Apica (= Abihka of the eighteenth century) probably paralleled that of Coosa, since Apica was a part of that Chiefdom and in the eighteenth century, Abihka was closely related to Coosa and had indeed surpassed it in importance by the late eighteenth century. The Apica were still located near Rome, Georgia (probably the Johnstone Farm site), in the 1560s, when Luna's men visited them, but archaeological evidence suggests that they moved south soon thereafter (Figure 10).

The hypothesized collapse of the chiefdom of Ocute into the eighteenth century Oconee Old Town has been discussed previously (Figure 7); however, one interesting point should be made. Of the tribes of importance in the Creek Confederacy in the eighteenth century (Coweta, Kasihta, Tuckabatchee, and Coosa according to Corkran 1967:4), three of these avoided direct European contact until the late seventeenth century. The exception, Coosa, had been a powerful complex chiefdom during the sixteenth century and was no doubt still an important group because of its former glory. Tuckabatchee was located near the fall line on the Tallapoosa River in the eighteenth century and probably had been in that general location since the fifteenth century (Vernon Knight, personal communication). Early European exploration bypassed the Tallapoosa drainage, instead concentrating on the Coosa (DePratter, Hudson, and Smith 1984). Thus, perhaps Tukabatchee was spared some of the

disease and starvation that ravaged areas that faced direct Euorpean contact by De Soto and Luna. De Soto in particular was very hard on the native population, stealing stored food, taking carriers and women, and even from time to time murdering Indians. The same points hold for Kasihta and Coweta. Both were probably located along the Chattahoochee River in prehistory (Vernon Knight, personal communication) and both were spared the horrors of European contact until the coming of English traders from Charles Towne. Both were able to maintain their precontact vigor until a later period. Both towns (formerly simple chiefdoms?) also moved to the Ocmulgee River after 1680 to be nearer to English traders who supplied them with guns, but following the Yamassee War in 1715, they returned to the Chattahoochee (Swanton 1946).

What does the archaeological record tell us about these hypothesized events? Is there any archaeological evidence for increased North-South interaction and are there archaeological correlates for the Creek Confederacy?

There is some archaeological evidence for late seventeenth century interaction with more northerly groups. This evidence is in the form of glass bead types identical or very similar to types known to have manufactured in Holland (Karklins 1974;1984) and commonly traded in the Northeast. These types (IVb33 and IVnn4, Kidd and Kidd 1970) are quite common in seventeenth century sites in New York (Pratt 1961; Bradley 1979), Maryland (Ferguson 1940), and even as far south as northern North Carolina (Wilson 1980), but are virtually unknown from areas of Spanish influence. However, two late seventeenth century sites

in Alabama have produced these beads in limited quantities. Site 1Ms^{V}32 in the Guntersville Reservoir has produced a blue and white striped bead of Kidd type IVb33 (Moundville collections). This site has been assigned to Period D, 1630-1670 (Chapter III). The second site is a poorly known site located near the Cooper Farm site near Gadsden, Alabama. A large brass axe effigy has been reported with a burial from this site (Greer 1966) and a large red, white, and blue striped chevron bead of Kidd type IVnn4 has been found at the site (E. S. Greer, personal communication). This poorly known site is placed in the late seventeenth century, but may date to Period D. Bead type IVnn4 has been found in glass factory refuse in Amsterdam (Karklins 1984) and type IVb33 is virtually identical to type IVb34 which is also found in Amsterdam. Only the spacing of the stripes varies; IVb33 has paired stripes while IVb34 has evenly spaced stripes. Both IVb33 and IVb34 are common on Iroquois sites in the Northeast; the absence of IVb33 in the Dutch factory collections is probably due to sampling error.

The fact that only one or two of these beads has been found on a limited number of sites in the Southeast does not suggest that there was a change in source of supply to the European traders. Rather, it suggests that there was increased interaction (raiding?) between Indians of the Northeast and Indians of the Southeast. The Great Indian Warpath down the Tennessee Valley documented by Myer (1928) was no doubt an old "interaction" route. The two sites in Alabama clearly are not sites of northern Indians who moved south, but are indigenous groups who had infrequent access to Dutch trade goods. Only a glance at the aboriginal material from those sites is necessary to confirm their identity.

What about archaeological correlates of the Creek Confederacy? It is argued that the sudden appearance of a ceramic horizon style, dominated by the type Chattahoochee Brushed or its shell tempered equivalent Walnut Roughened, marks the formation of the Creek Confederacy.

The origins of brushed pottery has been debated for years. Charles Fairbanks originally believed that the type was derived from the Lamar Stamping tradition of central Georgia, a sort of degenerate complicated stamped type (Fairbanks 1952:298;1958). Later Roy S. Dickens, working at the Horseshoe Bend site in Alabama, suggested that it was derived from an earlier Dadeville Series in Alabama (1979). More recently, Vernon J. Knight has suggested the presence of a sixteenth-seventeenth century brushed ware in the Tallapoosa drainage, part of his Atasi Complex (Knight and Smith 1980). Thus the present consensus seems to favor an origin in eastern Alabama.

Whatever its origin, the type quickly spread across the southeastern piedmont along the fall line. In addition to sites on the Tallapoosa drainage mentioned above, Chattahoochee Brushed pottery is common on the Chattahoochee (DeJarnette 1975), the Ocmulgee (Fairbanks 1952; H. Smith 1973) and the Oconee at the Oconee Old Town site (Williams 1983). It is the thesis of this study that the sudden spread of this style can be traced back to population movements triggered by the late seventeenth century warfare and slave raiding by armed groups to the north. As refugee groups banded together for protection, group intermarriage occurred. Increasing population movements, such as the documented movement of Kasihta and Coweta to the Ocmulgee River in the

1680s helped spread the style to the east. All these movements and accompanying intermarriages lead to a homogenization of the ceramic styles and the result was the brushed horizon style. Thus, it is argued that this horizon style is the hallmark of the increased intergroup interaction that was the result of the formation of the Creek Confederacy. The fact that many of the sites that share this horizon were located along the main English trading path is also quite significant. James Deetz (1965:99) has demonstrated a trend toward ceramic standardization over time in Arikara ceramics as the Arikara underwent depopulation and subsequent village consolidation.

In conclusion, it is proposed that the depopulation and decentralization of sixteenth century chiefdoms in the study area led to increasing recombinations of refugee groups. This process was accelerated during the second half of the seventeenth century by external pressures from displaced northeastern aboriginal groups armed with firearms and from slave hunters, both Europeans and their Indian allies. The ultimate result of the process was the formation of the Creek Confederacy, probably during the 1680s or 1690s. Marcos Delgado reported settlement of refugee groups near the headwaters of the Alabama River in 1686 and William Bartram recorded a Creek legend that the Confederacy was formed at Ocmulgee town in central Georgia while the Kasihta and Coweta were in the area (ca. 1689-1715). Milfort (1959: 114-115) records a tradition of the Creek that ". . . an Indian tribe, which had just been almost destroyed by the Iroquois and the Hurons, came to request the protection of the Moskoquis, which I shall now call

Creeks. The latter received them among themselves and assigned them a piece of land in the center of their nation. They built a town which today is rather large, which is called Tuket-Batchet." These documented events were separate manifestations of the same process. The refugees of the earlier chiefdoms found it necessary to form a political alliance so that they could deal with outside pressures brought about by events of the fur trade wars in the North and the slave trade in the South.

CHAPTER VIII
SUMMARY, CONCLUSIONS, AND FUTURE RESEARCH

Using archaeological and historical data from a portion of the interior Southeast, this study has attempted to elucidate the process of the disintegration of chiefdoms following contact with Europeans in the sixteenth century. Following the development of a model of disintegration suggested by several students of the New World, the model was tested with data from the study area. Chapter II provided background historical data on the study area. These data located chiefdoms of the sixteenth century and discussed historical data relative to the study area before 1673.

In Chapter III, a chronology based on European trade goods was developed in order to measure the rate of change from chiefdom to non-chiefdom. This scheme was necessary to provide the tight chronological control necessary to determine the timing of the changes during the early historic period.

Chapter IV used several different measures of archaeological data to document the demographic collapse that took place during the early historic period. Using multiple burials as an indicator of European disease epidemics, it was possible to show that disease was an important factor during Period A, 1540-1565, and Period C, 1600-1630. Period A is, of course, the period of the direct European contact of the De Soto and Luna expeditions, as well as the period when the possible

effects of earlier pandemics spread from coastal contacts would begin to show up in the archaeological record. Data from Period B, 1565-1600, were not sufficient for statements to be made. It seems likely that contact with the Pardo expeditions of 1566-1568 probably spread more disease into the interior and pandemics may have spread from St. Augustine, Santa Elena, and the coastal Guale missions. During Period C, 1600-1630, there is some archaeological data to show that the practice of multiple burial was again important, suggesting the presence of disease epidemics. This is precisely the period when a sudden influx of European goods appears in the study area.

Evidence for decreases in site size was also sought as a measurement for depopulation. While such data were difficult to obtain, data from the Coosa, Tennessee, and Oconee River drainages showed a clear trend towards decrease in site size over time. This decrease began during Period A, suggesting the early impact of disease epidemics. Mean site size in the Wallace Reservoir decreased from the sixteenth to seventeenth centuries.

Settlement counts were also used as a measure of depopulation. The number of sites showed a decrease from Period A to B, a stabilization or increase from Period B to C, and a decrease to Period D. The apparent stabilization or even increase from Period B to C is probably an artifact of the lack of data for Period B. Wallace Reservoir data also showed a substantial decline in the number of seventeenth century components from sixteenth century components.

It was hypothesized that under the stress of depopulation, sites would be abandoned and new sites established. Clear movements of

population were demonstrated down the Coosa River and although precise movements cannot be as easily determined from the Tennessee or Oconee River areas, site abandonment and the founding of new sites in these latter areas demonstrate that the process was the same in these areas. Such movements began during the sixteenth century, again suggesting the devastating effects of early epidemics.

Several measurements of the decline of chiefly organization were also developed and tested with data from the study area. The end of mound construction was believed to be a possible measure of the end of chiefly authority. The data suggest that no mounds were begun after 1600, or perhaps as early as the end of Period A (1565) and further that no mounds were added to after 1630 in the study area. By Period D (1630-1670), no mound centers were even occupied by groups that could be demonstrated to have built them. Thus, mound data suggest that chiefly power was severely eroded by the late sixteenth century.

The construction of palisades, another type of public work, was also considered a correlate of chiefly power. A length to width ratio of site dimensions was developed to indicate the presence of palisades, where direct evidence of palisades was lacking. The palisade study demonstrated that palisades were not constructed in the study area after Period C (1630).

The elaborate hierarchy of sites mentioned in the De Soto documents and demonstrated archaeologically, also disintegrated rapidly. In the Oconee River drainage, the elaborate prehistoric site hierarchy was gone by 1600.

Studies of burial practices, especially the inclusion of types of sociotechnic markers commonly in use during the prehistoric period, further showed that chiefly organization quickly eroded. Stone spatulate axes and native copper artifacts were both absent often no later than ca. 1610. Other measures of the loss of chiefly organization were mentioned, but the archaeological data are not presently available to test these hypotheses.

Craft specialization was also viewed as a measure of a chiefdom level of organization. Native copper and spatulate axes disappeared by the early seventeenth century, but Citico style rattlesnake gorgets may have persisted in use for another twenty years. Thus, most traits which were suggested as corresponding to a chiefdom type of organization can be shown to have disappeared by about the beginning of the seventeenth century; certainly no later than the first third of the century.

The fact that the demise of chiefly organization corresponds almost perfectly with the evidence for depopulation is certainly no accident. Having gone to great lengths in Chapter VI to demonstrate that acculturation was not a factor in culture change during the early historic period, it was nonetheless possible to demonstrate that a great deal of change had taken place. This was a process of "deculturation," or loss of cultural elements, as discussed by Steward and Faron (1959: 176). There can be no doubt that the primary cause of culture change during the early historic period was depopulation brought about by European disease epidemics. This depopulation resulted in so few people that chiefly organization could not be maintained. Simply stated, there

were not enough workers in the labor force to provide a food surplus to support chiefly organization and there were not enough warriors to conduct the warfare that had characterized chiefdoms (DePratter 1983). Public works were no longer constructed, craft specialists were no longer supported and quite possibly ritual specialists died off faster than they could transmit their esoteric knowledge (Hudson 1980). Simply put, the early historic period was a time of collapse and that collapse came by the beginning of the seventeenth century leaving the southeastern Indians in a state of "cultural impoverishment," leading to the rapid acculturation that took place during the eighteenth century.

Remnants of the once powerful chiefdoms, now reduced to little more than small towns, banded together for mutual defense from incursions of armed Indians from the north and slave traders from the east. Thus the Creek Confederacy was formed as a response to outside pressure that could no longer be withstood from within. Furthermore, it is clear that very similar processes were taking place in chiefdoms all over the western hemisphere.

Much remains to be done. Period B (1565-1600) is the least understood period in the sequence and yet it appears to be the time of greatest change. New sites were being settled, old sites abandoned, mound building ceased, and site specific settlement patterns were changing from compact, palisaded towns to more dispersed, linear villages. The contrast between sites of Period A and Period C is clear, but sites of Period B must be excavated to understand this shift. Particularly needed are burial data to confirm or deny the presence of disease epidemics and to demonstrate the shift from ascribed to achieved status.

If this shift does indeed take place at this time, there should be a random pattern in the distribution of grave goods instead of the clustering that would be expected with an ascribed system of ranked clans. More town plans must be examined to understand the shift in settlement pattern.

Shifts in subsistence during the early historic period are also poorly understood. What was the impact of the swine distributed by De Soto? Faunal analysts are thus far silent on this matter. Similarly, evidence has been presented that peaches were being grown in the interior by 1630 and it is suspected that this date will eventually be pushed back into the sixteenth century as more data are analyzed. By the end of the early historic period, it may be possible to detect a shift toward a fur (or leather) hunting economy. While much of the European artifacts found on sites of the early historic period may have been gifts to cement political alliances, it is probable that trading became more and more important. Again, this should be detectable archaeologically, perhaps by seeing an increase in the remains of economically important fauna, such as deer or fur-bearing animals.

While several possible population movements during the early historic period have been suggested in this research, these movements should be taken as hypotheses and further tested. It will be necessary to look for specific aboriginal traits, that can be traced to show group continuity from one site to another. This will be difficult to demonstrate, especially because families (and thus craftspersons) were dying out at an alarming rate. Resettlement of survivors and amalgamation of

refugees will make particular towns difficult to trace, but nonetheless it should be possible to do so given diligent study of aboriginal traits.

The early historic period was a time of great change throughout the New World. It should be clear from this research that the direct historic approach—working from well-described eighteenth century groups back to the time of contact—is bound to fail in the interior of the Southeast. There was far too much disruption brought about by the catastrophic depopulation during the early historic period. Groups moved, refugees regrouped, and cultures were severely altered, making the Southeast of the eighteenth century a very different place than its prehistoric forerunner. The prehistoric Southeast was a very complicated area of highly developed chiefdoms. Unfortunately, after the disruptions of the early historic period, we are left only with the meagre descriptions of the sixteenth century explorers and archaeological data to try to unravel these complexities. Sadly, this is also the case for much of the New World.

It is intended for the present study to stimulate more research into the processes of the decline of New World chiefdoms brought about by the European conquest of the New World. It is clear that better archaeological data must be collected to further refine the model presented here and that a regional approach should be utilized to intensively study particular chiefdoms. Such basic data as site size must be collected for more locales. Extensive excavation of particular sites should examine the frequency of mass and multiple burial and

physical anthropologists should study large skeletal series to look for population curves suggestive of disease epidemics and for the presence of people of mixed European/African-Indian ancestry. Indeed, it should eventually be possible to find the burials of European explorers. The early historic period was a time of great change and understanding the processes of this change is a challenging research topic for historians, ethnohistorians, and archaeologists. We are only beginning to understand the dramatic collapse that took place.

APPENDIX
CHRONOLOGICAL PARAMETERS OF LAMAR CERAMICS IN THE WALLACE RESERVOIR

APPENDIX
CHRONOLOGICAL PARAMETERS OF LAMAR CERAMICS IN THE WALLACE RESERVOIR

Late prehistoric ceramics from the Wallace Reservoir area of the Oconee River drainage of the Georgia piedmont have been intensively studied by a number of authors (Smith 1978,1981; Rudolph and Blanton 1980; Williams 1983). The Lamar Period has been divided into three phases: Duvall, Dyar (with early and late subphases), and Bell (Smith 1978,1981; Williams 1983). For the purpose of looking for change during the early historic period, only the Late Dyar (ca. 1525-1600) and Bell (1600-1670) phases need be considered here.

The Late Dyar phase is the sixteenth century Lamar manifestation in the Wallace Reservoir area. The ceramic chronology for the Dyar phase is based on stratigraphic excavations into mound outwash and a house floor excavation at the Dyar site (Smith 1981). Ceramic types of the Dyar Phase include Lamar Plain, Lamar Incised, Lamar Complicated Stamped, Coarse Plain, and Burnished Plain. The Early Dyar subphase also includes the type Morgan Incised. The Bell Phase, defined at the Joe Bell site (Williams 1983), consists primarily of Lamar Incised and Plain ceramics.

Throughout the later portion of the Lamar Period (Early Dyar, Late Dyar, Bell) several stylistic trends are in evidence in the ceramics. First, there is an overall reduction in the width of incised lines. Lamar incised pottery in the Wallace Reservoir was subdivided

into "bold incised" (line width greater than 2 mm), "medium incised" (1-2 mm) and "fine incised" (less than 1 mm). The Early Dyar subphase contains primarily bold incised ceramics with some medium incised. The Late Dyar Phase has some percentage of all incised line categories, but fine incised is slightly more common than bold incised while medium incised makes up some 70% of the incised pottery (Smith 1981:136). The frequency of fine incised pottery increases in the Bell Phase at the expense of other types.

The type Morgan Incised (Smith 1981:189) occurs in the Duvall Phase and the Early Dyar Phase, but it is absent in the Late Dyar Phase and Bell Phase considered here. There is also a tendency for the number of incised lines to increase in Lamar incised ceramics over time. Early Dyar Phase vessels often have as few as two incised lines, while Bell Phase vessels may have more than twenty line elements.

Rim modes also tend to change through time. The early Lamar Duvall Phase and Early Dyar Phase vessels have folded rims decorated with hollow cane punctates, as well as folded and pinched rims. The folded and punctated rim mode disappears by the Late Dyar Phase, when rim folds with notching or scalloping are present. James Rudolph has demonstrated that the width of rim folds increases over time (Rudolph and Blanton 1980). During the Bell Phase, a rim with a "T"-shaped flange, often incised on the upper surface, becomes popular and is an excellent marker for that phase.

There are also shifts in the frequency of complicated stamped decoration over time. Early Dyar Phase levels at the Dyar site contain

up to 20.5% stamped pottery, while the Late Dyar Phase contains less than 5%. Complicated stamped pottery is virtually unknown from Bell Phase sites (Smith 1981; Williams 1983).

The trends of the continuum are clear: less stamping, more and finer incised lines, and certain changes in rim decoration occur over time. Additionally, pipe smoking also increases dramatically in the Late Dyar and Bell phases; fine clay pipes are excellent markers of these phases.

The problem is how to determine the phase affiliation of a site based upon very small samples and preliminary laboratory analysis. All analysis was performed by trained laboratory personnel, but it should be noted that several individuals analyzed the sites, and thus some subjective observations may not be consistent from site to site.

A set of rules was established to place sites into the appropriate components. First, sites were assumed to be single component unless the ceramic counts strongly suggested otherwise. This decision undoubtedly masked the true situation to some extent, but particularly for small sites with small collections, it was the only reasonable choice.

Lamar sites believed to be of single component were excluded as too early for this analysis (i.e., they belonged to the Duvall or Early Dyar Phase) if they contained the type Morgan Incised, the folded and punctated rim mode, a predominance of bold over medium and fine incised, or a high frequency of complicated stamped ceramics.

Sites with a predominance of medium incised pottery, a small amount of complicated stamped sherds, and no folded and punctated rims were assigned to the Late Dyar Phase.

Bell Phase Sites were distinguised by the presence of "T" rims, more fine incised than medium or bold incised, and virtually no complicated stamped sherds. Finally, sites with a predominacne of fine incised sherds but with complicated stamped sherds were assumed to be multicomponent.

After making phase identifications based on these criteria as applied to the preliminary analysis forms on file at the University of Georgia, James Rudolph graciously supplied additional rim analysis data. The inclusion of these data reassuringly only changed the affiliation of a few sites, usually making them multicomponent. Thus the temporal analysis, although crude, appears to be successful and should be adequate for the broad purposes for which it is utilized here. Certainly a few individual sites may have been misidentified, but given the large sample size, such misidentifications are probably masked in the overall analysis.

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BIOGRAPHICAL SKETCH

Marvin T. Smith was born on March 10, 1949, in New York, New York. After several moves, by the age of five, his family settled in Rome, Georgia, where he was educated in the public school system. Marvin attended the University of Georgia in Athens, receiving his A.B. degree in 1971. While in Athens, he attended classes in anthropology taught by Charles Hudson and David Hally, and his fate was sealed. In 1971, he enrolled in the University of Kentucky for graduate study, receiving the M.A. degree in 1975. After several years of archaeological research in Georgia, Marvin enrolled in the University of Florida in 1981 to complete his graduate training.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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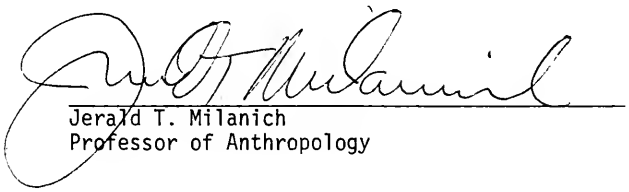

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