AN EXAMINATION OF THE SOCIAL COMPOSITION OF LATE MISSISSIPPIAN TOWNS IN THE ALABAMA RIVER VALLEY THROUGH CERAMIC STYLES

by

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ABSTRACT

An examination of the culture historical sequence of the Alabama River Valley has demonstrated that archaeologists have been unable to classify and describe pottery assemblages from Late Mississippian sites (ca. AD 1450-1540) using conventional methods of ceramic classification. In order to better understand sites dating to this period, a new method for ceramic analysis was tested. This analysis was based in a theory of cultural models, whose proponents argue that culture consists of a series of interconnected models governing proper behavior that are shared across the minds of individuals. To determine whether shared cultural models of ceramic production could be detected, a series of attributes was collected from collections of pottery sherds from four different Late Mississippian sites. These attributes consisted of aspects of ceramic paste composition, vessel form, and vessel surface treatment and decoration.

The ceramics used in the study were recovered from two seasons of excavations at the Matthew's Landing site conducted as part of this project and from previous excavations at three additional sites. Once the attributes were collected, both a cluster analysis and a correspondence analysis were used to test whether the cultural models of ceramic production could be inferred. Both analyses demonstrated that sites and pottery sherds were separable into groups that corresponded to the ceramic styles from three distinct Late Mississippian ceramic traditions, Moundville, Lamar, and Pensacola.

This suggests that the Alabama River drainage, which was not intensively occupied by populations adhering to Mississippian cultural practices until relatively late

in prehistory, was settled by populations migrating from three different geographic regions. The mixing of ceramic models associated with all three traditions further suggests that each town had a distinct mix of ethnically and linguistically diverse populations. Ethnohistoric records from the Hernando de Soto expedition, which traveled through the region approximately a century after it was settled, demonstrates that some form of a politically centralized chiefdom existed during this period within the study area. This politically organized body was likely a coalescent society that emerged after populations migrated into a new region from the deteriorating Mississippian chiefdoms in their homelands.

CHAPTER 1
INTRODUCTION

In a recent summary of aboriginal occupation in the upper portion of the Alabama River Valley, Craig Sheldon (2001:20) noted that "there is no existing cultural chronology for the late prehistoric period for the upper twenty-four miles of the Alabama River." That such a situation currently exists in a drainage that flows across most of central Alabama is extraordinary. Even as the number of recorded and excavated archaeological sites in the region has burgeoned with the growth of cultural resource management archaeology, the cultural chronology of the fifteenth and sixteenth century A.D. in much of the Alabama River Valley is still a blank space in the regional cultural sequence. A closer examination of the artifacts recovered and the history of excavations at several Late Mississippian sites in the Alabama River Valley illuminates the reasons why archaeologists have been unable to formulate a cultural chronology over the past few decades.

One reason that Late Mississippian sites in the Alabama River Valley have lacked a chronology for so many years is the nature of the archaeological sequence. The drainage did not sustain substantial occupation by peoples practicing the traits associated with the broad Mississippian cultural pattern until comparatively late in prehistory. In much of the Southeast, during the eleventh and twelfth centuries, a series of major cultural developments originating in the Mississippi River Valley spread across Native American peoples (Smith 1990). The major changes associated with the Mississippian cultural pattern were the cultivation of maize, squash, and beans as a subsistence base, the shift in settlement patterns to the floodplain of major drainages, the emergence of an institutionalized social ranking, and the political consolidation of multiple communities into political units known as chiefdoms (Bense 1994). This represented a major group of cultural shifts, since peoples who adhered to the preceding Late Woodland

pattern were organized into political entities that only rarely came together on the multi-community level, and practiced a subsistence strategy that was far more dependent on the procurement of wild foods (Knight and Steponaitis 1998). The best-known and largest Mississippian site in Alabama is Moundville, which was the center of a politically-unified chiefdom that stretched up and down the Black Warrior River Valley. Between the eleventh and fourteenth centuries AD, Mississippian polities were located in the Tennessee River Valley, the Mobile-Tensaw delta, the Tombigbee Valley, the Chattahoochee River Valley, and the Upper Coosa Valley (Walthall 1980) (Figure 1). However, the Alabama River Valley was not extensively settled by peoples exhibiting traits associated with the Mississippian cultural pattern until late in the Mississippian era, some four centuries after this cultural pattern took hold in the surrounding regions. While peoples practicing Late Woodland cultural patterns did inhabit the Alabama River Valley after Mississippian chiefdoms had emerged in the surrounding drainages, perhaps as late as the twelfth century (Sheldon and Jenkins 2003), it is likely that for at least two and a half centuries, much of the Alabama River drainage was only sparsely inhabited. Because of the long gap in the prehistoric occupation sequence, it is apparent that the appearance of Mississippian sites in the Alabama River drainage was the result of migration, rather than the result of diffusion of traits to existing groups of people.

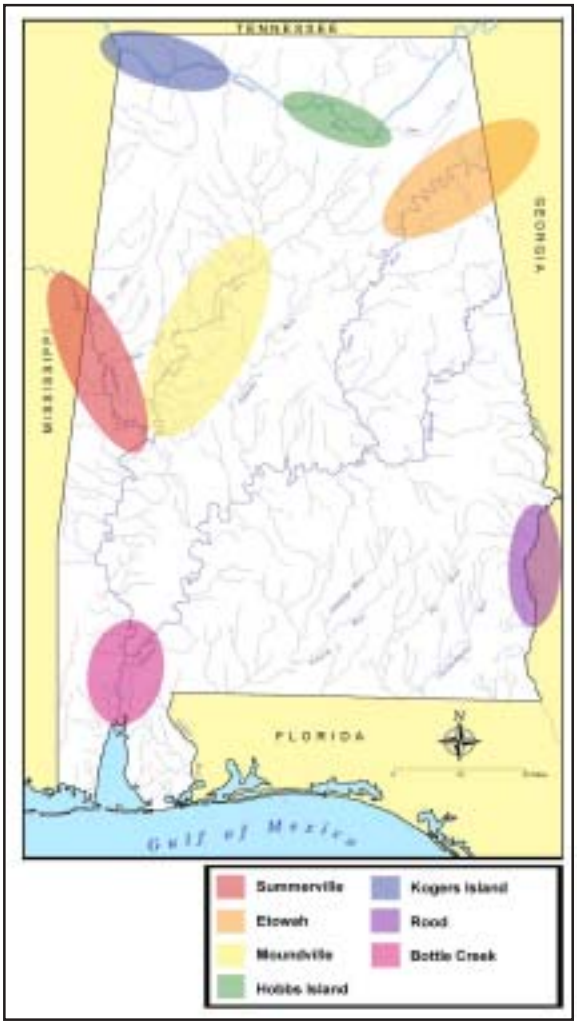

Figure 1. Distribution of Mississippian polities in Alabama during the eleventh through fourteenth centuries AD.

The Late Mississippian peoples who occupied the Alabama River drainage during the fifteenth century did not come from a single geographic area. This has led to a great deal of the confusion concerning the chronology and classification of Late Mississippian sites. In the southeastern United States, archaeological sites are typically assigned to their chronological position based upon similarities and differences in the paste, vessel forms, and decoration present in assemblages of pottery sherds (see Phillips et al. 1951). The ceramic assemblages from Late Mississippian sites in central Alabama possess ceramics associated with three major traditions of the Mississippian cultural pattern in the Southeast (Sheldon and Jenkins 2003) (Figure 2). The first of these is the Pensacola tradition, the expression of the Mississippian cultural pattern centered in the Mobile-Tensaw delta at the Bottle Creek site. Pensacola sites also extend eastward along the Gulf Coast into the Florida panhandle and westward to

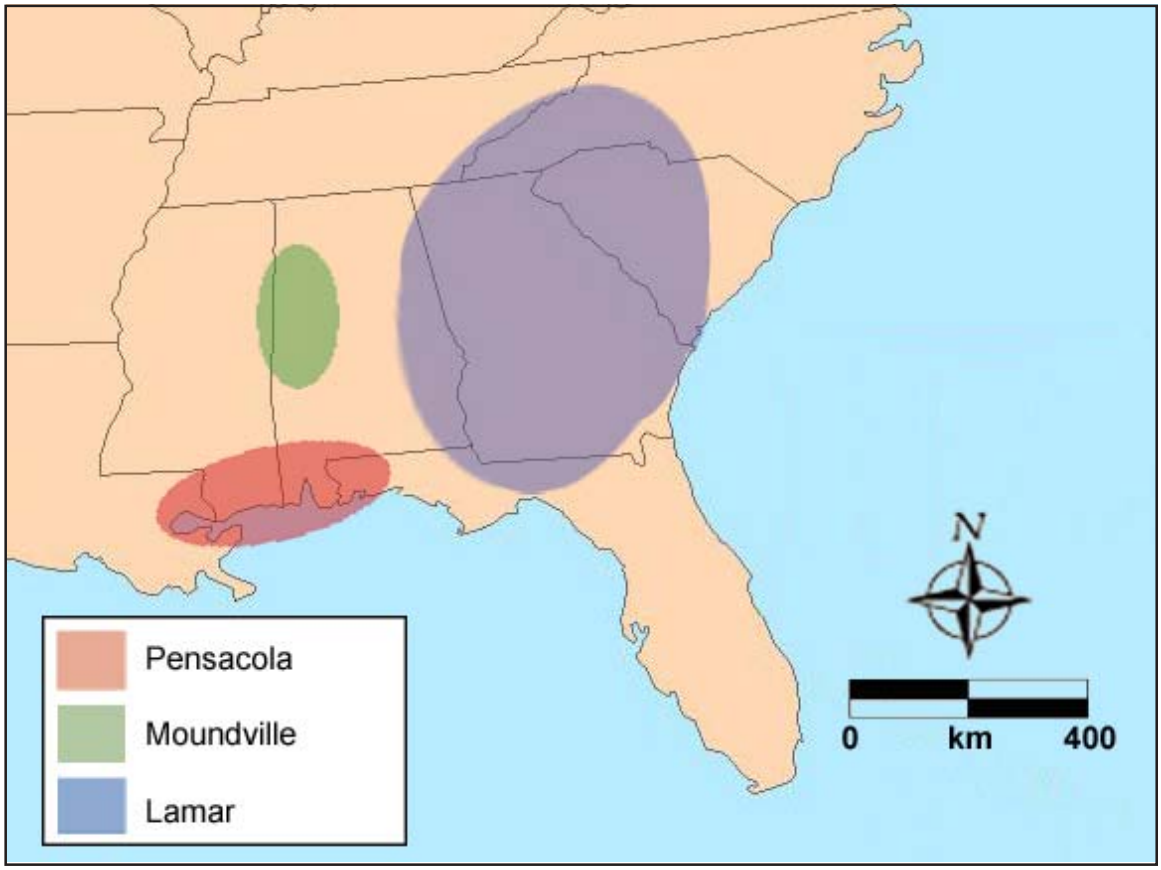

Figure 2. Map depicting distribution of major Mississippian cultural traditions discussed in the current study.

southeastern Louisiana (Brown 2003). It appears that at some time during the fifteenth century, as the chiefdom centered at Bottle Creek entered a period of political decline, sites with ceramic assemblages associated with the Pensacola tradition began appearing at sites in the middle portion of the Alabama River Valley (Curren 1984). This is likely the result of a migration of people upriver into Wilcox and Dallas counties, even to the junction of the Cahaba River.

The second Mississippian pottery tradition represented at sites in the Alabama River Valley is that of Moundville. As noted, Moundville was located to the west in the Black Warrior Valley and was the largest and longest-lasting Mississippian polity in the borders of present-day Alabama. The Moundville chiefdom incorporated a series of sites that stretched approximately 25 km upriver and 35 km downriver from the center (Welch 1998). However, sites with cultural ties to Moundville, which were not likely part of the polity centered at the site, are found to the west in the Tombigbee drainage, and farther north and south along the Black Warrior. The chronology of political organization in the Moundville chiefdom has been studied extensively (Steponaitis 1983; Knight and Steponaitis 1998; Knight et al 1999). Through these studies, researchers have determined that during the fifteenth century, the political consolidation of the Moundville chiefdom was on the wane (Knight and Steponaitis 1998). During this period of decline, it appears that groups of people from the Moundville culture area migrated out of the Black Warrior Valley, settling along river drainages to the east, including the Cahaba and Alabama rivers (Jenkins 2004).

Finally, pottery associated with the Lamar ceramic tradition is found at sites in the Alabama River drainage. The Lamar designation is given to Mississippian sites located across a broad area, including most of Georgia and neighboring portions of Alabama, Florida, South Carolina, North Carolina, and Tennessee . The Lamar tradition first emerged in northwest Georgia and spread across the southern Appalachian region after the collapse of the Mississippian chiefdom centered at the Etowah site (Hally 1994). The most common form of political organization present over the region associated with the Lamar tradition was not the complex chiefdom with a central site, lower order mound sites, and smaller outlying settlements

typical of Moundville and Bottle Creek, but rather a simple chiefdom centered at a single-mound site (Hally 1994). Recent archaeological evidence from an area south of the Alabama River drainage, near the present-day town of Troy (Figure 3), has revealed that occupations associated with the Lamar tradition in this area may have originated from a group that migrated out of the Etowah chiefdom area during a period of political instability in the fourteenth century (Jenkins 2004). People associated with this group are hypothesized to have spread subsequently into the Lower Tallapoosa and Alabama river valleys, as evidenced by the presence of Lamar ceramics at Late Mississippian sites in that area (Jenkins 2004).

Figure 3. Map depicting location of Etowah-related sites (in red) located in the vicinity of present-day Troy.

When attempting to work out the sequence of prehistoric occupation in a region, or the culture history, archaeologists in the southeastern United States have grouped archaeological sites into phases (see Philllips et al. 1951). A phase is defined as "an archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived,… spatially limited to the order of magnitude to a locality or region and chronologically limited to a relatively brief interval of time" (Willey and Phillips 1958:22). Because of the way in which the Alabama River drainage was settled by Late Mississippian peoples, archaeologists have struggled to create viable phase designations that subsume multiple major sites. Primarily, this difficulty exists because major sites along the drainage tend to have ceramic assemblages that differ substantially in the distribution of pottery styles associated with each of the three cultural traditions (Figure 4). At the far southwestern end of the spectrum,

sites tend to have a majority of Pensacola pottery, with a small amount of Moundville pottery and no Lamar pottery. At the uppermost portion of the Alabama River drainage, and into the Lower Tallapoosa Valley, sites have a majority of Lamar pottery, with a small amount of Moundville and Pensacola pottery. Sites located geographically in the center of the study area tend to exhibit differing proportions of pottery associated with all three cultural traditions.

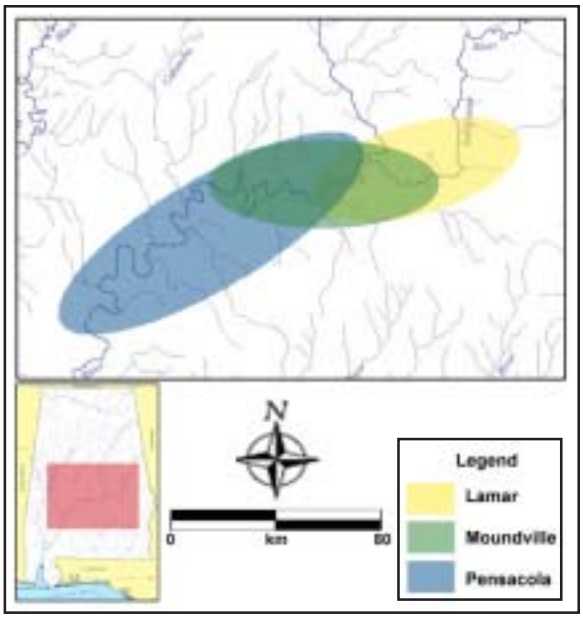

Figure 4. Distribution of major Mississippian pottery traditions on sites in the Alabama and Lower Tallapoosa River Valleys.

An even more basic problem has confronted archaeologists working in the Alabama River drainage. Archaeological phases that group late prehistoric sites in the Southeast are typically created by tabulating the relative frequency of ceramic types. These ceramic types are created to group pottery sherds on the basis of their ware and decoration. In selected areas of the Southeast, including the Moundville and Pensacola culture areas, archaeologists have further refined this system by adding ceramic varieties, which serve to aid chronology building by serving as a classificatory device for recognizing fine-scale areal and temporal variations from the type norm (Phillips 1970). Through the careful study of ceramics recovered from multiple excavations at Bottle Creek and Moundville, archaeologists have created type-variety systems to classify sherds recovered from sites in each chiefdom (see Steponaitis 1983 and Fuller 1998). Archaeologists also have formulated a series of ceramic types to classify sherds from sites in the Lamar culture area (Wauchope 1966). Such a careful study of collections like those cited above, followed by the creation of a broadly-accepted and published classification system, has never occurred for ceramics in the Alabama River Valley.

Archaeologists working in the region have employed one of two strategies for classifying pottery from Late Mississippian sites. On many occasions, they have borrowed ceramic type and variety definitions from adjacent areas and used them to classify sherds from Alabama River sites. This presents a problem for two reasons. First, in using the type system used to classify Lamar-derived sherds and the type-variety system to classify Moundville and Pensacola-derived sherds, archaeologists are drawing on two classification systems with differing levels of specificity. The ceramic types used to classify Lamar pottery, such as Lamar Bold Incised, are formed on the basis of a ware type and decorative technique, without taking the decorative motif into account. Because they do not take into account motif, ceramic types subsume multiple potential varieties. For example, the Carthage Incised type, which is part of the Moundville pottery classification, is defined to include sherds tempered with fine shell with a burnished surface incised with lines thicker than 2.0 mm (Steponaitis 1983:53-54). Different varieties of Carthage Incised, such as *vars. Carthage* and *Fosters*, exhibit different incised motifs. These two varieties include, respectively, sherds with incised multiple line scrolls and hands with long bones (Figure 5). In contrast, all incised Lamar pottery, regardless of the motif, is classified only as the type Lamar Bold Incised (Figure 6).

Figure 5. Motifs found on Moundville pottery classified as the type Carthage Incised. Note that each motif depicted represents a different variety. Carthage Incised *var. Fosters* is in the upper right, and *var. Carthage* is below it.

Figure 6. Examples of diverse motifs found on incised Lamar sherds classified simply as the ceramic type Lamar Bold Incised.

In addition to the problems created when two classifications with different levels of specificity are combined, archaeologists attempting to classify pottery from the Alabama River drainage have borrowed type names used to classify ceramics in the core areas of the Lamar, Pensacola, and Moundville traditions without fully evaluating how well their definitions match the sherds being described. Most of the Late Mississippian sites in the Alabama River drainage were occupied for at least one hundred years until European contact caused dramatic cultural disruptions. During this period, it can be assured there was some stylistic drift as several generations of female potters, who presumably learned their craft from their older female relatives, passed their knowledge down to the next generation. Additionally, as females who practiced different potting traditions lived side by side, it is likely that they began to incorporate aspects of the unfamiliar pottery traditions into their own ceramic production. Both of these factors would have led to the development of distinct pottery styles in the Alabama River Valley that have gone unrecognized because of the continued practice of applying type and variety designations from other geographic areas without critically evaluating how well those sherds fit a given type description.

Another factor that has led to the current problem with Late Mississippian chronology in the Alabama River Valley has to do with the history of the archaeology that has been conducted in the drainage. The first published excavations were those of C. B. Moore (1899), who visited five of the major sites from the period during his 1898 journey upriver (Figure 7). The focus of Moore's work was primarily the

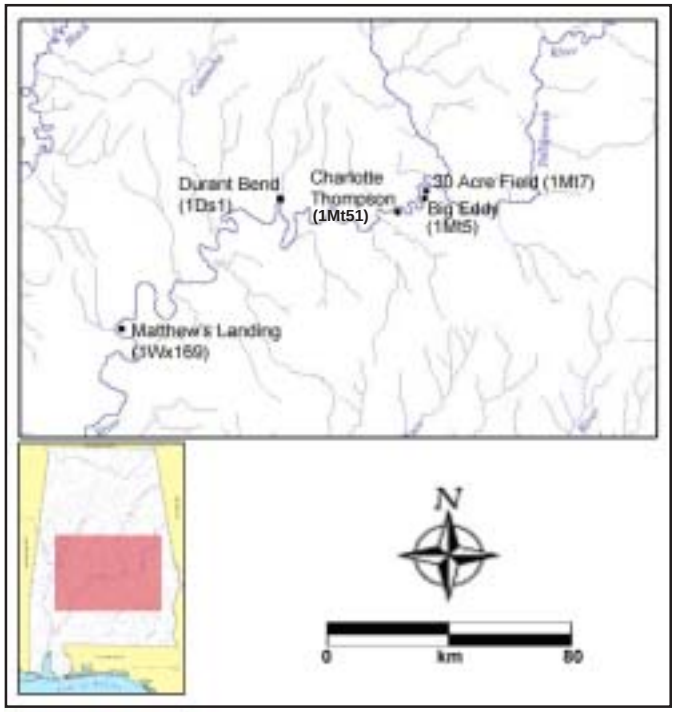

Figure 7. Late Mississippian sites in the Alabama River drainage visited during C. B. Moore's 1899 expedition.

excavation of burials, which eventually grew into an attempt to understand burial customs across the entire Southeast (Knight 1996). During the course of his excavations, Moore leveled mounds and excavated substantial portions of cemeteries. His collections from the Alabama River Valley, most of which are curated in the Smithsonian Institution's Museum of the American Indian, consist primarily of grave goods, meaning that the small sample of pottery from these sites amounts to a few whole vessels. At three of the most important sites in the upper portion of the drainage, Charlotte Thompson, Thirty Acre Field, and Big Eddy, Moore's work represents the only significant excavations to have ever taken place. Therefore, our only knowledge of the ceramic assemblages from these sites is drawn from the few whole vessels and large sherds that Moore chose to save.

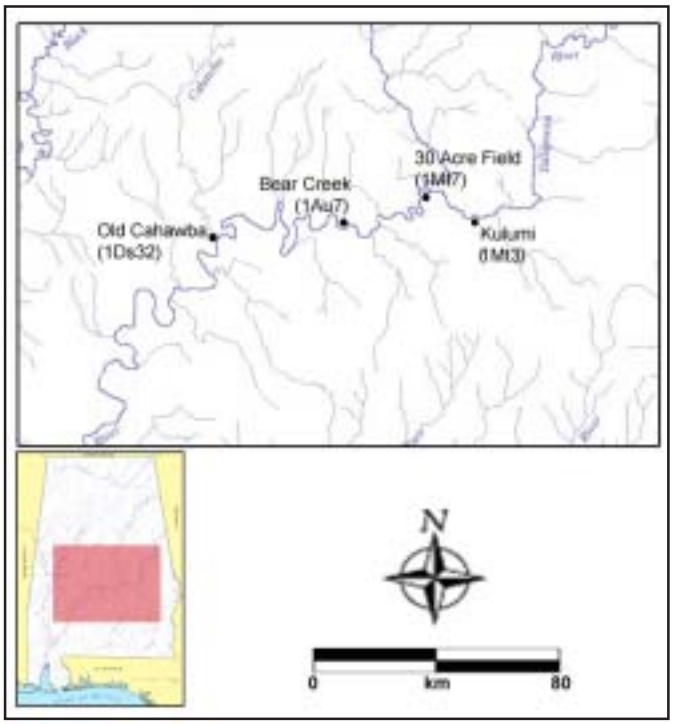

Figure 8. Late Mississippian sites in the Alabama River drainage excavated by David Chase.

After Moore's work was completed, no significant archaeological excavations were performed on sites in the Alabama drainage until the 1960s and 1970s. During the early part of the twentieth century, sites in the Alabama River drainage were not subject to extensive excavations directed by archaeologists working for the WPA and the CCC as part of the Depression-era relief programs. Between the 1960s and 1980s, archaeologist David Chase, who at the time was employed by the Montgomery Museum of Fine Arts, performed excavations at several Late Mississippian sites, including Bear Creek (1Au7), Kulumi (1Mt3), and Old Cahawba (1Ds32) (Figure 8) in an attempt to refine the ceramic sequence for the upper portion of the Alabama River Valley. Chase dutifully excavated these sites and tallied the

counts of pottery from each, creating a series of types to describe the ceramics he was finding. However, he did not publish a definitive chronology for Late Mississippian sites in the area.

Subsequent excavations by C. Roger Nance and Caleb Curren at Late Mississippian sites farther downriver provided large ceramic samples, although a difference in the analytical techniques employed by both investigators have made it difficult to compare their respective ceramic assemblages. Thirty years ago, Nance (1976:130-131) recognized the problems in existing Alabama River ceramic typologies, noting that ceramic typologies created for nearby sites, specifically Cottier's (1970) typology of sherds from Alabama River phase sites in Wilcox County, were simply not applicable to the Durant Bend ceramic assemblage. Additionally, Nance hoped to examine cultural differences at the community level and to detect intrasite cultural change on a finer scale than was offered by a type system. To accomplish these goals, Nance (1976:132-133) created a classificatory taxonomy that assigned the sherds to one of 53 different lots. Sherds were divided first by temper, next by vessel form and part of the vessel represented, and then into specific designations based upon vessel form. For example, shell-tempered rim sherds from necked jars with loop handles represented one lot, while shell-tempered rim sherds from necked jars with strap handles were classified into a different lot. Nance's ceramic classification represents a noble effort to describe the variation present in the Durant Bend assemblage, and he made an effort to compare attributes of Durant Bend ceramics to those from other contemporaneous sites. Its major flaw is that this classification scheme, like a type system, divided the assemblage into exhaustive and mutually exclusive categories. Because of the amount of variation in the assemblage, the sheer number of lots that attempt to categorize every possible combination of attributes becomes cumbersome.

Caleb Curren (1984) created the only typology formulated specifically for the Alabama River Valley in order to classify the pottery assemblage from the Matthew's Landing site (1Wx169) (Figure 7). In so doing Curren borrowed types from other regions, including those created for Moundville and Pensacola ceramics, and in addition created three new variety designations to classify the decorated bowl sherds from Matthew's Landing. Unfortunately, his

variety descriptions subsume a number of different paste recipes, surface treatments, decorative motifs, and even placement of incising. Upon close examination, it appears that the main criterion distinguishing them is the location of the incising on the interior or the exterior of the vessel. These new varieties have not been extensively applied to collections from other sites in the Alabama River drainage, although few assemblages from Mississippian occupations in the Alabama River Valley have been analyzed in the period since Curren created his typology.

Study Design and Theoretical Orientation

As the above examples have illustrated, a new study of ceramics from sites in the Alabama River Valley is warranted to work out the problems of chronology for Late Mississippian sites. Beyond the relatively simple issue of site chronology and classification lies a far more intriguing research problem. In AD 1540, approximately one hundred years after the Alabama River Valley was re-settled by Mississippian groups, the Spanish conquistador Hernando de Soto became the first European to visit central Alabama. The accounts of his expedition reveal that in the portion of his route that passed through central Alabama, the Spaniards encountered a powerful chief, Tascalusa, who held sway over multiple communities and was able to muster enough warriors to launch an impressive but ultimately unsuccessful attack on the expedition party (Biedma 1993; Ranjel 1993; Elvas 1993). The evidence from the de Soto accounts suggest that in a few generations after Mississippian peoples had settled the Alabama River drainage, they appear to have consolidated into some form of a centralized polity. In order to shed light on this political consolidation, however, the social composition of Late Mississippian sites in the Alabama River Valley must be better understood.

Ceramic sherds represent the most suitable artifact class for examining the social composition of Late Mississippian towns. In making a vessel, potters must make a series of choices, including what types of materials to add to the clay paste to strengthen the final product, what form of vessel to make, and how the pot will be decorated. These decisions are conditioned by the culture in which the potter learns the craft of ceramic manufacture. Ethnohistoric records have demonstrated that in the southeastern United States, pottery was

made by females, who typically learned their craft from their mothers and passed it down to their daughters (Harrington 2002). Because potters learned their craft in a given cultural environment, the social composition of towns should be traceable through an analysis of ceramic paste, form, and decoration.

The theory behind such a study is drawn from cognitive anthropology. Cognitive anthropologists conceive of culture as a matrix of meanings and understandings that exist in the minds of individuals (Dressler 2005). The core concept of cognitive anthropological theory is the cultural model, which consists of cultural knowledge that is widely shared among individuals and guides some portion of individual behavior (Shore 1996). All cultural models are not assimilated in individual minds in an identical fashion. Some individuals have better knowledge of a given cultural model than do other individuals. For example, in Mississippian societies, practicing female potters would have much greater knowledge, termed cultural competence, in the domain of ceramic production than individuals who did not produce pottery. Theory from cognitive anthropology has never been applied to the archaeological research; therefore, it still must be tested whether it is even possible to use the material remains left behind by a given cultural group to extract cultural models.

The present study thus was designed to test whether it is possible, first, to extract cultural models based on attributes of ceramic production and decoration and, if successful, to employ those models to understand the social

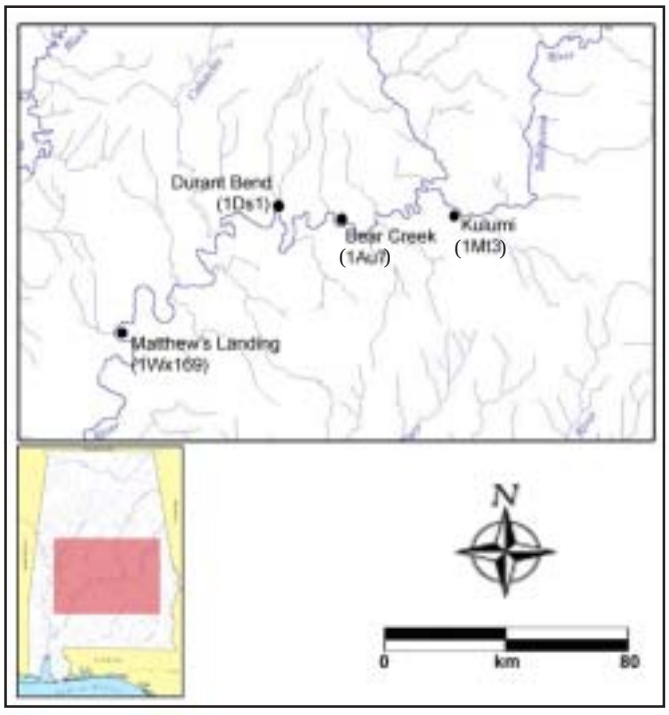

Figure 9. Late Mississippian sites whose pottery assemblages were examined as part of the current study.

composition of Late Mississippian sites (ca. AD 1450 to 1540) in the Alabama River Valley. While there are a number of sites known to date to this period, each of which are discussed in Chapter 5, only three of these had ceramic samples large enough to study. The sites examined are spaced relatively evenly along the river (Figure 9). These sites include Durant Bend (1Ds1), a large village located inside a sharp bend along the south side of river, Bear Creek (1Au7), another large village located at the mouth of a creek of the same name, and Kulumi (1Mt3), a site with two mounds in the lower portion of the Tallapoosa River Valley, before it joins with the Coosa River to form the Alabama. New excavations, discussed in Chapter 4, were conducted at a fourth site, Matthew's Landing (1Wx169), which is in the southwestern portion of the study area, farther downriver than the other sites.

A series of attributes of paste, form, and decoration, which are described in Chapter 6, were recorded for specific jar and bowl forms in the collections from each site. It was predicted that cultural models of ceramic production could be extracted from a set of ceramic attribute data, and that those models would indicate that the populations of Late Mississippian towns in the Alabama River Valley were multiethnic. Each of these distinct vessel forms are essentially separate functional classes within which stylistic attributes vary, necessitating the creation of three distinct data sets. The first consisted of attributes of paste and form observed on rim sherds from globular jars. The second data set was made up of attributes of paste and decoration observed on three bowl forms, the casuela, hemispherical bowl, and flaring rim bowl (Figure 10). The third and final data set was composed of

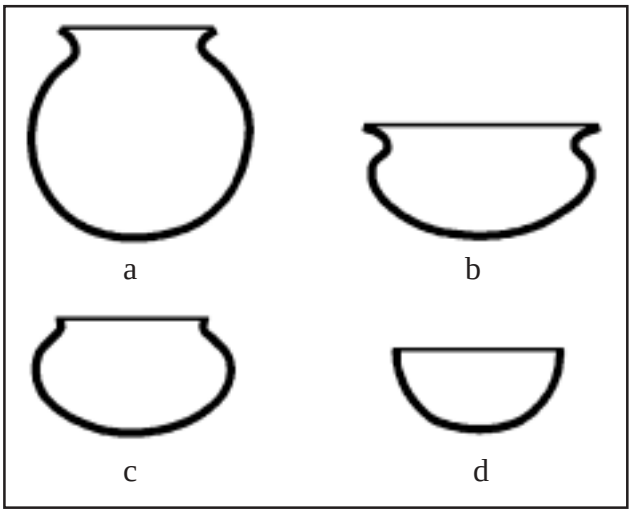

Figure 10. Vessel forms included in the current study, including (a) globular jar, (b) flaring rim bowl, (c) casuela, and (d) simple bowl.

attributes of paste and rim form observed on two bowl forms, the casuela and hemispherical bowl.

Each of the three data sets was then subjected to two sets of statistical analysis, the results of which are discussed in Chapter 6. The first consisted of a hierarchical cluster analysis, a statistical technique that clusters groups of related sherds based upon a calculated similarity measure. The cluster analysis generated a series of pottery groupings that tend to reflect stylistic differences between each of the three Mississippian pottery complexes represented in the study area. In other words, each of these clusters appears to represent a certain cultural model of how to construct or decorate a given vessel. The next step was to examine how each of these clusters are distributed at each site. This information was accessible through a cross-tabulation of sites by clusters; however, there was a more robust means of examining how certain pottery attributes tended to occur more frequently at individual sites. Correspondence analysis is a statistical technique that positions both columns and rows on a cross-tabulation in order to represent the numerical relationship between the groupings spatially. Therefore, the result of such an analysis, beyond the numerical values, is a graph that depicts the distances between both attributes and sites in space.

The results of the ceramic analyses provide telling information about the nature of Late Mississippian sites in the Alabama River Valley. First, it is increasingly clear that grouping the sites into archaeological phases is largely impossible, because the ceramic assemblages from each site are so different from one another. Using phase groupings to categorize these sites only obscures variation relevant to understanding the social composition of these towns and the nature of their political consolidation. The analyses employed have demonstrated that each individual town had a distinct composition of people from diverse ethnic backgrounds. Traditional archaeological systematics, particularly type classifications, are not an effective means of examining the fine-scale variation that is accessible to an attribute analysis. This brings up an even broader question of how common multiethnic societies may have been in the prehistoric Southeast, and how frequently they have gone unrecognized. Beyond this notion, the

extraction of ceramic production models suggests an interesting trend in the development of Late Mississippian ceramic styles. While the assemblages from each site clearly reflect the ties to the cultural traditions from whence they came, the results of the correspondence analysis also indicate that potters at these towns were beginning to develop their own distinct styles of pottery manufacture. The question of what this may have meant with respect to the political organization observed by the Spanish conquistadors who visited the Alabama River Valley is addressed in the final chapter. It is certain, however, that the entrance of European explorers into the drainage dramatically altered the existing political and social structure of the Alabama River Valley, and ushered in several centuries of drastic cultural change in central Alabama.

CHAPTER 2
THEORETICAL BACKGROUND

During the twentieth century, archaeologists typically borrowed and altered the underlying theoretical basis of their work from cultural anthropology to suit their needs. The fundamental difference between the three broad classes of twentieth-century archaeological theory is the way in which culture is defined. During the mid-twentieth century, culture historians, exemplified by Willey and Phillips (1958), construed culture as a series of norms governing behavior. This obviously includes the production of any aspects of material culture. New norms governing the production of material culture arose through independent innovation or were introduced into a given area through diffusion of ideas or migration of peoples. This construal of culture drew criticism from subsequent archaeologists, particularly during the 1960s and 1970s, who adhered to the processualist paradigm. Processualist archaeologists such as Taylor (1948) and Binford (1962) argued that construing culture as a series of norms did little to explain why certain material traits emerged in different times and places. Processual archaeologists employed a decidedly materialistic definition of culture, borrowed from the anthropologist Leslie White. This definition, put forth most notably by Lewis Binford (1962:219), stated that culture was the, "extrasomatic means of adaptation for the human organism." However, it seems that the processualist view of culture as a system allowing man to adapt to the environment owed more to Julian Steward's theory of cultural ecology than to Leslie White. In the 1980s, a group of archaeologists, led by Ian Hodder (1986), launched a series of criticisms of processual theory, arguing that a materialist and systemic view of culture deemphasizes the role of the individual in the past and completely discounts the role of ideational systems in shaping the past. Additionally, postprocessualist archaeologists took issue with the notion that the events of the past could ever be explained. Instead, drawing on postmodern

philosophy, they contended that the past can never objectively be known; thus, all the archaeologist can do is subjectively interpret material remains.

More recently, a theoretical offshoot known as agency theory, drawn from the work of two sociological theorists, Pierre Bourdieu (1977) and Anthony Giddens (1984) has arisen out of postprocessual theory and has gained some popularity among archaeologists in the Southeast. The best known application of agency theory to date in southeastern archaeology is its use to understand the growth and development of the largest and earliest Mississippian chiefdom in the Southeast, centered at Cahokia (Pauketat 2001a, 2001b, 2003). Both Bourdieu and Giddens' work is centered on the same basic argument, that as individual actors enact and embody societal traditions, these traditions are constantly reinterpreted and altered (Pauketat 2001:79). Drawing on Bourdieu's (1977) notion of *habitus*, agency theorists argue that individual motivation and behavior are inherently idiosyncratic. By accepting this notion, agency theorists turned away from the use of culture as it has been construed by anthropologists. Because every individual action, or practice, is presumed to be novel and creative, agency theorists presumed that these practices cannot be constrained by any environmental or cultural factors (Pauketat 2001b:74). The task of the archaeologist, therefore, is not to reconstruct past cultures, but to produce detailed histories of how certain practices came to exist in a particular place and time. Such studies must therefore be particularistic, because generalizing practice on a scale beyond the individual social group imposes unwelcome essentialist realities on a collection of unpredictable, disorderly practices (Pauketat 2001b:74, 2003:41).

Agency theory has been criticized for numerous reasons, which are laid out a recent paper (Dumas et al. 2005). One of the major criticisms put forth is that although there is currently no universally agreed-upon definition of culture, the majority of anthropologists would at least agree that culture by definition must be patterned, shared, and conservative, not idiosyncratic (Dumas et al. 2005). This basic characteristic of culture meshes well with the goals of archaeology. To reconstruct past societies and events, it is not useful to focus on the

particularistic and the idiosyncratic. Rather, it is necessary to search for patterns on a collective scale (Dumas et al. 2005:5). Defining culture as enduring, broadly shared knowledge does not deny the possibility of opposing beliefs in a given social system, as has been argued by some cultural anthropologists and agency theorists. Cultural knowledge is not evenly distributed, and does not have to be by definition. Following Shweder (2001:439), the idea of culture does not "necessarily imply the existence of within-group homogeneity in knowledge, belief, or practice. Every cultural system has experts and novices." Further, the bulk of human actions are the joint product of preferences and constraints motivated by culture. This runs directly counter to the central notion of agency theory, that structure, or rather culture, is an abstraction *derived* from everyday behavior (Giddens 1984). As Marshall Sahlins (1981:72) has pointed out "action *begins and ends* in structure."

A Summary of Cognitive Anthropology

Because it is argued herein that culture should be defined as broadly shared knowledge that is not necessarily homogenous, it is clear that none of the theoretical approaches to archaeology discussed employ such a definition of culture. However, this conception of culture accords very neatly with that used by cultural anthropologists who adhere to the theory of cognitive anthropology. The goal of cognitive anthropologists is to understand how individuals living in a group mentally evaluate and order their world (D'Andrade 1995:1). Cognitive anthropologists conceive of culture not as an integrated whole, but as a matrix of meanings and understandings that exists in the minds of individuals (Dressler 2003; Dressler et al. 2005). These meanings are shared and acted on by people as a series of mental models that order cultural behavior in a given domain, which can be anything ranging from the basics of how to behave in a given social situation to the structure of the universe (Shore 1996:47). These models are essentially outlines of the basic characteristics and processes that occur in a given domain. Essentially each model leaves open variables that are then filled in based on the particular situation (Dressler et al. 2005:224). By their nature, cultural models define appropriate behavior in given situations and allow individuals to make sense of the actions of

those around them (Dressler et al. 1999:50). Cultural models also order the knowledge needed to function as a member of a particular society (Quinn and Holland 1987:4).

Before going forward with an explanation of the theory and methods that cognitive anthropologists employ to extract shared cultural models, it is necessary first to note that cognitive *anthropology* differs from cognitive *archaeology*. Cognitive archaeology is an outgrowth of postprocessual theory and was first described during the early 1990s. Flannery and Marcus (1993:351) provided a definition of cognitive archaeology as the:

> "study of all aspects of ancient culture that are the product of the human mind: the perception, description, and classification of the universe (cosmology), the nature of the supernatural (religion), the principles, philosophies, ethics, and values by which human societies are governed (ideology), the ways in which aspects of the world, the supernatural, or human values are conveyed in art (iconography), and all other forms of human intellectual and symbolic behavior that survive in the archaeological records."

Cognitive archaeology is not a theoretically distinguishable branch of the discipline, but rather a series of methods for studying mental aspects of the archaeological record considered lost to archaeologists (Flannery and Marcus 1993). The methodology employed by cognitive archaeologists incorporates information from the ethnographic, ethnohistoric, historic, and archaeological records to understand cosmology, religion, ideology, and iconography. Researchers have employed these methods to examine the role of shamans in prehistoric cave and rock art (Clottes and Lewis-Williams 1998; Pearson 2002; Whitley 2000), Mesoamerican and Andean cosmologies (Burger 1992; Flannery and Marcus 1976, 1993), and even Mississippian iconography (Brown and Kelly 2000; Knight et al. 2001). However, archaeologists using these methods do not necessarily draw from the same basic culture theory.

The Background of Cognitive Anthropology

Cognitive anthropology began to emerge as a theoretical paradigm out of two distinct intellectual developments during the late 1950s. The first development occurred in the field of cultural anthropology, when the focus of ethnography underwent a shift. Instead of aiming to

describe the integration of social systems in the groups they studied, anthropologists began to evaluate the way in which different societies organized shared cultural ideas and beliefs (D'Andrade 1995). As a result of this shift in focus, ethnographers could no longer simply observe the events around them in the village and follow up by questioning informants about their cultural practices and institutions. To truly understand collective thought in a given society a method of ascertaining deeper cultural meaning was needed (D'Andrade 1995:16). A solution was derived from studies of kinship terms by Floyd Lounsbury (1956) and Ward Goodenough (1956). This method, known as componential analysis, identified the categories extant in the minds of informants. As originally developed, componential analysis, which also was known as feature analysis, was intended specifically for use in the analysis of kinship terms. By examining the commonalities across different kin terms and then collapsing those terms into like categories based upon a series of rules, Lounsbury and Goodenough were able to determine which kin distinctions were most important in a given system. The basic idea behind this approach was applicable beyond kin system studies because for the first time, Lounsbury and Goodenough had established a rigorous methodology for identifying units of cultural knowledge and analyzing their structure and integration among members of a given social group (D'Andrade 1995:17).

Cognitive anthropology was further influenced by anthropological studies of folk biology, which also incorporated knowledge concerning the workings of the human mind. As researchers began to investigate the differences in cultural conceptions of the natural world, it became increasingly clear that this knowledge could be divided into culturally-specific folk taxonomies. Although in any given social group, items were classified differently, all folk taxonomies were relatively similar in their organization. Cognitive psychologists determined that this underlying similarity is a result of the basic structure of the human working (short-term) memory, which universally can only process seven plus or minus two pieces of information at any given time (D'Andrade 1995:93). Folk taxonomies reduce the load on the short-term memory by allowing people to categorize certain objects in their brain by reducing the critical number of attributes for any given object by clustering features together. These two techniques

result in mental taxonomies whose structures are best described as ranked tree diagrams. Anthropologists recognized that the way in which items were structured in these tree diagrams is culturally specific (Berlin 1976). At the lowest level is a broad category of item, such as *plant*, followed by more specific groupings, such as tree, vine, grass, or shrub. Folk taxonomies go all the way out to the very specific level known as *varietals*, such as our own cultural distinction between plants like daylilies and calla lilies (D'Andrade 1995:97). In nearly all folk taxonomies, this classification extends out for five levels (D'Andrade 1995:93).

One of the key discoveries of folk taxonomy research was the fact that most individuals hold in their mind a prototype of what a member of a given class should look like, based on several salient features. For example, when asked to imagine a bird, most American informants reproduce an archetype that most closely resembles a robin, bluejay, or sparrow, rather than a penguin or ostrich, which although birds, do not possess the features of this class of animals perceived as typical (Boster 1988; Rosch 1975, 1976). In an example more in line with the interests of archaeologists, cultural anthropologists Kaplan and Levine (1981) investigated the manner in which Mexican potters categorized vessels in the assemblage produced by the potters and their peers. They found that classification, which was based largely on vessel shape and handle shape, was remarkably similar across the entire potting community, meaning that the potters shared a nearly identical archetype of what each class of pot should look like.

During the 1970s, the development of schema theory in cognitive psychology further added to the foundation of anthropological studies of cultural knowledge systems. D'Andrade (1995:124) defined a schema as an "organized framework of objects and relations which has yet to be filled in with concrete detail." Schemas are more complex than prototypes, and are built up over the course of individual experience to serve as abstract reproductions of environmental regularities (Mandler 1984:55-56). The fact that schemas are abstract and open-ended is what allows them to both organize individual experience and process the wealth of data generated by the external environment (D'Andrade 1995:122). For example, the schema of writing involves using some sort of instrument, which could be a pen, chalk, or even a stick, to

leave traces of some form of language on a surface, which could be paper, a chalkboard, or beach sand. In other words, while the exact details are open-ended, the schema of writing does highlight a single specific action (D'Andrade 1995:23). If one slot of the schema is filled with a certain object, for example, a keyboard, this may serve to predict what object could fall into the next slot. If a keyboard forms the first element of the writing schema, the brain automatically fills in the outcome, a computer monitor. If, on the other hand, the writing surface is a chalkboard, the brain is able to fill in that the writing instrument is a piece of chalk. The bulk of human discourse makes reference to schemas to understand what is being communicated, and the underlying structure of mental schemas differ from one society to another (D'Andrade 1995:125).

The central concept of cognitive anthropology, the cultural model, is rooted in the development of schema theory. The chief difference between these two concepts is that while the schema is simple enough to be held in its entirety in short-term memory, cultural models are probably much more complex, consisting of a series of interrelated, representational schemas (D'Andrade 1995:151-152,180). Quinn and Holland (1987:4) defined cultural models as "presupposed, taken for granted models of the world that are widely shared (although not necessarily to the exclusion of other alternate models) by the members of a society and that play an enormous role in their understanding of that world and their behavior in it." These models are the result of two influences, an individual's own biography combined with knowledge learned as a member of a given society (Shore 1996:49). It is the task of the cognitive anthropologist to distinguish those mental models that are idiosyncratic and personal from those that are cultural (Shore 1998:45). As D'Andrade (1992:29) noted, although researchers discuss schemas and models, it is impossible to replicate the actual shared mental model. Rather, in extracting a cultural model researchers are actually detecting highly schematic interpretations made using that model.

Shore (1998) examined in depth the distinction between knowledge that is idiosyncratic and that which is cultural, attempting to better understand both the extent of knowledge that is

cultural and how cultural knowledge differs from one group to another. An example of an individual idiosyncratic model are the mental maps each individual employs to navigate his/her own neighborhood and home city. Each person has a different mental map, the details of which are not shared by others in the community (Shore 1998:47). On the other hand, shared models are mental representations that exist externally as shared cultural institutions acted on and held internally in the individual mind. For example, when the U.S. national anthem is played at a baseball game, individuals automatically know to stand and remove their hats. As Shore (1998:47) noted, in order to drive behavior, "these models must be reinscribed each generation in the minds of its members." Cultural models are internalized based upon socially constrained experiences, and are guided by social norms, not personal choice. In many cases, a given society may have dominant cultural models accompanied by widely shared alternative models.

As part of his examination of the concept of the cultural model, Shore (1998) also created a series of genres of cultural models of interest to anthropologists. The first major division in a typology of cultural models is the distinction between linguistic and non-linguistic models. Cognitive anthropologists have focused heavily on linguistic models. Classes of linguistic models include scripts, which dictate individual speech turns in standardized conversations, lexical models, which encompass the folk taxonomies of classes of linked items studied heavily by early cognitive anthropologists, and verbal formulas, such as prayers, proverbs, and nursery rhymes (Shore 1998:57-58). Nonlinguistic models, on the other hand, encompass a diversity of sensory experiences, including models that order such diverse aspects of the individual environment as interpersonal space and posture to olfactory models associated with special occasions or events.

Shore (1998:61) noted that all of these various models differ in their function. Of greatest interest to the current study are what Shore (1998:65) classified as task models. Task models facilitate three basic processes, (a) individual ability to remember complex procedures, (b) the predictability of the results of these procedures, and (c) the coordination of complex tasks. Recipe models make up a subset of task models, and essentially consist of those steps

needed to perform complex routines such as food preparation, tool-making, or crop harvesting. Models of pottery manufacture would fall into this category. These models may consist of verbal or written steps of manufacture provided to the learner, or simply a set of guided physical practices provided to the learner (Shore 1998:68).

Cultural Models, Competence and Consensus Analysis

Cultural models examined by anthropologists include such diverse topics as the human mind (D'Andrade 1987), marriage and romance (Holland 1992; Quinn 1982, 1987, 1996), business success (Caulkins 1998), individual achievement (Strauss 1990), and ideal lifestyles (Dressler et al. 1996). In order to determine the existence of a cultural model, cognitive anthropologists rely on the collection of data across a given semantic domain. Early attempts at extracting cultural models focused on in-depth interviews with informants concerning specific cultural domains, which prompted Quinn and Holland (1987:5) to note that, "For the most part, cognitive anthropologists have specialized in talk." Quinn (1987), for example, extracted cultural models of marriage and romance from a series of in-depth interviews, totaling 15 hours, with American husbands and wives. To extract the cultural model from these interviews, Quinn (1987) performed a semantic analysis of certain key words, examined informant reasoning about marriage, and compiled a list of shared metaphors that characterized marriage. These methods of cultural model extraction, however, led some skeptical anthropologists to question how widely these models were distributed in the general population, because the lengthy interviews required from each participant in the study led to extremely small sample sizes.

A solution to this problem was proposed by Romney, Weller, and Batchelder (1986), who laid out the steps for mathematically extracting cultural models not from extensive interviews, but by evaluating the degree of similarity among participant answers of a series of questions concerning a specific domain. This method, known as consensus analysis, allowed cognitive anthropologists to examine one of the major research issues surrounding the development of cognitive anthropology, the extent to which cultural models are shared among individuals living in a social group. A cultural model represents the entirety of cultural knowledge

in a given domain across the minds of multiple individuals. Researchers assumed entire cultural models are not assimilated in a uniform fashion by each individual mind; rather the extent of sharing of the model, as well as each individual's expertise in that model, are variable. In performing cultural consensus analysis, researchers evaluate first whether a shared cultural model is present in a given domain, and then examine the degree to which individuals can reproduce that cultural model. Those individuals who are best at reproducing the cultural model are considered to have high cultural competence in that domain. Individuals with low cultural competence have difficulty reproducing a shared cultural model. With consensus analysis, Romney et al. (1986) also were able to determine that, if informants with high cultural competence are selected, researchers can confidently determine whether a shared cultural model is present using data from as few as six informants.

Research on cultural models of the ideal lifestyle across four socioeconomically diverse neighborhoods in Brazil by Dressler et al. (1996) provides an example of how consensus analysis can be used to determine the existence of a cultural model. Once informants from each of the four neighborhoods were selected for the study, they were presented with an inventory of 39 lifestyle items, including material possessions, such as televisions, washing machines, and automobiles, as well as behaviors, including attending the movies, reading books, and traveling, either in their own state or country or abroad. Informants then rated the importance of these items for an ideal lifestyle on a three point scale, ranging from unimportant to very important. Dressler et al. (1996) performed a factor analysis, a form of r-mode statistical analysis designed to determine which variables account for the majority of the variance in a given sample of data, on the twenty informants. Groups of informants are extracted as factors, which are then given a weight, known as an eigenvalue, that describes the proportion of variance in the sample that can be attributed to that factor. According to Romney et al. (1986), if a cultural model is shared across all informants, this analysis will generate a single large factor, with an eigenvalue at least three times the value of any other factors extracted. The first factor in the lifestyle sample examined by Dressler et al. (1996) accounted for 5.55 times the variance of the next largest

factor, meaning that individuals from all four economically different neighborhoods drew on a single cultural model of the good life. Additionally, Dressler et al. (1996) created a "cultural consensus key" based on informant responses and assigned an importance value to each of the 39 lifestyle items included in the analysis. They found that the ideal lifestyle shared across all neighborhoods was not one of conspicuous consumption of luxury items, like televisions, computers, and expensive houses, but one of simple domestic comfort, which included kitchen appliances, furniture, and media access.

Other techniques typically used to examine the cultural model of a given domain include free listing and pile sorting (Weller and Romney 1988). When the technique of free listing is used, participants are given a cultural domain and then asked to list any and all items that come to mind as part of that domain. In the second step of this analysis, the researcher examines these lists and determines which items occur on the most lists, or which items have the most salience. Those items are then written down on index cards and are given to participants who are tasked to sort the items into piles based upon their similarity to one another. The groupings created during the pile sorting process are then converted to proximity matrices to determine how frequently each item is grouped with every other item. These results are then entered into a multi-dimensional scaling analysis that generates a visual representation of the distance between individual terms included in the analysis, which allows the researcher to understand similarities and differences in the meaning of terms. These meanings are then further explored in a series of follow-up interviews with participants to further understand why they are considered to be similar or different from one another. This then provides the researcher with a clearer picture of whether a shared cultural model exists for a given domain. If that is the case, the researcher can then generate a set of responses or classifications presumed to be the best fit with the model of a given domain. The results of this analysis are not the actual mental model, but rather the result of individuals working from that model (Dressler et al. 2005:335).

Cultural Consonance

Methodological studies determined the best means for anthropologists to extract cultural

models from living individuals. Further research focused on how well individuals were able to fulfill and act on cultural models and whether this ability had any effect upon them. Once a model of an ideal Brazilian lifestyle was recognized, it became clear to Dressler et al. (1996) that, given the differing levels of economic prosperity in the four neighborhoods, the degree to which people were able to act on and fulfill this cultural model had to vary. The degree to which individuals approximate, in their own beliefs and behaviors, the prototypes for those beliefs and behaviors encoded in cultural models is a concept known as cultural consonance (Dressler 2005). To evaluate the degree of cultural consonance among study informants, Dressler et al. (1996) examined the rates of ownership for the items weighted as important, finding predictably that the cultural consonance in lifestyle was lowest in the lower income neighborhoods. In other words, those individuals who were in the highest socioeconomic bracket were able to obtain the material goods and behaviors associated with the cultural model of lifestyle, while those in the lowest socioeconomic bracket were not.

The relationship between an inidividual's ability to attain a shared cultural model and individual health factors, especially arterial blood pressure, was also examined by Dressler et al. (1999). The results of this study demonstrated the important role cultural models play in individual stress and health. Even when all physical factors affecting blood pressure were controlled, darker-skinned Brazilians of African descent with lower cultural consonance in lifestyle had significantly higher arterial blood pressure than their counterparts with higher cultural consonance in lifestyle. Dressler et al. (1999) concluded that this appears to be the result of the psychological stress brought on both by their inability to attain a lifestyle preferred as the normal model of domestic comfort and the additional stresses of being on the disadvantaged end of a racially stratified society.

In another study of cultural consonance, Dressler et al. (1997) surveyed individuals living in the four Brazilian neighborhoods to examine their cultural model of social support networks. They then studied the effect of differing levels of cultural consonance in social support on blood pressure. Again, when all other variables were controlled, the results revealed that

individuals with low cultural consonance in social support had significantly higher blood pressures, which led Dressler et al. (1997) to once again conclude that differences in blood pressure can only be attributed to the stress of an inability to live up to draw on culturally-modeled sources of support. Studies like those of Dressler and his colleagues have consistently demonstrated that individual consonance in shared cultural models has a measurable effect on health outcomes, providing concrete support for the importance of shared cultural models.

The Application of Cognitive Anthropology to the Archaeological Record

While the data that are left for archaeologists obviously preclude any sort of free listing, pile sorting, and interview data, this does not mean that a theory of cultural models has no application in the understanding of the past. A theory of cultural models can provide a useful explanatory framework for the understanding of large-scale archaeological problems, or can be used as part of an analysis much finer in scale to examine trends in material culture at a level as small as that of a single household. The latter of these two applications forms the basis of the current study, and will be discussed in detail with respect to ceramic production at a later point. But the possibilities of using a theory of cultural models to explain large-scale problems, such as the basis for Mississippian authority, are intriguing. First, it is necessary to examine theories archaeologists have invoked to explain the emergence and maintenance of social ranking and multi-community political integration in Mississippian society.

Archaeologists have attributed the source of Mississippian chiefly authority to several different sources. The three best known theories placed the locus of social inequality in (a) management of the redistribution of maize crops (Barker 1992; Milner 1998), (b) control of the circulation and production of prestige goods (Steponaitis 1986; Welch 1991), and (c) alteration and manipulation of existing cultural traditions to elite advantage. Archaeologists such as Milner (1998) and Barker (1992) argued that the hereditary chiefs who emerged in Mississippian societies were able to maintain their position through the control of large volumes of maize, which were obtained through tribute, corvee labor, and domestic production (Barker 1992:73). The chief attempted to stimulate the production of this surplus because it enhanced his prestige,

and because it provided buffers when individuals in the polity had a lean harvest year. By providing for individuals in time of hardship, a chief was able to secure followers (Barker 1992:62). The accumulation of surplus also helped a chief to avoid dissention and a power overthrow from the elites who surrounded him, since the chief could use this surplus to obtain finely crafted prestige goods for the elites (Barker 1992:74). Critics of this theory (see Pauketat 1994) noted that this theory placed too much emphasis on the material and failed to take into account the importance of ideology in the creation and maintenance of chiefly authority.

Archaeologists who employ a model of elite authority based on the circulation and control of prestige goods argued that chiefs were able to maintain their authority by controlling the production and circulation of prestige objects, also known as display goods. This theory takes into account both the material and ideological aspects of elite authority and was put forth to explain the enduring dominance of the chiefdom centered at the Moundville site, in Alabama's Black Warrior Valley. At Moundville, items believed to be associated with elevated prestige include those made from copper, elaborately decorated fineware ceramics, and high-quality polished stone artifacts including celts, pendants, and palettes. Marcoux (2001:30) noted that display goods that play an integral role in political economy possess five characteristics. They are (a) fairly ubiquitous in the archaeological record, (b) found in high concentrations among a few individuals, (c) made from exotic materials whose sources provide an ample supply, (d) non-utilitarian and highly ornate, often displaying iconography, and (e) present in local and non-local contexts. Steponaitis (1991:213) argued that once there was enough surplus production of maize, chiefs and elites maintained and increased their power by establishing and controlling workshops that produced prestige goods. These exotic items were then redistributed on a limited basis in order to secure the loyalty of allies, demonstrate the efficacy of the elites, and mark special status. Building on this idea, Welch (1991) argued that this process is demonstrated archaeologically by the presence of areas that may have been specialized workshops for the production of greenstone axes, mica, and elaborately decorated ceramics used as serving wares at the site of Moundville. However, recent work by Wilson (2001) and

Marcoux (2001) demonstrated that the archaeological evidence for a prestige goods economy centered at Moundville is limited at best.

A recent development in archaeological theory has emphasized the role of ideology, while downplaying the role of culture in Mississippian elite authority. Researchers working in the agency paradigm argue that Mississippian elites cultivated and maintained their power base by reinterpreting and consequently altering existing cultural traditions to their own advantage (Pauketat 2001a, b; 2003). Pauketat (2001b: 84) criticized the materialist model of elite power in agricultural surplus because it requires the archaeologists to conclude that (a) the actions of the common farmers are irrelevant, (b) behaviors do not change, so all change comes from external forces, and (c) all complex societies must have been alike. For Pauketat (2001a, b; 2003) the search for a cause of events was irrelevant; instead, the goal of the archaeologist should be to examine how the polities centered at Mississippian sites such as Cahokia historically came to be. Therefore, instead of seeing mound construction as a consequence of the emergence of an inherited elite, it should be viewed as part of the political negotiation process. The locus of this process at Cahokia is said to be individual practice, which occurred when Mississippian elites constantly redefined and reevaluated traditions to increase their own authority.

However, the notion that Mississippian elites could consciously transcend their deeply held cultural models to alter tradition with each novel social action seems fundamentally implausible. Rather, any theory concerning the emergence and perpetuation of Mississippian hierarchy should be firmly grounded in a definition of culture as widely-shared, deeply-held knowledge. For example, it can be assumed that all individuals living in a given polity shared a basic competence in the cultural models that structured Mississippian religion, cosmology, and ritual. Using a cognitive anthropological approach, it could be argued that it was the elites who had a better grasp of those models, or a higher cultural competence. Greater expertise on the part of some individuals with respect to the timing of ritual, the interpretation of the cosmos, and connection to the supernatural could then be employed as a means of maintaining an inherited

elite, because this expert knowledge was central to the function of a Mississippian chiefdom. As an example this explanation is insufficient in that propositions like these must be more carefully supported by archaeological evidence and argumentation. It does, nonetheless, provide an illustration of how cultural models can be applied to past societies in broad terms.

Cultural Models and Ceramic Remains

Through the analysis of data collected from living individuals, cognitive anthropologists can understand the ideational concepts of cultural models, consensus, competence, and consonance. Through the careful study of material remains, it is my argument that archaeologists can infer cultural models of artifact production held by members of a given society. On sites that date from the Late Mississippian era in central Alabama, pottery is well-suited to an analysis of cultural models. Throughout the pottery-making process, the manufacturer must make a series of decisions that affect the final product. These choices consist of the type of clay paste to be used, the form of pot to construct, and the decoration and surface treatment. Because of regularities in vessel production and decoration, it can be assumed that potters in the Southeast who worked in the same cultural setting likely shared very similar models of how to carry out each of these steps of ceramic production.

Archaeologists working in the Southeast have long recognized the usefulness of pottery classifications based on attributes associated with these three basic steps in the manufacture of pottery. For the most part, these classifications have been formed primarily to gain a better understanding of cultural historical sequences on a regional scale. The usefulness of ceramic types, defined as combinations of attributes of temper, surface treatment, and decoration, both in forming chronologies and in comparing ceramic assemblages across sites, cannot be denied. However, in many cases the use of types has created a problem in the understanding of variation among archaeological sites. This is certainly the case for Late Mississippian sites in the Alabama River Valley, where each archaeological investigation seems to have spawned a new ceramic typology. In many cases, the attributes used to define ceramic types are not related to the goal

of chronology building or are haphazardly borrowed from other regions, which has led to a great deal of confusion.

The vast majority of archaeologists working in the Southeast employ some variation of the type system to classify the ceramics recovered from archaeological sites. The basic framework of the type system was first devised after the 1938 meeting of the Conference on Southeastern Ceramic Typology, which was held at the University of Michigan, site of the Ceramic Repository for the Eastern United States (Ford and Griffin 1938). In the report from the proceedings, Ford and Griffin (1938:3) argued that ceramic types are simply groupings based on temporal and areal similarities employed as tools for interpreting culture history. The archaeologist must therefore be very careful that the creation of a new ceramic type will aid in the understanding of culture history; otherwise, types only cause confusion and clutter archaeological literature. Therefore, as Phillips, Ford, and Griffin (1951:64-65) noted, only those attributes that vary substantially across time and space should be used in the creation of a ceramic type. Further, types must be defined contrastively such that other investigators can easily distinguish them from one another.

Because the pottery sherds recovered from any given archaeological site are by definition fragments of a larger vessel, Ford and Griffin (1938:5) argued that the primary basis of divisions in a ceramic assemblage must be an attribute that all sherds share in common, such as paste or surface treatment. If a feature such as rim mode or decoration were the primary criterion, the risk of creating multiple types that each describe only a small part of a whole vessel is inflated. The Conference decided that the pottery types created by archaeologists should consist of three parts (Ford and Griffin 1938:8). The first of these is a designation taken from a geographic locality, such as *Lamar*. The second part is a designation that modifies the third term, which is a constant term for the type of surface finish or decoration employed. An example of a second term would be *complicated*, which would then be followed by the third term, *stamped*. The final type name, therefore, would be Lamar Complicated Stamped. In order to control the number of ceramic types created, the Conference decided to create a

review board to oversee the process of type creation, naming, and description. Perhaps the best-known application of this type system to create a ceramic chronology is the work of Phillips, Ford, and Griffin (1951) in the Lower Mississippi Valley.

While few archaeologists doubted that ceramic types were useful as culture-historical units, the creation of a system of ceramic types spawned the best-known archaeological debate of the mid-twentieth century. This series of published critiques and responses, written by James A. Ford and Albert C. Spaulding, focused on the cultural reality of ceramic types, and whether it was possible, or even relevant, for an archaeologist to recreate culturally-significant shared mental models used by past potters. In a 1953 article, Spaulding provided a series of statistical techniques that allowed the investigator to create sherd typologies based on the consistent co-occurrences of attributes. These types, Spaulding (1953:305) argued, were "combinations of attributes favored by the makers of the artifacts, not an arbitrary procedure of the classifier." Therefore, Spaulding (1953:305) continued, "a properly established type is the result of sound inferences concerning the customary behavior of the makers of the artifacts and cannot fail to have historical meaning." To create culturally meaningful types, Spaulding (1953:306-307) advocated the use of cross-tabulation of attributes and chi-square statistics to determine if the co-occurrence of attributes was in fact statistically, and therefore culturally, significant. There was no other way, Spaulding (1953:313) argued, to understand the cultural significance inherent in material remains.

James Ford took issue with Spaulding's claim that artifact types represented categories extant in the minds of the artifact makers. Rather, types, and even archaeological cultures, were arbitrary creations of the investigator useful only as tools to aid in the understanding of time-space relationships. While Ford (1954a:390-391) agreed that individuals did conform to set ceramic styles in a given place and time, that conformity did not necessarily translate into the chronological types that archaeologists derive from ceramic assemblages. For Ford, the importance of pottery types and ultimately of archaeological cultures lay in how they functioned as temporal units in the "braided stream" of the cultural continuum. Ford (1954a:391) argued

that Spaulding's statistical analysis of attribute frequencies was naïve, because it could reveal the degree to which people conformed to the rules governing ceramic production at one time and in one place, but provided no clues about culture change over time and space. In Ford's (1954a) opinion, any designations created by archaeologists, from types to archaeological cultures, were simply tools created by the investigator to draw order out of the continuous flow of material culture change.

Spaulding (1954:391-392) fired back, objecting to Ford's notion that the cultural standards of artifact manufacture constantly were changing through time and the resulting implication that types could be only a tool employed by the investigator to build chronological sequences. Spaulding (1954:393) went on to deem Ford's method of creating ceramic types, which was accomplished by observing a sample of sherds, tallying attributes that co-occur, and naming types, as neither replicable nor systematic. In the Southeast, such types were useful only for a single purpose, building chronologies, whereas Spaulding (1954:393) argued that his own types had a variety of further uses, including the understanding of patterns of human behavior. Spaulding's response to Ford ended in the suggestion of a stalemate, with Spaulding (1954:393) stating, "I am quite willing to let Ford have his types if he well let me have mine." While many members of the archaeological community sided with Spaulding in this debate, an examination of the typology-building methods used by archaeologists in the Southeast demonstrated that Ford's approach is alive and well (Dumas and Regnier 2003). However, many archaeologists who favored Ford's method of tallying attributes over Spaulding's more rigorous statistical calculations accepted the notion that the types they devised must have had some sort of meaning in the minds of the individuals who created those sherds.

In the Southeast, the ceramic type system was further refined by Philip Phillips (1958), who applied the concept of *varieties* to the Southeast at roughly the same time Smith, Willey, and Gifford (1960) were devising similar classifications for ceramics from Mesoamerica. Phillips (1970) added ceramic varieties to the typological classification of the ceramics that he recovered during his survey of Mississippi's Yazoo Basin. Variety designations always follow

type names and are written in italics, as in Leland Incised, *var. Blanchard*. Phillips (1970:26) argued that, "[t]he type-variety concept permits expansion and refinement of classification with the least amount of disturbance to existing formulations." The need for varieties, which Phillips (1970:24-25) created in order to reflect "specific areal and temporal variations in the norm of the type," arose when Phillips and his colleagues attempted to fit many of the sherds recovered in the Yazoo basin into types previously established in other regions. Phillips (1970:26) noted that varieties aided in solving this problem because they could be used to describe secondary variations in form or design that "represent narrow intervals on the sliding scales of time and areas." The purpose of creating varieties in the ceramic typology from the Lower Yazoo Basin was to aid in the exercise of chronology building, especially the creation of phases (Phillips 1970:23). Therefore, in Phillips' classificatory scheme, the attributes that make up varieties were selected strictly because they appeared to reveal clues about cultural differences across time and space.

Phillips (1970:27) further noted that, "any typological unit having split distribution in space or time, even though the pottery cannot be sorted, should be automatically separated into varieties." Therefore, sherds of the type Pensacola Incised found on sites in he Mobile-Tensaw Delta and in central Alabama must be sorted into separate variety designations even if they exhibit the same design elements executed in exactly the same fashion. Additionally, to effectively aid in the task of chronology building, the type-variety scheme of classification must necessarily be both mutually exclusive and exhaustive. Any given sherd only can be placed in a single type-variety designation, and every sherd somehow must be classified. Because types typically are formulated based on paste, surface treatment, and decorative technique, it is relatively easy to assign most sherds to a given ceramic type. However, because varieties tend to deal with aspects of decoration such as incised motif, which are not discernible on many sherds, a substantial portion of the pottery under examination ends up sorted into designations such as Pensacola Incised, *var. unspecified*.

Because the type-variety system is focused on the combination of ceramic attributes that are useful temporal markers, when applying this classificatory system, the investigator is left with numerous combinations of attributes that cross-cut ceramic types. Phillips (1970:28) termed these attribute combinations modes, and noted that although they do appear to provide information concerning the cultural and historical relationships between peoples, they were not included in the chronological analysis. Phillips (1970:28) created two basic classes of modes, form and decoration. Modes of form include vessel shape, rim attributes, basal shape and properties, and appendages, including handles, effigies, and other applied forms of clay. Modes of decoration include the technique of decoration, placement on the vessel, and the design motif or pattern. In Phillips's ceramic analysis, counts of modes were tallied separately from types and varieties. Beyond providing these simple counts, it seems that modes represented something of a quandary for Phillips, because although they are described and inventoried, there is little discussion of their possible cultural significance.

Although Phillips had limited success in incorporating modal studies into his analysis, subsequent archaeologists have been able to use these combinations of attributes to recognize that a great deal of variation exists even in established ceramic types. Brown (1982) produced a study of the variation in a single type, Pontchartrain Check Stamped, a type that dates to the Late Woodland period along the Louisiana Gulf Coast. After examining the distribution of several different varieties of this type, Brown (1982:49) noted that it appeared that an analysis employing rim modes was more sensitive than one using varieties in understanding spatial and temporal differences. By examining the rim modes on pottery of this type recovered from excavation units placed in a mound and in an off-mound area at the Morgan site (LMS Site 34-G-2), Brown (1982:59) was able to detect a difference in the distribution of vessel forms associated with cooking and serving in these two distinct contexts. In addition, Brown (1982:90-91) suggested that his analysis of rim modes could be expanded to neighboring regions, in order both to accurately control time and to better understand culture contacts across the Gulf Coastal Plain during this period of prehistory.

Creating a series of ceramic types was just one of the tasks of the culture historians. Because the ultimate goal was to create a sequence of material culture in a specified geographic area, units that integrated ceramic types in time and space were needed. To that end, Willey and Phillips (1958) introduced the archaeological phase, which aided in grouping sites in both time and space. Phases are defined as, "an archaeological unit possessing traits sufficiently characteristic to distinguish if from all other units similarly conceived, whether of the same or other cultures of civilizations, spatially limited to the order of magnitude to a locality or region and chronologically limited to a relatively brief interval of time" (Willey and Phillips 1958:22). Central to the phase concept are two integrative units, the horizon and the tradition. Horizons are cultural traits that appear and spread rapidly over a broad area. Therefore, two sites linked by the same horizon are presumed to be roughly contemporaneous (Willey and Phillips 1958:33). Traditions, on the other hand, are configurations of cultural traits that occur over a long period of time in a given region (Willey and Phillips 1958:37). Phases represent the integration of horizon and tradition, because these two concepts allow archaeologists to detect material changes both temporally and spatially. Willey and Phillips (1958:22) considered phases to be the basic operational unit in creating regional sequences, which can be anything from a thin stratum of material from a small campsite to a series of sites in a broad region occupied for centuries. For the most part, the archaeological phases defined for the Southeast, including those described in the work of Phillips, Ford, and Griffin (1951) and in Phillips (1970), were based on changes in the frequency and distribution of certain ceramic types and, in the case of Phillips (1970), varieties over time, though this does not preclude the possibility of nonceramic phases.

While the use of the ceramic types is ubiquitous across the Southeast, the type-variety system has only been applied to regions outside of the Mississippi Valley on a limited basis, typically by archaeologists trained in the Lower Mississippi Valley. Ceramic materials from both of the largest Mississippian sites in Alabama, Moundville and Bottle Creek, have been classified and ordered on the basis of the type-variety system (Fuller 1998, 2003; Steponaitis 1983).

However, the use of the type-variety and archaeological phase system has not been without criticism, especially by archaeologists working in the very area where these ceramic classificatory schemes originated, the central Mississippi River valley. Archaeologists such as O'Brien and Dunnell (1998:3) argued that they do not dispute the validity of ceramic phases and pottery types, but rather object to the way in which these units have been created and used by subsequent archaeologists. Specifically, O'Brien and Dunnell (1998:26) objected to the way in which types and phases, which they consider to be constructs created to order archaeological materials, have taken on a rigid empirical reality. Before going any further, it must be noted that this issue amounts to more than just a rehashing of the essentialist-materialist debates of Ford and Spaulding described earlier. This problem has become magnified in recent decades with the growth of contract archaeology, which has generated massive amounts of archaeological material. O'Brien and Dunnell (1998:26-27) argued that archaeologists have attempted to shoehorn this material into a classificatory structure in need of a complete overhaul. Because the classificatory structure has essentially remained unchanged since its inception, although thousands of new archaeological sites have been recorded, the continued use of the old type-variety and phase systems masks much important variation made apparent by the study of material from newly-recorded sites.

Several archaeologists working in the Central Mississippi River Valley have critically examined the phases and ceramic typologies created to order sites in time and space. Gregory Fox (1998) critiqued the continuing use of the four phases first named by Stephen Williams (1954) in southeastern Missouri, noting that many archaeologists have continued to force components into these phase designations even as it became apparent many do not fit these designations. Fox (1998:33) argued that in light of the new material recovered, these designations must be reevaluated through detailed comparative analysis, the use of statistical techniques, and a better control of chronology. To this end Fox (1998:43) closely reexamined Williams's (1954) phase descriptions using a cluster analysis of similarity coeffecients that compare all the assemblages assigned to a given phase with one another. His analysis

demonstrated there were no necessary and sufficient traits that serve to distinguish the four phases from one another. These phases also did not appear to be composed of groups of assemblages that minimized within-group and maximized between-group variation. The results of the similarity analysis demonstrated that phases have been create largely from a single archetypal component and assemblages were assigned to phases based on their similarity to that single component. As new sites are found, instead of reevaluating the phase designations in light of new data, new phases are created or the assemblages are lumped into the old designations. The result, Fox (1998:58) reported, is that archaeological assemblages appearing to vary greatly have been lumped into the same phase designations that continue to be used primarily for historic, not descriptive reasons.

Several other archaeologists working in the central Mississippi Valley have criticized existing culture- historical classificatory schemes. Paul Kriesa (1998:59) examined how the spatial limits of phases have been delimited in western Kentucky, noting that during the exercise of chronology building, archaeologists have frequently ignored spatial variation in stylistic and temporal ceramic types. Like Fox, Kriesa (1998) used multivariate statistical techniques to extract groupings of assemblages. The results of this analysis demonstrated that a few of the types thought to be chronological markers across the region did not change in frequency uniformly through time across the entire study area (Kriesa 1998:78). Like Fox, Kriesa (1998) argued that archaeologists have not defined phases carefully in the region and set out necessary and sufficient conditions to distinguish phases from one another. Kriesa (1998:78-79) also made the very important point that variation or discontinuities in Mississippian chronologies also must be understood in terms of patterns of political development, and not simply problems of sampling.

Mainfort (2003, 2005) also examined the phase classification of sites in the central Mississippi valley, noting that Phillips (1970:523-524) himself called for some sort of rigorous testing of the classifications that he made using primarily intuitive methods. Most recently, using a statistical technique known as k-means cluster analysis, Mainfort (2005) examined 39 sites in

the central Mississippi Valley, clustering sites based on the relative percentages of ten decorated pottery types in each assemblage. The eight clusters of sites generated by this analysis demonstrated that the phase designations created in the region obscured some of the variation in ceramic assemblages among the sites (Mainfort 2005:65). Mainfort (2005:66) provided several recommendations for future culture-historical analysis in the region, arguing that instead of using tallies of intuitively-derived ceramic attributes, archaeologists should employ powerful statistical methods that produce replicable results. Second, to be effective tools for understanding culture history, Mainfort (2005:66) recommended that phase descriptions and designations should be dynamic and fluid structures constantly being reevaluated as further archaeological evidence becomes available. Finally, and most importantly, Mainfort (2005:66) noted that ceramic typology as currently construed in the central Mississippi Valley is inadequate for addressing some of the basic questions about the past that archaeologists should attempt to answer, particularly the nature of ceramic variation among sites.

Mainfort (2003:33) also employed an analysis of rim modes to understand fine-scale chronology, again in the central Mississippi Valley. The rim mode study was built around the notion that ceramic types are well suited for documenting variation over long time spans, but less useful for understanding fine-scale spatial and temporal resolution. Mainfort (1999) previously argued that the existing phase and type designations in the region suggested a great deal of stylistic uniformity in ceramics across the region. However, when he conducted a brief examination of photographs of vessels from the region, Mainfort observed a great deal of stylistic variability. The presence of this variation led him to the conclusion that statistical methods of examining rim modes and motifs could provide a means of understanding the stylistic differences between smaller groups of sites. Mainfort's (2003) subsequent study of rim modes had two goals, (a) to determine whether rim attributes could reveal unrecognized spatial and temporal variation in the archaeological record and (b) how the distribution of these rim attributes compared to the distribution of ceramic types. Using the frequencies of six Mississippian rim modes from a total of 55 sites classified previously as belonging to seven

different phases, Mainfort (2003) executed a discriminant function analysis to determine whether assignment of sites to phases by means of ceramic types was supported by the distribution of rim modes. Mainfort (2003:41) reported that few of the sites assigned to the same phase were strongly clustered by rim mode, although the sites did cluster along broad geographic lines along a gradient from the Mississippi River westward to the St. Francis River. Through this rim attribute analysis, Mainfort (2003:42-43) argued that "late period ceramic variation—both geographical and temporal—in the study area is much more complex than is suggested by traditional regional ceramic typology and phase constructs." In fact, these results further demonstrated that the continuing use of type-variety systematics in the region causes archaeologists to overlook a great deal of important variation in the archaeological record and to ignore the importance of this variation in the understanding of the past.

As these recent examples have demonstrated, the usefulness of ceramic typologies and phases falls mainly in the realm of regional chronology-building. When archaeological problems that go beyond time and space are examined through ceramic assemblages, it is clear that another method is needed. This issue becomes increasingly evident when the ceramic type and phase designations created for Late Mississippian sites in central Alabama are examined critically. This is done in depth in the following chapter.

Cognitive Anthropology and Ceramic Analysis

Through data collected from living individuals, cognitive anthropologists are able to reconstruct mental models shared among members of a given society. Obviously, archaeologists do not have the benefit of asking the individuals who made artifacts how they thought about certain cultural domains. This does not, however, negate a theory of cultural models. The material remains that archaeologists examine, including pottery, display consistent regularities in form and decoration, which suggests that the individuals who made them shared models of the steps taken to manufacture these items. Shore (1998) would refer to these as task models. The challenge for the archaeologist who employs a cognitive anthropological approach to

understanding patterns of material culture, therefore, is to attempt to reconstruct cultural models held by past peoples.

This is not the first time archaeologists have attempted to understand an assemblage of artifacts by attempting to reconstruct the mental templates used by the individuals who made those artifacts. The archaeologist Irving Rouse (1939, 1960) examined the gap between a collection of artifacts and the minds of the artisans who made them when he distinguished between two kinds of artifact classification. The first kind described by Rouse (1960:313) was analytic classification, which is based on cultural *modes*. Rouse (1960:313) defined modes as units inherent in an artifact assemblage. Modes are indicated directly by the attributes of artifacts and demonstrate the concepts that govern the behavior of individuals in a community. The second type of classification is based on *types*, units based on combinations of investigator-selected modes that distinguish a group of artifacts from all other artifacts in a collection, and is referred to as taxonomic (Rouse 1960:313-315).

Using an analytic method of classification, Rouse (1960:318) argued that it is possible for skilled investigators to infer the standards of production adhered to by prehistoric craftsmen, provided they choose the proper set of attributes. When investigators perform analytic classification, the entire assemblage is divided into new classes each time a different attribute is investigated; no attention is paid to whether these attributes co-occur in a patterned manner. If selected combinations of attributes are examined, the investigator is performing taxonomic analysis. Unlike analytic classification, taxonomic classification is based on combinations of modes that the investigator chooses as diagnostic, and is imposed on the collection. Typologies are always artificial, because it is the archaeologist, not the manufacturer of the artifacts, who decides which traits are relevant in a typological classification. The creation of typologies has varied uses in archaeological research, but if the investigator wishes to understand how one social group is related to another, Rouse (1960:321) argued that instead, assemblages must be broken down by those constituent attributes indicative of modes, since typologies are too coarse and too arbitrary to use as a basis for comparison. While Rouse (1960) argued that by

performing analytic classification, the investigator can determine those modes that govern the behavior of artisans in a community, the distinction that he makes between modes as the mental standards, and attributes as the physical expression of those standards, is problematic. In his description of analytic classification, Rouse often used the terms attribute and mode interchangeably; however, the notion that the physical attributes of artifacts are the manifest expression of the cultural models of production held in the mind of individuals is an empirical question, not an assumption to be taken for granted.

Archaeologists studying Paleolithic stone tool technology explored the mental processes underlying artifact production through what is known as the *chaîne operatoire* approach. A *chaîne operatoire* approach involves an examination first of the processes used by ancient peoples to arrive at a specific artifact form. By reproducing stone tools found in the archaeological record and gaining a better understanding of the physical properties of raw materials, lithic technologists have been able to understand better the steps that ancient flint knappers employed in manufacturing their artifacts. They recently have expanded this approach to examine how specific tool manufacture processes reflect social distinctions that existed in the past, and more specifically, attempted to understand the rules of artifact production (Soressi and Geneste 2006:6). Following a *chaîne operatoire* approach, lithic production is a threefold process in which a need for a tool is recognized and then transformed into a conceptual schema that is turned into an artifact through an operational scheme (Soressi and Geneste 2006:7). The conceptual schemas are governed by culture.

A number of archaeologists and even a few cultural anthropologists have collected data from the ethnographic record to gain a better understanding of how practicing potters pass their craft down to subsequent generations. By examining how pottery production is transmitted among generations of potters, archaeologists have been better able to understand how potters distinguish their own ceramic designs and decorate ceramics in certain ways. For example, in his study of Kalinga potters working in the Phillipines, Graves (1985) noted that female potters work closely with their mothers or other relatives learning the steps of pottery production until

they are proficient at making pottery on their own. Potters within the village typically work in small groups based on residential proximity, and entire villages typically have their own basic decorative style differentiable from that of other villages. Graves (1986:31) argued that an investigator could examine the social relationships among contemporaneous communities through a study of variability in design structure. Similarly, DeBoer (1990) employs an analysis of design structure in his study of decorative styles of Shipibo-Conibo potters in an area of Peru inhabited by a number of different ethnic groups, each of whom try to assert their ethnicity through visual cues. Among potters who belong to this ethnic group, although no two individuals produce identical designs; there is a distinct unmistakably Shipibo-Conibo decorative style. The overwhelming majority of potters learn their style from related women who live in their immediate area. DeBoer (1990:104) suggested it is probable that a compound of related women making pottery with similar stylistic characteristics could be detectable in the archaeological record, though the archaeologist would have to be extremely familiar with the variability in a specific pottery style to detect such subtle differentiations. The methods that DeBoer used to evaluate Shipibo-Conibo pottery demonstrate his familiarity with the style, but are ultimately based on subjective evaluations and are therefore difficult to replicate.

In the Southeast, one of the classic ethnographic studies of pottery manufacture was done by M. R. Harrington in 1909. During the month that Harrington (2002 [1909]) spent in 1908 collecting data on material culture from the Cherokees of eastern North Carolina, he commissioned a female potter to produce several vessels in the older Cherokee style. Riggs and Rodning (2002:34) explained that the old style refers to traditional Cherokee potting practices, which the potter learned from her mother in the early part of the nineteenth century. Newer style pottery was made for tourists, and was stylistically different from the older style pottery because it incorporated styles used by Catawba potters, whose homeland was in South Carolina. The older style pottery was of interest to Harrington because it represented a ceramic tradition that had endured among the Cherokee since approximately AD 1400. The series of steps that a potter would take in making a vessel are clearly of interest to any study of cultural

models of ceramic production, because it provides an outline of the choices a potter faces when making a vessel. Harrington (2002 [1909]) documented each step of the pottery-making process as demonstrated by Iwi Katãlsta, who was born around the time of the Cherokee removal in 1838. Rodning and Riggs (2002:34) noted that she learned the craft from her mother, who was likely born sometime around 1803. Harrington (2002 [1909]:56-57) reported that the tools used by Iwi Katãlsta were simple, and included a hammerstone for pounding the clay, a sharpened stick for incising, a waterworn pebble for smoothing the clay surface, and a paddle for stamping the pottery. After digging out the clay, and refusing to reveal its exact source, Iwi Katãlsta began by molding the clay into a long form much like a loaf of bread and drying it for future use. When asked to make pottery, Iwi Katãlsta broke off a piece of this clay and pulverized it with her hammerstone. After it had been sufficiently pounded, the clay was placed in a wooden bowl, wetted down, and pulverized again. To obtain the proper consistency, the clay was kneaded and water or additional clay was added as needed. At this point, typically temper would be added, but Harrington (2002 [1909]:59) noted that in this case Iwi Katãlsta chose not to add any.

After the clay paste was prepared and Iwi Katãlsta decided which vessel form to make, she took a ball of clay and used it to make the bottom of a vessel. The body of the vessel was then built up through coiling long ropes of clay around from the base. When the desired vessel height was reached, a rim coil was applied, and Harrington (2002 [1909]:62) reported at this point Iwi Katãlsta had a number of choices about how to decorate the rim, including pinching, incising, or punctating. At this point, the finished vessel was dried for one to three days, after which it could be burnished. In this case, Iwi Katãlsta used a smooth stone continually wetted with water, though Harrington (2002 [1909]:64) noted other groups, such as the Catawba, were known to use mussel shells, gourds, or wood for this process as well. The vessels were then ready to be fired, which was done by first heating the vessels near a hearth and then placing them under burning pieces of bark for approximately one hour. The pots not cracked were "smoked" on the interior by placing burning material in the pot while it was still hot, swishing the

material around, and then inverting the vessel atop it. Harrington (2002 [1909]:65-66) noted that this caused the interior of the vessel to turn black in color and prevented water from soaking into the vessel walls.

Using such ethnographic studies and cognitive theory, it is possible to propose several generalizations about pottery manufacture in Southeastern Native American societies. Harrington's explanation of the steps involved in pottery manufacture is especially valuable. The exact manner in which each step of pottery manufacture was executed likely differed from one cultural group to another, as the example of Cherokee and Catawba potters using different types of tools for smoothing the vessel demonstrates. Regardless of these smaller-scale differences, the basic steps for making pottery were likely similar across most of the Southeast. Because there is little evidence of specialized manufacture of pottery in the Mississippian Southeast (Muller 1997), it is probable that ceramic production was organized on a domestic level, similar to the situation described by Graves (1985). Transmission of techniques of pottery manufacture most likely occurred between females within the household. Those females who lived in closest proximity to one another were often related to one another because of matrilocal residence patterns and likely worked together. D'Andrade (1995:213) noted that in situations where there is consistent training among workers, cultural consensus is correspondingly high. Therefore, potters who learned and practiced their craft together probably had stylistically similar products (Hill 1985), and were therefore about equally competent at replicating cultural models of ceramic production. In the moderately large Late Mississippian towns of the Alabama and Lower Tallapoosa river valleys, most potters probably interacted on a relatively frequent basis and, as a result, individual towns would have developed their own particular vessel construction techniques, forms, and decorative styles over time. However, these towns were not self-contained, stable entities. The coherence of ceramic production in an individual town would have been affected by the movement of people, due to marriage exchanges, war capture, or population intermixing as a result of political alliances. In the case of intermittent movement by small groups of people, a minor proportion of the entire assemblage from a given

site might exhibit different formal characteristics of pottery production from those otherwise seen. On the other hand, large-scale movements of peoples resulting in towns composed of individuals from different ethnolinguistic and regional backgrounds would appear differently in the archaeological record. As new groups of people working from different cultural models of pottery construction and decoration entered a community, presumably assemblage diversity in the form of detectable, multiple models would manifest itself in a measurable way.

Because pottery is one of the primary classes of artifacts that survive in the archaeological record of the Southeast, archaeologists have relied on patterns in ceramic assemblages to answer many of their questions about the past. Throughout the latter half of the twentieth century, archaeologists classified pottery based upon differences in ceramic paste and decoration primarily for the purpose of ordering sites and archaeological cultures in time and space. Archaeological phases and cultures in the Southeast typically have been created on the basis of similarities in ceramic assemblages. It seems apparent that examining patterns of ceramic production in and across archaeological sites can provide useful data to solve problems far beyond those of culture history. Drawing on theory from cognitive anthropology, it is argued that to practice their craft, potters relied on shared cultural models of the proper way to produce a pot, that encompassed all steps of pottery manufacture, including the way in which the clay paste was prepared, what vessel form was constructed, and how the pot was decorated. Therefore, similarities in these aspects of vessel production at contemporaneous archaeological sites in a given region strongly suggest potters at these sites were working from shared cultural models of ceramic production. The presence of pottery that appears to encompass multiple, distinct cultural models at a single site contemporaneously could be the result of a number of different processes. Reasons for the presence of multiple cultural models of ceramic production may include, but are not limited to, the migration of multiple ethnic groups within a single region, diffusion of distinctly different ceramic styles from another region, and even the production of distinct classes of ceramics for use in different social settings. It is the task of the archaeologist to synthesize the available archaeological evidence and explain how

and why multiple cultural models of ceramic production may exist on a single archaeological site.

Before explaining how certain cultural models of ceramic production may have come to exist on a given archaeological site, it is necessary to determine the best available method for extracting cultural models from ceramic assemblages composed of small pieces of whole vessels. Certainly, the cultural models that governed pottery production encompassed a series of steps that the archaeologist will never be able to comprehend completely. However, many of the decisions made during the construction of a given ceramic vessel can easily be evaluated by archaeologists. This is especially true of three steps of ceramic production, (a) the preparation of the clay paste, (b) the construction of the vessel form, and (c) the method and style of decoration. To prepare a clay paste, potters had to select a particular clay source and then decide what type of tempering agent would be added to make the clay body stronger. In many cases, this consisted of a whole series of decisions beyond choosing a primary temper, including what size the tempering particles would be and whether or not secondary tempering agents would be added. Once the paste was prepared successfully, potters had to determine what form of vessel would be made. In the broad categories of form, such as specific types of bowls and jars, potters then faced a series of decisions, including how to make the rim of the pot and whether or not to add certain features, such as handles. The final broad category of pottery construction is decoration. Decoration encompasses a series decision, including treatment of the pottery surface, the manner in which to execute the designs, and the motif of decoration.

It is my argument that by examining the models of ceramic production at archaeological sites in the Alabama River Valley dating to the approximate period of A.D. 1450 to 1550, the ethnic composition of Late Mississippian towns can be understood. It is clear that a system of ceramic typology, which creates mutually exclusive and exhaustive classifications of pottery sherds, is inadequate for handling this problem. Instead, the best method of examining pottery appears to lie in recording a series of attributes related to paste composition, vessel form, and decoration. Because each broad vessel form category, such as bowls and jars, appears to have been created according to distinct cultural models, these form classes should be kept analytically

separate. The following chapter examines the culture history of the Alabama River Valley, and provides some background concerning the Mississippian settlement of the region.

CHAPTER 3
CULTURE HISTORY OF THE ALABAMA RIVER VALLEY

Approximately one thousand years ago, Native American life in the Southeast changed dramatically when a new cultural pattern began to spread across the region. Archaeologists have identified the emergence of a new way of life known as the Mississippian cultural pattern around A.D. 1050 in multiple locations across the Southeast. This pattern is recognized in the archaeological record by the presence of a series of traits including but not limited to intensive maize cultivation, shell-tempered pottery, rectangular wall-trench structures, pyramidal earthen mounds, and the long distance circulation of well-crafted prestige objects. These common traits likely represent a series of very broadly-shared cultural models. Across the Southeast, sites associated with the Mississippian cultural pattern, which is named for the area in which it originated, the American Bottom region of the Mississippi River valley, are subdivided into a series of cultural traditions, typically based upon both geographic and material distinctions. The principal trait defining the Mississippian cultural pattern, however, is the emergence of a ranked society. According to Fried (1967:109), rank societies are those in which positions of elevated status are inherited in a single group of elites. The presence of chiefdom-level political integration of multiple communities is also central to Mississippian culture. In a chiefdom, some communities serve as economic, social, and religious centers. At the apex of the political system is a chief, whose office is inherited (Sahlins 1963; Service 1962). Anthropologists have noted one of the major duties ascribed to the chief is the supervision of the system of redistribution, in which goods are collected at the center and then doled back out to the population (Service 1962). The chief also has the power to mobilize labor, which is put toward the construction of public works, such as earthen mounds.

Between approximately A.D. 1050 and 1600, the Southeast was populated by a series of Mississippian chiefdoms that arose and declined at different times. Some endured for

centuries, while others rose and fell in just a few generations. Because not all chiefdoms are alike in form, archaeologists have devised ways of classifying these polities. Steponaitis (1986) has distinguished between simple chiefdoms, with only one level of political control beyond the local community, and complex chiefdoms, in which control is exercised over the commoners on two or more levels by a set of elites who vie with one another for power. Above the complex chiefdom is another level of hierarchy, the paramount chiefdom (Anderson 1990). Paramount chiefdoms subsume multiple polities, and may include both simple and complex chiefdoms under a single political order. Hally (1996:98) noted that paramount chiefdoms appear to have been relatively rare in the Southeast. When they did emerge, because they integrated multiple polities and peoples vying for political control, paramount chiefdoms were likely unstable and collapsed in a few generations.

Henry Wright (1984) introduced the notion that chiefdom-level polities undergo cycles of political growth and decline throughout their history. Frequently, these cycles in chiefly authority are accompanied by the abandonment of old centers and the reestablishment of new major sites. This process has been documented in the Southeast, most notably in the form of Anderson's (1994) study of chiefdom cycling in the Savannah River Valley. More recently, however, Blitz (1999) examined the process of mound center abandonment and re-occupation in the Southeast, and noted many of these instances likely can be attributed instead to the fissioning of rival groups of elites, who splintered off and established new polities at some distance from their homelands. Conversely, the presence of contemporaneously-occupied, nearby single mound centers may indicate separate groups on the verge of fusing to form a single polity.

The archaeological sites in the Lower Tallapoosa and Alabama River Valley included in the present study were all occupied by peoples exhibiting the Mississippian cultural pattern approximately 500 years ago. The region under consideration is of interest because it was not subject to intensive settlement by peoples considered Mississippian until this period. The movement of peoples into this region was likely the result of major chiefdoms entering into

cycles of political decline in adjacent regions, and may even represent examples of fissioned peoples moving into and settling a new region.

Late Woodland and Early Mississippian Chronology in the Alabama River Valley

Until just a few years ago, there was no published chronology of prehistoric occupation in the Alabama River drainage. In 1998, David Chase published a survey of the pottery in central Alabama and committed to print many of the archaeological phases he had named during the course of over thirty years of archaeological research in the region. This was followed by the creation of an as yet-unpublished manuscript by Ned Jenkins and Craig Sheldon (2003), which provided a much clearer understanding of the temporal and spatial changes in ceramic assemblages over time in central Alabama. One perceived flaw in the latter synthesis is that the spread of pottery decorative traditions is typically equated with the movement of people. In the present summary, that implication has been toned down considerably, because the archaeological evidence supporting some of the proposed migrations is limited.

Late Woodland Phases

Although Jenkins and Sheldon's chronology extends all the way back to 1700 B.C. when the first ceramics begin to appear on archaeological sites in central Alabama, the current study is concerned primarily with the period after approximately A.D. 900, when the area was occupied by several groups associated with the Late Woodland cultural pattern. Woodland culture precedes Mississippian culture in the Southeast. Peoples associated with this cultural pattern had low levels of multi-community political integration and practiced a subsistence strategy based on procurement of wild foods supplemented by limited horticulture. Jenkins and Sheldon (2003:2) divided Woodland ceramic assemblages in the upper Alabama and Coosa/Tallapoosa river valleys into two basic traditions, which they designate Coosa and Tallapoosa (Figure 11). The Coosa tradition subsumes four phases, Calloway, Dead River, Hope Hull, and Union Springs, which are dominated by sand-tempered plain pottery. Pottery associated with the Coosa tradition dates back 1,100 years and occurs on sites in the lower Coosa/Tallapoosa Valleys and in the uppermost portion of the Alabama River Valley. The Tallapoosa tradition, on

the other hand, incorporates 1,400 years of prehistory and is subdivided into three phases, Cobbs Swamp, Henderson, and Autauga. The check-stamped pottery associated with the Tallapoosa tradition occurs in the upper portion of the Alabama River Valley. Farther down the valley, in Dallas and Wilcox counties, Woodland sites have yielded pottery with different decorative traditions, and are not included with either of those groupings.

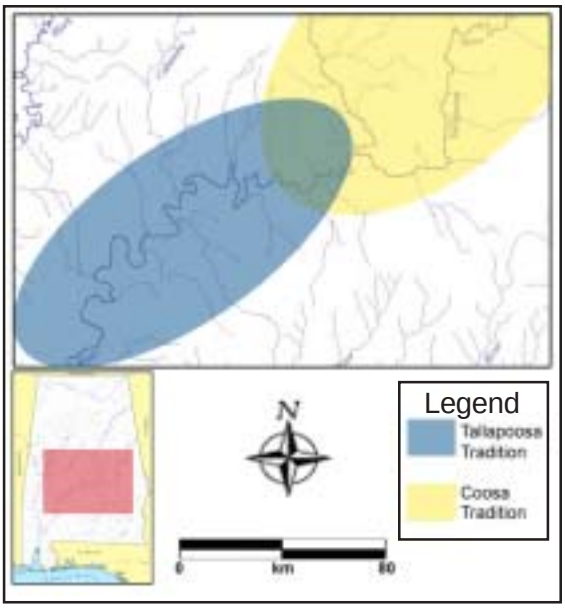

Figure 11. Distribution maps of sites of the Coosa and Tallapoosa potting traditions, according to Sheldon and Jenkins (2003).

Across the Southeast, the Late Woodland period is recognized as a time of population increase. Jenkins and Sheldon (2003:3) argued that, "The Late Woodland period is remarkable for its ceramic diversity throughout the Alabama Coastal Plain." Indeed, each different physiographic district in Alabama seems to be associated with a different ceramic complex at this time. In the upper portion of the Alabama River Valley, three Late Woodland phases that overlap temporally and spatially have been identified. The ceramic assemblages of all three of these phases, Autauga, Hope Hull, and Union Springs, are dominated by a single vessel form, a tall conical cooking pot with a high shoulder and flaring rim known as the focal form (Jenkins and Sheldon 2003:5) (Figure 12).

The Autauga phase of the Tallapoosa tradition (Figure 13), which lasted from approximately A.D. 900 through A.D. 1300 in the upper Alabama River Valley, has been further divided into two subphases, Bear Creek (A.D. 900-1050) and Hickory Bend (A.D. 1050-1300). Sites associated with the Bear Creek subphase occur in the Alabama River Valley, above its junction with the Cahaba River and below the junction of Pintlala Creek (Jenkins and Sheldon 2003:9). It is succeeded in the region by the Henderson phase. The continuity in the ceramic assemblages indicates some degree of cultural stability among the peoples of these two

phases. The Bear Creek subphase is named for one of the sites included in the current study, 1Au7 (see Figure 9). Autauga pottery may be check-stamped, plain, pinched, incised, or punctated, and is tempered with coarse sand. This ware has a distinctive appearance because the exterior of the vessels was smoothed with water when the paste had dried to a leather-hard consistency. This caused the sand particles to be exposed, leading to what has been called a "salt and pepper" effect (Jenkins and Sheldon 2003:9).

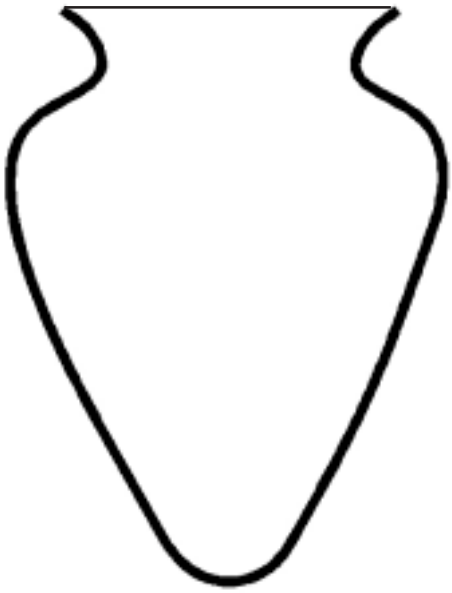

Figure 12. Profile of focal form vessel typical of Late Woodland ceramic assemblages in central Alabama.

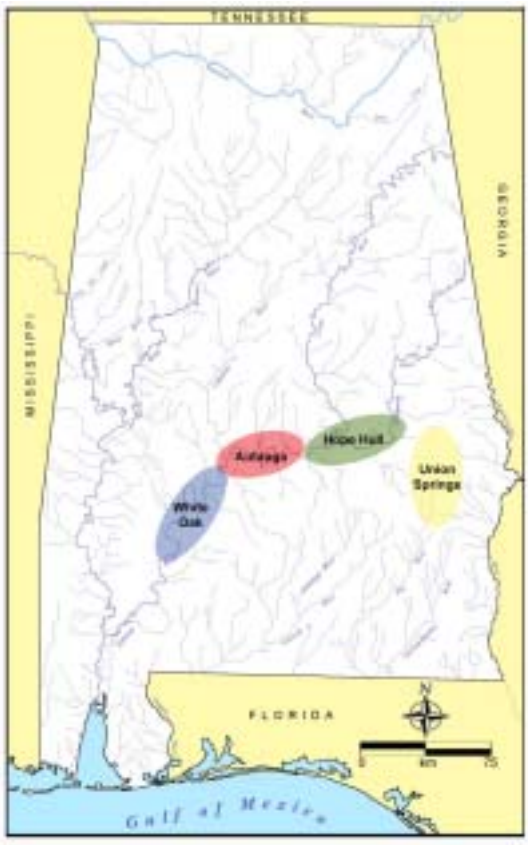

Figure 13. Distribution of Late Woodland phases in central Alabama

A single radiocarbon date of cal. A.D. 896-1132 (p=.95) was obtained from a feature with pottery associated with the Bear Creek subphase occupation at the site of the same name. At some time during the Bear Creek subphase, the distribution of Autauga pottery across central Alabama expanded, and sites with Autauga components first appear in the Lower Tallapoosa Valley after A.D. 1000.

The later Autauga subphase, Hickory Bend, dates from A.D. 1050 to 1300. This subphase coincides with the emergence of the two major Mississippian polities in Alabama, Moundville and Bottle Creek. During this subphase, it is clear that some traits associated

with Mississippian culture were incorporated by Autauga peoples, although these traits were completely foreign to them (Jenkins and Sheldon 2003:11). The best example of this phenomenon occurs at the Fusihatchee site (1Ee32), where four Mississippian-style rectangular wall trench structures were excavated (Figure 14). Only 3 to 12 percent of the pottery assemblage recovered from these structures was shell-tempered. The remainder of the assemblage was comprised of Autauga ceramics found in the same context as the shell-tempered pottery (Sheldon et al. 2001). There is evidence of some transmission of Mississippian ceramic traditions, however, in the form of copies of Mississippian vessel forms occurring on Autauga wares.

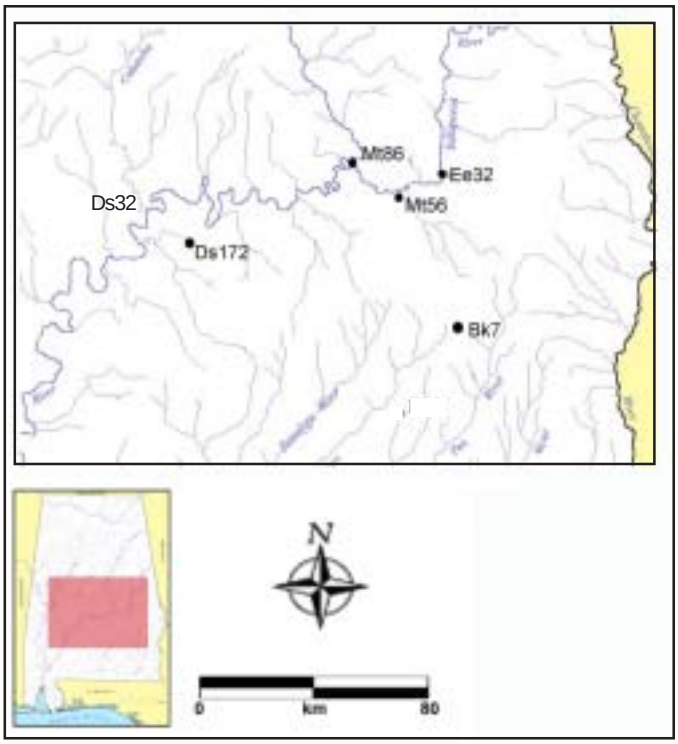

Figure 14. Locations of Woodland sites mentioned in the text.

Late Woodland sites of the Coosa tradition are divided into two phases, Hope Hull and Union Springs. Hope Hull phase sites date between A.D. 800 and 1100 and occur in the Alabama River Valley upriver from Pintlala Creek past the Coosa-Tallapoosa junction (Figure 13). The best known Hope Hull pottery is a red-filmed ware that occurs on pots shaped liked hollowed-out pillows, although this ware represents only about ten percent of a typical Hope Hull assemblage. Undecorated Hope Hull pottery, classified as the type Adams Plain, is tempered with fine sand and has a burnished surface. The red-filmed ware, known as Montgomery Red Filmed, appears to be some sort of copy of pottery made by peoples associated with Late Woodland Weeden Island culture (Jenkins and Sheldon 2003:15). Hope Hull and Autauga pottery have been found in association with one another at the Ziegler site

(1Mt86, Figure 14), which is believed to date to around A.D. 1000 (Futato 1973). A number of other dates have been obtained for Hope Hull sites, including one thermoluminescence date and at least nine radiocarbon assays. These suggest an end date for the Hope Hull phase of sometime between A.D. 1000 and 1100. After this time, Hope Hull pottery vanished on sites in the Alabama River Valley and was replaced by Autauga pottery.

The appearance of Autauga pottery in the area formerly occupied by Hope Hull peoples has led Jenkins and Sheldon (2003:10) to suggest this was due to a movement of peoples making Autauga pottery up the Alabama River. If this was the case, then there is some question of what may have happened to the people who made Hope Hull pottery. Did the people making Hope Hull pottery adopt the traditions of Autauga pottery manufacture? If this is the case, it may not have been necessarily a movement of people that forced this change, but simply the introduction of new ceramic traditions that somehow eclipsed existing traditions. On the other hand, it is possible the people making Hope Hull pottery were pushed out of their home territory and migrated elsewhere. As discussed below, archaeological evidence from the Union Springs phase (Figure 13), which dates between A.D. 1000 and 1300, appears to suggest that neither of these two scenarios is accurate.

In 1983, David Chase conducted a series of excavations at Site 1Bk7, where he found an occupation level with red filmed and plain pottery very similar to Hope Hull ceramics (Chase 1998:80-81). This site, and others with a similar ceramic complex, is located on the drainage divide between the Tallapoosa and Chattahoochee rivers (Figure 14). During his excavations at the site, Chase (1998:80) believed that he had finally come across a solution to the intriguing problem of what happened to the peoples who made Hope Hull pottery. Union Springs pottery is slightly different from Hope Hull, in that the majority type of plain pottery is tempered with both sand and ground schist. When Chase reexamined pottery from the Montgomery area, he realized he had incorrectly classified Union Springs pottery as belonging to an earlier Woodland pottery tradition, Calloway, which has a very micaceous paste. It soon became apparent to Chase that Union Springs pottery occurs on sites in the upper Alabama and lower Coosa/

Tallapoosa drainages alongside Autauga pottery (Jenkins and Sheldon 2003:16). This suggests that Hope Hull peoples did not abandon their own ceramic traditions wholesale, but instead incorporated Autauga pottery traditions into their domain of ceramic production or intermarried with Autauga peoples.

Farther down the Alabama River, below its junction with the Cahaba, Late Woodland occupations are associated with the White Oak phase (Figure 13), which appears to have emerged around approximately A.D. 700-800 (Chase 1998:73). This phase was first defined by Chase (1969) after excavations at the White Oak Creek site, and was later recognized at several other sites, including Old Cahawba and the Cedar Creek mound (Figure 14). Pottery from the White Oak phase is cord-marked, pinched, and check-stamped. The cord-marking appears to be derived from the earlier Claiborne complex, which is centered in the Tombigbee River Valley (Jenkins and Sheldon 2003:6). Claiborne complex occupations, which date from A.D. 400 to 800, also extend eastward into the Alabama River Valley. The pinched pottery in Whiteoak phase assemblages appears to be the result of incorporation of models associated with Weeden Island ceramic traditions. Several Weeden Island settlements have been recorded in Wilcox County in the vicinity of the location where Pine Barren Creek empties into the Alabama. Jenkins and Sheldon (2003:6) suggested that these people may have come down this large creek after leaving the Conecuh River Valley. The White Oak phase appears to have lasted until at least A.D. 1050, since evidence of this component is found at the Cedar Creek Mound site (1Ds172) associated with an intrusive Moundville I phase component (Figure 14). Jenkins and Sheldon (2003:18) referred to this early Mississippian component as the Cedar Creek phase. It is unclear whether there are other sites of the same cultural affiliation in the region or whether this site, with a single pyramidal mound, represents an isolated case of site-unit intrusion by Mississippian peoples from the north.

Early Mississippian Phases

As Jenkins and Sheldon (2003:19) stated, between A.D. 1100 and 1350, during the early and middle Mississippian periods, the Alabama River Valley below present-day

Montgomery was only sparsely populated. During this time, the only occupants were a few cases of intrusive people from the Moundville cultural tradition. Farther upriver, Mississippian components are a bit better represented. The earliest Mississippian occupation in the Lower Tallapoosa valley is designated the Shine I phase, which is presumed to date between A.D. 1200 and 1350 (Figure 15). There are two mound sites with known Shine I components, Jere Shine (1Mt6) and Muklassa (1Mt10). Jenkins and Sheldon (2003:19) argued that these mound sites and smaller sites in the vicinity likely represented part of a simple chiefdom. Shine I phase ceramics are very different from their Late Woodland predecessors, as nearly 99 percent of the assemblage is tempered with crushed shell. Late Woodland conical pots are absent from Shine I assemblages and are replaced by globular jars with handles and nodes. Incised pottery, including a few examples of incised jars very similar to those found at Moundville, also occur in Shine I assemblages.

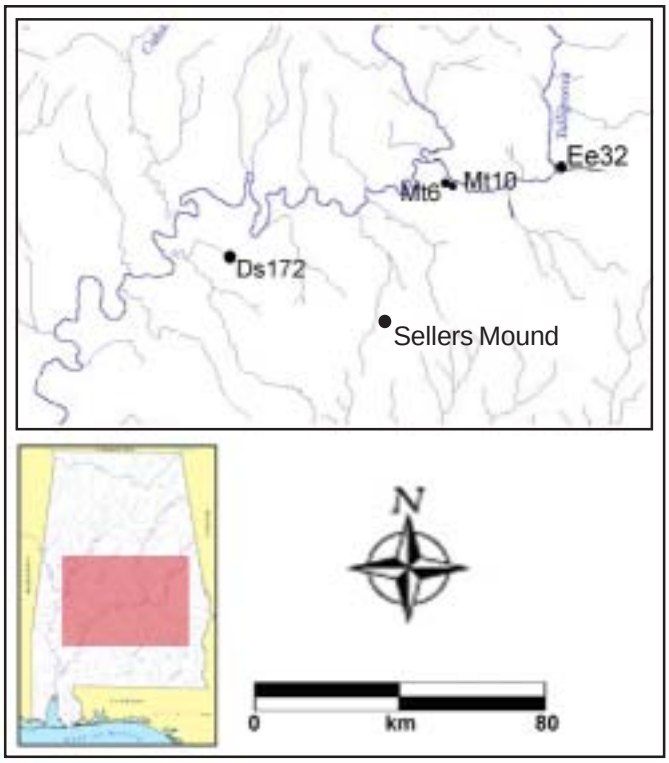

Figure 15. Distribution of Mississippian sites mentioned in the text.

In the upper portion of the Alabama River Valley, Jenkins and Sheldon (2003:25) designated the few sporadic Mississippian components dating between A.D. 1100 and 1300 as the Brannon phase. Ceramic assemblages associated with this phase were first described by the avocational archaeologist Peter Brannon (1934:8-12), who referred to the pottery excavated at the site at the Coosa/Tallapoosa junction as the "Type B" culture. Although there is little provenience information for these vessels, they were illustrated by Brannon (1934: Plates

7-9), and appear to consist of jars with loop handles, which may be decorated with incised arches and rays around the shoulders. Below the arches, the sherds are indented, so the incising has the appearance of being on a raised surface (Jenkins and Sheldon 2003:25). Most of the vessels illustrated by Brannon (1934, 1935) are sand-tempered, although a few appear to be tempered with shell. Sheldon et al. (2001) reported the recovery of Brannon phase ceramics in association with terminal Woodland ceramics on the floor of the four wall trench houses excavated at Fusihatchee (1Ee191). Radiometric assays taken on material from these houses date between A.D. 1100 and 1300. Jenkins and Sheldon (2003:26) reported the presence of another possible Brannon phase component at the Sellers Mound, on the upper portion of Pintlala Creek (Figure 15).

Jenkins and Sheldon (2003:26) argued the very poorly-known Brannon phase appears to be related closely to the Mississippian traditions from the nearby Chattahoochee River Valley, particularly the Rood I phase, which dates between A.D. 1100 and 1250 (Blitz and Lorenz 2006). Early Mississippian sites in the Chattahoochee Valley appear to represent planned settlements by immigrant peoples. Based on the earliest pottery found on Rood I sites, these sites were newly settled by Moundville-related peoples who came from the west, and made shell-tempered pottery with incised arches around the shoulders (Blitz and Lorenz 2006). Later in the early Rood sequence, sand tempering became dominant in Chattahoochee Valley assemblages. Jenkins and Sheldon (2003:26) suggested that the Brannon phase may represent a similar scenario in which small portions of the migrating early Moundville groups settled in the Alabama River Valley. While this may have been the case, there is so little archaeological evidence from these occupations that the entire phase almost can be described as ephemeral. Brannon phase occupations just as easily could have been the result of site unit intrusions of peoples from the Chattahoochee Valley during the Rood I phase.

The archaeological evidence from the years between approximately A.D. 1100 and 1300 suggests there were four distinct pottery traditions in central Alabama, which are divided into the Autauga, Union Springs, Shine I, and Brannon phases. Jenkins and Sheldon (2003:20)

argued that this implies that there were peoples from four distinct cultural traditions living side by side. There is some question, however, whether different pottery complexes necessarily imply different peoples in this case. It seems likely by this time the widespread occurrence of Union Springs and Autauga pottery in the same contexts represents only a single Terminal Woodland cultural group. The Mississippian peoples who occupied the Alabama River Valley were likely immigrants from elsewhere. There is some evidence of Mississippian traits at sites like Fusihatchee, but the intrusive peoples were never able to establish large, long-lasting polities like those at Moundville and Bottle Creek. As Jenkins (2004:2) noted, the numbers of people who moved into the region were not large enough to have made a major cultural impact on the substantial numbers of terminal Woodland people living in the region.

The Lamar Tradition in the Lower Tallapoosa Valley

The question of what happened to terminal Woodland peoples in the Alabama and Lower Tallapoosa valleys may be answered by examining the evidence for the intrusion into the region of peoples associated with the Lamar tradition, the Southern Appalachian manifestation of the Mississippian cultural pattern. Sites with pottery associated with the Lamar tradition ranged across a broad geographic area, including most of Georgia and neighboring portions of Alabama, Florida, South Carolina, North Carolina, and Tennessee. Lamar tradition sites in the Lower Tallapoosa Valley are grouped into the Shine II phase. The Lamar tradition subsumes sites in the Southern Appalachian region that exhibit many of the traits associated with the Mississippian cultural pattern with the exception of pottery assemblages dominated by shell-tempered wares. Ceramics assemblages associated with the Lamar tradition are composed of complicated stamped and plain outflaring jars and incised carinated bowls, all of which occur on a sand/grit-tempered ware (Hally 1994:144). The origins of Lamar tradition ceramics can be traced back to the Mississippian chiefdom centered at the Etowah site in northern Georgia, which was initially occupied around A.D. 1050 (Hally 1994). The sand-tempered rectilinear complicated ceramics associated with the Etowah tradition eventually evolved into those of the Savannah cultural tradition, represented at Etowah by the Wilbanks phase, around A.D. 1200.

Savannah pottery is decorated with curvilinear complicated stamping. Pottery styles associated with the Savannah tradition spread geographically over time to cover most of Georgia and portions of surrounding states, and by A.D. 1350, the Savannah tradition had fully evolved into the Lamar tradition (Hally 1994)

The Lamar tradition has been divided arbitrarily into three temporal periods, Early Lamar (A.D. 1350-1450), Middle Lamar (A.D. 1450-1550), and Late Lamar (A.D. 1550-1800), based on changes in the ceramic assemblages through time. Hally (1994:147) broadly outlined the temporal evolution of Lamar ceramics through these periods. Generally, the later an assemblage dates, the greater the frequency of incised pottery. As incising increases in popularity, the width of incised lines becomes smaller and the number of lines increases. Also, the quality of execution of complicated stamping declines gradually through time, eventually yielding to brushing in the western limits of Lamar culture. Across its broad geographic distribution,the Lamar tradition has been divided into twelve regional variants classified chronologically into phases.

The Lamar pottery complex has been described by several archaeologists as a fusion of the indigenous southern Piedmont and Appalachian complicated stamping tradition and Mississippian traditions of burnishing and incising (Caldwell 1957; Fairbanks 1950, 1952). As Hally (1994:149) pointed out, however, the introduction of incised pottery is likely not the result of a late introduction of Mississippian pottery. After all, Mississippian cultural traits such as platform mounds, maize cultivation, shell-tempered pottery, and wall-trench structures were present in the core area of the Lamar tradition since at least A.D.1200 at sites such as Etowah. Hally (1994:150) noted that Lamar settlements tend to be concentrated in alluvial valleys and their adjacent uplands. The interfluvial zones between major drainages appear to have been only sparsely settled, although it does seem that in some areas, such as the Oconee River drainage,that peoples inhabited the uplands in small farmsteads (Elliott 1990). This sparse settlement in interfluvial zones is likely because Lamar peoples were dependent upon maize

cultivation, which made up the bulk of their subsistence, and needed to be in proximity to mineral-rich, well-drained alluvial soils.

Numerous Lamar sites possess multistage platform mounds used in many cases for an extended period of time (Hally 1994:157). A handful of these sites have multiple mounds. In many cases, these mound sites also have areas that seem to have served as public plazas, as well as associated habitation areas. The standard Lamar domestic structure is a large rectangular single-set post wattle-and-daub structure that measures 6-7 m across. It is typically paired with smaller rectangular structures without daub, believed to be arbors used primarily during the warmer months. There appears to be have been some differentiation in the size of these domestic structures, which was based on the social status of the inhabitants (Gougeon 2003). The chief means of examining the nature of social status in the archaeological record, however, is the consideration of status as reflected in burial treatment (Peebles and Kus 1977). Across Lamar culture, individuals were most often buried in a flexed position beneath the floor or just outside of the larger houses, although burials have been found in a few Lamar mounds in Georgia (Hally 1994:164-165).

Substantial burial data are available from only one Lamar site, the King site (9Fl15) in northwest Georgia. The King site was a palisaded town with no mound but a large plaza ringed by an estimated 47 houses (Hally 1994:158). In the excavation of approximately two-thirds of the site, 190 burials were encountered; of these, 102 yielded grave goods. Hally (1994:165) reported that most of the grave goods typically found in Lamar burials, including ceramic vessels and pipes, ground stone celts, shell gorgets, earpins, and beads, and triangular projectile points, tend to occur with both sexes and all age groups at the King site. However, there are a few artifact types typically crafted of exotic materials, which reflect supralocal symbols that appear to occur with specific age and sex categories. The most obvious differentiation is adult males, whose graves included the only evidence of embossed copper cutouts, spatulate celts, and stone discoidals. Iron tools, which demonstrate that occupation at the King site postdates initial European contact, are confined to male burials (Hally 1994:165). Although the burial artifacts

at the King site clearly demonstrate some level of elevated status, Hally (1994:167) noted that these burials do not yield the high status items found with males and females of all ages typical of earlier Mississippian sites such as Etowah. Unfortunately, there are simply not enough data from Lamar sites to determine whether social ranking, including inherited social status, was widely associated with the Lamar tradition.

In addition to ascribed social ranking, one of the key characteristics of chiefdom-level societies is multi-community political integration. Hally's (1993) examination of the distribution of Lamar mound sites in northwest Georgia determined that all contemporaneous mound sites in the region were either less than 18 km or more than 32 km apart. Based on a chief's ability to exert his authority and reach any site under his domain in a single day's journey, the maximum extent of any Mississippian polity in the region was approximately 40 km in size. By combining the information concerning the distribution of mound sites and the maximum size of a given polity, Hally (1993) established that any two mound sites less than 18 km apart belonged to the same polity and those more than 32 km apart belonged to separate polities. Using this polity size data, Hally (1994) examined the spacing of mound sites to understand how many separate polities may have existed throughout the geographic area where Lamar tradition sites were located during the pre-contact era. Figure 16 shows Hally's reconstruction of polities based on the location of mounds across the geographic distribution of the Lamar tradition. It should be noted most of these polities

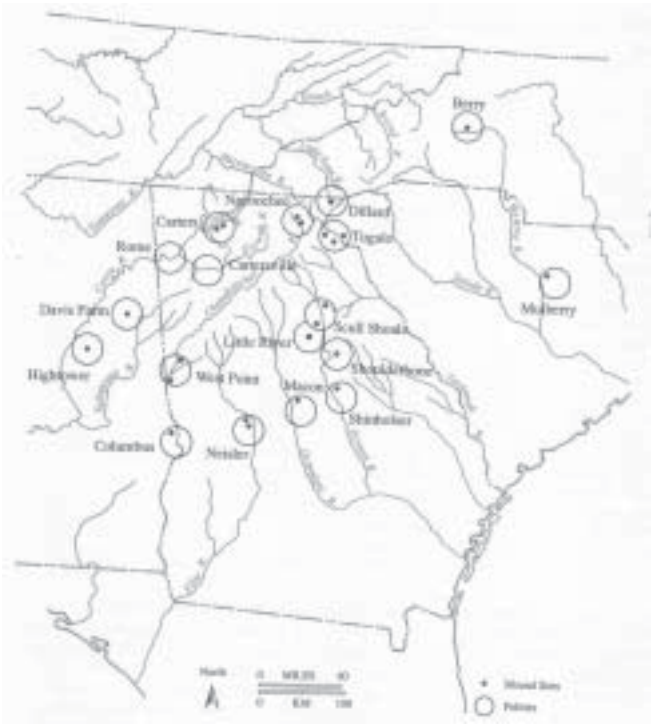

Figure 16. Map of hypothesized polity limits based on the position of Lamar mound sites (Hally 1994:170).

appear to be simple chiefdoms centered at a single mound site. Although the map illustrated in Figure 16 indicates that Middle Lamar sites can be broken down into constituent polities, it is still unclear how well these polities match up with the archaeological phases defined based on ceramic assemblages (Hally 1994:172). It should also be noted that Hally defined no polity in the area where the Shine II phase has been defined, likely because the distribution of sites associated with this phase is not well understood.

Clearly, the Lamar tradition is a broad designation subsuming multiple political entities, and, almost assuredly, multiple linguistic groups. This cultural tradition spans a broad geographic area, and the Lamar peoples of the Lower Tallapoosa and Upper Alabama drainages represent one of its westernmost expressions. The Shine II phase designation was first introduced by David Chase in a paper delivered at a meeting of the Alabama Archaeological Society in 1979. The phase received no other mention in print until Knight (1985:9-10) published a short description of it. Knight (1985:10) characterized the Shine II phase as a regional manifestation of the Lamar tradition, best exemplified by mound sites such as Jere Shine, Tukabatchee, and Kulumi. Aside from these mound sites, Shine II components also are recognized on approximately twenty smaller sites identified during a survey of the Lower Tallapoosa conducted by Gregory Waselkov. Shine II ceramic assemblages are described as having a very high amount, approximately 85 percent, of undecorated pottery tempered with sand or grit. Knight (1985:10) also reported that pottery tempered with shell or shell and grog occurs in limited amounts on Shine II sites, as does black burnishing. The decorated types include Lamar Complicated Stamped and Mercier Check-Stamped, which make up approximately ten percent of the Shine II assemblage. A very small minority of pottery (approximately three percent) in the Shine II ceramic assemblage consist of casuelas or flaring rim bowls decorated with curvilinear bold incising. At the time Knight (1985) published this phase description, the dating of the Shine II phase was based entirely on cross-dating of ceramics. Excavated contexts at Kulumi and Jere Shine demonstrated that the phase lasted until at least A.D. 1550, and Knight (1985:10) argued that it probably extends later into the sixteenth

century, since the earliest site with a component associated with the subsequent Atasi phase dates to about A.D. 1630.

Knight's (1985:173) excavations at Tukabatchee revealed that the Shine II phase occupation at the site was a small, compact town centered around a single mound. Knight (1985:173) suggested that it is likely this town and others in the region made up part of a series of Late Mississippian "petty chiefdoms," which were very similar to the single mound Lamar chiefdoms described by Hally (1994). A series of excavations were conducted at another Shine II mound site, Kulumi (1Mt3), in the 1980s by Craig Sheldon and Ned Jenkins. Unfortunately, the results of these excavations, which yielded a substantial amount of material from the Shine II occupation at the site, have not been published. A summary of these excavations can be found in Chapter 5 of this work. Knight's (1985) description of the Shine II phase remained the only published information on Shine II until Chase published a description of central Alabama ceramics in 1998. Chase's description of Shine II pottery was based primarily on the material from his excavations at the Jere Shine site (1Mt6) during the early 1960s and early 1970s. Chase (1998:87) noted that at this site there is a vast difference between ceramics associated with this occupation and the earlier Shine I phase, and suggested that there was no continuity between the peoples associated with these two phases. It is also unclear whether there was any break in time between the Shine I and Shine II phase occupations. A single radiocarbon date taken on material from a feature yielding Lamar pottery was cal. A.D. 1316 - 1404 (p=.05) (Chase 1998:88). Chase (1998:87) listed three main classes of pottery in the Shine II ceramic assemblage. Most is made up of grit-tempered plain, complicated stamped, and incised ceramics associated with the Lamar tradition. Chase also described a minority group of shell-tempered burnished sherds, which he argued are related to the Dallas tradition, centered in Tennessee. While this may seem somewhat odd, it was a logical conclusion, given that at other Lamar sites, such as those associated with the Barnett phase in Northwest Georgia, occurrences of shell-tempered incised pottery are attributed to the diffusion of Dallas ceramic traditions (Hally 1994).

Until very recently, Chase's description was the most recent summary of the Shine II phase. This phase has received new attention in recent years as part of an attempt to synthesize the prehistory of central Alabama (Jenkins and Sheldon 2003) and to examine the origins of the historic Upper Creek Indians (Jenkins 2004). Jenkins and Sheldon (2003:20) provided a far more extensive description of the Shine II phase than previously has ever appeared in print, finally moving beyond the description of the phase simply in terms of its ceramic assemblage. They provided a geographic range for Shine II for the first time, noting the presence of sites in an area extending from the Big Bend of the Tallapoosa River to approximately five miles east of the junction of the Coosa and Tallapoosa rivers. This distribution makes Shine II the westernmost expression of the Lamar tradition. Sheldon and Jenkins (2003:20) identified five mound sites with Shine II phase components, adding Muklasa and Hickory Bend (1Mt56) to the list of three previously mentioned. It is unclear whether these five sites were part of the same polity centered at the Jere Shine site, as Sheldon and Jenkins (2003:20) suggested.

Sheldon and Jenkins (2003:21) further described the pottery from Shine II phase sites, using some of the unpublished results from their excavations at Kulumi (1Mt3) as an example. They noted that in the levels dating to the Shine II phase, at least half of the ceramic assemblage is made up of shell-tempered pottery. This is a far greater percentage of shell-tempering than had been reported previously at other Shine II sites. Sheldon and Jenkins (2003:21) also have reexamined the shell-tempered incised sherds from Kulumi that Chase considered to be Dallas-derived, with surprising results. These sherds show much closer ties to Moundville, with wide line incising, burnished surfaces, and incised motifs typical of pottery that would be classified as Carthage Incised at Moundville. These motifs occur on Moundville vessel shape forms such as short-neck and flaring rim bowls. A sherd from a shell-tempered burnished frog effigy jar, a form common at Moundville, also was recovered.

It is now understood that Shine II pottery assemblages possess sherds associated with both Moundville and Lamar ceramic traditions. This poses the question of whether the presence of Lamar ceramic traditions in Shine II culture is the result of a development that

occurred in place or a migration of peoples from the east. Until recently, it seemed there were no possible antecedents to Lamar pottery in east or central Alabama, and therefore Shine II had to represent the fusion of two completely independent groups who migrated into the region. This blending of traditions, and likely of peoples, is unexpected, especially given that archaeologists working in central Alabama have long assumed that the north-south running geographic break between Late Mississippian sites that possess shell-tempered Moundville-related ceramics and those that possess primarily sand-grit complicated stamped pottery likely represented a boundary between two distinct prehistoric linguistic groups (Sheldon 2001:20-21). The origins of Lamar ceramics in central Alabama may be traced back to sites on the easten side of this boundary, such as Walnut Creek (1Pk7, Figure 15). Pottery from this site, which is located east of present-day Troy near the headwaters of the Choctawhatchee River, is decorated with complicated stamped concentric circle and bull's-eye motifs (Chase 1998:89). These ceramics have been called the Walnut Creek complex, and the decorative motifs present on these sherds appear to be related closely to Wilbanks phase pottery from the Etowah River Valley. According to Chase (1998), another large site with Walnut Creek pottery is located nearby. Jenkins (2004:3) argued these two sites represent a group of people who migrated from the core area of the Etowah chiefdom, possibly as the result of some sort of internal political struggle.

Walnut Creek pottery does not occur only on sites located near the headwaters of the Choctawhatchee River. Chase (1998:89) also reports finding sherds of this pottery complex at the Jere Shine site (1Mt6). Jenkins (2004:4) noted that sherds of Walnut Creek pottery also were recovered alongside Autauga pottery at Kulumi (1Mt3). The presence of Walnut Creek pottery at many sites with later Shine II occupations led Jenkins (2004:4) to suggest that this pottery was introduced into the region by peoples from the Etowah River Valley, who left their homeland in the wake of political strife and settled in the Alabama River Valley. These peoples then assimilated the groups making pottery associated with the terminal Woodland Autauga and Union Springs phases and the Mississippian Brannon and Shine I phases. Jenkins further

suggested that Lamar components of the Shine II phase, which appear to have first emerged around A.D. 1350 to 1400, are direct descendents of the Walnut Creek complex. Jenkins (2004:4) argued, therefore, the appearance of Moundville pottery on Shine II sites is the result of political alliances with intrusive peoples who established several mound sites located to the west, in the upper Alabama River Valley.

Moundville Occupations in the Upper Alabama Valley

The period when the Alabama River Valley first was occupied by substantial numbers of Mississippian peoples appears to correspond with cycles of political decline in the two largest Mississippian polities located in present-day Alabama, centered at the sites of Moundville in the Black Warrior Valley and Bottle Creek in the Mobile-Tensaw delta. It appears, therefore, that the settling of the Alabama River Valley by people from each of these two chiefdoms was the result of this instability. To understand the roots of this political instability, it is necessary to examine the developmental sequences of both chiefdoms, which have been intensively evaluated and reformulated by archaeologists in the past decade (Brown 2003a, b; Fuller 2003; Knight and Steponaitis 1998).

Excavations at the Moundville site have been occurring for well over a century. One of the largest of these projects was a series of excavations done in advance of the construction of the road now circling the site. These and other recent excavations in the 1970s and 1990s along the northwest river bank and into many of the mounds have generated a wealth of archaeological data. These data have been synthesized by several researchers in an attempt to understand the history of the Moundville site and the polity centered around it. The Moundville tradition in the Black Warrior Valley has been divided into a series of four phases defined using a seriation of vessels recovered from gravelots at the site, along with stratigraphic data from excavations (Steponaitis 1983). The political history of the site was divided into chronological stages of development by Knight and Steponaitis (1998). As is illustrated in Table 1, the ceramic phase boundaries do not correspond with the changes in the stage of political development. Because this portion of the study is concerned with political developments in the

Black Warrior Valley leading to the settlement of the Alabama River Valley, the stages of political development presented by Knight and Steponaitis (1998) will be used herein.

Table 1. Moundville Phases and Developmental Stages

Date	Ceramic Phase	Developmental Stage
AD 1600	Moundville IV	Collapse and Reorganization
AD 1500	Late Moundville III Early	
AD 1400	Late Moundville II Early	The Paramountcy Entrenched
AD 1300		Regional Consolidation
AD 1200	Late Moundville I Early	Initial Centralization
AD 1100	Late West Jefferson Early	Intensification of Local Production
AD 1000		

During its heyday, the political center at Moundville was one of the largest prehistoric communities in North America. The site is located on a terrace 17 meters above the Black Warrior River, approximately 24 kilometers south of the Fall Line. In the approximately 75 hectares comprising the site are at least 29 earthen mounds arranged about a central plaza (Figure 17). There is evidence that portions of this plaza were leveled artificially by filling some depressions early in the site's history. The entire site was encircled by a wooden palisade on three sides for a little over a century. The river formed the northern boundary of the site, and Carthage Branch, a deeply entrenched drainage that empties into the river on the northeast side of the site, may have also aided in the site defenses. Occupation areas were located around the periphery of the mounds.

Figure 17. Map of the earthen mounds and palisade line at the Moundville site. (From Knight and Steponaitis 1998:3, Figure 1.1).

Immediately prior to the initial founding of Moundville, the Black Warrior Valley was occupied by peoples of the West Jefferson phase, which dates between approximately A.D. 1000 and 1125. Archaeological evidence reveals a broad pattern of social stress characterized by resource scarcity, endemic warfare, and settlement circumscription across the Southeast during this period (Knight and Steponaitis 1998:10). Although terminal Woodland peoples in the Black Warrior Valley never reached the levels of settlement circumscription seen in the neighboring Tombigbee Valley, it is doubtful that West Jefferson peoples escaped these pressures entirely. Archaeological evidence has demonstrated that during the early West Jefferson phase subsistence was likely based on wild foods (Scarry 1993). Some time during the later portion of this phase, however, there was a notable intensification in both maize and craft production (Knight and Steponaitis 1998).

The site of Moundville itself was not occupied until approximately A.D. 1050, when many of the traits considered diagnostic of the Mississippian cultural pattern, such as platform mounds, shell-tempered pottery, and rectangular wall-trench houses, first appeared in the regional archaeological record (Knight and Steponaitis 1998:12). At the same time, a settlement shift occured in the Black Warrior Valley, as peoples spread out into dispersed farmsteads rather than the tightly-packed villages of the West Jefferson phase, probably as a result of the increasing importance of maize cultivation. During the period between A.D. 1125 to 1250, which is known as the early Moundville I phase, the archaeological record reveals the emergence of a small-scale ranked society, as evidenced by the construction of two mounds on the Moundville terrace. Knight and Steponaitis (1998:13) suggested that these sites served as the residences for competing local leaders who attempted to consolidate authority through the control of the exchange of exotic goods and the rituals of mound building. These mounds are not indicative of any sort of regional consolidation, however.

The period between A.D. 1200 and 1300 was an era of political consolidation in the Black Warrior Valley (Knight and Steponaitis 1998:17). By A.D. 1225, during the Late Moundville I phase, the paramount center at Moundville had been constructed. Based on

available evidence, it appears that construction on all of the mounds at the center was begun during a relatively brief time period (Knight and Steponaitis 1998: 15). The layout of Moundville was planned, with a central plaza, symmetrical distribution of mounds, and alternation of mounds where individuals were buried (Peebles 1971). The circular arrangement of mounds at the site, with the largest mounds along the northern margin, has been interpreted as a means of imposing the ranked social order upon the landscape (Knight 1998). Those social groups with the highest rank occupied the larger mounds to the north, while those at the lower end of the social hierarchy occupied the mounds along the southern edge of the site. The construction of a palisade realigned settlement at the site as residents began to move inside the walls and site population rose to approximately 1,000 people (Knight and Steponaitis 1998:15; Steponaitis 1998:42). In the surrounding Black Warrior Valley, new single-mound centers were constructed as sites previously occupied were abandoned (Knight and Steponaitis 1998:16). During the thirteenth century evidence of the mobilization of foodstuffs for the purpose of elite provisioning, intensification of trade in exotic items, and mobilization of labor in the form of mound and palisade construction appear in the archaeological record. All of these facts combine to suggest Moundville had become the political center of a multi-community polity with a ranked social hierarchy, better known as a chiefdom.

During the subsequent period at Moundville, in the years between A.D. 1300 and 1450, the archaeological record shows a clear elaboration of the symbols of chiefly authority, particularly in burials (Knight and Steponaitis 1998:17). During this period, the archaeological record suggests that elites began to distance themselves from their followers in an unprecedented way, through elaborate burials furnished with exotic goods. As this process was occurring, the population of commoners living at the site of Moundville was dwindling, as they vacated the center to settle at dispersed farmstead sites in the surrounding valley, leaving only the elites behind (Knight and Steponaitis 1998:18). During this period, the palisade was apparently dismantled, and Moundville underwent a shift from a bustling political center to a necropolis.

This shift in the role of Moundville is demonstrated by data from excavations at the site. The chronologically diagnostic pottery found in burials shows that the frequency of people buried at the site increased through time over the span of the Moundville I through Moundville III phases (Steponaitis 1998:37). This led archaeologists to initially assume that the population at the site had peaked during the Moundville III phase. However, this conclusion was reevaluated when the distribution of chronologically diagnostic ceramics in domestic refuse was taken into account. During the period between the Moundville I through Moundville III phases, midden deposits at Moundville drop off dramatically (Steponaitis 1998:37). In fact, excavations have shown that many of residential areas occupied during the Moundville I phase were replaced with cemeteries after A.D. 1300 (Knight and Steponaitis 1998:19). Additionally, very few burials are found on sites in the surrounding Black Warrior Valley dating to the period of A.D. 1300 to 1400. These shifts suggest that as the authority of the paramount chiefs became more and more entrenched, the role of Moundville shifted, as it became the preferred place of burial for all individuals living in the chiefdom (Knight and Steponaitis 1998:19).

Excavations in the mounds at the center have demonstrated that by A.D. 1400, many were abandoned, especially along the southern edge of the plaza. During this period more secondary single-mound centers were established in the river valley. This was probably increasingly necessary, because elites needed to find a way to continue to hold political sway over an ever-dispersing population (Knight and Steponaitis 1998:20). Knight and Steponaitis (1998:21) noted that this likely suggests lower order groups were no longer participating in ritual activities at the center. This abandonment is one of the initial archaeological indicators that the political fabric of the Moundville chiefdom was beginning to unravel.

By A.D. 1450, the signs of political decline are more apparent in the archaeological record of the Black Warrior Valley. At this time, occupation was confined to only three of the mounds at the center and only one small off-mound area was occupied. Perhaps even more telling is the drop in the frequency of burials at the center by this time, which occurred as construction continued and cemeteries were established at outlying mound sites (Knight and

Steponaitis 1998:21). This perhaps suggests that elites at outlying sites were beginning to usurp power from the center. During this time, people began once again to aggregate into nucleated villages, a trend not seen since the West Jefferson phase. These population shifts were not confined to the Black Warrior Valley. Pottery associated with the late Moundville III phase has been found on sites in the Cahaba River drainage to the east (Steven Meredith, personal communication 2003). It was also during this era that Moundville-related pottery first began to appear on sites in the Alabama River Valley. The lack of any substantial occupations in both of these drainages associated with the earlier Mississippian phases suggests that these were settlements newly founded by groups of individuals who migrated from the Black Warrior Valley during the time the chiefdom centered at Moundville was collapsing. These people appear to have occupied five mound sites in the upper portion of the Alabama River Valley and set up a polity in an entirely new region.

Jenkins (2004) defined the Big Eddy phase to group the five Moundville-related mound sites stretching from the junction of the Coosa and Tallapoosa rivers to a point approximately 10 miles downriver. Unfortunately, there have been painfully few excavations at these sites by professional archaeologists. David Chase conducted two separate excavations at the Jackson Lake site; however, I was able to locate notes from only one set of excavations, and only artifacts from the other. The pottery from the second round of excavations, which is curated at both the University of Alabama at Birmingham and Auburn University at Montgomery, includes both shell-tempered sherds that appear to be Moundville related and plain and complicated stamped grit-tempered Lamar sherds (Jenkins 2004:9). In his 1899 trip up the Alabama River, C. B. Moore excavated three of the mound sites now grouped into the Big Eddy phase, Thirty-Acre Field, Big Eddy, and Charlotte Thompson. Whole vessels and sherds recovered by C.B. Moore (1899:152, 167, 173) from Thirty-Acre Field and Charlotte Thompson confirm the presence of Moundville pottery at these sites. The collections from Moore's excavations in the mound at Charlotte Thompson, which will be discussed at a later point, also possess sixteenth-century European trade material that appears to be from the Tristan de Luna expedition of A.D.

1560. This suggests that mound construction continued at this site even after initial contact with the Hernando de Soto expedition in A.D. 1540.

The Pensacola Tradition in the Alabama River Valley

Farther down the Alabama River, Late Mississippian sites have been classified as comprising the Furman phase, which is considered part of the Pensacola cultural tradition, centered in the Mobile-Tensaw delta (Curren 1984; Little and Curren 1989). The intrusion of Pensacola peoples into the Alabama River also seems to be the direct result of political instability, although in this case the chiefdom was centered in the Mobile-Tensaw delta. The history and developmental sequence of the chiefdom centered at the Bottle Creek site (1Ba2) is very much connected to that of Moundville. Bottle Creek is considered to be the most important site associated with the Pensacola tradition, the designation for Mississippian sites located along the portion of the northern Gulf Coast stretching from Choctawhatchee Bay in western Florida all the way across Mobile Bay and Mississippi Sound to southeastern Louisiana (Brown 2003:7). This entire region was not politically consolidated under the leaders residing at Bottle Creek; rather the Pensacola tradition along the Gulf Coast subsumes a series of simple chiefdoms, consisting of single mound sites and outlying settlements centered around each individual bay system along the coast (Bense 1994:234). In the current study, the focus will be on the history and development of the chiefdom centered at Bottle Creek, in the Mobile-Tensaw delta, because it is located downriver from the study area.

With over 18 mounds, Bottle Creek was the largest site associated with the Pensacola tradition. The site stretches east to west approximately one kilometer across a levee on Mound Island. The landform on which the site is situated is elevated three meters above the surrounding inundated swamp. The central portion of the site consists of a complex of four intentionally-constructed mounds situated around a plaza (Figure 18). At least one of these mounds, Mound L, represents a truly monumental construction effort. Before this mound was constructed, 30 cm of clay fill was added to an area measuring over 2500 m^2 to create an artificial platform (Brown 2003:208; Brown and Fuller 1993:152). The central portion of the

Figure 18. Contour map of the Bottle Creek site, showing the location of all of the mounds. (From Brown 2003:4, Figure 1.4).

site is flanked by nine house mounds, which arose through the accretion of midden soils from households over time. Finally, there are four mounds along the periphery of the site likely used as burial mounds late in the history of the site. While today the location of Bottle Creek is quite remote and inaccessible, as Brown (2003:8) noted, its location in the Mobile-Tensaw delta places it near the intersection of both east-west running trails and north-south waterway routes.

Artifacts have been collected from the Bottle Creek site since as early as 1702, when Jean-Baptiste Le Moyne d'Iberville visited the site while exploring the Mobile-Tensaw delta. The collection of five clay "idols" taken from the site by Iberville has been subsequently lost to the ages (Brown 2003). The history and ceramic chronology recently formulated for the site are based on data from controlled excavations at the site in the 1930s and from a series of excavations into several of the mounds conducted by Gulf Coast Survey (GCS) of the Alabama Museum of Natural History (AMNH) during the 1990s. Based on pottery recovered from these two series of excavations, stratigraphic evidence from test units placed into several of the mounds, and a series of radiocarbon assays, the occupation at Bottle Creek has been divided into four phases. Excavations also have generated a relatively broad outline of the political development of the site, although this sequence is not as well understood as that of Moundville.

In part, this is because few excavations have been conducted at contemporaneous sites located in the immediate vicinity of the Bottle Creek site, so the structure of the chiefdom centered there is not well understood.

As a cultural tradition, Pensacola has had a somewhat checkered history. It was initially described as a pottery complex by Gordon Willey (1949), who associated it closely with the Fort Walton tradition, because of its presence at the mound site of the same name. It is now well understood that the Fort Walton site lies at the western edge of the distribution of sites with Fort Walton-related ceramics and at the eastern edge of sites with Pensacola-related ceramics, and the two are completely separate cultural entities. As Pensacola was divorced from Fort Walton, it was then recast as a coastal derivative of the Moundville tradition, because there were obvious ceramic similarities. As Fuller (2003:27) noted, "people continued to regard Pensacola as a hyphen-dependent poor relative to Fort Walton and Moundville." This problem was due primarily to a lack of archaeological investigations at Pensacola sites as well as a poor understanding of the Pensacola ceramic sequence. This problem has been cleared up by examination of the pottery recovered in excavations at the site during the 1930s (Fuller and Brown 1993) and from the 1990s excavations by the GCS (Fuller 2003). The most recent ceramic chronology is based on pottery recovered from test units placed into Mounds A, C, and D (Figure 18).

Terminal Woodland occupations in the Mobile-Tensaw delta are classified as the Coden phase (A.D. 750-1100), which is characterized by sand-tempered check-stamped pottery. Like Moundville, it appears that the Bottle Creek site did not sustain any substantial terminal Woodland occupation (Fuller 2003:61). The earliest Mississippian occupation at the Bottle Creek site is classified as the Andrew's Place phase (A.D. 1100-1250). The ceramics from this phase reveal close ties to late Moundville I/early Moundville II ceramics from the Black Warrior Valley, which Fuller (2003:62) suggested may represent a case of site-unit intrusion. Chronologically, the beginnings of the Andrews Place phase occur a few generations after Moundville initially was occupied. There is little evidence that any mound construction occurred

during the Andrew's Place phase, although excavation data suggest a palisade was erected during this period (Fuller 2003:28). If the beginnings of Bottle Creek do represent a site-unit intrusion by Moundville peoples, this may represent an effort by the newcomers to distance themselves from the peoples already occupying the region (Fuller 2003:62).

By the subsequent Bottle Creek I phase (A.D. 1250-1400), a true Pensacola stylistic complex had begun to emerge. It was during this phase that definite mound construction began at Bottle Creek. As Fuller (2003:62) pointed out, Moundville ceramic models still were evident to some degree in the ceramics of this phase, but stylistic divergence suggests the origins of a distinct style of ceramic form and decoration, suggesting that Pensacola potters had begun to develop their own models of ceramic production. During this phase, in addition to the incorporation of Moundville ceramic traditions, Pensacola potters incorporated models of ceramic production associated with the Plaquemine tradition of the Lower Mississippi Valley. Grog and mixed grog and shell tempering occurs during this phase, as well as Plaquemine vessel forms, such as interior incised plates. By the Bottle Creek II phase (A.D. 1400-1550), the ties between Pensacola and Moundville pottery decorative styles and vessel forms had weakened even more. Finally, at the beginning of the subsequent Bear Point phase (A.D. 1550-1700), Pensacola pottery had diverged strongly from Moundville. Stylistic traits associated with Pensacola pottery in the Mobile-Tensaw delta began to appear at sites to the east and west along the Gulf Coast during this time, even appearing on Fort Walton pottery (Fuller 2003:62).

While this ceramic sequence provides a picture of how Pensacola potters transformed Moundville models of ceramic production and also incorporated models from the Lower Mississippi Valley, it does not provide a history of the political development at Bottle Creek. This can be fleshed out by examining the results of the recent round of excavations at the site. Clearly, Bottle Creek represents a central site in some form of Mississippian polity, although the hierarchy of settlements in the chiefdom is unclear. The recent excavations at Bottle Creek have generated information concerning how the site may have functioned as the center of a Mississippian chiefdom. The first line of evidence comes from subsistence data. The location of

Bottle Creek in the middle of a frequently inundated swamp contrasts with the floodplain settlement pattern typical of the Mississippian cultural pattern. The site's location in a rich, swampy environment with little adjacent arable land has led to questions concerning the role of maize cultivation in subsistence at the site (Gremillion 1993:133). Prior to the excavations at the site in the 1990s, no evidence of maize cultivation had been recovered from Bottle Creek. However, preliminary analysis of botanical samples from the Gulf Coast Survey excavations examined by Gremillion (1993) demonstrated the presence of maize kernels in multiple flotation samples.

Subsequent and more detailed work by Scarry (2003a, b) demonstrated that maize agriculture did play a significant role in food consumption at Bottle Creek. Perhaps even more telling is the evidence of elite provisioning at the site. Because the northern end of Mound Island is almost completely covered by the Bottle Creek ceremonial precinct and all of the surrounding swamp was inundated periodically, it is likely the maize consumed at the site was grown elsewhere and brought to the site for consumption (Scarry 2003b:126). This is further supported by the plant evidence, which shows a high ratio of corn kernels to corn cupules (Scarry 2003b:127). This indicates the maize crops were processed, or removed from the cob, before they were brought to Bottle Creek from surrounding farmsteads and villages.

Further evidence of elite provisioning, as well as evidence concerning the political history of the site, comes from a comparison of vessel shapes from Mound A, the largest mound at the site, and Mound C, one of the accretional house mounds (see Figure 18). Johnson (2003:165) noted that the presence of large amounts of *Rangia cuneata* shells on Mound C, as well as its proximity to Dominic Creek, suggests that this mound served as an area of food preparation for elites living on Mound A. Midden deposits from Mound A, on the other hand, appear to represent an area used primarily for the serving and consumption of food. In each mound, the lowest strata reflect an early pre-mound occupation dating to approximately A.D. 1200. Around A.D. 1250, a series of mound layers were laid down on Mound A in quick succession. The ceramics recovered from the pre-mound deposits in the Mound A area

suggest that prior to mound construction there was no evidence of provisioning in Mound A, because jars, used for food storage and preparation, made up nearly 65 percent of the assemblage in this context (Johnson 2003:166). In short, there was no evidence of social differentiation between the occupants living in the areas that became Mounds A and C. When mound-building began, Mound A became the central focus of the social landscape at the site, and the proportion of jars present in the Mound A assemblage dropped by more than half, to less than 30 percent (Johnson 2003:166).

The archaeological evidence suggests that the Bottle Creek site was occupied for over a century before mound construction began rather rapidly in A.D. 1250. Like Moundville, the basic layout at Bottle Creek appears to have been planned prior to the beginning of mound construction. Brown (2003:215) has noted that the dimensions of the plaza were intentionally made large enough to allow space for the mounds to expand in size. During the period between A.D. 1250 and 1550, Bottle Creek likely served as the center of political, economic, and spiritual life in the Mobile-Tensaw delta (Brown 2003:222). Sometime in the early sixteenth century, however, the site began to experience some major changes. It is during this period that the four sandy mounds on the eastern and western edges of the site are believed to have been constructed (Mounds O-R; Figure 18). These four mounds closely resemble the low, sandy burial mounds typically found on sites of the Bear Point phase. Excavations conducted into Mound O by Read Stowe in 1989 and 1990 have never been summarized in writing. Surface collections from Mounds O-R have yielded only Bear Point phase pottery (Brown 2003:222). Although burial mounds were being constructed at the site during this phase, test excavations have shown there is little archaeological evidence of a Bear Point occupation on the rest of the Bottle Creek site. Brown (2003:222) suggested that this may indicate that the site was used as a place for burial after it was depopulated at the end of the Bottle Creek II phase. Unlike at Moundville, however, this development occurred after European contact, and it seems Bottle Creek was *not* at the height of its political control when this shift in roles occurred.

The middle portion of the Alabama River Valley was settled by peoples practicing Pensacola potting traditions at some time during the middle of the fifteenth century, which appears to coincide with the decline in population at the Bottle Creek site. This does not necessarily mean the individuals who settled at sites such as Matthew's Landing came directly from Bottle Creek itself. Presumably, the instability at the Bottle Creek site was felt across all the settlements in the chiefdom, and the groups who settled the middle Alabama River Valley may have come from anywhere within its boundaries. Late Mississippian sites with Pensacola pottery located along the Alabama River between present-day Selma and Monroe County have been classified as the Furman phase (Little and Curren 1989). The only published description of the Furman phase described its ceramic assemblage as a close relative of the Bear Point phase in the Mobile-Tensaw delta, although decorated plates are much less common at Furman phase sites (Little and Curren 1989:172). In truth, there are only three major sites where a definite Furman phase component has been identified, Matthew's Landing (1Wx169), Old Cahawba (1Ds32), and the Philippi Mound (1Wx98). Two of these sites are examined further as part of the current study. Unfortunately, the Philippi Mound is not, since it was largely destroyed by looters in the mid-twentieth century. When William Sears (1959) studied some of the sites in the region, he interviewed these collectors and was able to ascertain that this site was a low sand burial mound, like those found on Bear Point sites along the Gulf Coast. One of the more intriguing aspects of the Philippi Mound is the recovery of glass beads from these burials. This is the only Pensacola-related site in central Alabama where European trade materials have been found, but unfortunately these artifacts, as well as the vessels recovered from the mound, fell into the hands of private collectors. The whereabouts of these artifacts are currently unknown.

Trends in the Prehistory of the Alabama River

Based on the current knowledge concerning the archaeology of the Alabama River Valley, certain trends in the prehistory of this region after approximately A.D. 1050 have emerged. The first and most notable trend is the lack of substantial Mississippian settlements

and ranked chiefdoms in the Alabama River Valley, which never emerged even as complex societies were developing in the nearby Chattahoochee, Black Warrior, and upper Coosa drainages. The simple chiefdom that emerged for a time in the Lower Tallapoosa during the Shine I phase, appears to have faded out in little more than a century. At other early Mississippian mound sites, such as Cedar Creek, intrusive groups appear to have been equally unsuccessful in forming an enduring political entity. A second trend in the prehistory of the Alabama River Valley is the presence of what appears to have been multiple ethnic groups living side by side for an extended period of time. This trend goes back at least to Late Woodland times, since archaeological evidence demonstrates that by A.D. 900 the upper portion of the valley was occupied by peoples making the pottery typical of the Autauga and Hope Hull phases. A few centuries later, communities associated with two Mississippian phases, Brannon and Shine I, can be found alongside Late Woodland Autauga and Union Springs phase communities. In another century, no traces of the terminal Woodland peoples remained. It appears a group of people associated with the Etowah chiefdom had settled in this region by A.D. 1450, and thus the valley was being colonized by peoples from three distinct Mississippian cultural traditions.

By the beginning of the sixteenth century, the Alabama River drainage was culturally a very different place than it had been during the previous four centuries. Significant groups of Mississippian people had established large villages extending from the Lower Tallapoosa Valley all the way down the Alabama River to Monroe County. While three different phases have been created in an attempt to group these sites, a brief examination of the material recovered from each site suggests that grouping these sites into contrasting phases obscures the variation present in each individual ceramic assemblage. The best example of this is the Bear Creek site (1Au7). The ceramic assemblage from this site has pottery considered diagnostic of the Shine II, Big Eddy, and Furman phases. Thus, Dickens (1971:Plates XXII and XXIII) illustrated Lamar, Moundville, and Pensacola pottery from his excavations at Bear Creek. Based on the culture history, it is clear each of the sites in the Alabama River Valley was settled by peoples

coming from multiple cultural traditions. These people established new towns, in some cases built mounds, and appear to have intermingled with one another, perhaps intermarrying. The evidence from the ethnohistoric record suggests that by the time the Hernando de Soto expedition made its way into the Alabama River Valley in A.D. 1540, some of these towns were united into a single polity led by a powerful chief.

The Hernando de Soto Expedition

For the native peoples of the Southeast, the century following European contact was characterized by population loss due to disease epidemics resulting from newly-introduced pathogens and internal conflict resulting from slave raiding by armed native peoples. Ultimately, these population stresses led people to abandon regions occupied heavily before contact and to coalesce in new areas, forming completely new societies with a heavy focus on integrative institutions (Kowalewski 2001, 2006). The peoples of the Alabama River were not immune to the upheaval of the early contact era. Unlike the Gulf and Atlantic coasts, during the sixteenth and seventeenth century European contact in interior Alabama was limited. Because of the paucity of European accounts from the interior during this era, the transformations in the interior are primarily tracable in the archaeological record. Evidence from early contact-era sites has demonstrated that in the decades following initial contact with the expedition led by the Spanish conquistador Hernando de Soto in A.D. 1540, the cultural landscape of the Alabama River Valley was transformed (Cottier 1970; Curren 1984; Regnier 2006; Sheldon 1974). Many of the settlements occupied before contact were abandoned in favor of a few large, nucleated villages, best exemplified by the Liddell site (1Wx1), located upriver from Matthew's Landing in Wilcox County. By the dawn of the eighteenth century, when sustained contact with European settlers truly began, native peoples had vacated most of the Alabama River Valley. Peoples had coalesced near the Coosa-Tallapoosa junction and around Mobile Bay, leaving the Alabama River Valley largely abandoned.

Because of the dramatic cultural changes of the contact era, archaeologists have been forced to rely on archaeological data and a few ethnographic accounts to reconstruct the

cultural landscape of the Southeast in the years immediately prior to contact. While the archaeological evidence in the Alabama River has thus far been considered at length, the ethnographic accounts of Mississippian peoples in the region have been largely ignored up to this point. The ethnographic evidence in question comes from the accounts of the Hernando de Soto expedition, which cut a path of destruction through the region in A.D. 1540. Although de Soto's exact route through central Alabama has been debated heavily in some quarters, it seems almost certain that de Soto led his army of mounted soldiers, footmen, and pigs through one or more of the Late Mississippian towns considered in the present study.

Like many of the Spanish conquistadors, Hernando de Soto was born to noble parents of meager means in the region of Extremadura (Hudson 1994b). At the age of 14, he ventured to the New World to seek his fortune. He aided in the conquest of Panama and Nicaragua and later served with Francisco Pizarro during the conquest of the Inca in Peru (Hoffman 1993). His participation did not earn him the power he had hoped for, so he returned to the Spanish court to petition for a governorship. He was granted the right to explore La Florida, the Spanish designation for North America, in 1537 by the Spanish crown (Hudson 1994b). At the same time, de Soto was appointed governor of Cuba, and he intended to use island as a supply base for his expedition (Hoffman 1993:449-450). The expedition, consisting of about 600 people, 250 horses, several packs of hounds, and a herd of swine, set out for La Florida from Havana in May of 1539. Ultimately, de Soto's goal was to conquer the native peoples of La Florida, which would provide two major benefits. First, the conquest would earn de Soto renown, and, if La Florida proved to be home to a large empire like Pizarro found in Peru, a subsequent appointment as governor of the province would allow him to amass even greater wealth (Hoffman 1993).

Before an examination of the route of the expedition in central Alabama can be undertaken, the sources of information concerning the journey must be understood. Four more or less complete accounts of the events that took place between 1539 and 1543 are currently known to scholars. These accounts vary significantly in their perceived reliability. The first to be

written was the terse narrative of Luis Hernandez de Biedma, which was presented to the king and his council in 1544, although not published until the mid-nineteenth century (Galloway 1995:86). Biedma accompanied the expedition, serving as a factor on behalf of the Spanish crown. Upon completion of the expedition, his narrative of the events of the expedition was transcribed and provided to the king as a testimony. Therefore, it is the only true primary source among the accounts, and is more useful for discovering what the expedition did rather than the native response to these actions (Galloway 1995:86, 102). Also, Biedma is considered the only transcriber of the expedition with a decent sense of direction (Hudson 1987, 1997). The second account, which consists of the diary of De Soto's personal secretary, Rodrigo Ranjel, was copied and edited by Gonzalo Fernandez de Oviedo y Valdés, who appears to have collected it in 1546 (Galloway 1995:86). Ranjel's account includes a number of pertinent facts, and it is assumed as De Soto's secretary, Ranjel would have been privy to most meetings with chiefs and decision-making processes (Galloway 1995:102). The account by Ranjel is useful for the identification of town names, but his reports on town size and structure are lacking (Galloway 1995:104).

The final two accounts are more questionable in their accuracy, and appear to be fleshed out with details that reflect the agendas of their authors. The first of these accounts, which was published in 1557, is the account of the rather mysterious Gentlemen of Elvas. Elvas is not specifically named, but he appears to be one of the surviving Portuguese members of the expedition from the town of the same name. From the details of the narrative, it seems, unlike Ranjel, Elvas was not privy to de Soto's meetings with chiefs and decision-making processes. This is evidenced by the fact his concern for the names of the towns visited and leaders encountered appears secondary to his observations concerning the abundance of food and the description of towns (Galloway 1995:103, 1997:18). The final, and most controversial, narrative is that of Garcilaso de la Vega, who hailed from Peru and was the son of a Spaniard father and a mother who was an Inca noble (Galloway 1997). Garcilaso's account was published in 1605 and is said to have been based upon interviews with Gonzalo Silvestre, a

surviving member of the expedition, and accounts of two other survivors (Clayton et al. 1993:xxvii). Factually, Garcilaso's account is the least reliable, especially because he concentrates primarily on the noble fighting techniques of the Indians and presents information concerning only a few of the towns visited (Galloway 1995:105). A final caveat concerning the accounts of the de Soto expedition is warranted. The ethnohistorian Patricia Galloway (1995:97,110) cautioned that the Spanish observers of the events of the expedition were encountering foreign cultures with wholly alien social structures. It must be understood that in making their observations, each member of the expedition was assuredly attempting to fit these societies into their own social order and make sense of what they saw. The descriptions of "provinces" in the narratives may be exaggerated, as part of an attempt by the conquistadors to place the Native American cultural landscape into a Spanish framework.

By combining the data from these narratives, particularly those of Biedma, Ranjel, and Elvas, with data concerning the location of sixteenth-century sites, anthropologist Charles Hudson (1990, 1994a, 1997) provided a fairly detailed route of the entire expedition through the interior Southeast. While the locations of the specific sites mentioned in the narratives are many times best guesses, Hudson's route is the only current scholarly reconstruction that traces the entirety of the expedition. Therefore, in tracing the general path of the expedition, Hudson's route will be used (Figure 19), though it

Figure 19. Reconstruction of the Hernando de Soto expedition route in central Alabama, as proposed by Charles Hudson and his colleagues (Hudson 1990:182, Figure 10-1).

should be noted that this route is not necessarily accepted as entirely accurate. Other suggested routes in Alabama will be examined when it is time to identify specific towns with specific sites in the Alabama River Valley.

Two weeks after setting sail from Cuba, Hernando de Soto and his men made their initial landfall at Tampa Bay (Hudson 1997). From there, the Spaniards struggled through a sparsely-populated area of central Florida to the polity identified as Apalachee, where they spent the winter of 1539, encamped near the principal village of Anhaica (Ewen 1998). This winter camp has been relocated by archaeologists in present-day Tallahassee and is now known as the Governor Martin site. After five months at Anhaica, the expedition departed Apalachee for points northward, moving through the wilderness of central Georgia into South Carolina, where the most notable encounter they had was in the province of Cofitachequi. Here, they were met by the Lady of Cofitachequi, who was carried upon a litter and bedecked with pearls (Biedma 1993:230). After leaving Cofitachequi, the expedition turned back to the north and west, crossing into western North Carolina, east Tennessee, and eventually descending into the Coosawattee River Valley in northwest Georgia (Hudson et al. 1985). Here, the expedition encountered the center of the paramount chiefdom of Coosa. The chief at Coosa held sway over a series of villages apparently extending from Chiaha, near the Tennessee/North Carolina border to Talisi, in east Alabama (Hudson et al. 1985).

After traveling through the Coosa chiefdom, de Soto and his men arrived at Talisi, where they were met by a representative of powerful chief Tascalusa. It is at this point that the exact course of the expedition is of interest to the current study. Before attempting to pinpoint which village mentioned in the expedition chronicles might match which site, the basic events that occurred while in Tascalusa's polity will be discussed. While in Talisi, de Soto released the chief of Coosa, who he had held captive since departing the central town of Coosa (Ranjel 1993:288).

Talisi seemed to be located at the edge of the domain of the chief of Coosa, and it was here the expedition was first met with an emissary of chief Tascalusa, who informed them

Tascalusa wished to meet with de Soto and his army (Ranjel 1993:288). After resting at Talisi for approximately twenty days, the expedition departed for the principal town of Tasculusa on October 5, 1540. The party spent the night in a town under the domain of the chief of Talisi known as Casiste, which was described by Ranjel (1993:288) as a "pretty town alongside a river." Ranjel (1993:288) apparently took less pleasure in Caxa, the next town the party encountered, which he described as a "wretched town on the bank of the river." Caxa also was described as being at the boundary of the provinces of Talisi and Tascalusa. From Caxa, the expedition moved on, spending the night along the bank of a river, across from a town called Humati. After traveling for another day, they stayed overnight at a town called Uxapita, the last town before the principal town of Tascalusa, known as Athahachi (Figure 19) (Ranjel 1993:288). At Athahachi, de Soto first encountered Tascalusa. Rather than coming to meet the expedition, as was the case with previous encounters, Tascalusa waited for de Soto to come to him (Ranjel 1993:290). Biedma, Ranjel, and Elvas all described Tascalusa as a tall, physically imposing figure with a very noble countenance, who was surrounded by a group of fellow nobles and servants. All three Spaniards remarked that one of these attendants carried what appeared to be a large sunshade on a pole that was decorated with a white cross on a black background. Ranjel (1993:290) and Elvas (1993:94-95) noted that Tascalusa waited for de Soto's visit sitting on cushions in a structure located atop a mound. Ranjel (1993:290) reported the chief was wearing a headdress and a full-length cloak made of feathers.

Based on the reports of the three chroniclers, the meeting between de Soto and Tascalusa did not go very well. After meeting atop the mound, Tascalusa accompanied de Soto to the army encampment, and in the customary manner, de Soto detained him. Ranjel (1993:291) and Biedma (1993:232) both reported this greatly angered the chief, who likely was rarely forced to bend to the will of others and was accustomed to considerable freedom in his comings and goings. During this meeting, de Soto asked for porters, women, and supplies from the chief. Tascalusa apparently agreed to supply a fraction of the personnel de Soto requested immediately, and stated if de Soto accompanied him and his retinue of elites to the

town of Mabila, he would received the remainder of the requested personnel (Ranjel 1993:291). The expedition departed Athahachi for Mabila, which was reached after three days of travel. On the route to Mabila, the expedition stopped at the town of Piachi, which Ranjel (1993:291) noted was situated on a craggy bluff. Here, the expedition crossed the river again, even as the chief of Piachi apparently resisted this action (Ranjel 1993:292). On the third day, both Elvas (1993:98) and Ranjel (1993:292) reported that the expedition traveled through a land that was populous. Ranjel (1993:292) also pointed out after departing Piachi, the expedition entered into an outback area.

On October 16, 1540, the expedition then came to Mabila, which Biedma (1993:233) described as a small, heavily palisaded village situated on a plain. On the plain outside the fortification walls, Biedma (1993:233) reported evidence of several demolished houses. De Soto and a contingent of his principal men followed Tascalusa into the town. Ranjel (1993:292) reported that many of the members of the expedition had been delayed in their arrival at Mabila because they were out looting the surrounding towns. Once inside the town walls, the small contingent of Spaniards was entertained with dancing and songs by a few dozen women (Ranjel 1993:292). The narratives of Biedma, Ranjel, and Elvas all reported that during this entertainment, chief Tascalusa retreated into a house. The Spaniards noticed numerous people hiding in the houses and carrying bows and arrows. The attack appears to have begun when one of the members of the expedition struck one of Tascalusa's principal elites with a sword (Biedma 1993:235). The contingent of Spaniards was hit with a volley of arrows, and a number of them, including de Soto, were wounded (Ranjel 1993:293). The Spaniards fled the village and de Soto regrouped his army on the plain outside. From there, the mounted soldiers attacked the village, lighting it afire and burning it to the ground, but not before taking multiple casualties. The vast majority of the warriors Tascalusa had amassed at Mabila were killed, and the narratives (Biedma 1993:235; Elvas 1993:104; Ranjel 1993:294) mentioned that many of them committed suicide rather than allowing themselves to be captured.

The aftermath of the battle was grim for the Spaniards, and even worse for Tascalusa's warriors. The reports of casualties on both sides differ depending on which narrative is consulted. Elvas (1993:104) reported that 18 Spaniards were killed, 150 were wounded with approximately 700 arrow strikes, and approximately 2,500 Native Americans were killed. On the other hand, Ranjel (1993:294) reported 22 Spaniards, seven horses, and 3,000 Native Americans killed, 148 Spaniards wounded with 688 arrows, and 29 wounded horses. Yet another set of casualty figures comes from Biedma (1993:235) who reported more than 20 dead Spaniards, 250 wounded with 760 arrows, and no figures on native casualties. All three accounts (Biedma 1993:235; Elvas 1993:104; Ranjel 1993:293-294) mentioned that many of the materials being carried with the expedition, including a number of pearls and the altar set for Catholic mass, were burned up in the fire. After the battle, the expedition remained encamped upon the battlefield for 28 days so the injured soldiers could heal. During this time, Ranjel (1993:294) reported that members of the expedition burned all nearby villages as retaliation for the attack.

Historians of the de Soto expedition, such as Hudson (1997:248), noted that the battle at Mabila marked a turning point. Biedma (1993:236) and Elvas (1993:104) both reported that at Mabila that de Soto received word ships were waiting to resupply the expedition at the Bay of Ochuse, presumed to be either Mobile or Pensacola Bay. Only about six days worth of travel lay between Mabila and the supply ships. De Soto attempted to conceal this news, fearing that if he took his men to these ships, the entire expedition would dissolve and the men would sail back to Cuba (Elvas 1993:104). Additionally, the only riches de Soto had amassed to send back to Cuba were the pearls taken from Cofitachequi, which had burned in the fire at Mabila. With no riches to report, de Soto was worried that he would be considered a failure in the eyes of the Spaniards, as he had found nothing but the wasteland of La Florida. When the men found out about the ships to the south, there was nearly a mutiny, although de Soto was able to subdue it.

It seems likely that after the demoralizing battle at Mabila, the soldiers of the expedition were beginning to realize that subjugating the Native Americans of the Southeast would not be an easy task (Hudson 1997:248). Unlike what de Soto had observed working under Pizarro in Peru, there was no overarching ruling body whose authority the Spaniards could replace. Prior to contact, the Inca already had managed to assemble an empire and govern a huge amount of territory, and the Spaniards simply displaced the ruling parties and assumed their roles as heads of state. In the Southeast, conquest would be much more difficult and would require the subjugation of numerous smaller, politically independent groups spread across a broad geographic area. After Mabila, the character of the expedition changed. De Soto apparently was embittered, and could see he was not going to find the riches of Peru during the course of his travels (Hudson 1997:248). In two years, de Soto died of fever, likely thinking himself a failure. Certainly he had no idea five centuries later, his expedition would be subjected to such scrutiny by archaeologists, geographers, and historians.

De Soto's route between Talisi and Mabila is of special interest to the current study because it is during this portion of his route that he traveled through central Alabama. In the present study, three attempts to correlate the path of the expedition with known archaeological sites are of interest. Two of these routes were originally published as part of a set of 13 working papers by the Alabama De Soto Commission, which was convened in an attempt to propose a path for the expedition through Alabama. This route was to be used to create a De Soto Highway Trail marking the path of the expedition. In Alabama, work by researchers on the reconstruction of the route, especially the location of the battle at Mabila, spawned a hotly contested debate among the parties involved.

In reconstructing the specifics of the expedition route, Hudson and his colleagues typically used five lines of evidence, which consisted of supporting evidence from other expeditions, the presence/absence of archaeological sites, the presence/absence of sixteenth-century Spanish artifacts, the correlation of the route to physiographic features, and the distribution of archaeological phases and cultures (DePratter 1994; Hudson 1987, 1997;

Hudson et al. 1985, 1987, 1989). During the 1980s, Hudson and his colleagues synthesized this information to attempt to match the towns of Tascalusa's chiefdom mentioned in the narratives with existing archaeological sites. Because Talisi is the first town in which the expedition first met with representatives of Tascalusa, that town will be the starting point. DePratter, Hudson, and Smith (1985:120) placed this town along the Coosa River in the vicinity of present-day Childersburg. The three villages the expedition passed through next, Casiste, Caxa, and Humati, are believed to have been situated on the Coosa. Uxapita also is believed to have been on the Coosa River, just above its junction with the Tallapoosa to form the Alabama River. DePratter, Hudson, and Smith (1985:121) pointed out that Ranjel (1993:290) described Tascalusa's principal town Athahachi as newly built, but do not suggest a possible location for it. In a later refinement to the route, Hudson (1990:12) stated that Athahachi was likely somewhere in the vicinity of the Coosa-Tallapoosa junction, perhaps at the Charlotte Thompson site. The next town, Piachi, which was situated on a "craggy bluff" along the river is suggested to have been Durant Bend (1Ds1) (DePratter et al. 1985:122). Mabila was suggested to have been somewhere near the junction of the Cahaba and Alabama rivers, perhaps at the heavily fortified site at Old Cahawba (1Ds32) (Hudson et al. 1990:181). Hudson, Smith, and DePratter (1990:181-182) argued that this location is a good fit because it is situated right on the boundary between the Late Mississippian Pensacola and Moundville III-related phases in the Alabama River Valley, and because placing the site here accords well with the uninhabited wilderness the expedition crossed after leaving their encampment at Mabila.

In a completely different reconstruction of the De Soto route through Alabama, Little and Curren (1989:170) also employed multiple lines of evidence, including documentary evidence from the narratives, later historic data concerning historic Native American peoples, and archaeological, physiographic, and linguistic data. They examined pottery distributions at sites from the sixteenth century to tie archaeological phases to the polities encountered by the Spaniards. Little and Curren (189:171) also tied linguistic boundaries reported by the Spaniards to the political boundaries of chiefdoms, as well as attempted to link De Soto-era

peoples to their historic counterparts. One of the major differences between the two proposed routes concerns the amount of distance covered on a daily basis by the members of the expedition. Little and Curren (1989:170) argued that by proposing typical day's journey of approximately 20 miles, Hudson and his colleagues overestimated the distance the expedition could travel. Overestimating distance would warp the entire route through the state. They also argued that Hudson and his colleagues assumed too much accuracy in the Spanish measures of distance between towns.

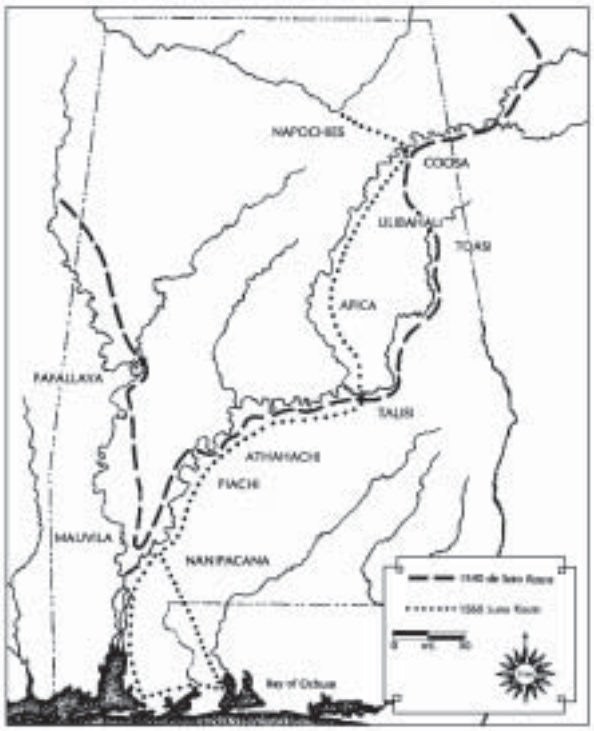

Figure 20. Reconstruction of the Hernando de Soto and Tristan de Luna expedition routes in central Alabama, as proposed by Keith Little and Caleb Curren (Little and Curren 1990:175).

Once they established their methodology, Little and Curren (1989) set out to establish the route of the expedition through Alabama, which was based on a location of the principal town of Coosa in northeast Alabama (Figure 20). Based on the settlement data and the travel time from Coosa, they argued Talisi is instead represented by the Shine II phase sites in the Lower Tallapoosa (Little and Curren 1989:179). This means the town of Caxa, which was supposedly the boundary between the polities of Tascalusa and Coosa, was likely somewhere along the boundary between Moundville III and Lamar peoples. Therefore, Little and Curren (1989:181) suggested thatCaxa may have been the Charlotte Thompson site. Little and Curren (1989:181) noted that after Caxa, the place names used by the expedition changed from being linguistically Creek to Choctaw. Little and Curren (1989:181) tied the linguistic change to the break between the polities of Talisi and Tascalusa. Once De Soto crossed into Tascalusa's

territory, the first town he encountered was Athahachi, which was suggested to be the Cedar Creek site in Dallas County. This is a major problem, because the Cedar Creek site has since proven to date to the Moundville I phase, meaning the occupation there dates about four centuries too early (Jenkins and Sheldon 2003). After a visit to another town, Piachi, which Little and Curren (1989:182) proposed is simply one of a number of Late Mississippian sites in the Wilcox County area, the expedition was led to Mabila. Mabila is described as a well-fortified town situated on a plain, with a pond located nearby. Based on the physiography described for the site, the concentration of Mississippian sites in the area, and the recovery of a number of sixteenth-century Spanish artifacts in the region by a collector, they argued that the best possible location for Mabila must be Clarke County, Alabama, in the forks of the Alabama and Tombigbee rivers, well south of Hudson's proposed location near the lower Cahaba River.

Regardless of which route is employed, several important conclusions can be drawn concerning the events surrounding the passage of the de Soto expedition through central Alabama. The first has to do with the nature of the polity controlled by Tascalusa. As archaeological evidence has demonstrated, the Alabama River was not densely settled by Mississippian peoples until approximately a century before the arrival of de Soto. When it was settled, these groups of people came from three different areas, and were likely culturally diverse. No matter where in the Alabama River drainage Athahachi was located, it was the center of a powerful polity that emerged to encompass several ethnic groups in just a few generations. Currently, it seems most likely Athahachi is one of the three mound sites in Montgomery County, Charlotte Thompson, Big Eddy, or Thirty Acre Field (Jenkins 2004). It is interesting to note that the sixteenth-century Spanish artifacts recovered from the Charlotte Thompson mound suggest that mound construction continued at this site well after the de Soto expedition, although the arrival of the expedition was disastrous for the Native American population. If the estimated number of warriors involved in the attack at Mabila is anywhere near accurate, it appears that Tascalusa was able to rally a large army from surrounding towns.

Because Mabila was almost assuredly farther down the Alabama River than the mound sites in Montgomery County, it is highly likely this group of warriors was drawn from a culturally diverse people, who may have come from settlements such as Bear Creek, Matthew's Landing, and Durant Bend.

The Tristan de Luna Expedition

Additional evidence concerning the placement of the towns encountered by de Soto and the aftermath of the battle at Mabila is provided by the report of the 1560 expedition of Tristan de Luna y Arellano. In 1559, the Viceroy of New Spain charged Luna with the task of founding a colony in the area of La Florida de Soto had previously explored (Hudson et al. 1989:31). There appear to have been several motives for the establishment of the colony, which include establishing a mission system to Christianize Native Americans and providing refuge for any Spaniards who might be shipwrecked along the coast (Hudson et al. 1989:31). Several of the survivors of the de Soto expedition had suggested that Coosa would be an ideal place to establish a colony and still held out hope there were precious metals to be had somewhere in the interior. Additionally, a Spanish colony at La Florida would thwart any other European colonial powers from claiming this land. Before Luna set sail, he learned of the bay at Ochuse from members of the de Soto expedition. This bay had been discovered by Francisco Maldonado, who had been chartered by de Soto to explore the coast line and examine every bay and river delta (Hudson et al. 1989:31). It was here that Maldonado waited for the expedition after the battle of Mabila, when de Soto had to prevent his men from mutinying and leaving to meet the ships.

The basic plan of the Luna expedition was to make landfall at Ochuse, establish a small settlement, then travel inland and establish a colony at Coosa. Finally, the expedition would make their way to the bay at Santa Elena, which was discovered along the Atlantic Coast during a failed attempt at a colony led by Lucas Vasquez de Ayllon in 1526. Luna set sail from Mexico in June of 1559 with at least 1,500 people and about 240 horses. The expedition first entered Bahia Filipina, Mobile Bay, after missing the entrance to Polonza, Pensacola Bay. He decided

to sail back to Ochuse, but first put ashore all of the horses and some of the men so they could travel overland (Hudson et al. 1989:33). The expedition set up a small colony near Pensacola Bay, and were soon disappointed to find the local population made up primarily of fishermen, affording them little opportunity to resupply their grain stores. Even after sending a party up what is now known as the Escambia River and into the interior over land about 10 leagues, no substantial populations were encountered. The situation went from bad to desperate when, only five days after arriving in Ochuse, a hurricane struck and nine of the 12 ships were sunk, causing the expedition to lose about half of their supplies (Hudson et al. 1989:34).

With the colonists already beginning to starve, it quickly became obvious the expedition was going to have to move to survive. Luna made the decision to send about 150 of his men inland to search for the town and river of Piachi, which they knew from the survivors of the de Soto expedition (Hudson et al. 1989:34). The members of the expedition traveled 40 grueling leagues before encountering the river, where they hit several smaller villages and a single large town with 80 houses, which they called Nanipacana (Hudson et al. 1989:36). After recovering from a fever, Luna moved the rest of the expedition inland to Nanipacana. Some went by trail, while others piloted small boats over to Mobile Bay and rowed up the Alabama River (Hudson et al. 1989:36). During the journey upriver, it appears the Native Americans had adopted a scorched earth policy, vacating their villages and even burning their fields before the Spaniards arrived. A small exploring party sent up the Tombigbee River reported the same phenomenon there. From Nanipacana, Luna dispatched another party, which journeyed overland upriver reporting more vacated houses for the first half of their journey and an unoccupied wilderness for the second half. On the other side of this wilderness was the province of Atache, near the head of navigation of either the Coosa or Tallapoosa rivers (Hudson et al. 1989). The small party also reported that the towns of Atache were on a series of open grasslands. The advance detachment made their way to Coosa and sent for Luna to come and examine the land. However, back in Nanipacana, things were not going well for Luna. The expedition party had run through the stores of corn and were forced to eat all manner of wild plants,because there

were few deer around. When Luna tried to force the remainder of the colonists upriver, they refused and eventually the camp at Nanipacana dissolved and the colonists headed back southward to Ochuse (Galloway 1995:156). From there, Luna attempted to sail for Santa Elena on the Atlantic coast but was stopped by a storm. Eventually, the colonists, including even the priests, filed a massive lawsuit against Luna, and he was replaced as expedition commander (Hudson et al. 1989). The expedition dissolved and the surviving colonists returned to Mexico.

While multiple researchers have attempted to match the towns mentioned by Luna, specifically Nanipacana, Piachi, and Atache, with archaeological sites, only two studies of this nature will be discussed. Hudson et al. (1989) suggested that because the expedition landed at Pensacola Bay and traveled forty leagues to reach the Alabama River, Nanipacana must have been somewhere in Wilcox County (Figure 21). There are two large sites of note in Wilcox County, Matthew's Landing (1Wx169) and Liddell (1Wx1). Substantial excavations have now been performed at both sites, but no evidence has been recovered confirming either site as the location of Luna's long-term encampment. By situating Nanipacana in Wilcox County and using the exploratory party's estimate of traveling approximately 60 leagues, this places Atache somewhere near the Coosa-Tallapoosa junction (Hudson et al. 1989:37). There is

Figure 21. Reconstruction of 1560 Luna expedition route as proposed by Hudson and his colleagues (Hudson et al. 1989:35).

evidence the savannas described by the small exploratory party did exist near present-day Montgomery during the historic era. Hudson et al. (1989:37) also suggested that it is no coincidence that the name "Atache" is very close to "Athahachi," meaning that Luna's expedition likely encountered Tascalusa's principal town. However, Hudson et al. (1989:38) noted that by the time Luna's party visited the polity it was likely no longer a paramount chiefdom, with subordinate polities. They suggest instead that Atache was one of two or three simple chiefdoms along the Alabama River. It is unclear whether Piachi, which Hudson et al. (1989:39) believed to have been the Durant Bend site (1Ds1), and Nanipacana were part of the same chiefdom.

Galloway (1995:150) argued that Nanipacana likely was located much farther south, in the Mobile-Tensaw delta, based on the fact that a distance of approximately 40 leagues (108-138 miles) between Ochuse and Nanipacana is vastly overestimated. If the members of the expedition were starving after the hurricane, it would make little sense for them to travel so far overland to find food, when Mobile Bay, which they had already noted was populous, was only about 60 miles away. Reports from foraging investigations by the colonists in and around Nanipacana state the town was in the floodplain of a river, near another river, the "Tome," in an area populated with numerous towns. Galloway (1995:151) argued that this fits the description of the Mobile-Tensaw delta region in the mid-sixteenth century, and noted that there are many similarities between the names of towns observed by Luna's party and those recorded in the region later in the historic era. Galloway (1995:152) placed Atache in the Mobile-Tensaw delta as well, and noted the long, sparsely-inhabited stretch of river could only be the lower Alabama River, which linked the delta and the Coosa-Tallapoosa junction. However, there is some question concerning whether this region was sparsely populated. Knight (1989) produced a map of Late Mississippian occupation in the Alabama River Valley that shows several clusters of sites in portions of the Alabama River Valley, although it is unclear how the de Soto expedition may have affected the populations of these towns. Primarily, this is because it is difficult to determine whether these sites were abandoned after the events of A.D. 1540.

Although various members of the expedition spent nearly eleven months at Nanipacana, there is no mention at all of the social structure of the native inhabitants in the region. Galloway (1995:153) argued that this implies there was no overarching social structure, meaning villages in the region were autonomous, and perhaps Nanipacana had been the center of what was once a chiefdom. Of course, because the focus of the expedition was finding the province of Coosa and finding a path to the Atlantic Coast, it may be possible that the social organization of Nanipacana was an irrelevant detail to the starving, desperate colonists. The search party sent ahead for Coosa did, however, report that while journeying up the Alabama River they crossed a linguistic boundary. A member of the expedition reported that although the languages of Coosa and Nanipacana were different, they did share some words. Galloway (1995:153) argued that this may have been the boundary between Eastern and Western Muskogean dialects. Hudson and his colleagues (Hudson et al. 1989:36-39) used this information to argue that Tascalusa's chiefdom was large in geographic scale, as well as being multiethnic, because Atache seems to be Eastern Muskogean and Tascalusa and Nanipacana seem to be Western Muskogean. Galloway (1995:154) countered that they confused the details of the expedition, and Atache was found during an expedition up the Tombigbee, and Caxiti was the only Tascalusa town the advance party encountered. Galloway (1995:159) further suggested that the "savannas" observed by the expedition simply may have been abandoned maize fields, not natural prairies. This evidence led Galloway (1995:154) toquestion seriously the conclusion there were three chiefdoms in the Alabama River Valley at the time of the Luna expedition.

Regardless of which route is employed, the reports from the Luna expedition do provide some interesting clues concerning how de Soto's expedition may have changed the cultural landscape of central Alabama. First, it is interesting to note that Native Americans had apparently learned a new strategy for dealing with the foreign intruders. In most cases, the villages Luna's search party encountered were abandoned well before the Spaniards arrived at them. These inhabitants seem to have preferred observing the search party from a distance, rather than meeting them directly, as chief Tascalusa had done. However, it is interesting that

although the sites were abandoned, they had been recently occupied, which led Galloway (1995:157) to tentatively conclude that there was little evidence of massive casualties due to disease epidemics this early in the protohistoric period. Luna's expedition did have ample opportunity to transmit disease, since some portion of its members lived among the Native Americans at Nanipacana for nearly a year (Galloway 1995:160).

Another critical detail observed by the members of Luna's expedition was a decline in the political organization in the region. Although they disagree where the towns Luna's reconnaissance party visited were located, both authors studying Luna's expedition agreed that there was some form of degradation in the political organization of the Alabama River Valley between de Soto's exit and Luna's arrival (Galloway 1995:161; Hudson et al. 1989:36-39). What is uncertain is whether this was a wholesale degeneration, such that every town was largely autonomous, as Galloway (1995:153) suggested, or simply a collapse of the paramount chiefdom of Tascalusa into several simple chiefdoms (Hudson et al. 1989). This issue is of special interest to the current study, since there is some question about when the political collapse leading to the societies typical of the protohistoric era occurred. The volume of European goods recovered from the mound at the Charlotte Thompson site by C. B. Moore suggests that mound construction in the upper Alabama River Valley occurred well after contact with the de Soto expedition. Unfortunately, Moore (1899) did not illustrate these artifacts, so it has been impossible to determine an age for these artifacts based on his published data. As part of the present study, these artifacts, which are currently curated at the Smithsonian Institution Museum of the American Indian, were examined. The results of this examination, presented later, do appear to clear up some of the debate over which sites Luna may have visited, and questions about the nature of social organization in the Alabama River Valley in A.D. 1560.

When all of the ethnohistoric evidence from the de Soto and Luna expeditions are combined with the archaeological data, it becomes clear that there is a major problem with the phase designations created for Late Mississippian sites in the Lower Tallapoosa and Alabama river valleys. It has been noted previously that the ceramic assemblages from a number of

these sites have been found to possess wares and styles of decoration associated with all three of the Mississippian cultural traditions found in the region. It is clear that grouping these sites in terms of phase designations only glosses over variation within and among sites. This variation must be examined in order to understand how the united political entities observed by the de Soto expedition may have emerged. The best means of understanding this is to analyze each ceramic assemblage based on a series of attributes, and compare ceramic styles across towns. This is the best way to examine whether potters across towns were using shared cultural models of ceramic production, which in turn provides clues concerning the ethnic makeup of these towns.

CHAPTER 4
EXCAVATIONS AT THE MATTHEW'S LANDING SITE

Excavations for this project were undertaken at Matthew's Landing (1Wx169), a multiple mound site situated on the Alabama River in an area of Wilcox County known as Possum Bend. Matthew's Landing is currently the best-preserved and most important Mississippian mound site for nearly 100 miles along the Alabama River. The relevance of this site to archaeological research has been recognized since 1899, when C.B. Moore arrived there and established that the site at Matthew's Landing as having consisted of two mounds and a village. Although the site figures prominently in the prehistory of the region, prior to this new round of research, excavations there beyond those undertaken by Moore were confined to a single field season conducted by Caleb Curren in 1982. Curren separated the site occupation into two sequential components, Late Mississippian and Protohistoric, based on the recovery of ceramic types believed to be associated with both periods. If the site had been occupied before, during and after initial European contact, as suggested by Curren's occupation sequence, this would make it distinct in the region and certainly worthy of further study to understand how the effects of initial contact were expressed in an individual town. Curren's excavations, however, were focused on the recovery of contact-era artifacts in an attempt to associate the site with the de Soto and Luna expeditions. They shed little light on whether there were discrete areas of occupation associated with each of the two components present at the site. Based on the material recovered from the 1982 excavations, Little and Curren (1990) later designated the Late Mississippian component at the site as part of the Furman phase, which subsumed contemporaneous sites along the Alabama River from the present-day Selma area to southern Wilcox County. While a subsequent paper further describing the Furman phase was promised (Curren 1984:85), it never materialized. It therefore remained unclear whether the designation of a separate archaeological phase for Late Mississippian sites in the

region was justified. Finally, despite the mechanical excavation of multiple trenches and hand excavation of several features, Curren's excavations produced no sixteenth-century Spanish artifacts, leaving it unresolved whether the site corresponds to towns mentioned in the narratives of sixteenth-century Spanish expeditions into the region.

In order to address these three issues, the goals of my initial field season were to produce a new map of occupation areas at the site using the results from shovel testing and to obtain a ceramic sample in order to better understand the chronological and temporal position of the site. The first season of archaeological fieldwork, which took place during the summer of 2003, involved (a) the production of a detailed contour map of the site, (b) shovel testing of the site along a close-interval grid, and (c) excavation of test units whose location was based on the results of the shovel testing. The first season of investigations provided valuable information about the site. Shovel testing revealed its layout and generated questions about the prior characterization of Matthew's Landing as a multi-component site. The formal excavation units, which were placed in the areas where features or evidence of dense occupation were encountered in shovel tests, provided information about the mound construction sequence and domestic occupation from the recovery of portions of a possible pre-mound structure and the burned remains of a wattle and daub house. Because many questions remained concerning the layout of structures from the Late Mississippian era in central Alabama, a second season of fieldwork was undertaken in the summer of 2004 in order to complete the excavation of the burned house.

Site Setting

The present-day site of Matthew's Landing (1Wx169) sits on the edge of an alluvial terrace above the Alabama River. The site is located approximately 15 kilometers west of the town of Camden. As it is currently recorded in the Alabama State Archaeological Site File, the site consists of two mounds and an associated village (Figure 22). The land upon which the site is located is currently owned by Herbert and Marian Furman of Camden, who have taken measures to protect it from access by anyone other than hunters who lease the rights to use the

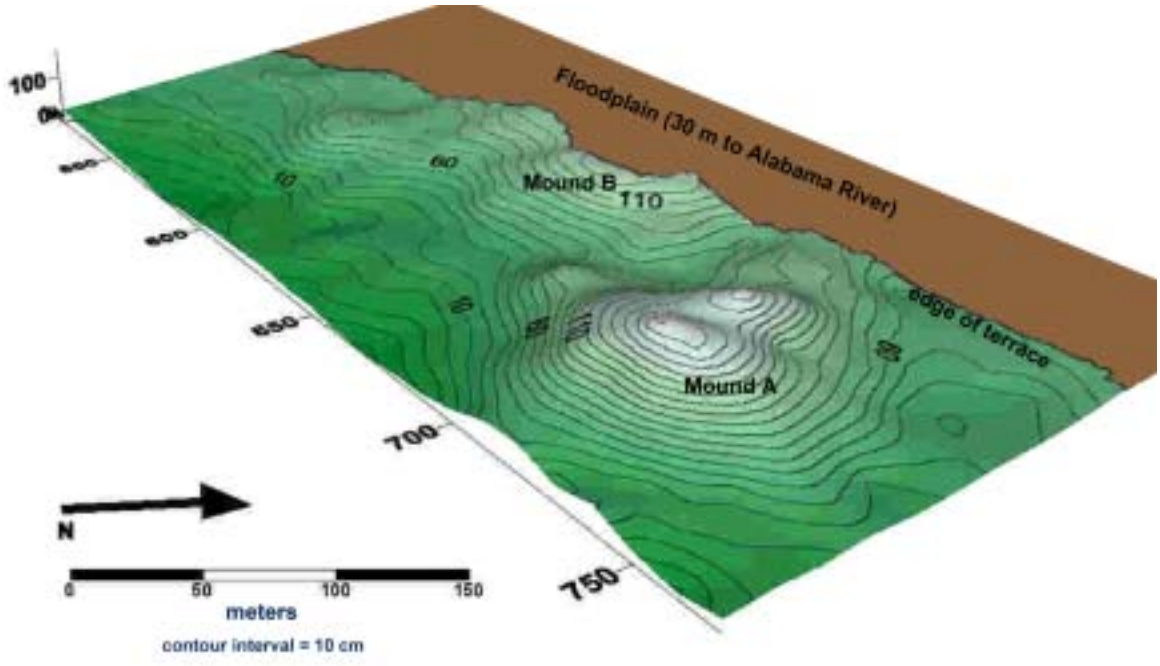

Figure 22. Three-dimensional contour map of the Matthew's Landing site made during the 2003 field season.

land throughout the year. While the site is currently in pasture, the cultural deposits have experienced some disturbance over the past years, although no more than is typical for the region. The site area has been subjected to cultivation for well over a century, and as a result, the largest mound, which was designated Mound A, has been plowed down and has lost a substantial portion of its original height. It also appears to have slumped and spread out beyond its original dimensions, now measuring approximately 60 m north-south by 40 m east-west and 1.8 m in height. At one time, there was a sharecropper house atop Mound A. The remains of this structure are still visible, and artifacts associated with its residents are distributed in the plowzone across the site. Mound B is a low mound rising only 60 cm above the rest of the site and extends along the edge of the terrace for 40 m.

The edge of the terrace, which is approximately 7 m above the typical summer water level, has experienced erosion due to various flooding episodes, which has resulted in an unknown portion of the site, including part of Mound B, being lost to the Alabama River. The landowners report that the river rarely floods above the terrace, although when it does, most of

the site stays above the water level. A final source of disturbance comes from a rather unusual source. In the past several decades, the population of feral pigs in the region has increased dramatically, and the animals have wrought great destruction on the land surrounding the site by digging into the soil in search of food. In some cases, the craters resulting from their activities stretch 10 m across and are up to 30 cm deep. Fortunately, the impacts from these activities do not appear to extend well below the plowzone. Between the first and second season of fieldwork, the feral pig population, and the amount of damage inflicted upon the site, appeared to have dropped dramatically as a result of a local resident who began trapping and selling the animals.

The Soil Survey of Wilcox County (Brannon 1997) shows two soil types in the site area, Cahaba fine sandy loam and Riverview fine sandy loam. Shovel testing across the site generated profiles associated with both soil types. As the soil survey map demonstrates, closest to the edge of the terrace, Riverview series soils are present. Soils associated with this series are deep and well-drained and occur on high parts of the Alabama River floodplain. Approximately 60 m south of the terrace, Cahaba series soils, which are also very deep and well-drained, predominate. The main difference between these two soil series is evident in the B-horizon, which consists of a red sandy clay loam for the Cahaba series and a dark yellowish brown fine sandy loam for the Riverview series. Essentially, this change in soil type across the landform meant that subsoil along the terrace edge was different from that on the southern edge of the site.

Matthew's Landing and the Conquistadors

Although there has been much controversy surrounding the projected paths of the Hernando de Soto expedition of AD 1540 and the Tristan de Luna expedition of AD 1560 in Alabama, the location and temporal position of the Matthew's Landing site dictate that the correlation of the site with Spanish expedition routes cannot be ignored. Depending upon which of the two competing expedition routes are followed, Matthew's Landing is either Piachi, the last of Tascalusa's towns visited on the way to Mabila (Little and Curren 1990), or alternatively

it is too far down the Alabama River Valley to have been visited by the expedition (see Chapter 3, Figure 19, Hudson et al.1990). The site also lies directly in the presumed path of the 1560 expedition of Tristan de Luna, who traveled from Pensacola Bay to the Alabama River Valley en route to the Coosa chiefdom. Luna and a number of members of his expedition established camp at a village known as Nanipacana, which Hudson et al. (1989) suggested to be the Matthew's Landing site (see Chapter 3, Figure 20) . Little and Curren (1990) argued that Nanipacana is farther south, in the Mobile-Tensaw delta, and that Matthew's Landing was simply an abandoned town along the expedition route toward Coosa (see Chapter 3, Figure 21).

Prior Excavations at Matthew's Landing

In 1899, C. B. Moore became the first professional archaeologist to visit the mounds at Matthew's Landing during his journey up the Alabama River. Moore noted the presence of three mounds in the vicinity of Matthew's Landing, one of which was a truncated pyramid, "much ploughed down and irregular" (Moore 1899:297), approximately 1.5 m in height, with two associated borrow pits. This is clearly Mound A. Moore (1899:298) described the low mound near Mound A, which is clearly Mound B, as "an irregular undulation from 1 to 2 feet [.3-.7 m] in height." In his search for burials, Moore conducted extensive excavations into Mound A, describing its composition as clay covered with sand. He concluded that it was domiciliary in nature, and reported recovering only sherds, a perforated mussel shell, and a single earthenware "checker."

Moore (1899:298) described the stratigraphy of the smaller undulation in order to confirm that it was indeed a man-made feature. Upon excavating Mound B, Moore encountered an upper stratum of clay four to five inches (10-13 cm) thick, underlain by a layer of yellow sand with a high clay content 18 inches to two feet (45-60 cm) thick. Below the sand layer was a midden, which was between one and two feet (38-60 cm) thick. In Mound B, which was also deemed domiciliary in nature, two burials were encountered. Moore noted that these were secondary bundled inhumations characteristic of the Protohistoric period, leading

him to believe they were from a later time period than the mound construction. The most notable artifact recovered from the excavations into this mound, aside from numerous sherds and pottery "checkers," was the head of a duck effigy, which Moore (1899:298) noted was shell-tempered and burnished.

The third mound at Matthew's Landing, located approximately 400 meters away, is now known as the Dale site (1Wx77). After Moore had abandoned the first two domiciliary mounds at Matthew's Landing in his quest for burials, he began excavations at the Dale site. His excavations there focused on the mound, which he describes as a truncated pyramid greatly affected by flooding, although still seven feet in height. In the upper one meter of this mound, Moore (1899:298-299) reported a layer of sand yielding numerous burials, including an urn burial with the disarticulated remains of at least five infants. Moore excavated a total of 23 burials from this single stratum, removing it completely, and noting that the stratum immediately below appeared to date to a much earlier period. The artifacts of note recovered from the Dale site included a ground stone discoidal, a small engraved ceramic bowl, several plain ceramic vessels, and two shell gorgets.

No further archaeological work was done at the Matthew's Landing site until it was relocated in 1980 by Ned Jenkins and Teresa Paglione, who were performing a site survey in the region for Auburn University at Montgomery. Jenkins and Paglione listed one definite mound and a second possible mound at the site, and reported the recovery of both shell-tempered and sand-tempered check stamped pottery from the river bank. As part of the same survey, they recorded the Dale site (1Wx77) as a Late Woodland mound, based upon the presence of Weeden Island pottery, although Jenkins (2005, personal communication) reported that making a surface collection was difficult because the mound and surrounding area were grown up with trees. During my second season of investigations in 2004, our field crew visited the Dale site and made a surface collection in a plowed game plot to the west of the mound. Only sand-tempered plain pottery was recovered from the surface. No shell-tempered pottery has been found at the site since Moore visited and removed the upper layer of the mound.

In 1982, Caleb Curren (1984) conducted a three-month field season at Matthew's Landing, excavating a total of 40 test trenches. The excavations were part of a larger project directed by Curren focused on documenting and evaluating known sites of the Protohistoric period in central Alabama. At Matthew's Landing, Curren's investigations were aimed at generating information concerning the Protohistoric Alabama River phase component believed to be present at the site, obtaining a sample of Mississippian sherds, and recovering Spanish contact period artifacts sufficient to associate the site with either the de Soto or Luna expeditions (Curren 1984). Curren identified artifacts he believed to be diagnostic of both Late Mississippian and Protohistoric components, based upon the stratigraphic position of the materials and the presence of a ceramic type thought to date exclusively to the Protohistoric period, known as Alabama River Appliqué.

In the trenches excavated by Curren, the plow zone was stripped mechanically or by hand. Only midden and feature fill were screened. No trenches were placed directly into Mound A, most likely because the Mississippian occupation was not the focus of the investigation. Curren (1984:83) reported that a trench placed directly southwest of Mound A revealed that the top of the mound appeared to have been pushed off by historic activities. A profile cut of Mound B was made along the edge eroding into the river bank, and two trenches were placed into this mound. Excavation in both of these stopped when features were encountered, and these trenches were not excavated all the way to sterile subsoil. Although the 40 trenches excavated at the site yielded a number of features, Curren only excavated and reported on those features he assigned to the Protohistoric period. Therefore, 11 pits, six burials, two hearths, portions of three structures, and post holes he considered to be associated with the Mississippian structures were exposed but were left unexcavated. These Mississippian features were reported to occur northeast of Mound A, in Mound B, and southwest of Mound B. Curren's basis for assigning these features to the Mississippian component is unclear.

Curren reported on three excavated features and one structure he assigned to the Protohistoric component, although again, the criteria for assigning a feature to the Protohistoric

occupation is unclear. A burial also is shown on the map of the Protohistoric structure excavated, although no associated burials are mentioned in the report of excavations. The largest feature assigned to the Protohistoric occupation at the site was a wattle and daub structure that had burned. The associated daub scatter measured approximately 7 m across, and a baked clay hearth was found in the central portion of the structure. The 42 post holes associated with this house formed no discernible wall pattern. Outside of the wall of the structure was an associated pit, Feature 15. Curren (1984:84) reports the recovery of mussel shell, animal bone, stone, and Protohistoric sherds from this and another pit, Feature 18, the latter located between Mounds A and B. Finally, a third feature was reported to have yielded both Mississippian and Protohistoric sherds in a mixed context.

Curren (1984:260-275) analyzed all of the ceramics recovered from the site and provided tables of type counts from the trenches and the excavated features. The Mississippian sherds were classified according to the Pensacola typology described by Fuller and Stowe (1982), while the sherds deemed Protohistoric were classified according to a typology Curren created. Unburnished sherds were incorporated into the existing types and varieties Mississippi Plain, *var. Warrior*, Alabama River Appliqué, *var. Alabama River*, and Barton Incised, *var. Demopolis* (for type descriptions, see Cottier 1970; Jenkins 1981; Phillips 1970,). Burnished non-incised sherds were classified using the existing types Bell Plain, *var. Hale* and Alabama River Painted (see Cottier 1970; Phillips 1970; Steponaitis 1983). Curren (1984:219) added the designation *var. Cork* to the Alabama River Painted type, although no justification for adding this variety designation was given. Burnished incised sherds were classified using the existing types, Pensacola Incised, *var. Matthew's Landing* (see Fuller and Stowe 1982), and Alabama River Incised (see Cottier 1970; Steponaitis 1983), to which the designation *var. Alford* was added. In Curren's typology the distinction between these two types appears to be mainly whether the vessel was a flaring rim bowl with incising on the interior rim, for Alabama River Incised, or on the exterior, for Pensacola Incised. Unfortunately, this typological analysis combines too many motifs in each variety to make comparison of varieties among

contemporaneous sites meaningful. The analysis of Mississippian sherds is a bit more informative because only types previously defined based on Gulf Coast assemblages were used. The distribution of types and varieties among the Missisippian sherds appears to correspond closely to a late Bottle Creek phase assemblage, although Little and Curren (1990:172) noted that Furman phase ceramic assemblages are distinguished from their Gulf Coast counterparts by a reduction in the frequency of the incised plates classified as D'Olive Incised, employed in the classification of Pensacola ceramic assemblages from the Gulf Coast.

Following Curren's work at the site, several major issues surrounding Matthew's Landing still had not been addressed. First, even though Curren suggested some areas of Mississippian occupation at the site, it was still not possible to confidently assign discrete occupation areas to each component; nor was it possible to determine whether there were any stratigraphic differences between the components. Second, the relationship of the Furman and Alabama River phase components at Matthew's Landing to other sites in the region was still not well understood. Finally, even with the excavation of 40 trenches, no Spanish artifacts were recovered. With these three issues in mind, a new round of excavations was initiated at the site.

Results from Shovel Testing

The first goal of the 2003 field season, under my supervision, was to excavate shovel tests on a grid across the entire site to understand the vertical and horizontal distribution of the two reported components. Using the road running along one edge of the site as a baseline, a total of 11 perpendicular transects spaced 20 m apart were laid out. Along these transects, 50 x 50 cm square-shaped shovel tests were excavated at 10 m intervals. No tests were excavated in Mound A due to the limitation in depth of a 50 x 50 cm test. Several tests also were excavated on the opposite side of the road in order to be certain this historic feature was not simply an artificial boundary. All of these tests were negative, yielding no cultural material. Artifacts from the tests were taken back to the field laboratory, where they were washed and rough-sorted into categories including ceramics, daub, lithics, faunal material, non-aboriginal artifacts, and charcoal. The weight of ceramics and daub in each test were then entered into

Golden Software's Surfer program, which was used to generate isopleth artifact density maps of the site.

The 83 shovel tests excavated across the site revealed a great deal of information about the stratigraphy and the nature of the occupation at Matthew's Landing (Figure 23). Predictably, a plow zone with an average depth of 20.6 cm made up the top stratum of shovel tests. In areas heavily disturbed by recent feral pig activity, up to 15 cm of the plow zone soils had been destroyed or displaced. Therefore, while the pig damage at the site was extensive, in no location tested did it extend below the plow zone to expose or churn up midden soil. Plow zone soil was a yellowish brown silty loam, and yielded both aboriginal and historic artifacts; the latter are presumably related to the tenant farmer residence that once stood atop Mound A. Along the road, which makes up the southeastern boundary of the site, the plow zone was underlain by sterile subsoil, a strong brown clay loam. Along the edge of the terrace, shovel testing revealed a dark grayish brown to black midden soil ranging between 7 and 26 cm in

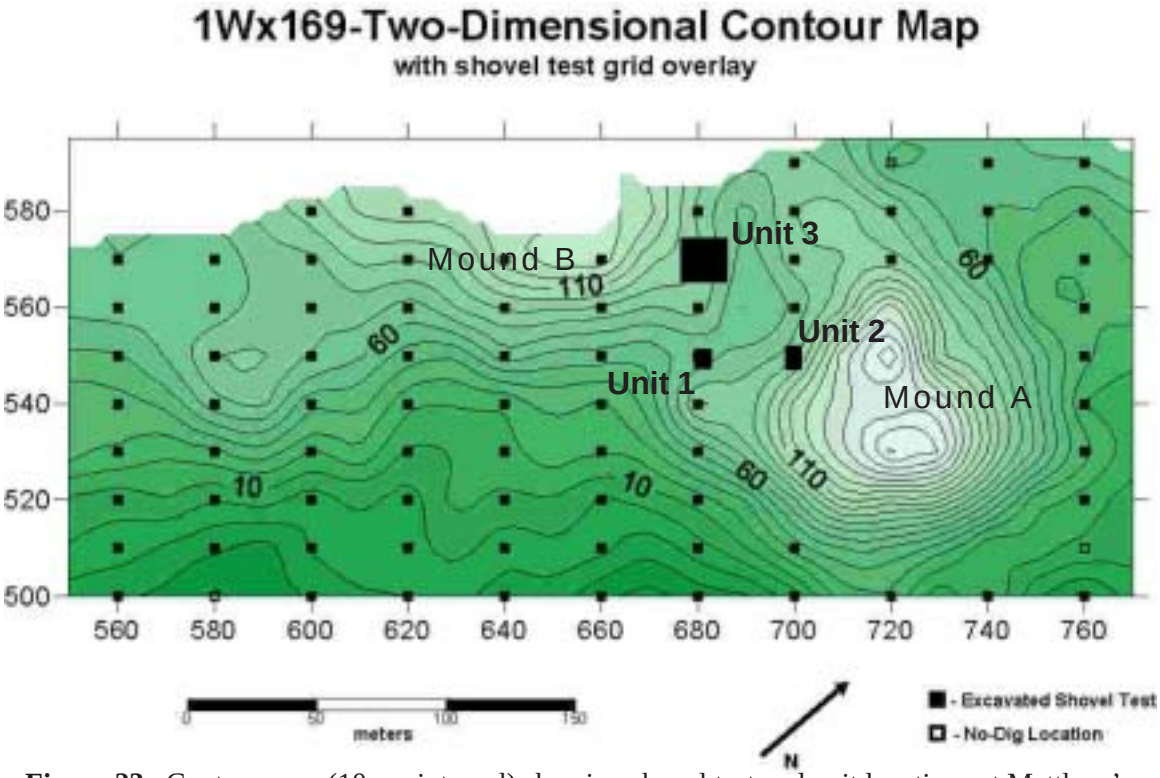

Figure 23. Contour map (10 cm interval) showing shovel test and unit locations at Matthew's Landing.

depth. The band of midden soil, which presumably reflects the densest area of occupation at the site, stretched for 140 meters along the edge of the terrace, and extended southeast from the terrace approximately 60 m. This stratum possessed a moderate density of pottery, daub, stone, and faunal remains. Below the midden, sterile subsoil consisted of a yellowish brown silty loam. Cultural features were encountered in four of the shovel tests, and formal test units were subsequently placed over two of these shovel test locations. Five of the shovel tests exposed the boundaries of earlier excavation units, most likely from Caleb Curren's 1982 excavations at the site. Two additional shovel tests appear to have encountered disturbed soil backfilled from earlier excavations, but no unit boundaries were discernible in these tests.

Artifact Concentrations and Site Occupation

Initially, the contour maps generated for the site employed the weights of ceramics and daub from every excavated shovel test. Based on the maps of pottery weight, daub weight, and combined pottery and daub, the two tests yielding the largest amount of artifacts were obvious (Figures 24, 25, and 26). Features were encountered in both of these shovel tests, and it was apparent that formal test units should be placed in these locations. Based on the density of daub

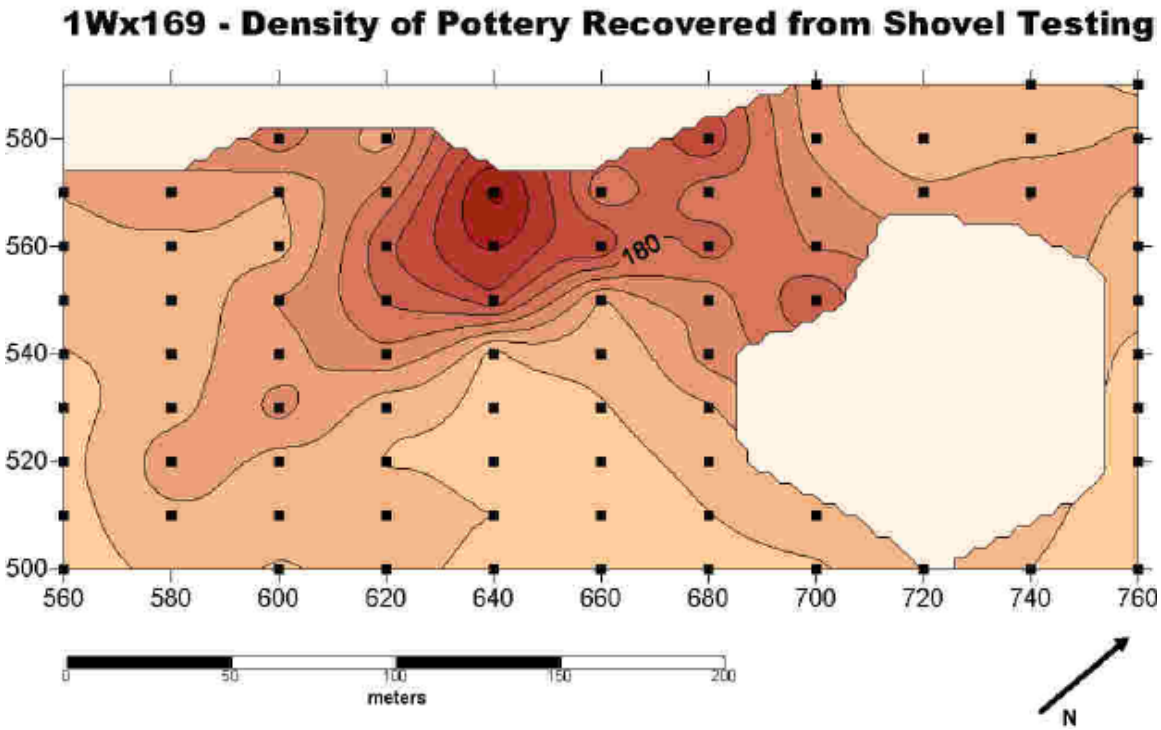

Figure 24. Contour map of pottery weights recovered from shovel testing.

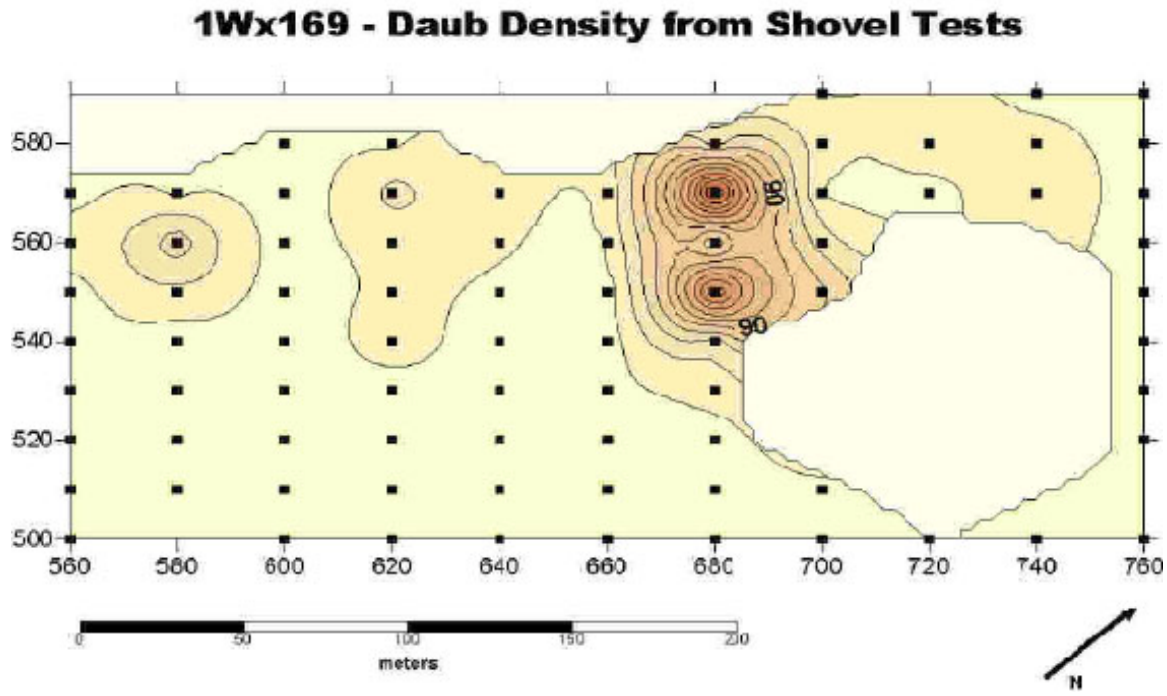

Figure 25. Contour map showing weights of daub recovered from shovel tests.

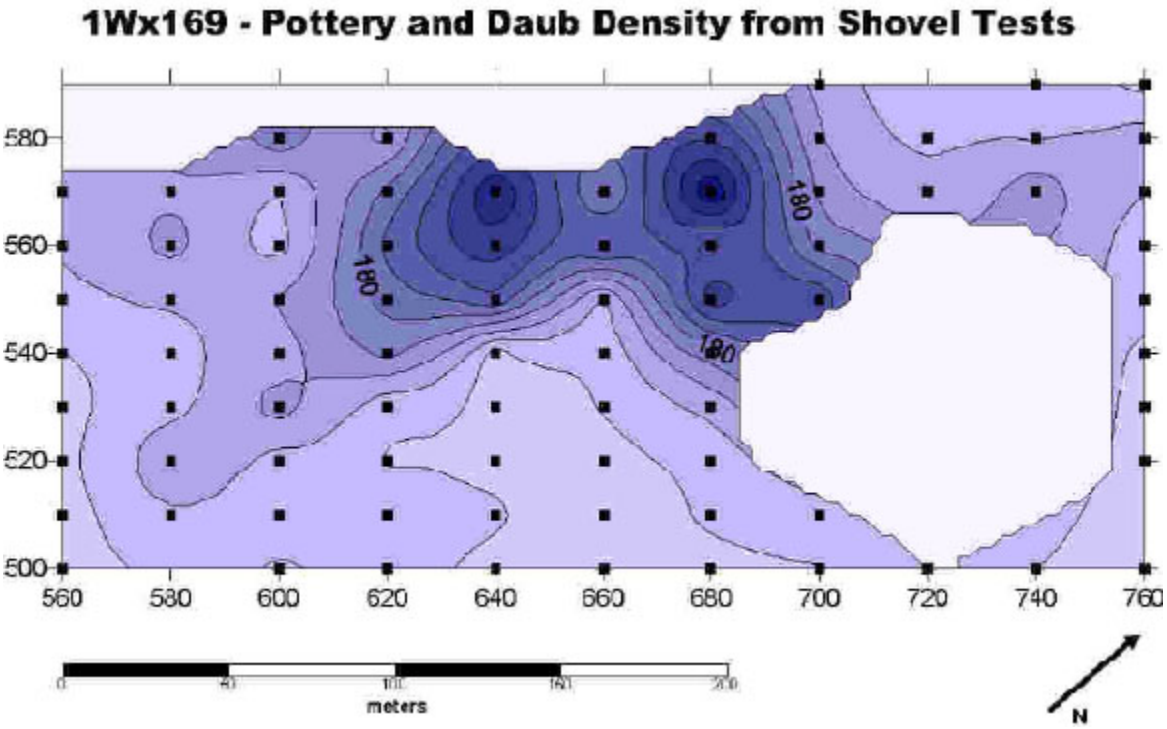

Figure 26. Density of combined weights of pottery and daub recovered from shovel tests.

recovered, it was clear that one of these two tests, N570 E680, had been placed in the location of a burned structure. In examining the density maps for combined pottery and daub weights across the site, it became apparent that the distribution maps were skewed in areas where dense midden or features were encountered in shovel tests. The daub map is obviously skewed in the areas of both features along the E680 line, while the pottery map shows the dense area of midden along the E640 line. These concentrations also show up on the map of the combined pottery and daub densities. The only other area of dense artifact recovery on raw density maps is on the northwestern flank of Mound A, where a formal excavation unit also was placed.

The artifact density maps generated using every shovel test provided a visual representation of the areas on the site where features were encountered and where midden deposits yielded the most cultural material, but they failed to give an accurate picture of settlement across the entire site. For example, the daub density map makes it appear that along the western portion of the grid, there was only sporadic occupation, which is clearly not the case when the map of the density of pottery at the site is examined. In order to eliminate the effects of the shovel tests encountering features and midden, the mean and standard deviations for each category (pottery, daub, and combined) were calculated. Then, those weights more than two standard deviations above the mean were eliminated, negating the effects of high artifact recovery from only a handful of shovel tests. The mean weight of sherds and daub recovered from each shovel test was 88.8 g, with a standard deviation of 97.2 g. Therefore, all shovel tests with combined pottery and daub weights greater than 283.2 g were eliminated as outliers in the distribution. The new distribution map of combined weights provides a much better representation of the occupation across the site, and clearly illustrates the extent of the midden arcing southwest from Mound A (Figure 27). Additionally, the high artifact density along the edge of the terrace suggests that some of the areas of heavy occupation may have been lost due to erosion. When the outliers are removed from the map of pottery recovery (Figure 28), an even better representation of occupation at the site emerges. The mean weight of pottery recovered from shovel tests was 73.5 g, with a standard deviation of 77.7g; therefore, tests with

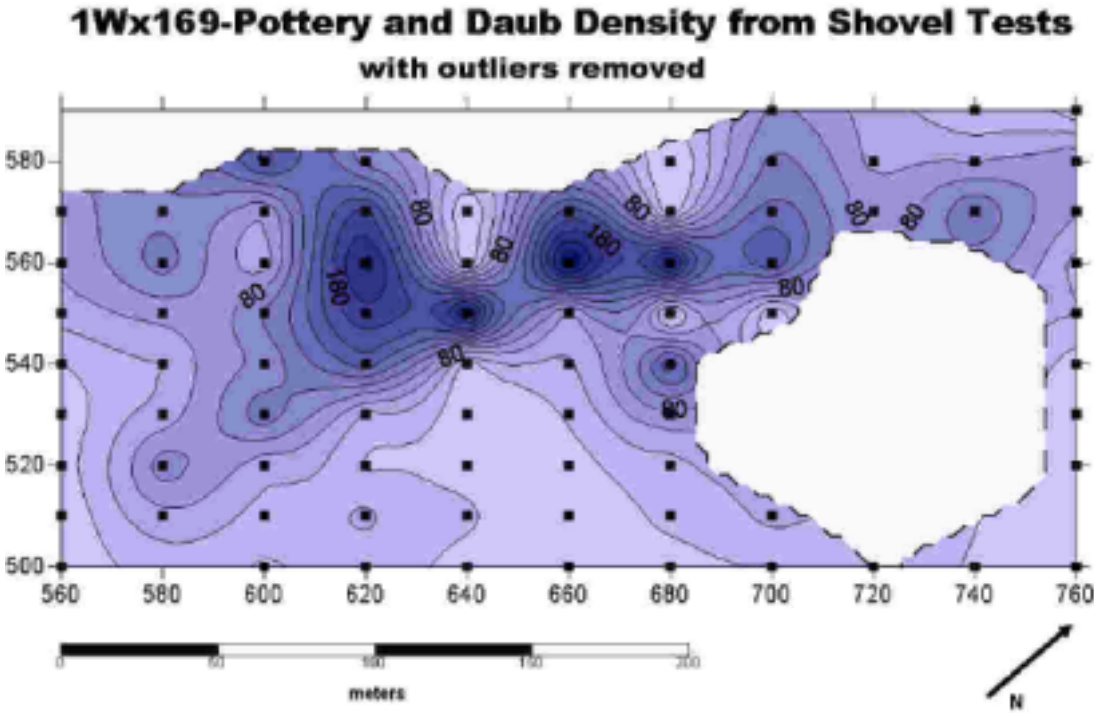

Figure 27. Density of combined weights of pottery and daub recovered from shovel testing with outliers removed.

pottery weights above 228.9 g were eliminated as outliers. Finally, the daub density map (Figure 29), which excludes all tests with daub weights of more than 94.7 g ($\bar{x}$=15.4, ó=39.7), demonstrates several areas of interest, including the northwestern flank of Mound A, where a test unit was excavated, the top of Mound B, and the western edge of the site.

Test Unit Excavation, 2003 Season

Two of the three 2 x 2 m test units excavated at the site in 2003 were placed over shovel tests that located features. The third unit was placed on the northwestern flank of Mound A in an area where a moderate artifact concentration was noted, in order to better understand the construction sequence of the larger mound. Because it was clear that the site possessed only a single cultural component by the time shovel testing was completed, the 2 x 2 m units were excavated by natural stratigraphy. One of the three test units was placed in the location of a burned structure recognized immediately as such based on the dense quantities of daub in a single shovel test. This feature appears to correspond to Curren's Structure 2, which

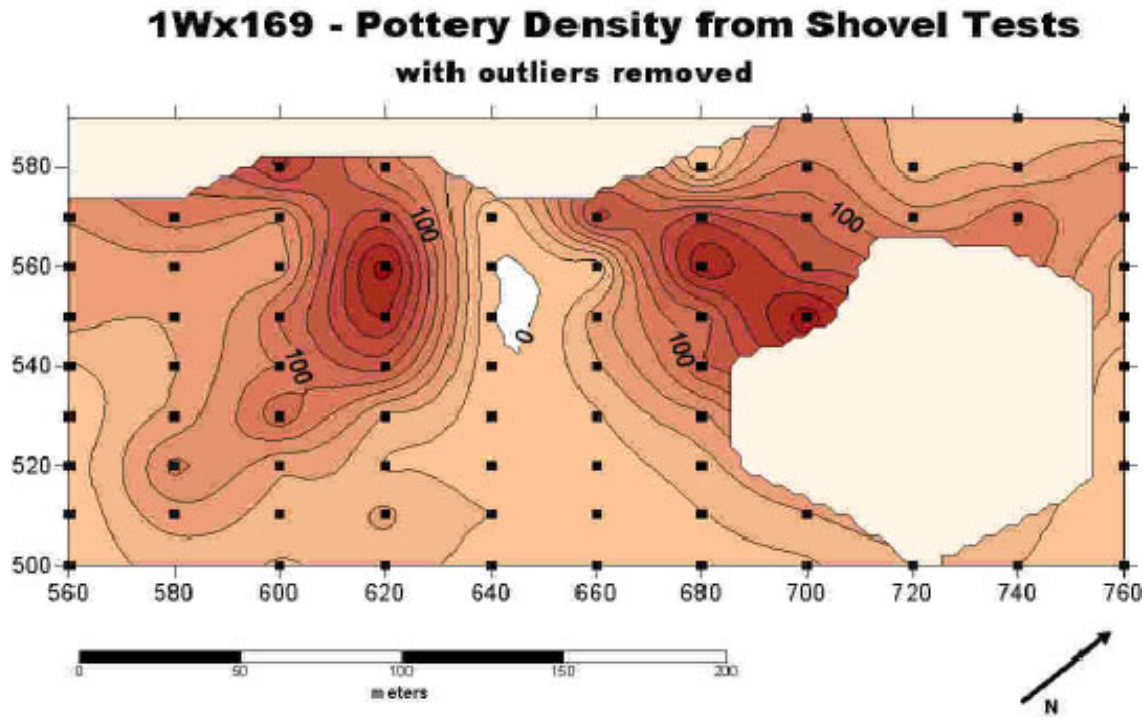

Figure 28. Contour map of pottery recovered from shovel tests with outliers removed.

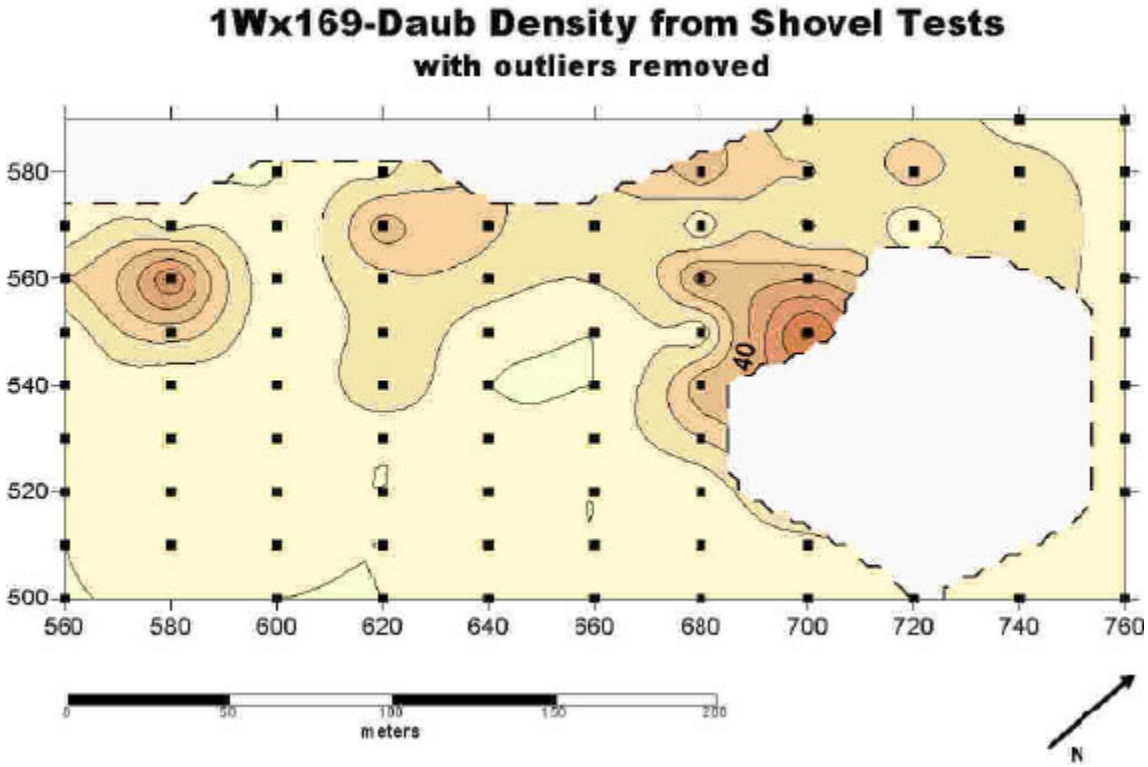

Figure 29. Contour map of daub weights from shovel tests with outliers removed.

he located but did not excavate because of time constraints. During the course of the first season, the original excavation unit was expanded to 4 x 4 m, and the western wall and central hearth of the structure were exposed. The second season focused on excavation of this structure, and the excavation area was expanded by the addition of six 2 x 2 m units. In the units associated with the structure, excavation techniques were somewhat different, because of the possibility of identifying activity areas. The plow zone was still shoveled out in 2 x 2 m units, but once the underlying daub scatter was revealed, excavation units were divided into quadrants measuring 1 x 1 m, and the daub scatter was hand-excavated and dry-screened through 1/4" mesh. When the base of the daub scatter was reached, all features were hand-excavated.

Test Unit 1 (N550 E679)

Test Unit 1 was placed around the location of a prior shovel test that had discovered a feature yielding both charcoal and daub. Feature 3 was first detected at a depth of 37 centimeters below surface (cmbs). Because the unit was placed in an area of feral pig disturbance, the surrounding ground surface was very uneven, and thus the depths of each stratum below surface are inconsistent. The plow zone, which across the site was a 10YR3/4 dark yellowish brown silty loam, extended to depths ranging between 22 and 30 cmbs. The midden in this unit (Figure 30), which across the site was a 10YR3/1 very dark gray silty loam, was approximately 20 cm thick. At the base of the midden, three cultural features were

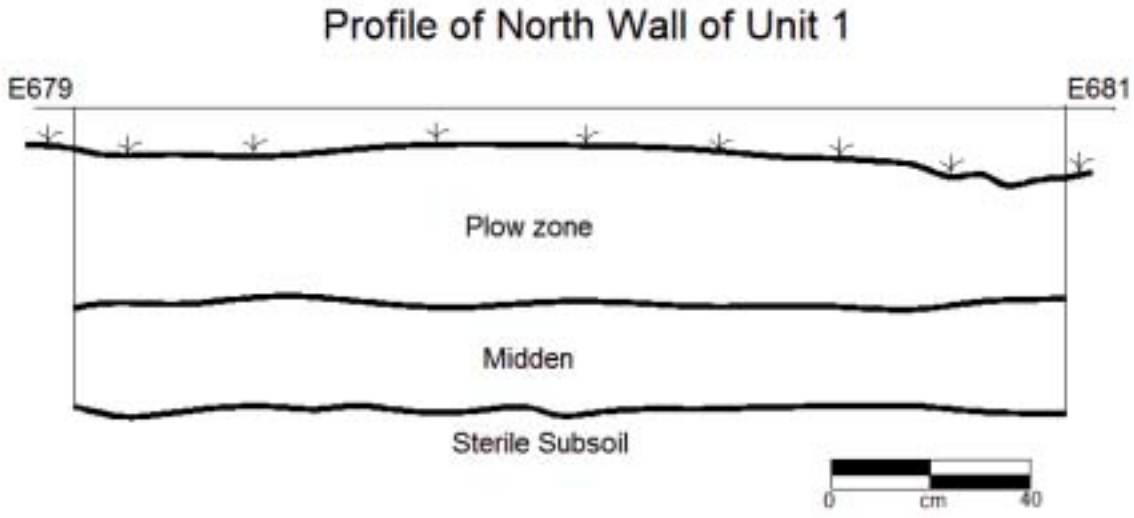

Figure 30. Unit 1 North wall profile.

encountered (Figure 31). Two of these, Features 13 and 14, proved to be posts, which were not recognizable as any part of a structure. The third, Feature 3, was a smudge pit measuring 64 cm north-south x 35 cm east-west and extended to a depth of 9 cm (Figure 32). The contents of the smudge pit were not burned corncobs, but rather some sort of unidentifiable plant matter. The entire contents of Feature 3 were taken as a flotation sample to preserve botanical remains for future interested researchers. The artifact density in this unit was relatively light compared to the other two test units. The artifacts recovered will be discussed in greater detail below.

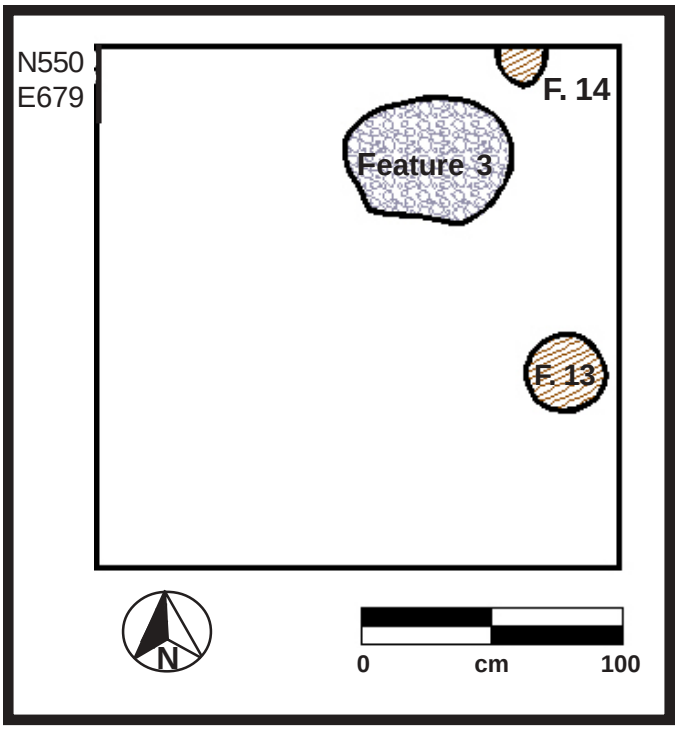

Figure 31. Plan view of Test Unit 1 at base of midden.

Test Unit 2 (N551 E699)

Test Unit 2 was placed in the northwestern flank of Mound A, based upon the stratigraphy found in the shovel test excavated in this area. From the surface downward, the test revealed a plow zone, a clay stratum, midden soils, and another clay stratum (Figure 33). Initially, based on what Curren had reported, it was unclear whether this area was part of the original mound or simply an area over which the upper portion of the mound was pushed during historic construction activities. Excavation revealed that this area is probably at the edge of the original mound, although it had been plowed down substantially (Figure 34). The unit appears to have been placed in an area plowed down to the very lowest strata of mound construction. Shovel testing on the southwest side of the mound in and across the road revealed the soils displaced from atop the mound. In this area, a disturbed stratum with unusually high artifact concentrations was present in two shovel tests. Because this disturbed stratum was clearly the

Figure 32. Profile of Feature 3, the smudge pit encountered in Test Unit .1

Figure 33. Profile of Test Unit 2, which was excavated into edge of Mound A.

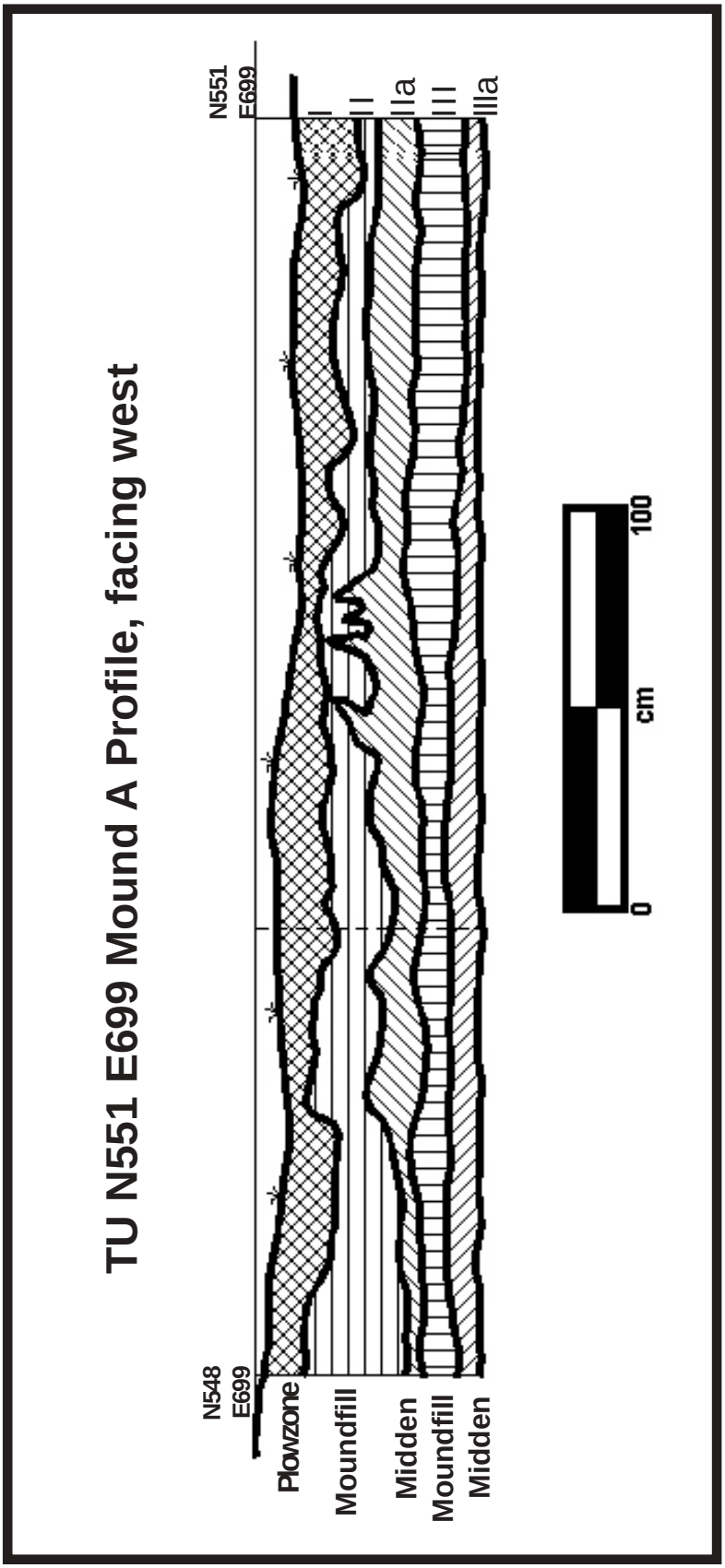

Figure 34. Map of western profile of Mound A, showing mound construction stratigraphy.

result of historic activities, the results from these two tests were not included in the artifact density maps. All shovel tests on the southeastern side of Mound A revealed very low artifact densities and no cultural deposits.

In Unit 2, the plow zone, Stratum I, extended to a maximum depth of 24 cmbs. Below the plow zone, Stratum II was a 10YR4/6 dark yellowish brown sandy loam that appears to be a mound construction layer. This stratum ranged in thickness from 5 cm at the northern end of the unit to 16 cm in the southern end of the unit. The mound fill in Stratum II was underlain by a layer of midden soil, designated Stratum IIa approximately 10 cm thick across the unit. Below this was another zone of mound fill, Stratum III, a 10YR3/3 dark brown clayey silt, which was about 15 cm thick across the unit. At the base of this fill episode, the artifact density increased substantially, although there was no discernible soil change. This artifact-rich zone, designated Stratum III a, was approximately 8 cm thick, and overlay sterile subsoil. At the top of sterile subsoil, four features were encountered. Two of these extended into the southern wall of the test unit, so a 1 x 2 m extension was added to the unit along the southern wall.

Once the extension was excavated, the features extending into the wall and those in the rest of the unit were excavated. Feature 10, which had been in the northern wall of the unit was a large post hole measuring 35 cm in diameter and 34 cm in depth (Figure 35). A large concentration of shell was present at the top of the feature. Below this was a large sherd from a cylindrical bowl. This sherd was decorated with wide-line incised circles filled with engraved cross-hatching that appears to be part of a motif associated with the Southeastern Ceremonial Complex. The type and variety assigned to this class of sherds along the Gulf Coast is Pensacola Incised, *var. Holmes.* Feature 11, which also extended into the southern wall of the original test unit, was a smudge pit measuring 43 cm north-south by 35 cm east-west and 10 cm in depth. Once again, this feature was filled not with burned corncobs, but instead the same vegetable matter present in Feature 3. The contents of this feature were also taken as a soil sample for flotation and botanical analysis. After these features were excavated, our extremely rainy field season culminated when Tropical Storm Bill moved inland at the end of June,

dumping 3.5 inches of rain in the area overnight. The next morning, the unit was filled with water, which caused a great deal of soil slumping along the unit profiles. The only solution was to cut the walls back beyond the areas of slump. This action revealed a line of evenly spaced post holes, Features 12, 16, 17, and 18, in the unit floor along the western wall (Figure 35). These post holes measured between 18 and 23 cm in diameter and 35 to 45 cm in depth. When excavated, each yielded either a single large plain sherd or a single large quartzite cobble

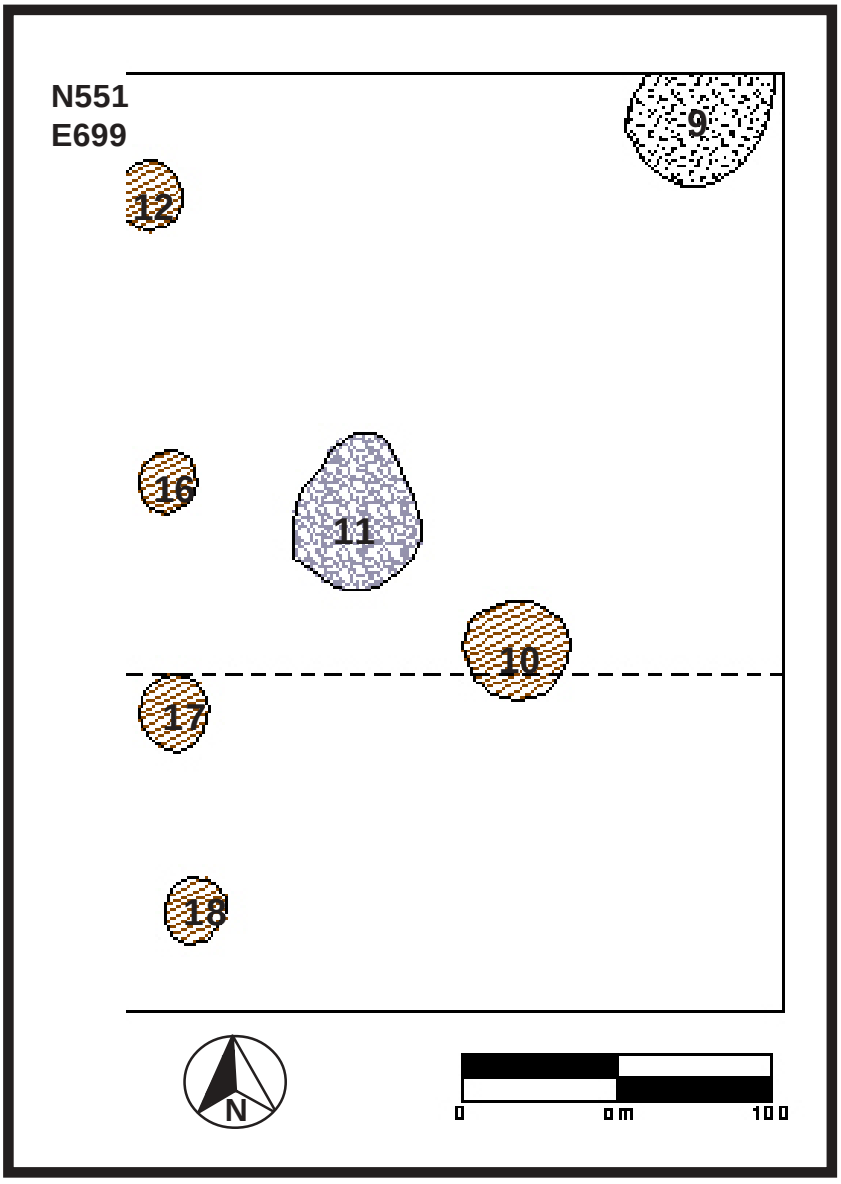

Figure 35. Plan view of Test Unit 2 showing line of posts, central support post (Feature 10), and other features.

in their fill. It appears the post holes were part of the wall of a structure and Feature 10 may have held a roof support post from this structure. No evidence of daub was detectable in the unit and there was no carbonized wood in the fill of the posts, suggesting that the structure may have been dismantled prior to mound construction. Finally, the edge of a pit was encountered in the northeastern corner of the unit. Although it was designated Feature 9, it was not excavated and no additional units were opened up around it because of time constraints.

Test Unit 3 (N571 E679)

Test Unit 3 was placed at the location where a prior shovel test revealed the presence of a burned structure, based on the quantity of daub recovered. The shovel test was stopped at 20 cmbs when it became obvious that this area would be ideal for unit excavation. By comparing the new site map to that of Curren's 1982 excavations (1984:82) (Figure 36), it became clear that this was the structure (#2) he had not excavated because he ran out of time. After the plow zone was removed (Figure 37), it was evident that our test unit had been placed

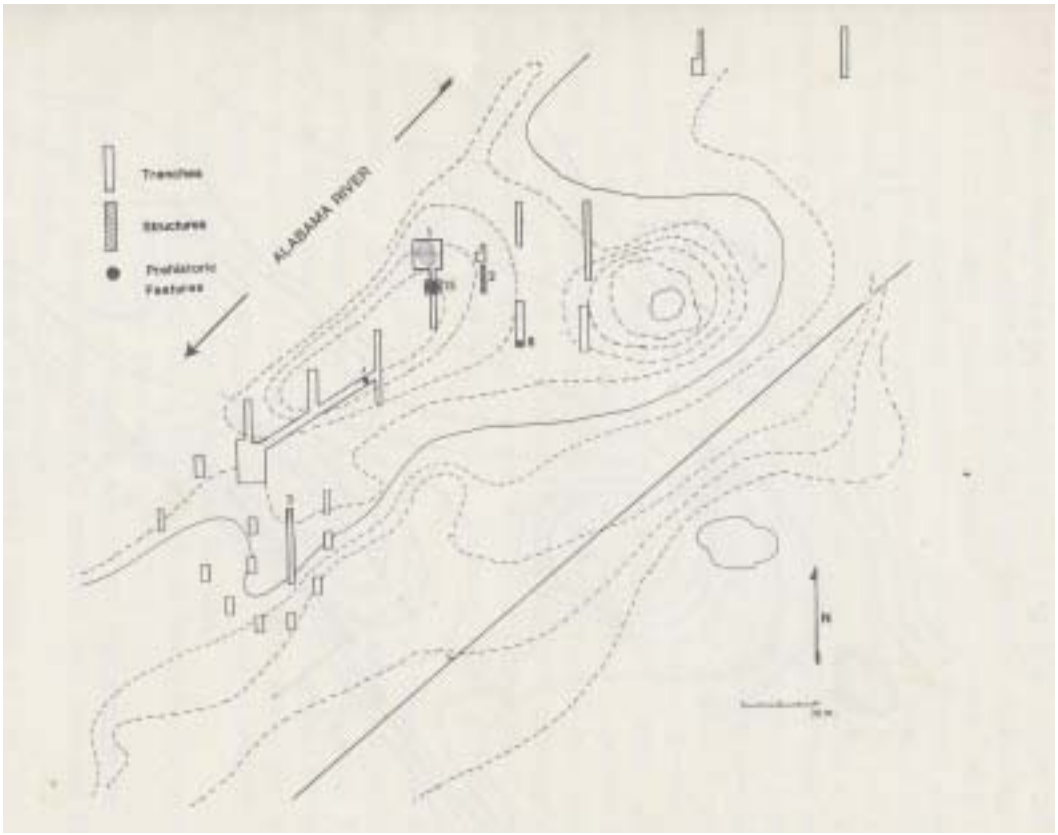

Figure 36. Map of excavations conducted by Curren in 1982 showing the location of Structure 2.

along the western edge of this structure. To determine the north-south boundary of the structure, another test unit, N569 E679, was placed to the south of the original unit. These two open units were then expanded to the east. After the shallow plow zone, 5 to 22 cm in depth, was stripped from all four units the daub scatter, which was designated Feature 19, was excavated by hand in 1 x 1 m areas in two of the units. The layer of burned daub proved to be approximately 15 to 20 cm thick. Underneath this layer in the northeastern 2 x 2 m unit, on the floor of the structure was approximately one half of a plain jar tempered with coarse shell that had been sitting on the floor of the house when the roof collapsed (Figure 38). This pot sat on the edge of the burned clay surface hearth, which had a burned post directly adjacent to it (Figure 39). Two wall posts were discovered below the daub scatter in the other unit that was hand-excavated to sterile subsoil, located in to the south and west. The remaining two units with the plow zone removed were not excavated further due to time contraints.

When the first season came to a close, the entire 4 x 4 m excavated area was lined with plastic and backfilled. The plastic was placed in the unit in hope that it would protect the

Figure 37. Daub scatter in 4-x-4 m unit at base of plow zone showing western wall of structure along left side of photograph.

Figure 38. Portion of globular jar encountered at the base of the daub scatter.

Figure 39. Burned post and edge of clay hearth encountered at base of daub scatter.

underlying deposits from extensive damage by feral pigs, because they would surely be drawn to the freshly churned up soil. The plastic lining also curbed damage to the deposits by fire ants, which had built extensive nests in the loose backfill soil by the time the second season began.

Structure Excavation, 2004 Season

It was decided that a second field season was needed to focus entirely on the excavation of the structure. During the 2004 season, the backfilled area was first re-excavated and the original 4 x 4 m unit was expanded to follow the boundaries of the structure. Six additional 2 x 2 m units, two 1 x 2 m units, and two 50cm x 2 m units were added around the original excavation block. The units expanded to the north and south proved to be outside the limits of the daub scatter. The four units placed to the east of the original units also exposed the eastern edge of the daub scatter, which measured approximately 5.5 m east-west by 4.5 m north-south.

Because of time constraints, the daub scatter was only excavated in six of the excavation units. In one of these units, a portion of the original clay floor was discovered, and was photographed and mapped (Figure 40). Few artifacts were recovered on the floor level below the daub scatter, which suggests that the structure was swept clean before it burned. At the base of the daub scatter, a total of 44 posts were identified. Of these, nine appeared to be associated with the walls of the structure. The four central support posts averaged 30 cm in diameter and 38 cm in depth. These posts had large quantities of charcoal and daub in their fill.

Figure 40. Portion of clay floor of structure uncovered during daub scatter excavation.

The average diameter of the wall posts was 19 cm, with an average depth of 19 cm. The wall posts were evenly spaced approximately 80 cm apart. Based on the distances from the central posts to these two outer walls, the structure would have measured 5.5 x 5.0 m, with a floor area of approximately 27.5 m^2. Unlike the structure excavated by Curren in 1982 (Figure 41), it appears that there is a discernible post pattern, consisting of a square of four central roof support posts and widely-spaced wall posts arranged in a square to rectangular shape. In addition to the posts, three other features were found in the excavated floor area. Feature 33 was first recorded as an oblong stain with a heavy concentration of daub along what was presumed to be the western wall of the structure (Figure 42). Within Feature 33, a large chunk of daub was discovered (Figure 43). The underside of this section of daub had multiple impressions of the split cane presumably used to support the daub. After Feature 33 was excavated, it remained unclear what its exact function was, although it may represent an area packed down and used as an entrance. Feature 66 was an ovate stain located to the west of the hearth. When excavated, it yielded small quantities of pottery, faunal bone, and shell. Given its shape and size, it is possible that this feature may have been an infant burial whose skeletal remains had disappeared due to soil acidity.

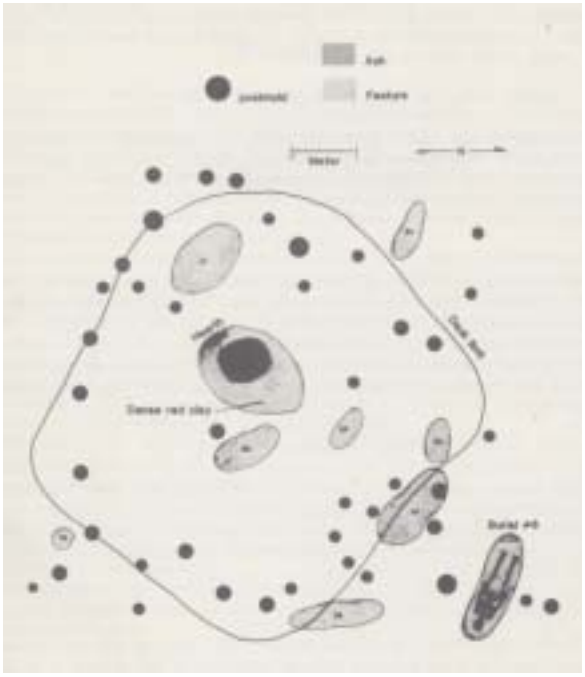

Figure 41. Amorphous structure excavated at Matthew's Landing site by Curren (1984:86).

This structure and the one excavated by Curren were likely similar. Few contemporaneous structures have been excavated in central Alabama. Extensive excavations of contemporaneous structures have taken place in the Upper Coosa drainage, in northwest Georgia, particularly at the Little Egypt site. Like contemporaneous structures found at Little Egypt, this structure was square in shape, although the number of wall posts was lower and they

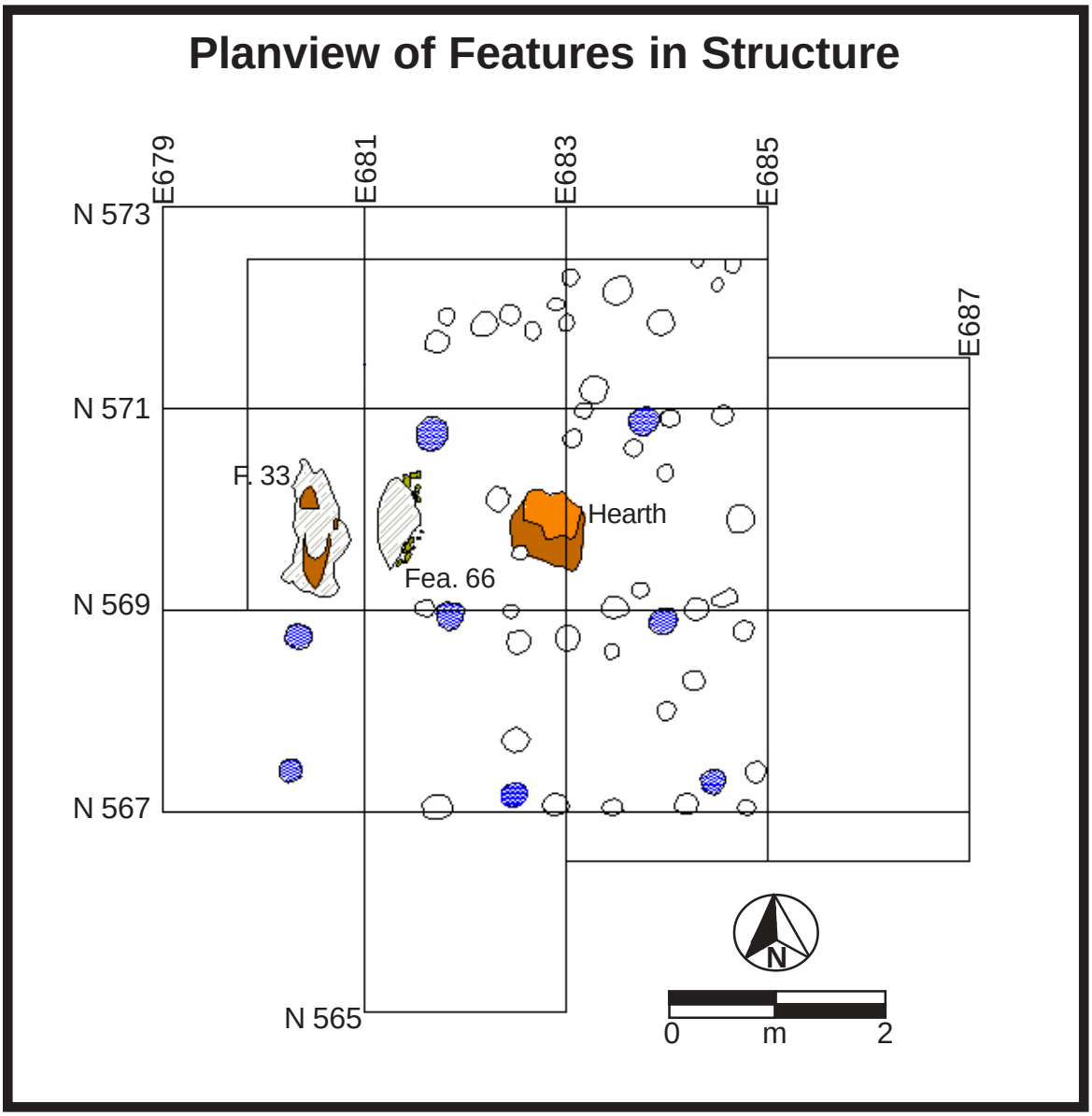

Figure 42. Map of features associated with structure excavated during 2003 and 2004 field seasons. The blue posts are those equal in depth and spacing and are believed to be wall posts.

Figure 43. Intact section of daub uncovered in Feature 33, along western wall of structure.

were spaced farther apart. Unlike houses in northwest Georgia, there was no evidence of a house basin stain or earth piled against the structure wall, although the floor likely was packed down approximately 30 cm below ground surface. The clay layer found at this depth must have been prepared intentionally, given the silty soils along the terrace. The number of posts along each wall, which was approximately four to five, was fewer than the seven or eight typically associated with structures in northwest Georgia (Gougeon 2002:16). Unlike houses in northwest Georgia, there was no evidence of partition walls in the structure. The ceiling of the structure appears to have been daubed, based upon the scatter of daub across the entire floor of the structure. There was no evidence of a formal entrance trench, although Feature 33 possibly represents the entrance to the structure. The floor area was much smaller than the 9.6 x 9.2 m dimension reported for elite structures at the Little Egypt site, and is even smaller than the dimensions of 6.6 x 6.2 m reported for non-elite residences (Gougeon 2002). The small size of the structure means it is doubtful that it was an elite residence, although there is no artifact

assemblage from the floor to corroborate this evidence since the structure was cleaned out before it burned.

Excavation Unit Artifacts

All artifacts recovered from unit excavation were analyzed by myself and three undergraduate laboratory assistants. Artifacts brought back to the lab were first washed and rough-sorted into one of eight categories: plain pottery, sherdlets, decorated pottery and vessel landmarks, stone, daub, faunal remains, non-aboriginal artifacts, and charcoal (^{14}C samples). Analysis for each of these categories, with the exception of decorated pottery, was completed by the laboratory assistants. I then checked their analyses before the artifact data were entered onto recording forms for each category.

The ceramic analysis was conducted in several steps. First, sherds too small to analyze were separated from the pottery assemblage by screening the entire pottery assemblage through 1/2-inch mesh hardware cloth. For each provenience, weights and not counts were recorded for sherds that passed through the 1/2-inch screen. The second step in ceramic analysis was to separate the decorated pottery and vessel landmarks from the plain body sherds. Only 12.3 percent of the total assemblage was decorated. Decorated sherds were incised and/or engraved (n=330), or much more infrequently painted red and white (n=2). The vessel landmarks present in this assemblage include jar and bowl lips and rims, globular jar collars and handles, appliqué strips from globular jars, and effigy fragments. Each decorated or landmark sherd was examined individually, and when possible, Gulf Coast (based on Fuller 1994) or Alabama River Valley (based on Cottier 1970) type and variety classifications were also recorded for each of the sherds. In most cases, however, decorated sherds did not fit existing type designations. Because it was not the purpose of this study to create types and varieties, these sherds were designated Unclassified Incised. The ceramic types recovered from the site show a mixture of types associated with both the Bottle Creek II and Bear Point phases at the Bottle Creek site.

The final step in the ceramic analysis was the separation of the plain sherds into four categories: coarse shell-tempered, fine shell-tempered burnished and unburnished, and sand/grit-tempered. The sand and grit-tempered sherds, some of which were check-stamped, are clearly related to an earlier Woodland occupation of the site area. The recovery of these earlier sherds was sporadic, and no concentration of this material was detected during shovel testing. Coarse shell-tempered wares made up the majority of the assemblage at 71.9 percent, and these sherds were typically plain. The 8,543 plain sherds associated with this ware made up 71.5 percent of the total assemblage. Two other known types that occurred are associated with a coarse shell-tempered ware. The first is Alabama River Appliqué, which is defined by the presence of applied clay strips below the lips of globular jars. Nine sherds of this type were recovered, which is only 0.1 percent of the total ceramic assemblage. The second ceramic type associated with coarse shell-tempered plain sherds is Moundville Incised, *var. Douglas*, which is identified by the presence of incised arches located on the shoulders of globular jars. These arches also may be accompanied by punctation. Twenty-three of the sherds in the sample were classified as Moundville Incised, *var. Douglas*, which makes up 0.2 percent of the total assemblage. Ceramic wares tempered with fine crushed shell comprised 28.1 percent of the total assemblage. Fine shell-tempered burnished plain pottery was most common, comprising 16.2 percent of the total ceramic assemblage (n=1,933).

Among the decorated sherds, most (n=1,050, 8.8%) fell into the Unclassified Incised category, meaning the sherd was too eroded to type, the incising motif was not recognizable, or the decorative style did not fit any known Gulf Coast or Alabama River Valley type. The most common decorated varieties on a fine shell-tempered ware conformed to the type Pensacola Incised type (n=332, 2.8%). Other types represented in the assemblage include Mound Place Incised and Alabama River Painted. Among the bowl sherds assigned to a specific vessel form, the most common form was the casuela (n=328), followed by the hemispherical bowl (n=26). The cylindrical bowl and the plate form were recovered with the same low frequency (n=8).

The stone recovered from the site was separated into three basic categories, chipped, ground, and unworked. Chipped stone debitage was further separated into amorphous shatter, cores, and flakes, which were then sorted by material type. Flakes also were broken down by reduction stage, including primary and secondary reduction, and bifacial thinning (see Andrefsky 1998 for descriptions of each of these reduction stages). Chipped stone tools were separated into several categories, including projectile points, microdrills, preforms, and scrapers. Ground stone was broken down into several categories based on the material recovered, which included greenstone celt fragments, ground sandstone, and other groundstone. Finally, the unworked stone was separated into pigment quality hematite, unworked sandstone, petrified wood, fire-cracked rock, cobbles, and pebbles.

In general, lithic debitage and finished tools were scarce across the site, probably due to a paucity of raw material sources in the surrounding region. The majority of the lithic debitage fell into the amorphous shatter category, followed by the bi-facial thinning category. Quartz was the most commonly used raw material, followed by chert and Tallahatta sandstone, respectively. Most of the finished tools recovered were made of Tallahatta sandstone. The finished tools made of Tallahatta sandstone recovered from unit excavation include a Madison projectile point, the distal end of an additional projectile point, and a scraper. The only quartz tool recovered was a single microdrill. The chert tools recovered consisted of a projectile point fragment and a preform. The ground stone fragments recovered included three polished greenstone chips apparently spalled from a celt, and another larger celt fragment. The only other significant ground stone artifact was a sandstone discoidal (Figure 44), recovered from the structure area.

Pieces of daub with visible cane impressions were counted, weighed, and bagged separately for future study. Over 220 kg of daub were recovered from the excavation of the structure. The bulk of this material had no cane impressions. In some areas, however, large concentrations of daub with cane impressions were noted (Figure 45). Concentrations of daub with cane impressions were observed in the northwestern corner of the structure and within feature contexts.

Across the site, faunal remains were relatively scarce, given the fact that few features were excavated. The most notable find was a shell gorget fragment (Figure 46) recovered from the plow zone outside of the eastern edge of the daub scatter associated with the structure. This artifact was likely plowed up from a sub-plow zone feature, because mussel shell recovery was also high in that area. Due to time constraints, the midden was left in place in this area because it was

Figure 44. Ground stone discoidal with incised circle recovered from the plowzone over the excavated structure.

Figure 45. Concentration of daub with cane impressions at northwestern corner of structure.

beyond the limits of the daub scatter. The other faunal concentration of note was a cluster of mussel shells recovered from the top of Feature 10 in the units placed on the edge of Mound A.

Figure 46. Shell gorget recovered from plow zone in N569 E683, in the structure area. The drilled hole on the left side has been broken off.

Positioning Matthew's Landing in Time and Space

Three lines of evidence from the recent round of investigations at Matthew's Landing combine to suggest that there is a major problem with the prior characterization of the site as multi-component. Shovel testing in off-mound areas revealed a midden showing no evidence of stratification. The artifact distribution maps showed only a single coherent pattern of occupation across the site. Finally, sherd types previously assigned to the Protohistoric component, such as Alabama River Appliqué, were found in the same contexts as types previously assigned to the earlier Mississippian component, such as Pensacola Incised, *var. Gasque*. These results suggest that there was only one occupation at Matthew's Landing. It now appears that occupation at the site was limited to a single Late Mississippian village abandoned shortly after initial Spanish contact during the mid-sixteenth century. This conclusion is further supported by data drawn from sites in the surrounding area, including recent refinements to the ceramic sequence of the Gulf Coast based on data from the Bottle Creek site (Fuller 2001), the study of a definitive post-contact assemblage from the immediate area, and a re-examination of the pottery recovered from Curren's 1982 excavations.

In his report of excavations at the site, Curren (1984) proposed that the distinct Late Mississippian and Protohistoric components at the site were stratigraphically superimposed. It should be noted that when the locations of Curren's excavation trenches are tied to the site map

from the current project, most of them are located in an area of sparse occupation at the site that likely served as a plaza. Because he recovered evidence of a daub scatter at nearly 1 m in depth in his longest trench at the site, Curren evidently assumed that daub at this depth, which was much greater than the Protohistoric structure and feature he identified at the site, was evidence of the earlier Mississippian occupation. No artifacts were recovered at so great a depth during our shovel testing, not even when a test was dug through Mound B, and no evidence of this structure was detected. Due to the fact Curren reported this find at such a depth, several shovel tests were extended well into sterile soil, and all formal excavation units were probed down at least one meter into sterile soil to ensure that no buried Mississippian deposits were present. Based on the shovel test excavations, there was simply no evidence of a stratigraphic separation between two components.

The ceramic assemblage recovered from the current round of excavations at Matthew's Landing shows close ties to the Pensacola culture of the Gulf Coast, with the exception of the Alabama River Appliqué sherds. Because this portion of the Alabama River Valley does not appear to have sustained any substantial Mississippian occupation until the late fifteenth century, it is most likely that Matthew's Landing was settled by a population that moved upriver from the Mobile-Tensaw delta region. As Brown (2003:222) noted, mound construction at Bottle Creek continued up through the beginning of the Bear Point phase in the early sixteenth century. Test excavations in several of the mounds at the Bottle Creek site strongly suggest that after the cessation of mound construction, the population of the site dropped significantly. The presence of several late mounds, which may be burial mounds, suggests that the site was used for burials well into the historic era. There is evidence that although Bottle Creek still was being used as a place of burial, its position at the center of the social and political environment of the Mobile-Tensaw delta had eroded substantially. By the early to mid-sixteenth century, peoples living in the Tombigbee Forks region, near the confluence of the Mobile, Tensaw, and Alabama rivers, had adopted the practice of burying their dead in sandy burial mounds. Sites with sandy burial mounds are classified as belonging to the Ginhouse Island complex (Fuller and Stowe 1982). A

similar cultural trajectory characterized the late history of the Moundville chiefdom; as chiefly power waned, people began to move out from the center, and in many cases, elites established mound sites away from the center of the chiefdom (Knight and Steponaitis 1998). Matthew's Landing, then, may represent a group migrating inland and establishing a new chiefly lineage in the wake of the decline of Bottle Creek.

There is, however, a second possible explanation for why Matthew's Landing was settled by peoples who appear to have come upriver from the Mobile-Tensaw delta. John Blitz (1999) has theorized that Mississippian polities frequently experienced social fission and fusion as a response both to political stresses from competing factions of elites or environmental stresses on populations. Fission occurred when some portion of the population left a particular town and founded their own small polities elsewhere; typically these new polities are represented by remote single mound centers. It is also possible that Matthew's Landing was founded by a group of elites who splintered off from the Bottle Creek chiefdom during a period of contested chiefly succession and established their own smaller polity at a distance from the center, while Bottle Creek was still flourishing as the center of a chiefdom. Because there are still no absolute dates for the earliest occupation at Matthew's Landing, it is impossible to determine whether the founding of the site occurred before, during, or after the time when mound construction ebbed at Bottle Creek.

The ceramics recovered from recent excavations provide some clues about the timing of the settlement of Matthew's Landing. It should be noted, however, that a portion of the ceramics from the Matthew's Landing site, while closely related to those of the Gulf Coast, also possess stylistic decorative aspects making them distinct (Figure 47), reflecting the development of the site as a cultural entity independent of the Bottle Creek site over time. There are numerous sherds bearing motifs representative of an emergent regional decorative tradition; these sherds cannot and should not be forced into the classificatory scheme created for the Gulf Coast. However, in the Matthew's Landing ceramic assemblage, there are sherds that would be assigned to types associated with the Protohistoric Bear Point phase (AD 1550-1700) if

they were recovered from a site along the Gulf Coast. The Gulf Coast pottery types recovered from Matthew's Landing include Pensacola Incised, *vars. Matthew's Landing* and *Bear Point* (Figures 48 and 49), Mound Place Incised, *vars. Walton's Camp and McMillan*, and Moundville Incised, *var. Douglas* (see Fuller 1994 for a description of Pensacola pottery types). The ceramic assemblage also possesses types associated with the Mississippian Bottle Creek II phase (AD 1400-1550), including Pensacola Incised, *vars. Holmes* and *Gasque* as well as several rim effigies, one of which falls into Fuller's (1993) *Crested Bird* type (Figures 50, 51, and 52). Also making up a small portion of the assemblage

Figure 47. Sherds recovered from Matthew's Landing that do not fit existing ceramic typologies.

Figure 48. Pensacola Incised *var. Matthew's Landing* recovered from 1Wx169.

Figure 49. Pensacola Incised, *var. Bear Point* recovered from 1Wx169.

are two sherds of fine shell-tempered burnished pottery with incising greater than 2.0 mm in thickness. In Fuller's Pensacola pottery classification system, these sherds could be classified as either Carthage Incised or Leland Incised; however, because the incised motifs are not discernible, they cannot be confidently assigned to either type. Instead of representing sequential phase occupations, it appears the ceramics at Matthew's Landing correspond chronologically with an assemblage excavated from Mound A at the Bottle Creek site. Fuller (2001:32) reports an undisturbed midden in levels D100F3 and D100F4 of a trench into Mound A yielding types diagnostic of both the Mississippian Bottle Creek II and Protohistoric Bear Point phases. Because the deposits do not appear to be mixed, Fuller suggests that this may be evidence of a transitional period between the two phases (Fuller 1998:28, 2003:34). He dates this transitional component to the fifteenth through early sixteenth centuries. This description appears to apply to the assemblage at Matthew's Landing as well, meaning the bulk of the Mississippian occupation at Matthew's Landing likely dates from the late fifteenth to early sixteenth centuries.

Figure 50. Pensacola Incised, *var. Holmes* sherd recovered from Feature 10.

Figure 51. Pensacola Incised, *var. Gasque* sherd recovered from structure area.

Figure 52. Crested bird effigy head recovered from daub scatter.

The sherds from the 1982 excavations of the structure and two of the features Curren assigned to the Protohistoric component also were examined. Currently, the ceramics from the site are in the care of Nicholas J. Holmes, Jr. of Mobile, Alabama, who is holding them awaiting the completion of a storage facility under construction at the University of South Alabama. Unfortunately, no bags of sherds labeled Feature 8 were present in the collection of artifacts studied. This is especially unfortunate, because Curren (1984:85) reported that Feature 8 yielded a partially restorable vessel and many large diagnostic sherds. However, the pottery from the other three features provided a sample large enough to satisfactorily confirm there was no Protohistoric Alabama River phase component present at Matthew's Landing. Sherds from above and within Curren's Structure 1 were classified as types associated with the Protohistoric Alabama River phase, including Alabama River Appliqué; however, there were also sherds bearing decorative techniques typical of the Late Mississippian Bottle Creek II phase, including finewares with secondary cross-hatched engraving. Feature 15 yielded several sherds of red and white painted pottery, which is quite rare at the site and is typically dated to the later sixteenth century, although red and white painting occurs as early as the fifteenth century in the Black Warrior Valley. Finally, Feature 5, which was thought to have possessed mixed cultural material from Protohistoric and Mississippian occupations, yielded appliqué pottery as well as a sherd from a plate with interior incisions, which would be considered D'Olive Incised along the Gulf Coast.

The results of my ceramic reanalysis suggests that Curren may have assigned features

and structures to the Protohistoric period based on the presence of a single pottery type, Alabama River Appliqué, which has long been associated with the Alabama River phase and burial urns in central Alabama (Cottier 1970; Sheldon 1974). However, it now seems probable that appliqué decorative technique on jars appeared during the decades just before European contact and occurs in association with assemblages that are by all other criteria Late Mississippian. Assemblages with similar overlaps of Mississippian and Protohistoric ceramics have been recovered from other sites, including the Yarborough site in east-central Mississippi (Solis and Walling 1982).

By comparing the ceramics from the Matthew's Landing site with an assemblage recovered from a nearby site on the Alabama River that definitely dates to the post-contact era, it becomes apparent there was no significant Protohistoric occupation at Matthew's Landing. The Liddell site (1Wx1) is located on the eastern side of Gee's Bend in Wilcox County. Curren (1984:53) has reported the recovery of beads dating to AD 1590-1650 from a burial pit and a feature excavated at Liddell, suggesting an early seventeenth-century occupation at the site. The ceramics from Liddell, which are curated at the Office of Archaeological Research at Moundville Archaeological Park, were given a cursory examination in order to understand the basic traits of a Protohistoric ceramic assemblage from Wilcox County. The differences between the Liddell and Matthew's Landing ceramic assemblages were striking. The primary decorated pottery type in the collections examined from Liddell was Wilcox Incised, a type originally described by Cottier (1970). Wilcox Incised pottery is described as very fine line, poorly-executed swastika scrolls incised on the shoulders of jars. These vessels also usually show incised vertical lines below the lip of the jar. Wilcox Incised occurs on a burnished very fine shell and sand tempered ware. No examples of Wilcox Incised were recovered during either season of excavations at the Matthew's Landing site.

The ceramic assemblage from the Liddell site also possessed a high diversity, as would be expected for a post-contact site. Large-scale population movements and massive depopulation have been well-documented for the post-contact era, most notably by Marvin

Smith (1987, 2001). As some areas emptied of people, towns of refugees with ballooning populations grew up elsewhere; Liddell is likely one such town. Together with Wilcox Incised pottery, which appears to be a combination of pottery models held by peoples from the Gulf Coast and from as far west as the lower Mississippi Valley, are flaring rim bowls and burnished wide-lined incised pottery that are Late Moundville ceramic models. Also, approximately 20 percent of the Mississippi Plain sherds examined were tempered with fossil shell, a tradition that occurs across the Black Belt in west central Alabama and east Mississippi where fossil shell is readily available. Sites yielding primarily fossil shell-tempered pottery in the lower Black Warrior Valley, near present-day Demopolis, date to the late seventeenth-century (Patterson 1990). Finally, sherds with a form of rim notching that appears to be derived from the Bear Point rim mode associated with Pensacola pottery (see Fuller 1994 for a description of this mode) are also present in the Liddell assemblage, perhaps suggesting ties to the earlier inhabitants of the Matthew's Landing site. The amount of diversity in the Liddell assemblage suggests that this site may have experienced an influx of peoples who came from several different geographic areas and practiced a variety of different potting traditions. This wide range of ceramic diversity simply is not present at the Matthew's Landing site.

Evidence of Spanish Contact

No sixteenth-century artifacts of European manufacture have been recovered from any of the three rounds of archaeological excavations at Matthew's Landing. Negative evidence does not mean the site was not visited by either of the two Spanish expeditions that traveled through the region. It is likely that if Spanish artifacts are there to be found at the site, they are concentrated in burial contexts. During the present excavations, only one possible burial, that of an infant, was excavated. Curren's 1984 excavations found at least six burials of inidividuals of unknown sex and age, and Moore (1899) reports encountering several burials in his excavations in Mound B, but thus far none have yielded any artifacts attributed to the de Soto or Luna era. Currently, there is still not enough evidence to say whether or not the site was visited by either

expedition. It is clear, however, that contact with these two expeditions introduced some sweeping cultural changes in this portion of the Alabama River Valley.

Matthew's Landing: A New Description

The analysis of the ceramics from several rounds of excavations at Matthew's Landing and the comparison of these results to other assemblages has produced a better picture of the community at Matthew's Landing. Some time during the late fifteenth century, the site was founded by people who most likely migrated from the Mobile-Tensaw delta region, and established a small mound center. The potters in this group made pottery that, according to traditional typologies and culture history, is associated with both the Mississippian and Protohistoric eras. A reanalysis of this material has established that the ceramics supposedly diagnostic of these two periods overlap temporally, which is what led to the earlier confusion surrounding the assigment of ceramics from the site to different components. In addition to building a small platform mound, the residents of the site also erected a low sandy mound, probably early in the settlement's history, since Curren (1984:84) reports a wall trench from a structure atop this mound. Houses extended from the larger mound in an arc along the terrace, and the area ringed by this settlement likely served as a plaza. Curren (1984:77) has suggested that the people of the Matthew's Landing site used the nearby Dale site (1Wx77) as a burial mound. Curren's excavations at Matthew's Landing have shown, however, that burials were placed both within and outside houses, and Moore's excavations revealed that burials also were placed into Mound B, following the contemporaneous burial mound tradition on the Gulf Coast. Wherever burials occurred, it is clear that over time, Matthew's Landing developed as a center culturally differentiated from contemporaneous occupations along the Gulf Coast. The potters at the site began to develop their own distinct ceramic styles, as Gulf Coast Mississippian pottery styles were gradually phased out over time. By the mid-sixteenth century, the site had been occupied for at least two, if not three, generations. Whether or not Matthew's Landing was visited by either the de Soto or the Luna expeditions, the site was not spared from the

effects of the brief European incursions. By the late sixteenth century, the site was abandoned, and the remainder of its residents had dispersed, likely resettling at other large towns in the region, such as the Liddell site.

CHAPTER 5
SUMMARY OF LATE MISSISSIPPIAN SITES IN THE ALABAMA RIVER DRAINAGE

In the Alabama River Valley, there have been relatively few large-scale modern excavations at Late Mississippian sites. Only about half of the excavation results have ever been published. In several cases, the only excavations at major mound sites were done by C. B. Moore over a century ago. This chapter represents one of the first attempts to summarize the excavations at some of the major Mississippian sites in the Alabama River Valley. There are other sites that have been omitted from this list[1]; however, the sites covered by this chapter are those for which excavation notes were readily available.

Figure 53. Map depicting locations of Late Mississippian sites discussed in the current chapter, as well as locations of Moundville and Bottle Creek.

Bear Creek (1Au7)

This site is located on the second terrace on the northern side of the Alabama River at its junction with Bear Creek in Autauga County (Figure 53). It was originally recorded by David Chase.

[1] Mound sites that have been located by survey but never subjected to intensive excavation include Towassa (1Mt200), Debardeleber (1Ee163/164), and Busman's holiday (1Ee40). Those mound sites are recorded by Dimmick (1989).

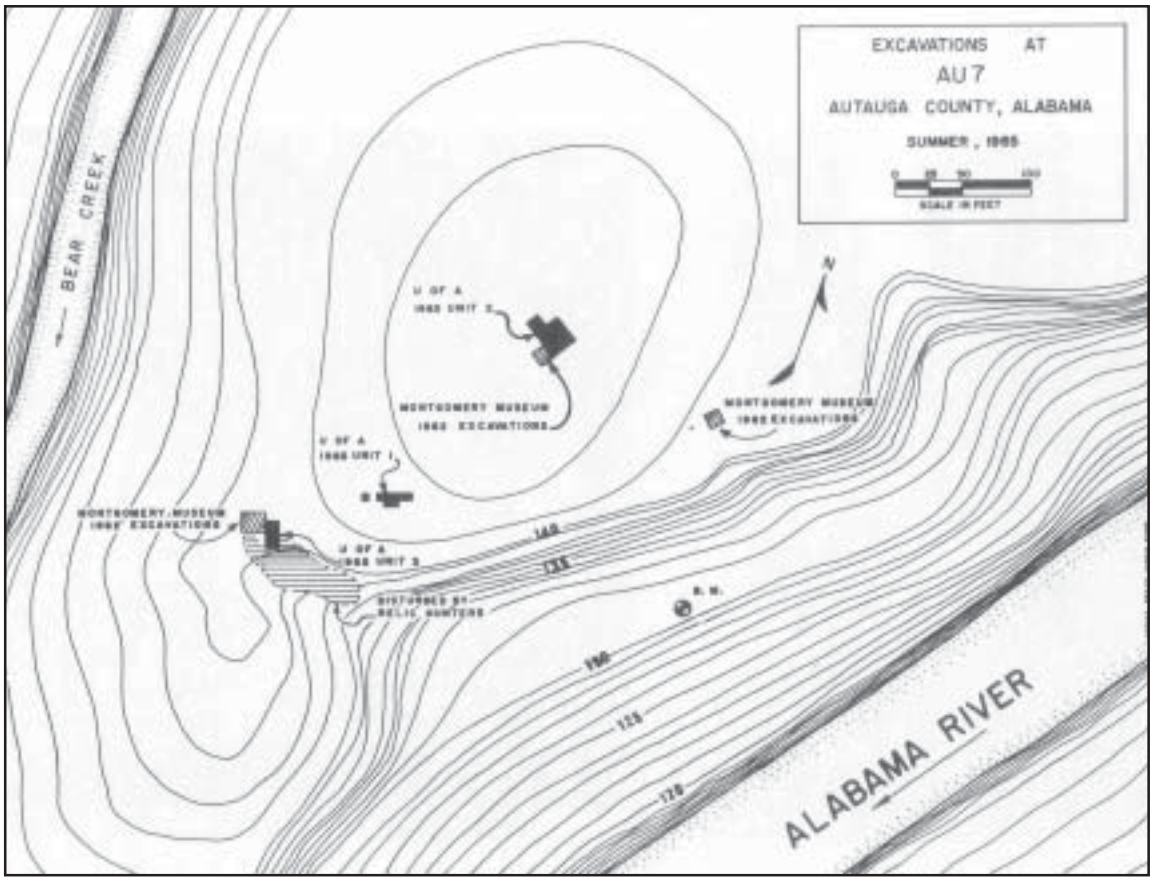

Figure 54. Contour map of the Bear Creek site (1Au7) showing location of Chase and Dickens' excavation units (Dickens 1971:27, Figure 7).

Chase considered Bear Creek to be the type site for the Terminal Woodland Autauga phase (Chase 1998:76). In 1962, Chase and a crew from the Montgomery Museum of Fine Arts conducted a series of excavations on three areas within the site boundaries (Figure 54). A portion of the notes from this excavation is curated at the Archaeology Laboratory at the University of Alabama at Birmingham (UAB), as are the artifacts. Additional artifacts recovered by Chase are curated at the Office of Archaeological Research in Moundville. Information concerning Chase's excavations at the site is drawn from these notes, although they do not appear to be the complete record of his excavations at the site. Additional work at the site was done in 1965 by Roy Dickens, who conducted excavations there while working for the University of Alabama. Dickens's work at the site was done as part of a program to test sites in advance of the construction of the Jones Bluff Lock and Dam Reservoir. The sites tested were

selected based on their potential to further the understanding of the late prehistoric and Protohistoric periods in the Upper Alabama River Valley. Dickens (1971:26) reports that the site at Bear Creek in particular was selected because it was judged to be endangered by both erosion and pothunting, which had occurred extensively in one area of the site. The artifacts recovered from Dickens's excavations are stored in the Erskine Ramsey Archaeological Repository at Moundville.

The notes curated at UAB possess information on the artifacts recovered from seven test units. Most of these units were excavated in 6 inch (15.2 cm) levels; those not excavated by arbitrary levels were placed in an area looted by collectors where midden soils and daub were visible at the surface. The amount of daub scattered about this area by pothunting activities suggested that the looters had partially destroyed the remains of a wattle and daub structure. Chase placed excavation units in this area in an attempt to salvage the house floor (Figure 55), and managed to uncover seven aligned posts, a concentration of pottery, mussel

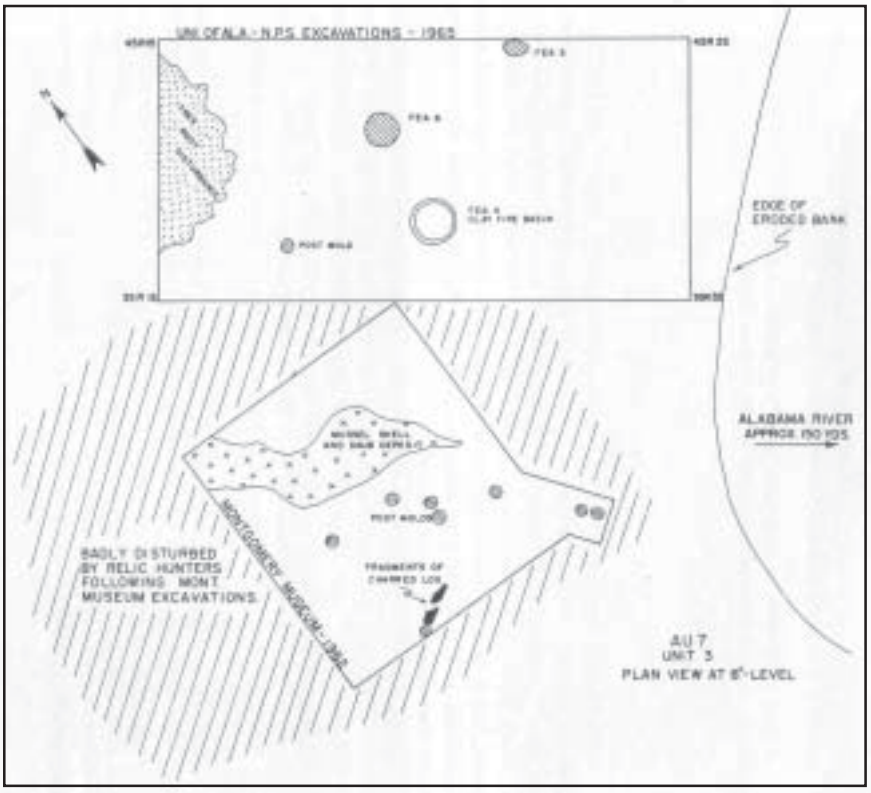

Figure 55. Map of Dickens's 1965 excavations and Chase's earlier unit at the Bear Creek site (Dickens 1971:35, Figure 10).

shells, and daub, as well as evidence of burned timbers. Unfortunately, all of these efforts were thwarted by the retaliatory actions of looters who returned to the site, dug through, and destroyed Chase's excavations shortly after he left the site. The units with concentrations of Mississippian material include X-6, Test Area Bank, X-9, and Excavation Area D over Feature 1a, which is presumed to be the structure.

Dickens (1971:26) reported both sand and shell-tempered sherds recovered from surface collections his crew conducted at the site. He noted that the sand-tempered sherds were scattered over an oval-shaped area measuring approximately 10 acres, while the shell-tempered sherds appeared to have been confined to small clusters along the riverbank. He suggested that these clusters may represent individual house locations, which were arranged in a linear configuration along the edge of the terrace. Dickens (1971:27) also conducted excavations in three areas of the site, called Units 1, 2, and 3; two of these areas were adjacent to Chase's original excavations. Unit 1, which consisted of a trench measuring 5 x 20 ft. (1.52 x 6.10 m) plus three 5 x 5 ft. (1.52 x 1.52 m) expansion units, was not located adjacent to any of Chase's excavations. This unit revealed a thin midden, measuring 4 to 6 inches (10.2-15.2 cm) in thickness, underlain by a seemingly random scatter of posts. Both sand-tempered and shell-tempered sherds were recovered from this test unit.

Unit 2 consisted of five 10-x-10 ft. (3.05-x-3.05 m) units excavated adjacent to a unit where Chase had recovered two burials. The new excavation unit yielded several features and a thicker midden, all of which were associated with the Autauga occupation at the site. Unit 3 was placed adjacent to one of the Chase excavation units, where Structure 1 was located. At the time Dickens arrived at the site, further destruction by the looters had left behind an extensive spoil pile, which included daub, charred wood, pottery, and human remains. Dickens relocated Chase's original excavation units, and then attempted to excavate another portion of the structure by adding two additional 10 x 10 ft. (3.05 x 3.05 m) units (see Figure 55). These units revealed the presence of a dense midden from the surface to 10 inches (25.4 cm) below the surface. This midden yielded a high density of Mississippian sherds along with scattered

Autauga sherds. At the floor of the house, a clay-lined hearth, two small pits, and a single post hole were exposed. These features yielded more Mississippian sherds, lithic artifacts, and shell. Unfortunately, work was stopped after the features were excavated due to time constraints.

Both Chase and Dickens assigned the Mississippian sherds recovered from Bear Creek to the Pensacola and Fort Walton series. The ceramic types they recorded, based on those created by Willey (1949), include Pensacola Incised, Pensacola Plain, Lake Jackson Plain, and Fort Walton Incised. Additionally, Dickens (1971:67) reported the recovery of several Alabama River Appliqué sherds (Figure 56). Because the chronology of Pensacola sherds had not been established at this time, Dickens (1971:102) was unclear whether the site dated to the Mississippian or Protohistoric eras, and thus assigned it only the broadest chronological affiliation, between AD 1400 and 1700. An examination of the Mississippian sherds from Dickens's excavations in his Plates XXII and XXIII (1971:68-69) demonstrates that the

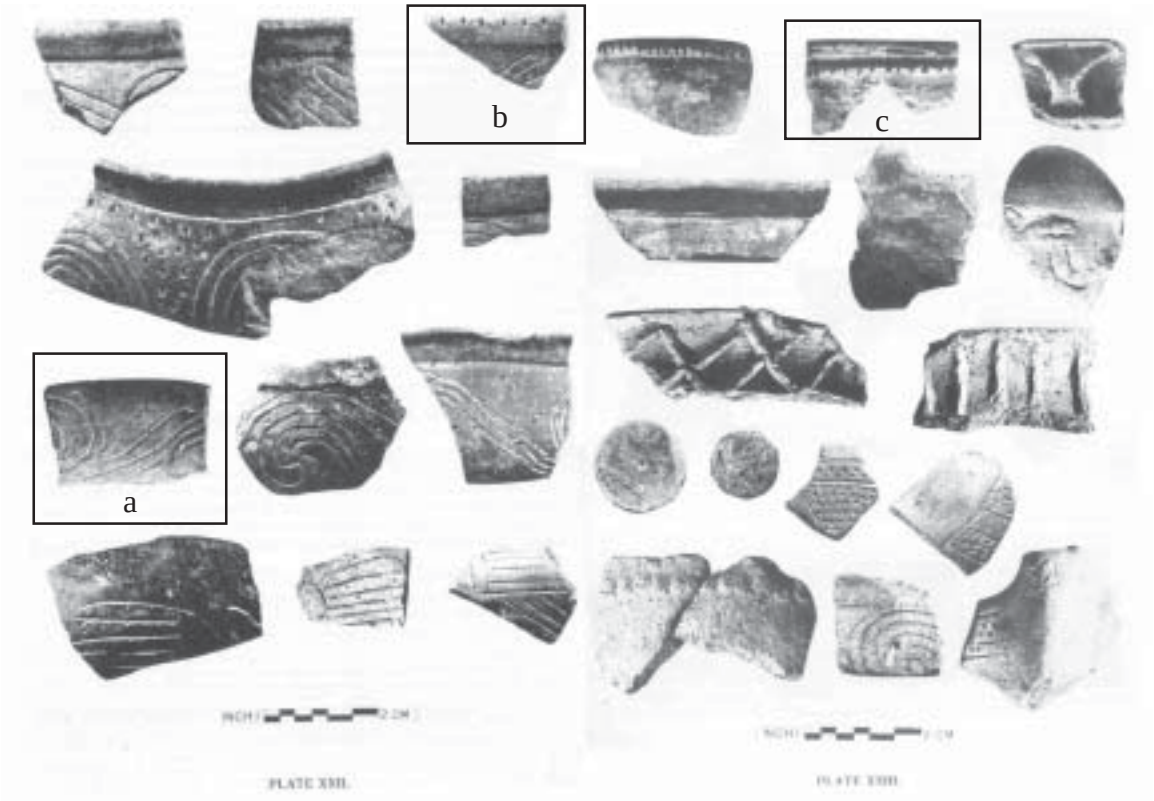

Figure 56. Dickens's Plates XXII and XXIII (1971:68-69), which depict sherds from three major Late Mississippian ceramic complexes, (a) Moundville, (b) Pensacola, and (c) Lamar, recovered from the Bear Creek site (1Au7).

occupation at the site may be more culturally complex than a simple Pensacola occupation. In his Plate XXII, reproduced in Figure 56, at least six of the sherds appear to be more closely related to late Moundville ceramics than to Pensacola. The Moundville-related sherds consist of short-necked bowls and a flaring rim bowl decorated with scrolling guilloches and short-necked bowls decorated with Moundville-style hand and long bone motifs. The two sherds on the upper left of Dickens's Plate XXIII appear to be hemispherical bowls with fillets applied just below the rim, which is a form typically associated with Lamar pottery. To better understand the ethnic composition of the group who lived at the Bear Creek site, both collections of sherds were reanalyzed. Data were collected from a total of 168 sherds from the Chase collections and approximately 289 sherds from the Dickens collections.

Old Cahawba (1Ds32)

Old Cahawba is known widely as the first capital of Alabama, serving in that capacity between 1820 and 1826. The town site is located at the confluence of the Cahaba and Alabama rivers in Dallas County. The Mississippian occupation at Old Cahawba was in the area that became the town center for the new capital. Until the 1850s, this area exhibited a single earthen mound and the remains of a palisade ditch. The mound was removed in 1858 to aid in railroad construction. From 1863-1865, the town center was used as a containment area for Federal troops captured during the Civil War, who were held in an unfinished cotton warehouse partially constructed several years earlier. Today the site is owned and cared for by the Alabama Historical Commission (AHC), ensuring no further construction in the site area. In the current site area, the locations of many of the original streets and buildings are well known, although the remaining buildings have been reduced to ruins. Clearly, the cumulative historic disturbance has taken a drastic toll on the Mississippian deposits at the site. However, some information has been gained from excavations at the site while it has been in the care of the AHC.

The bulk of the archaeology in the town center at Cahawba has been conducted in response to site improvements and proposed construction activities. The first such investigation

Figure 57. Contemporary Map of Old Cahawba site showing location of boat launch. Number 2 designates the area where the original archaeological site and the Castle Morgan Civil War prison were located (map courtesy of the Cahawba advisory committee).

was directed by David Chase in 1977. Chase conducted an examination of a proposed boat ramp to be constructed along the southern end of Vine Street, making surface collections of aboriginal pottery along the eroded river bank. While Chase (1977) recommended that the boat launch location be moved elsewhere, his recommendations were apparently not heeded, because the boat launch is now present at the site (Figure 57). In 1982, Chase prepared a report detailing a preservation plan for Old Cahawba evaluating how the proposed construction of visitor amenities in the portion of Cahawba acquired by the Alabama Historical Commision would affect the archaeological deposits. Chase (1982) conducted shovel tests in these areas and reported a single area of the town where concentrations of Mississippian material were recovered (Figure 58). The area of Mississippian occupation was in the vicinity of the Civil War prison, which is commonly known as Castle Morgan. Even with the substantial historic disturbances to this area, Chase (1982:18) reported the presence of artifacts from multiple phases of prehistoric occupation at depths up to 40 cm from tests placed along the bluff and in the picnic area south of Capitol Street. Chase assigned some of this material to a Pensacola phase component he suggested may date to the mid-sixteenth century.

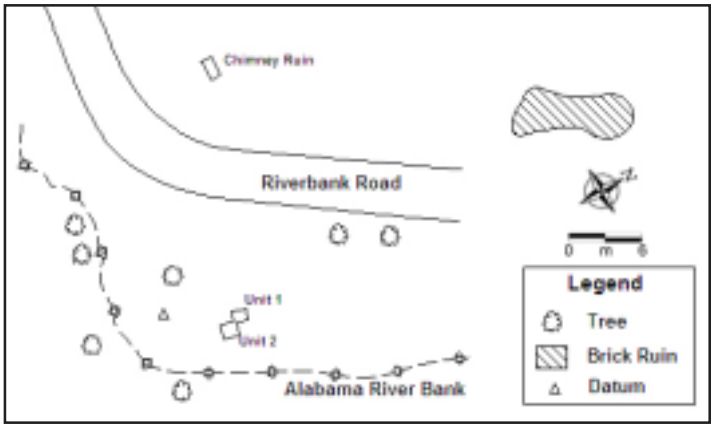

Figure 58. Digitized map depicting Chase's picnic area excavations (adapted from Chase 1982, Figure 15).

Finally, Chase (1982:20) reported on investigations of the area thought to be the original location of the mound leveled in the mid-nineteenth century. This area was bounded by Capitol Street on the north, Second Street on the south, Mulberry Street on the east, and Pine Street on the west. After intensive surface collection and the excavation of numerous shovel tests in the area, Chase found neither the remains of a mound nor prehistoric artifacts. While Chase did concede the possibility the remains of the mound were leveled completely, he suggested the more likely explanation is that any mound at the site would have been closer to the banks of the Alabama River, and the Castle Morgan area had been designated incorrectly as the area where the mound was once located.

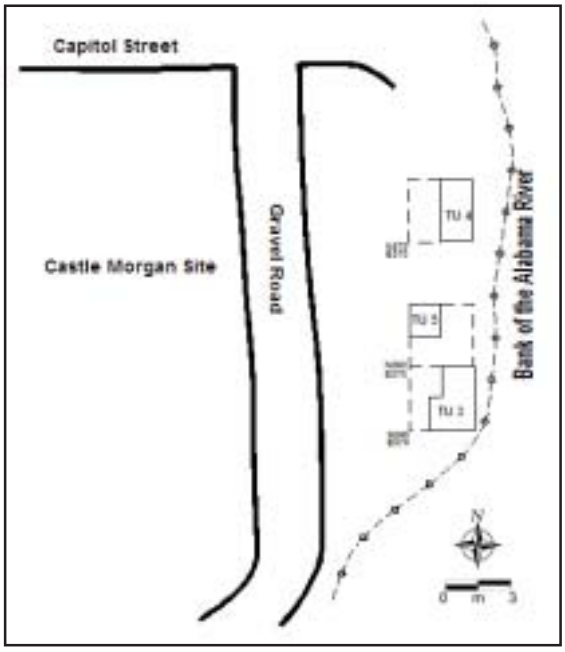

Figure 59. Digitized map of Chase's 1986 riverbank excavations at Old Cahawba (1Ds32) (original map courtesy of Linda Derry, Alabama Historical Commission).

In 1986 Chase conducted additional excavations along the banks of the Alabama River aimed at further evaluating the prehistoric site detected in this area. Chase opened three more units along the edge of the bank (Figure 59). He detailed his findings in these units in a brief report submitted to Linda Derry, the archaeologist who presently oversees the site. The first unit, which he numbered Unit 3, following the original two units placed during the 1982 investigation, was in a largely undisturbed area. In this unit, which measured five feet (1.52 m) east-west by ten feet (3.05m) north-south, Chase excavated four six inch (15.24 cm) levels before reaching sterile clay. The sherd frequencies by level show a concentration of Mississippian material overlying artifacts associated with an earlier Whiteoak phase occupation that Chase (1998:73) dated to the Late Woodland period (A.D. 700-800). In his report, Chase again asserted that the Pensacola occupation likely dates to the mid-sixteenth century.

He also compared the site at Old Cahawba to Mabila, because of the presence of a ditch around the town square area assumed to be a palisade ditch around the site. Chase also noted the presence of fired daub and charcoal and several post holes found in the unit, which may suggest that some of the structures at the site burned; however, as he acknowledged, the archaeological record shows that wattle and daub structures burned frequently in prehistory due to a variety of causes completely unrelated to Spanish entradas.

A second unit, Unit 4, was placed five feet (1.52 m) north of Unit 3. This unit measured 5 x 5 ft. (1.52 x 1.52 m) and was excavated down two levels. At the base of Level 2, a historic feature was encountered in the northern half of the unit. Chase excavated down another level in the southern half of the unit before abandoning his excavations. Level 3 yielded daub fragments Chase describes as "large and thick" and evidence of several post holes and possibly a clay floor. Chase stopped at Level 3 to avoid further disturbance to the historic feature in the northern half of the unit. The third unit Chase excavated, Unit 5, was another 5 x 10 ft. (1.52 x 3.05 m) unit dug parallel to the bank slightly to the north. Only one level was excavated in this unit because Chase encountered a brick scatter and did not wish to disturb any of these deposits. This brick scatter was likely related to Castle Morgan, and Chase suggested further excavations in that area to determine if the use of the site as a prisoner camp completely obliterated any prehistoric deposits within the prison walls.

Further excavations at Cahawba were conducted in 1987 by two teams from the University of Alabama. The first set of excavations was performed in March under the direction of Vernon J. Knight. The goal of Knight's (1987:1) excavations was to determine whether a semicircular feature was indeed an "Ancient Indian Work," as it was called on the 1817 survey map of the town site. A circular feature, presumably the mound, also was depicted within the semicircular feature (Figure 60). The presence of a palisaded village in the Lower Cahaba River directed archaeological attention to the site, and led Hudson et al. (1985) to suggest that the site was part of the province of Mabila, where de Soto and his army defeated the forces of Chief Tascalusa in a demoralizing battle. Knight (1987:5) notes that his excavations were not

Figure 60. 1817 Map of the Cahawba land district depicting original mound site surrounded by palisade wall (map courtesy of Cahawba Advisory Committee).

focused on proving the site as Mabila, but rather on confirming general characteristics any candidate for the site of Mabila must possess. These include a compact, fortified village, many burned structures, and Spanish artifacts. Initially, Knight's testing focused on determining whether the ditch, which had since been filled in, was part of a defensive structure. To this end, an area 5 feet (1.52 m) wide and 47.5 feet (14.48 m) long was excavated over the filled in trench down to sterile subsoil. Predictably, most of the overlying strata yielded large quantities of nineteenth-century artifacts. The lower levels included Pensacola sherds in primary context as well as posts indicating the presence of a palisade wall, consisting of a series of nine posts six inches (15.2 cm) in diameter spaced 1.3 feet (39.2 cm) apart (Figure 61). These posts were quite shallow, which caused Knight (1987:6) to conclude that an embankment at the base of the palisade wall was leveled off at some point (Figure 62). At the base of the entrenchment, substantial evidence of burning was recovered; this included fragments of daub likely associated with the palisade wall.

Knight also tested inside the palisade wall, searching for evidence of burned Late Mississippian structures. These units were placed over a unit excavated in 1986 by the Alabama Museum of Natural History Summer Expedition crew, which encountered intact Mississippian deposits. In this area 225 square feet (68.6 m^2) were excavated down through the midden to expose features in the sterile soil at a depth of approximately one foot (30.5 cm). The features encountered included 19 post holes, four midden concentrations, and a large

refuse-filled pit (Figure 63). Although some burned daub was recovered, the post holes were not arranged in any order and are not likely to be associated with a structure.

The second series of excavations at Cahawba in 1987 were carried out during the summer by students in a field school taught by Richard Krause, who was assisted by Troy Martin. This series of excavations also was aimed at recovering evidence of the de Soto expedition. An additional goal was to provide a detailed sequence of each fill episode in the defensive trench. Krause also supervised the production of a topographic map of the former stockade area, which shows a possible mound remnant, although this could just as easily be the result of some historic construction (Figure 64). Excavation of the ditch was completed after sterile subsoil was encountered at a depth of 5.4 feet (1.34 m), and a detailed profile map was created (Figure 65). Martin (1989:73) documents nine episodes of fill in the trench, six of which were intentional. Additionally, Martin (1989:73) notes that in the area of the summer excavations, the burned area at the base of the ditch was found to contain both aboriginal and early nineteenth-century historic material. Again, no evidence of sixteenth-century Spanish artifacts was found in this series of excavations.

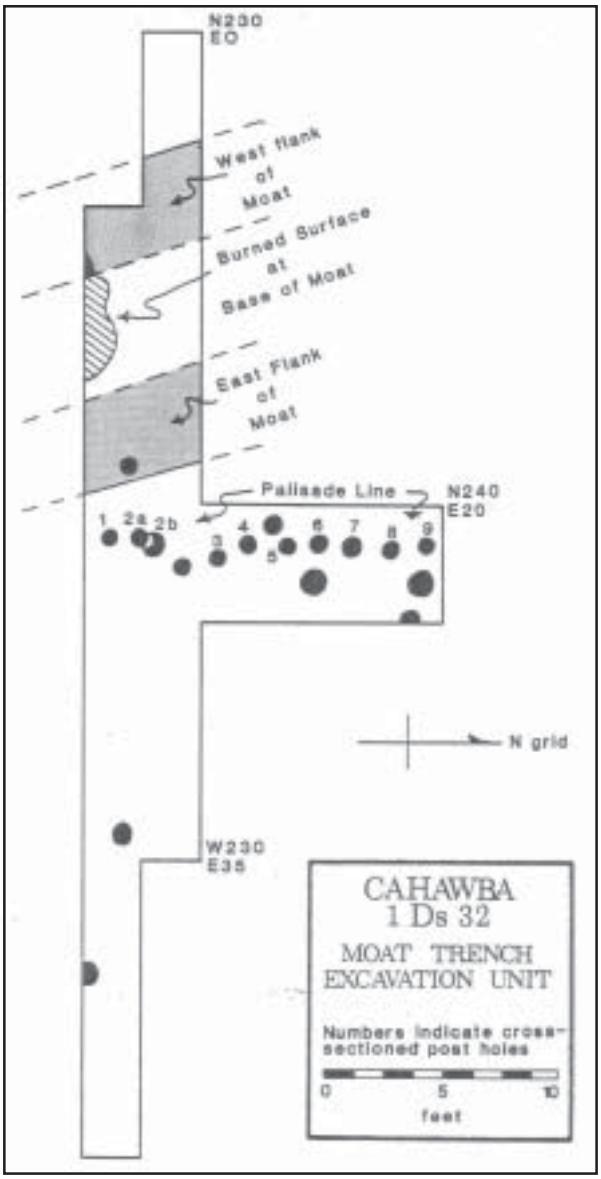

Figure 61. Map of moat trench excavation unit from Knight's 1987 excavations (Knight 1987:7, Figure 2).

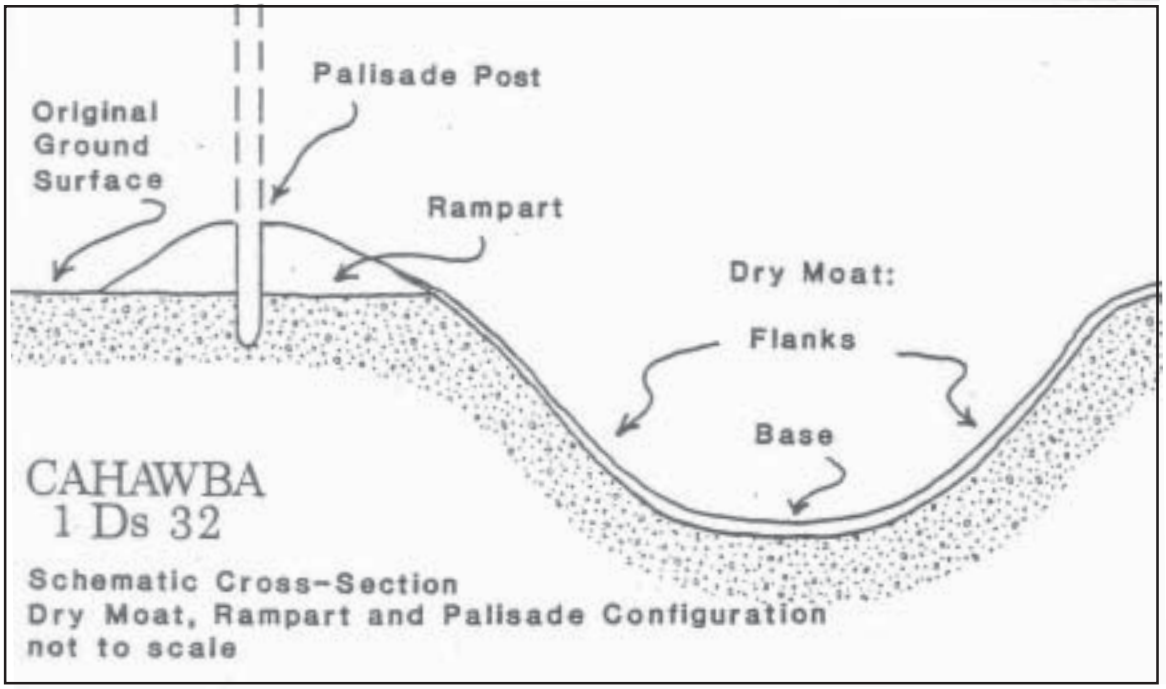

Figure 62. Knight's reconstruction of the structure of the moat at the Old Cahawba site (Knight 1987:8, Figure 3).

For the present study, I examined the sherds recovered from Chase's excavations, primarily to evaluate whether the ceramic assemblage did display ties to Pensacola ceramic traditions. Because of the cumulative effects of historic disturbances, the ceramic collections from the site are few in number and the sherds are small in size. The few incised sherds with motifs large enough to discern possessed the stylized skull and separated guilloche motifs typical of late Pensacola pottery along the Gulf Coast, suggesting strong ties to that ceramic tradition. It is interesting to note many of the sherds also exhibited moderate to heavy inclusions of grog in their paste. This type of paste also was observed frequently in the ceramic assemblage from the Matthew's Landing site (1Wx169). Because of the small size of the ceramic assemblage at Old Cahawba, it is difficult to draw any definite conclusions about the people who lived at the site. However, the few excavations at the site suggest two things, (a) the Mississippian inhabitants produced pottery closely tied to Pensacola traditions, and (b) some intact Mississippian deposits may remain at the site and could be excavated to further understand the relationship of the Mississippian settlement at the site to the rest of the communities in the Alabama River drainage.

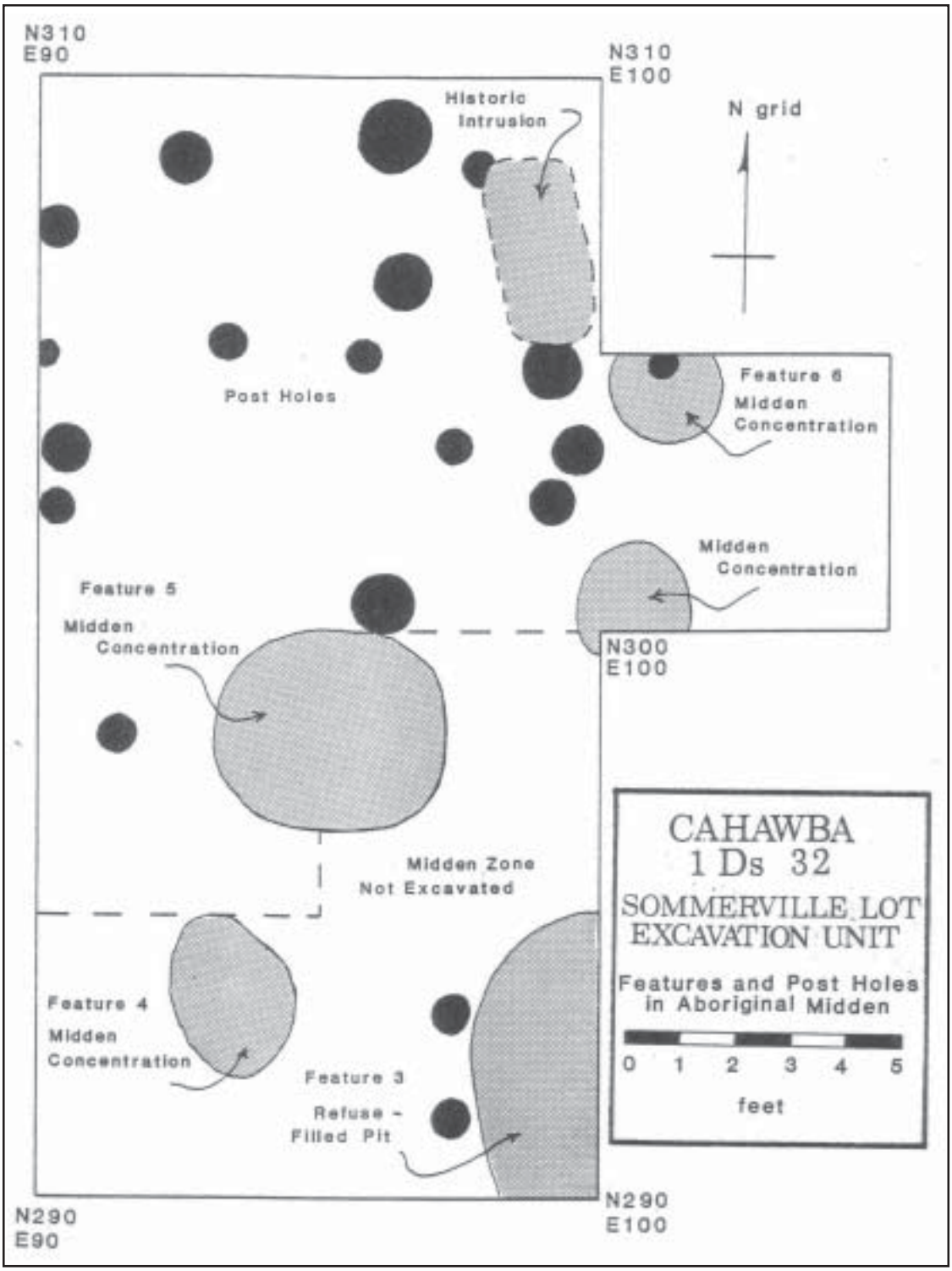

Figure 63. Plan view of features uncovered by Knight in a block excavated during the 1987 season at Old Cahawba (Knight 1987:10, Figure 4).

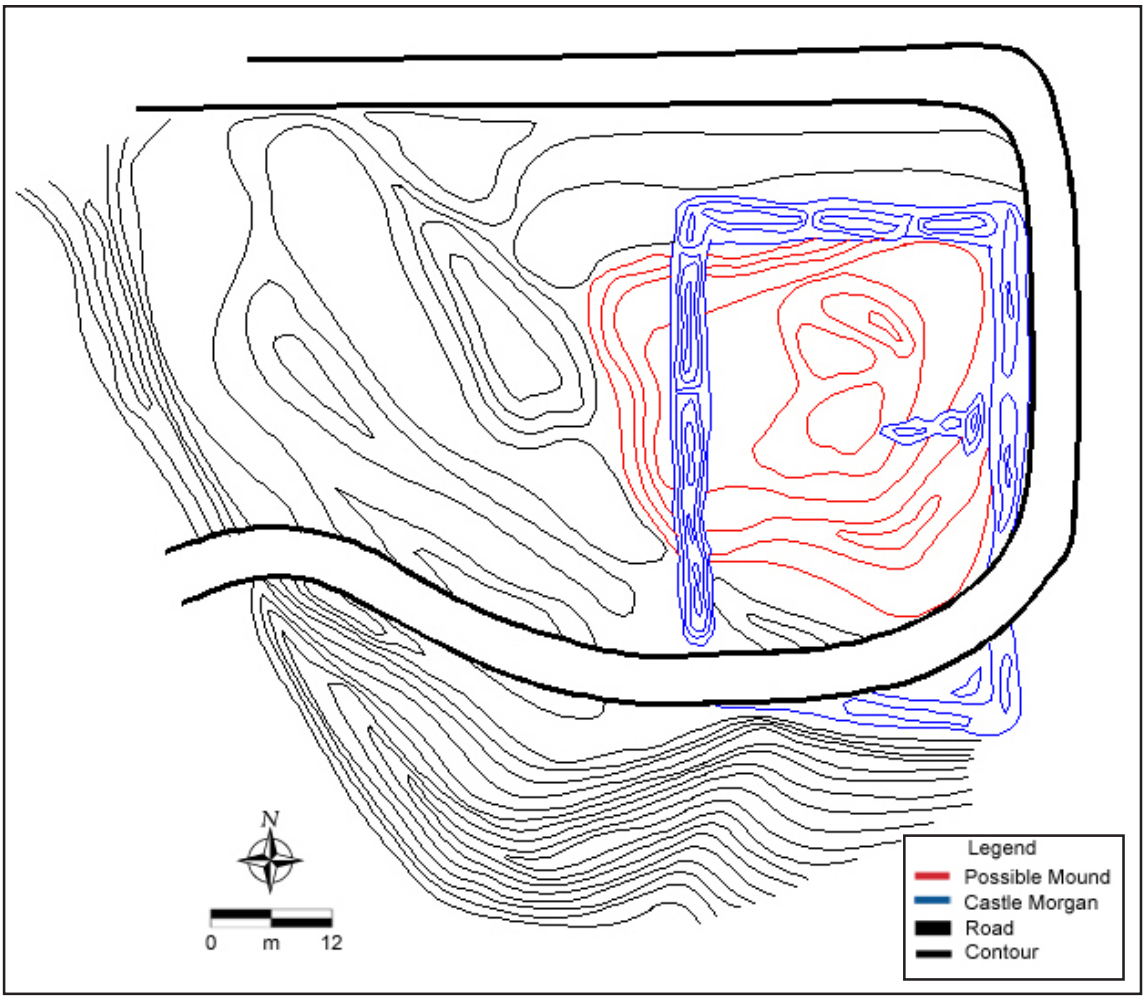

Figure 64. Map based on incomplete field contour map from Krause's 1987 excavations at Old Cahawba. The outlines of Castle Morgan are shown in blue and the possible remnant of the original mound is shown in red.

Durant Bend (1Ds1)

The Durant Bend site is located in the narrow neck of land in a large bend in the Alabama River in Dallas County. The Alabama State Archaeological Site File lists the site as officially recorded by David L. DeJarnette, but the first documented excavations at the site were done much earlier by C. B. Moore in 1899. Moore spent a great deal of time at the site, which he erroneously termed the "Aboriginal Cemetery, Durand's Bend." Prior to Moore's visit to Durant Bend, the Great Flood of 1886 (which contributed to the further abandonment of the town of Cahawba downriver) inundated the terrace and left exposed burials upon recession of the water. The presence of these exposed burials attracted a number of looters, who probed

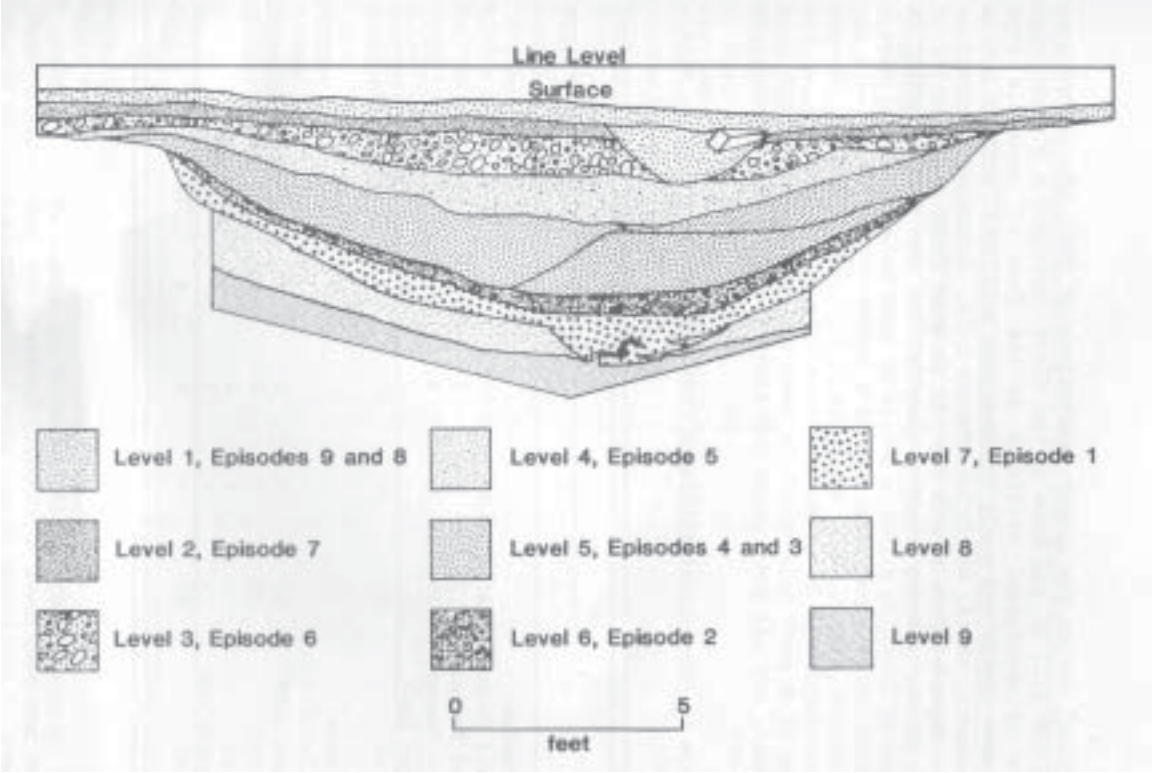

Figure 65. Profile of trench excavated during Krause's 1987 excavations (Martin 1989:60, Figure 2).

about the site and excavated a number of urn burials before Moore's arrival. Eventually the landowner put a stop to this activity, but a great deal of damage already had been done.

Because of the presence of numerous urn burials, which had piqued his interest downriver at Matthew's Landing, Moore spent a total of nine days at the site. After Moore had sent workers testing across the site at intervals with a probe rod, the bulk of his excavations focused on a field approximately three acres in size. He noted the presence of numerous sherds on the surface, some of which were fragments of burial urns and some of which were check-stamped. It is unclear if Moore recognized that these check-stamped sherds belonged to an earlier Woodland component, although he does suggest they were likely fragments of cooking pots (Moore 1899:306). Moore also took a particular interest in the ground stone artifacts recovered from the site, and reports the recovery of one discoidal, a chisel-like implement, and a bannerstone. Additionally, he reports recovering two pendants, one made of earthenware and the other made from the tooth of a large carnivore.

As always, however, it was the burials that most intrigued Moore. In the two trenches excavated at the site, Moore discovered 25 extended and 2 bundle burials. Moore (1899:307) notes that the frequency of missing bones among the remains buried in an extended position suggests that they were allowed to decompose before burial. Only one of these burials were accompanied by grave goods. In addition to these burials, Moore excavated 22 urn burials, which possessed a total of 39 vessels. Moore (1899:309-319) gives a detailed report of each vessel type, any grave goods, and the number and age of the individuals interred in each of the urn burials. The most complex of these burials consists of five vessels arranged in a highly unusual pattern (Figure 66). Unlike many of the urn burials excavated elsewhere by Moore, only one infant was interred in this burial urn, along with a few shell beads. It is interesting that Moore made no note of the mound in the center of the site.

In 1970, Roger Nance of the University of Alabama at Birmingham conducted excavations in several areas of the Durant Bend site (Figure 67). Nance (1976:13) described the site as measuring approximately 230 m east-west by 185 m north-south, with a single earthen mound near the center of this area. Because the site had been disturbed rather severely by plowing, flooding, and looting, Nance and his crew sought to test whether any undisturbed midden areas remained and to better understand the sequence of occupation. Nance (1976:15) selected seven locations for testing, consisting of the Mound, the East Midden, the North Midden, the Northwest Midden, the West Midden, a surface shell concentration approximately 16 m north of the mound, and west of the East Midden. The East Midden and the unit to the west yielded the most material related to the Mississippian occupation at

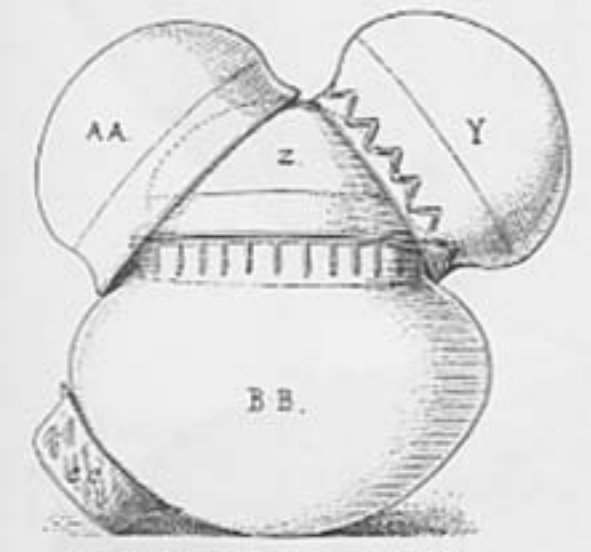

Figure 66. Urn burial excavated by Moore at the Durant Bend site (Moore 1899:317).

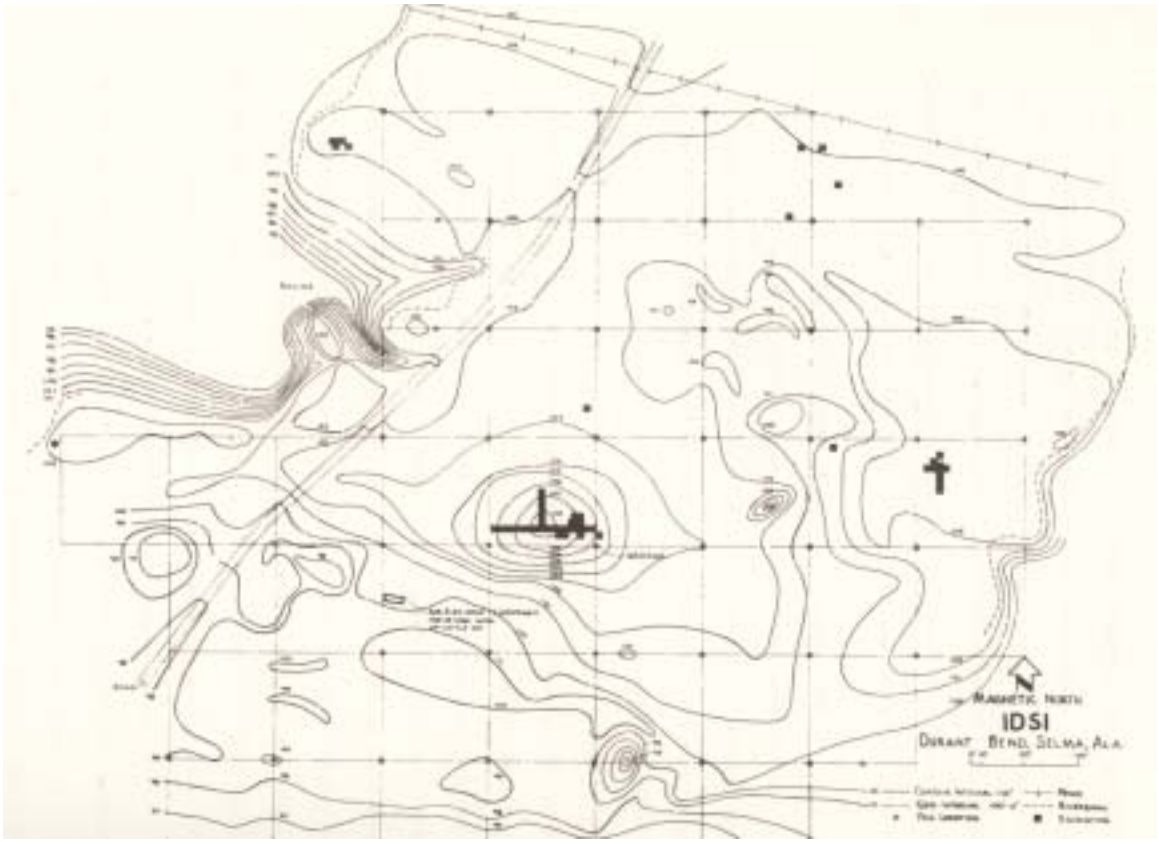

Figure 67. Location of Nance's 1970 excavations at the Durant Bend site (Nance 1976:14. Figure 1).

the site (Figure 68). The excavations in the West, Northwest, and North Middens all recovered smaller amounts of shell-tempered pottery. The mound, however, yielded only pottery associated with Weeden Island culture, suggesting that it can be attributed to one of the Woodland occupations of the site.

Nance (1976:123) noted that the East Midden, along with the North Midden, represents the most disturbed area of the site. In the East Midden area, five 6 x 6 foot (1.83 x 1.83 m) units were stripped of plow zone and then excavated in six inch (15.2 cm) levels. A trench measuring 6 x 30 ft. (1.8 x 9.15 m) was stripped of plow zone to search for features. The cultural deposits in the East Midden extended to a depth of approximately 34 inches (86 cm). Deposits in the east midden consist of a 14-inch (35.6 cm) plow zone of disturbed midden soils yielding artifacts, shell, and animal bone. Nance (1976:124) reported that only a thin remnant of the midden remained intact below the plowzone. In two of the units, the remains of a

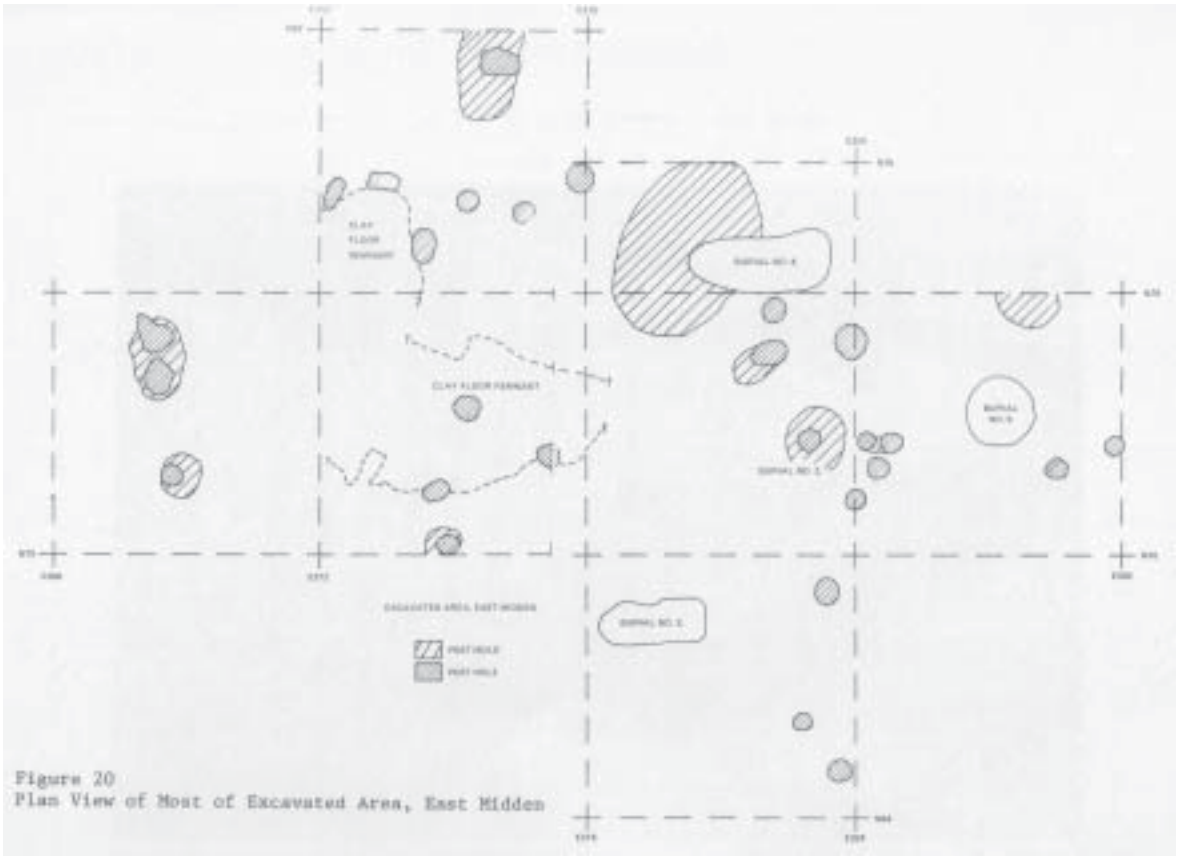

Figure 68. Plan view of partial structure excavated in the East Midden by Nance at the Durant Bend site (Nance 1976:125, Figure 20).

packed clay floor and associated post underlay the plow zone. Five infant burials also were encountered in the East Midden; one of these was a double interment with a globular jar situated over the individuals' skulls.

In the North Midden, units were excavated into a shell midden dating primarily to the same period as the mound. Although no significant Mississippian occupation was detected in this area of the site, scattered shell-tempered sherds were recovered from the North Midden units. Excavation units were placed in the Northwest Midden area due to the presence of two shell-tempered sherds eroding from the river bank. The units in this area yielded sand-tempered sherds related to a Terminal Woodland Autauga phase occupation. Additionally, several sherds of Moundville Incised, *var. Moundville* globular jars with folded rims were recovered from this area. This type is dated to the Moundville I phase (A.D. 1120-1260), and may represent an Early Mississippian site-unit intrusion contemporaneous with the Late Woodland Autauga

occupation, which is not altogether uncommon in this region, as evidenced by the Cedar Creek mound (1Ds172). Shell-tempered sherds dating to the later Mississippian occupation, including appliqué jars and incised casuelas, also were recovered from the Northwest midden. Because the Moundville ceramic sequence is well-established, the later Moundville-related pottery is easily distinguishable from that associated with the earlier occupation. Nance (1976:119) reported that the West Midden ceramic assemblage was virtually identical to the one recovered from the Northwest Midden. Because these two areas are separated only by an erosional ravine, it is likely that at one time they were part of a single area of refuse disposal.

Because there was no universally agreed-upon ceramic typology for the Middle Alabama River Valley and the types used did not always fit the Durant Bend assemblage, Nance attempted an attribute analysis of the sherds recovered during his excavations. Additionally, Nance (1976:19) justified his analysis by noting that he was reluctant to create a ceramic typology based solely on the collections from a single site. In Nance's analysis, sherds were divided into lots based on three criteria: (a) site area; (b) surface design and decorative technique; and (c) temper. A typical lot name in this analysis, therefore, is "Northwest Midden, Appliqué, Shell-tempered." It is clear that this technique worked reasonably well for the Woodland Deptford, Weeden Island, and Autauga sherds; however, for the East Midden sherds, more lot designations had to be added to accommodate the diversity of decorative motifs and rim modes present in the Late Mississippian assemblage. With the addition of the new modes and motifs, the lot names became increasingly complicated, and it became increasingly apparent that this system did not work well for an assemblage with a high variability of incised designs and rim modes.

In 1982, Craig Sheldon returned to Durant Bend with the University of Alabama Museum of Natural History's Summer Expedition program. The goal of Sheldon's excavations was to locate the area of the East Midden in which Nance had unearthed the packed clay floor and try to excavate the rest of the structure. Sheldon's field notes from the site, which are curated in the archaeology laboratory at Auburn University-Montgomery, show that Nance's

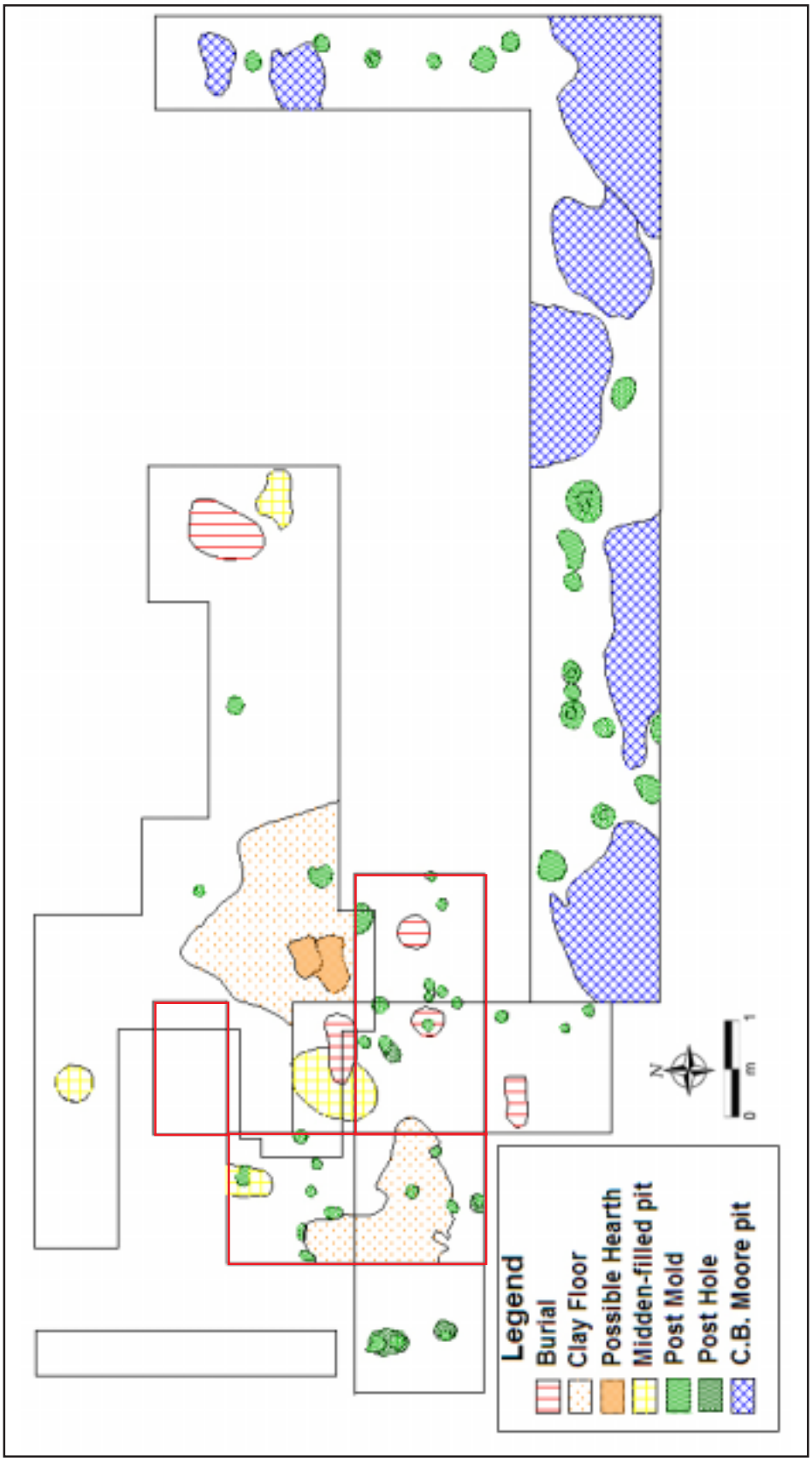

Figure 69. Map of Sheldon's 1982 excavations and Nance's 1970 excavations (outlined in red) at the Durant Bend site (1Ds1).

units were quickly relocated (Figure 69). The plow zone was stripped from a series of units excavated in the area, and more of the packed clay floor area was revealed and designated Feature 15. One of the first features to be found was Feature 12, an intact pit filled with midden soil. In this block of excavations, which lay along the northern and eastern side of Nance's excavations, two burials disturbed by the plow were also discovered. Sheldon also placed a long excavation trench measuring 2 m north-south and 11 m east-west at the southeastern edge of Nance's excavation units. A trench 1 m wide was extended 8 m to the north at the eastern end of this trench. In the new extension unit, a series of features were met with. Sixteen of these were post holes, and seven were large pits. Initially, it was thought that these pits might represent cultural features. After observing the loose mottled soil and irregular dimensions, Sheldon concluded that these features, which covered much of the southeastern excavation block, were almost certainly backfilled holes from C. B. Moore's excavations at the site. Most of the units in the East Midden area were either disturbed from looter activities or failed to find significant cultural features. Because the end of the excavation was drawing near, Sheldon decided to have the plow zone mechanically stripped in two areas to search for features. Before any of these features could be excavated, however, time ran out for the expedition.

Because both Nance's and Sheldon's excavations yielded relatively large samples of sherds available for study, the pottery from Durant Bend was included in the present analysis. The sherds from Sheldon's 1982 excavation were not previously analyzed. Data were collected from a total of 343 sherds from Nance's collections and from 177 sherds from Sheldon's collections.

Charlotte Thompson Place (1Mt51)

The mound at Charlotte Thompson Place represents the first of three Mississippian mounds visited by C. B. Moore in the vicinity of present-day Montgomery. No other mound site in the Alabama River Valley at which Moore excavated has intrigued archaeologists as much as Charlotte Thompson. When Moore (1899:319) visited the site, he described it as a mound situated on a natural ridge 67 feet (20.4 m) on a side at the base and 9 feet (2.7 m) in height.

This mound was shaped like a truncated pyramid, and the summit of the mound measured 32 feet (9.8 m) per side. At Charlotte Thompson, the mound had not been cultivated, although looters had dug a trench approximately 10 feet (3 m) wide from one edge of the summit nearly through to the center of the mound. Moore (1899:319) began his excavation of the mound by placing a trench from the flank of the mound all the way to the center. Approximately 4.5 feet (1.37 m) from the flank, a burial was encountered, and Moore extended his trench, essentially excavating through the entire mound. By the time he was finished, Moore (1899:320) noted, "a mere shell was left standing, in which, presumably, there are few if any interments." Moore (1899:320) reported that the mound was composed of a platform of clay approximately 3 feet (1 m) thick covered over by a layer of sand making up the rest of the feature. The mound was intriguing, because as Moore (1899:32) notes, "from top to bottom, were objects of iron, of glass, and of other material, derived from the whites, which proved the mound to be of post-Columbian origin." It should be noted here that on the very same page, Moore (1899:320) reported that the multiple burials found within the mound were jumbled, because many were bundle burials, and his crew had trouble distinguishing interments from one another. The artifacts Moore recovered from this mound are curated in the collections of the Smithsonian Institution's Museum of the American Indian and were examined as part of the present study.

Figure 70. Plain shell gorgets from C. B. Moore's Montgomery County excavations (Smithsonian Accession Number 170979.000).

The artifacts recovered from the Charlotte Thompson mound proved to be a diverse mix of sixteenth-century Spanish materials and artifacts of native manufacture. A substantial portion of the native materials were made from marine shell; the shell objects of personal adornment consisted of 27 plain shell gorgets (Figure 70), along with a large quantity

of shell beads, pins made from whelk columellas, and ear plugs. Shell and bone fish hooks, a shell scraper, and a marine shell cup were also recovered. The chief reason for studying this collection was to better understand the ceramics from the three mound sites in Montgomery County, the site under discussion, Thirty Acre Field, and Big Eddy, whose ceramics are believed to be related closely to those of Moundville. Only two whole vessels were preserved in the collection, although Moore (1899:323) notes that a large quantity of sherds of a "good ware" were found during the mound excavations. Both of the vessels from the site curated at the Smithsonian are miniature vessels reported to have been found interred with a single individual (Moore 1899:323-324). The first of these bowls (Figure 71) appears to be vaguely related to Pensacola-style casuelas, because it is decorated with incising and punctation and has a shape similar to a casuela. The ware for this vessel is somewhat peculiar, because it is tempered primarily with fine to moderate sized particles of crushed shell, although the paste also exhibits very heavy inclusions of grog. The second vessel (Figure 72) is clearly a Moundville-related flaring rim bowl decorated

Figure 71. Pensacola Incised-derived miniature casuela bowl recovered from the Charlotte Thompson site by Moore (Smithsonian Accession Number 174435.000).

Figure 72. Incised flaring rim bowl with Moundville-derived hand and long bone motif recovered from the Charlotte Thompson site by Moore (Smithsonian Accession Number 174434.000).

Figure 73. Pair of spatulate-shaped ground stone celts recovered from Montgomery County sites by Moore (Smithsonian Accession Numbers 172789.000 and 172190.000).

with a hand and long bone motif. The ware for this vessel is a more typical fine to very fine crushed shell with no grog inclusions, although the vessel is not burnished and fired in a reduction environment to produce a black filmed effect. Pottery fired in a reduction environment frequently occurs in ceramic assemblages from Moundville-related sites. Other ceramic artifacts recovered from the mound include several discoidals, a single handle from a globular jar, three pipes, and a pottery trowel. Moore (1899:326) reports finding multiple ground stone objects, including a stone gorget, 13 celts, and three "hoe-shaped implements" (Figure 73) which intrigued him so greatly he later wrote a summary of these objects in the Southeast (Moore 1903).

The copper objects Moore recovered from the Charlotte Thompson mound will be discussed along with the Spanish artifacts, as some of these artifacts may have been made by Native Americans from European materials. Moore (1899:326-327) reports finding nine projectile point-shaped copper ornaments decorated with embossing and having holes punched in one end (Figure 74). Numerous ornaments of this type, which are decorated consistently with a slightly varying motif resembling a human eye, were found in burials

Figure 74. Two embossed copper projectile point-shaped badges recovered from Montgomery County sites by Moore (Smithsonian Accession Numbers 170146.000).

at the Big Eddy and Thirty Acre Field sites located upriver as well. Smith (1987:100, Figure 52) illustrates two of these artifacts from the King site in northwest Georgia, and similar artifacts also were recovered from the Pine Log Creek site in the Mobile-Tensaw delta. Brain and Phillips (1996) group these and similar badges into the Thirty Acre Field style (1996:292,373). Another projectile point shaped artifact, which is not decorated, was recovered with a remnant of a cord and six attached shell beads (Figure 75). This artifact, which is substantially thicker than the embossed projectile point shaped objects, appears to be made of European brass and not native copper. In addition to these artifacts, two matching pendants that appear to represent some sort of serpentine shape (Figure 76) also were recovered. The most spectacular metal artifact recovered from the mound was the Charlotte Thompson plate (Figure 77), a brass plate with a punched design showing a bird flanked by two lions. The designs on this brass plate are taken from European heraldry and are in no way derived from typical Southeastern Native American iconography. Two other similar plates, which appear to date to the 1560 Luna

Figure 75. Cuprous metal projectile point with preserved cordage and pearl beads recovered from the Charlotte Thomspon site by Moore (Smithsonian Accession Number 170203.000).

Figure 76. Serpentine-shaped sheet copper ornaments recovered from the Charlotte Thompson site by Moore (Smithsonian Accession Number 170216.000).

Figure 77. Sheet brass plate with Spanish heraldic design consisting of an eagle flanked by two lions recovered from the Charlotte Thompson site by Moore (Smithsonian Accession Number 170219.000).

expedition, have been recovered in the Southeast. These are the Coosawattee Plate, found at the Poarch Farm site in Northwest Georgia by an artifact collector and the plate found at St. Mary's Wildlife Refuge Cemetery in Northwest Florida (Smith 1956). Moore also recovered two plain gorgets composed of a cuprous metal, which he sampled and had tested by a chemist in Philadelphia, who reported that one piece was clearly native copper, while the other had numerous impurities, which it would have picked up during the course of the smelting process used by Europeans. Additional artifacts made from European brass include three bells (Figure 78) of the Clarksdale type (Brown 1979), a portion of a

Figure 78. Three sixteenth-century Spanish brass bells of the Clarksdale type recovered from the Charlotte Thompson site by Moore (Smithsonian Accession Number 170217.000).

Figure 79. Cast brass bell fragment recovered from the Charlotte Thompson site by Moore (Smithsonian Accession Number 173059.000).

Figure 80. Possible candlestick base made of brass recovered from the Charlotte Thomspon site by Moore (Smithsonian Accession Number 173058.000).

bell of another heavier type (Figure 79), and what appears to be the base of a candlestick (Figure 80). Also in the collections from this site were a few iron chain links and two iron spikes, which were reported to have been found at all depths in the mound, even at its base (Moore 1899:331). The other significant European artifacts consisted of glass beads. Two of these are seven-layer chevron beads likely from the sixteenth century (Figure 81), which were accompanied by a single straight aqua-colored layered cane bead of the Nueva Cadiz type (Smith 1983).

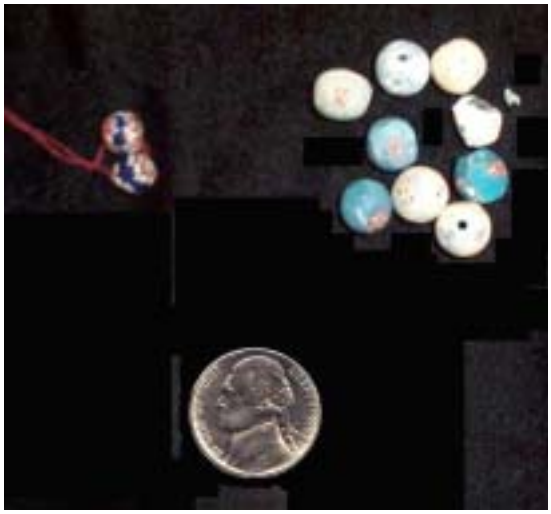

Figure 81. Seven-layer chevron glass beads and aqua round beads with millefiori "eyes" recovered by Moore from the mound on Charlotte Thompson place (Smithsonian Accession Numbers 170052.000 and 170051.000).

Moore's excavations represent the only archaeological work conducted at the Charlotte Thompson site. After a recent visit, Ned Jenkins (personal communication, 2006) reported that all traces of the mound have been obliterated. Moore (1899:332) also reports

the presence of a rise covered with midden soil, which may have been from the village presumably associated with the Charlotte Thompson mound. It is unclear whether any of the village deposits remain intact, but if this is the case, further excavation at the site is called for to better understand the temporal affiliation of the site and nature of the ceramic assemblage. The material Moore recovered offers the tantalizing suggestion that in a portion of the Alabama River Valley, some form of mound construction and burial, and possibly chiefly hierarchy, persisted into the post-contact era up to and possibly even beyond the 1560 visit of the advance party of the Tristan de Luna expedition. It is unclear whether Charlotte Thompson represents one of the principal towns of Tascalusa, as mentioned by the chroniclers of the de Soto expedition. At multiple points in his report on the site Moore (1899) insisted that European artifacts were found even in the lowest levels of the mound. This may mean mound construction began after initial European contact, perhaps as a way of starting anew after the disastrous battle at Mabila. Before jumping to conclusions, however, it must be remembered that Moore's field methods and recording were not acceptable by modern standards. His frustration at separating individual burials in the Charlotte Thompson mound was likely the result of situation in which multiple burial pits intruded upon one another, or perhaps the result of the burial of multiple individuals in a single mass grave. Whatever the situation, the continued use of this mound after contact is unprecedented in central Alabama. It is tempting to associate this site with the town of Atache discussed in the chronicles of the Luna expedition, as Hudson et al. (1989) have done, but it is unclear whether the scouting party sent upriver by Luna indeed visited the site or whether the artifacts circulated to this central location through aboriginal trade.

Based on the artifacts recovered, several things are clear about the Charlotte Thompson site. First, the whole vessels recovered suggest some level of cultural connection to both Moundville and Pensacola ceramic traditions. Second, a good deal of aboriginal activity clearly occurred at the site after European contact. Many of the European artifacts appear to date to the sixteenth century. Even the aboriginally made artifacts are of the types typically found on Protohistoric sites in the region, especially the plain shell gorgets, shell beads, and hoe-shaped

ground stone implements. These artifacts appear to date slightly later than those recovered at the nearby related mound sites, Thirty Acre Field and Big Eddy.

Thirty Acre Field (1Mt7)

The next mounds along the Alabama River at which Moore spent substantial time were at the Thirty Acre Field site, which possessed two mounds. The first of these mounds was found in a field bordering a swamp, and Moore (1899:333) reports that it had the shape of an inverted bowl. The mound measured 13 feet (4.0 m) in height and 88 feet (26.8 m) across at the base. The summit plateau measured 42 feet (12.8 m) on a side. Moore (1899:333) and his seemingly indefatigable crew of laborers started working on the mound by digging two trenches approximately 3 m wide along the northern and eastern margins of its base. Because they found no human remains, the trench was widened further toward the center of the mound, nearly to the summit, but still no burials were found. At this point Moore (1899:334) moved his excavators to the slope of the mound, 7 feet (2.1 m) above the base, and began removing the top of the mound. Finally, through this effort they found the remains of 111 individuals and many associated grave goods.

The grave goods from the ThirtyAcre Field mound included four shell gorgets and multiple shell beads and pins. Two of the gorgets, classified by Brain and Phillips (1996) as belonging to the Spaghetti and the Hixon styles (Figures 82 and 83) were examined in the collections at the Smithsonian. Multiple shell beads and pins also were recovered from the site. Moore (1899:338-339) also recovered two ceramic specimens of interest from the first mound. The first was a crudely executed bottle (Figure 84) made on a sand/grit-tempered ware. This vessel may have been an attempt to produce a Moundville bottle form. The second was a bird effigy head (Figure 85) broken from a hemispherical bowl decorated with three incised lines executed below the rim. This effigy is similar to those found at Moundville. Also recovered from this mound were a single red ground stone bead (Figure 86), a hoe-shaped celt, and two round copper discs with central perforations (Figure 87).

Figure 82. Spaghetti-style shell gorget recovered by Moore from the mound in Thirty Acre Field (Smithsonian Accession Number 171020.000).

Figure 83. Hixon-style shell gorget recovered by Moore from the mound in Thirty Acre Field (Smithsonian Accession Number 171022.000).

In the same field, Moore (1899:342) reported finding another smaller mound nearly plowed away. The smaller mound measured only about 1 foot (30.5 cm) in height and approximately 50 ft (15.2 m) in diameter. Moore's crew dug through the mound entirely to a depth of approximately 1.5 feet (45.8 cm), where they encountered the last remnants of clay mound fill underlain by midden soils including the burials of 31 individuals. With one of these burials were fifteen additional sheet copper pendants similar to those found at

Figure 84. Sand/grit tempered bottle recovered from the larger mound in Thirty Acre Field by Moore (Smithsonian Accession Number 174432.000).

Figure 85. Bird effigy head from incised bowl recovered from the larger mound in Thirty Acre Field by Moore (Smithsonian Accession Number 172785.000).

Figure 86. Bead made of ground stone of an unknown red rock recovered from the larger mound in Thirty Acre Field by Moore (Smithsonian Accession Number 171024.000).

Charlotte Thompson (Figure 88). Moore (1899:342) reports that two of these were found near the individual's head. The remaining five were found nearby atop a piece of woven cane matting, which was preserved by the salts in the copper (Figure 89). Eight more pendants were piled up nearby, although Moore (1899:343) does not report exactly where. The only other finds of note in this smaller mound were two whole vessels. The first was a subglobular bottle, which was made on a fine shell tempered ware and exhibited incised scrolls around the body (Figure 90). The second was a miniature coarse shell tempered globular jar with appliqué ridges around the rim of the vessel (Figure 91). The few pottery finds from the Thirty Acre Field mounds also suggest a cultural connection to Moundville. The sand/grit tempered bottle shown in Figure 84 is something of an oddity; it

Figure 87. Copper disc recovered from the larger mound in Thirty Acre Field by Moore (Smithsonian Accession Number 173077.000).

Figure 88. Nine embossed copper projectile points and fragments recovered from Moore's Montgomery County excavations (Smithsonian Accession Numbers 170146.000).

Figure 89. Woven cane matting found by Moore under a group of embossed projectile point badges in the larger mound in Thirty Acre Field (Smithsonian Accession Number 173074.000).

Figure 90. Small bottle with incised scrolls recovered by Moore from the larger mound in Thirty Acre Field (Smithsonian Accession Number 174433.000).

Figure 91. Miniature globular jar with applique strips and loop handles recovered by Moore from the larger mound in Thirty Acre Field (Smithsonian Accession Number 174431.000).

most closely resembles a Moundville bottle executed on a sand/grit-tempered ware. Unfortunately, there are no further sherd collections from the mounds at Thirty Acre Field.

The only other excavations conducted at the Thirty Acre Field site were done by David Chase in 1971. He examined the foundation trenches for a home to be placed near the larger mound at Thirty Acre Field and recovered a small assemblage of pottery (Sheldon 2001:23). These ceramics were curated at the laboratory at Auburn University -Montgomery, and were examined as part of the present study. The ceramic assemblage was comprised primarily of grit-tempered sherds. The vast majority of the shell-tempered sherds were plain, and the only decorated sherds would be classified as Moundville Incised, although the variety is unclear. These sherds, which were part of a globular jar decorated with arches incised about the shoulder, suggest that there also may have been an earlier Mississippian occupation at the site.

Big Eddy (1Mt5)

The final mound site of interest visited by Moore was the mound at the Big Eddy site. Moore (1899:345) noted that this mound, which was in a cultivated field, "is a great landmark looming up from all directions." The mound, which had been slightly eroded, rose to a height of 16.5 feet (5.0 m), and measured 108 feet (32.9 m) on a side at the base. The summit of the mound was reported to measure 50 feet (15.2 m) along a side. Fortunately, the mound at Big Eddy served as a flood refuge for livestock, and Moore was not permitted to remove the feature in its entirety, as he had done at both Thirty Acre Field and Charlotte Thompson. Instead, Moore (1899:345) reported that his crew removed the upper 6 feet (1.8 m) of the mound, which was composed of a sandy clay interspersed with midden layers and hearths. Moore (1899:345) noted that the mound appears to have been used as a cemetery by European settlers during the historic era. In the upper layers of this mound 19 indigenous burials were encountered. The grave goods recovered consisted of the typical celts, shell beads and pins, and more of the copper projectile point-shaped objects. These also occurred with portions of preserved cane matting, which Moore (1899:346) believed was likely wrapped

about the entire body. There were no ceramic artifacts from the site preserved in the collections at the Smithsonian.

The Big Eddy site was revisited by Oakley and Watson (1977) in May of 1976 as part of a survey of lands controlled by the Corps of Engineers, who now own the site. At the time they visited, Oakley and Watson (1977) reported that the mound measured 15.58 m in diameter at the base and was 2.74 m in height. The summit measured 9.14 m across. Oakley and Watson (1977) performed a series of shovel tests across the village area, where they found a 10 cm-thick midden deposit that yielded artifacts, including ceramics, lithics, charcoal, and daub. They also found intact subsurface features, including posts and a midden-filled pit. Oakley and Watson (1977) reported that the primary ceramic types recovered from these excavations were sand-tempered plain and red-filmed associated with an earlier Hope Hull phase Late Woodland occupation. Only 3.1 percent (n=13) of the sherds Oakley and Watson (1977:345-352) recovered from Big Eddy were shell-tempered. As Sheldon (2001:23) noted, it appears the mound at Big Eddy possessed a Late Mississippian burial component in the upper zone, while occupation debris from the surrounding site yielded primarily Late Woodland material. The work performed by Oakley and Watson at the Big Eddy site suggests that areas of intact deposits are present in the site habitation area.

Kulumi (1Mt3)

The site of Kulumi is a multiple mound center located on the southern bank of the Tallapoosa River approximately 12 kilometers upriver from its junction with the Coosa River to form the Alabama. The first excavations at the site were done by David Chase from the Montgomery Museum of the Fine Arts, along with a crew of volunteers. At the time Chase visited the site, he noted that the main mound measured 40 feet (12.2 m) in height and 100 feet (30.5 m) per side at the base. The site was surrounded by a cattle pasture, and the mound was continuing to erode. A second mound, which had eroded almost completely, also was recorded at the site, although no dimensions were given for this feature.

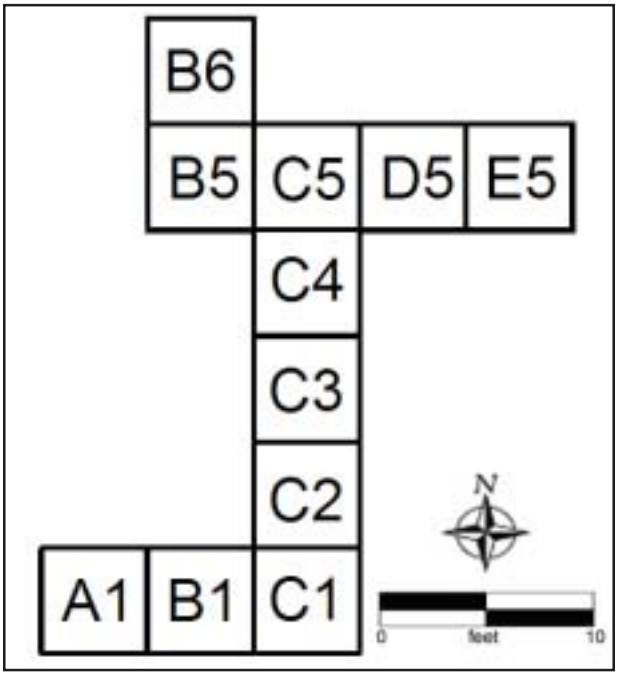

Figure 92. Map showing units excavated at Kulumi during the course of Chase's 1965 excavation. The map showing their location on the site has been lost.

Based on his field notes, which are curated at Auburn University-Montgomery, Chase began his excavation by placing a few shovel tests around the site. He decided to place excavation units in the areas where he recovered plain shell-tempered and sand/grit-tempered sherds from the shovel tests. Chase began his excavations by laying out two 5 x 5 foot (1.5 x 1.5 m) units labeled A1 and B1, which were the beginnings of two trenches that would give him a sample of the site stratigraphy. A map of Chase's excavation unit placement is included as Figure 92, although no nformation tying these units to the topography at the Kulumi site was available. Chase reports in his field notes that he excavated Unit A1 in six-inch (15.24 cm) levels. No artifacts were encountered in Unit A1 unit until the fifth level was reached, which would have been at approximately 75 cm below the ground surface. The pottery in this level was from an earlier Woodland occupation, as was the post excavated. In Unit B1, the artifacts were equally as deep.

When Chase returned to the site one week later, he opened a third unit, C1, which possessed sufficient superimposed material for him to create a sequence of occupation. In his notes, Chase reported the presence of a Protohistoric component with shell-tempered incised and plain pottery and sand/grit-tempered incised, plain, and complicated stamped sherds. Levels 2 and 3 were described as belonging to a late Mississippian occupation, and included Mississippi Plain and what Chase termed Bear Creek Incised. Bear Creek Incised appears to be closely related to Pensacola Incised. Finally, in Levels 4 through 6, Chase reported that the

ceramics recovered were primarily affiliated with Woodland occupations, and included Weeden Island types and Calloway Plain pottery. After obtaining this basic sequence, Chase continued to excavate at the site, extending a trench eastward from Unit C1, across to Unit C5 (see Figure 92). Chase noted the presence of a dense midden with high quantities of sherds in Units C2 and C4, and in some of the extension units, including B5, B6, and D5. In Unit D5, Chase found a charred wood and ash layer with a heavy bone concentration, underlain by a hard-packed clay floor. Several units, including B6, C2, and C4 also yielded features. Because he had enough material to create a site sequence, and because another nearby mound site, Jackson Lake (1Ee82), was being destroyed by looters, Chase decided to move on from excavations at Kulumi.

During the summers of 1983 and 1984, Craig Sheldon of Auburn University Montgomery and Ned Jenkins of Fort Toulouse/Jackson State Park led two additional seasons of excavation at Kulumi. During the 1983 season, Sheldon and Jenkins excavated a series of units northeast of the large mound (Figure 93). In this area they excavated a series of nine 2 x 2 m units (Figure 94) in an attempt to locate structures and to get a better understanding of the occupation sequence at the site. A few of the units were substantially more productive than others. Unit 6 yielded a large quantity of ceramic material, including shell-tempered pottery, which was found at depths of between 30 and 50 cm. This unit also exhibited a clay cap, numerous post holes, and a burned area. Unit 8 yielded a large amount of Lamar Complicated Stamped pottery and Unit 9 included a deep deposit of disturbed sand overlying midden soil.

In the 1984 season, Sheldon and Jenkins returned to the site and excavated three more 2 x 2 m units. Unit 10 was placed in the area just north of Mound A, while Unit 11 was placed near the remnant of the smaller mound. An additional unit, numbered 12, was placed along the edge of the second terrace. Unit 10 encountered a midden with sand/grit-tempered Lamar sherds overlying Late Woodland sand-tempered Autauga sherds. Unit 11 yielded midden in Levels 3 and 4, as well as three post holes that first appeared in Level 7. A midden layer yielding numerous sherds and bone fragments was discovered in Unit 12. In addition to these

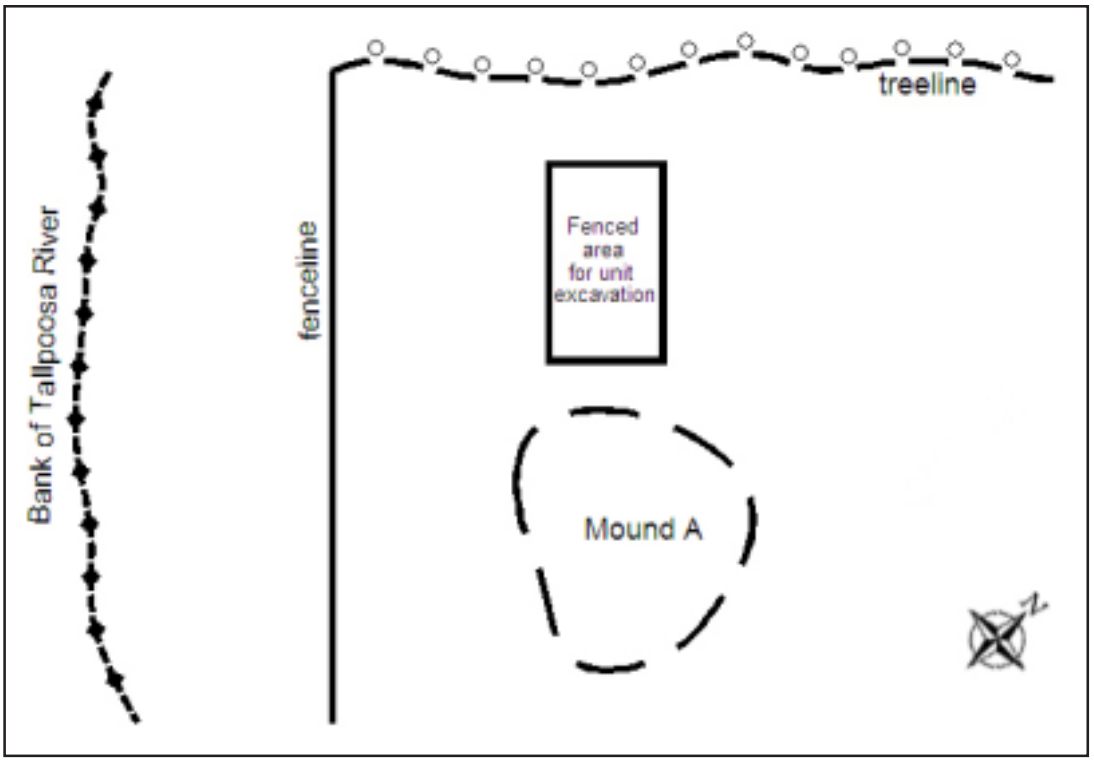

Figure 93. Map showing area in which excavation units were placed during Sheldon and Jenkins's 1983 excavations at the Kulumi site. Map is not drawn to scale.

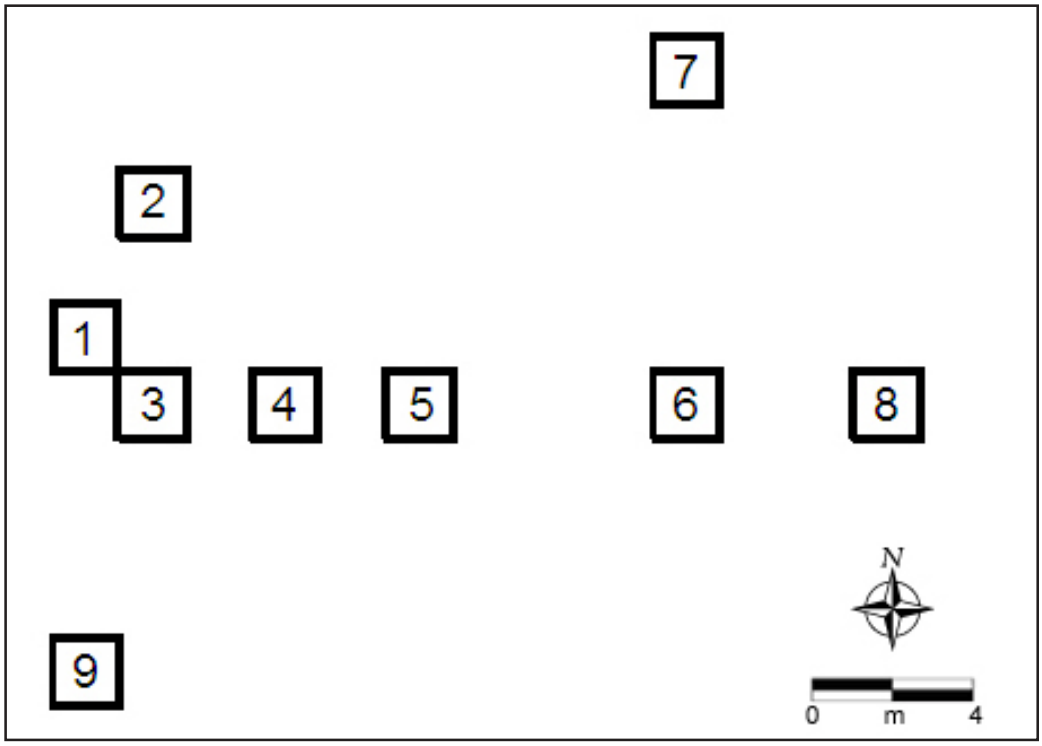

Figure 94. Location of nine excavation units placed northwest of the large mound at the Kulumi site during Sheldon and Jenkins's 1983 excavations. These units were in the fenced area depicted in Figure 93.

three units, Sheldon and Jenkins used a metal detector to search for artifacts associated with a historic-era component around the western edge of the larger mound. After recording the positions of subsurface metal artifacts, they laid in a 1 x 4 m trench in the area of densest metal concentration. Their trench and subsequent expansion units revealed the presence of metal parts from trade guns, historic trade materials, a burial, pits with shell artifacts, and a scatter of posts. These materials were presumed to relate to a historic Creek occupation at the site that likely dated from some time in the eighteenth century.

After the fieldwork was completed, Jenkins worked with an undergraduate student at Auburn University Montgomery on an analysis of the pottery. The counts of each pottery type in each 10 cm level were tallied, and frequencies of ceramic types were graphed for each level using typical battleship-shaped graphs. The laboratory forms show that in the lower three levels, Middle Woodland Calloway Plain pottery, with heavy mica inclusions, was most frequent. In the fourth through sixth levels, sand-tempered Autauga pottery dominated the assemblage, and shell and sand/grit-tempered pottery began to appear in a low frequency. In the second and third levels, the propotion of sand/grit-tempered pottery decreased as the amount of shell-tempered pottery increased. The frequency graphs show that in the highest levels equal amounts of shell and sand/grit-tempered pottery were recovered. At the time the original analysis was performed, the shell-tempered incised sherds were thought to be related to the Dallas tradition, the designation given to Late Mississippian sites in eastern Tennessee. This is not surprising, since Late Mississippian assemblages in northern Georgia typically possess both sand/grit-tempered Lamar pottery and shell-tempered Dallas pottery. Recently Jenkins (2004) reexamined the sherd collections from Kulumi and discovered that the shell-tempered incised pottery was derived from the Moundville type Carthage Incised rather than Dallas.

The site of Kulumi is of great interest to the present study because it has yielded sherds from both Lamar and Moundville traditions. These two groups possessed significant cultural differences, given their positions on either side of a major archaeological divide presumed to mark the division between groups speaking eastern and western Muskogean languages

(Sheldon 2001:20-21). The sherd collections from Chase's 1965 excavations were relatively small, and consisted primarily of plain shell-tempered body sherds and Woodland pottery. Data for the present study were collected from only 19 sherds from this collection. The pottery from the 1983 and 1984 seasons associated with the Mississippian occupation also was re-analyzed. For the most part, these sherds were relatively small in size, similar to what would be expected from the plow zone, and they were relatively scarce in many of the units. Craig Sheldon (personal communication, 2005) suspects that many of these units may have been placed in an area built up as a plaza extension flanking the mound, which may explain the small quantity of badly broken sherds. Data were collected from 116 sherds from the 1983 and 1984 excavation material.

Jackson's Lake (1Ee82)

The Jackson's Lake site sits in the arc of an oxbow lake on the northeastern bank of the Alabama River in Elmore County, approximately 9 kilometers below the Coosa-Tallapoosa junction. At the time David Chase recorded the site, the mound measured approximately eight feet (2.4 m) in height and 50 feet (15.2 m) on a side at the base. In 1963, Chase dug a series of trenches at the site to obtain a ceramic sequence. In 1965, Chase discovered that the mound was being looted heavily, and ceased his excavations at Kulumi in order to excavate at Jackson's Lake to better understand the occupation sequence at the site before it was destroyed. However, in the Alabama State Archaeological Site Files (ASASF), Chase noted that the mound had been so heavily looted it was not likely to be salvageable. The notes from the 1965 excavations remain, but the artifacts are missing. From the 1963 excavations, the artifacts are present, but the notes are missing. Ned Jenkins (personal communication, 2005) reports that this site possessed stratified deposits yielding sherds from both the Moundville and Lamar pottery traditions, which would make it an ideal source of study. The sherds from the 1963 excavations were examined in anticipation of using them in the current study. Unfortunately, the assemblage was composed primarily of plain body sherds and pottery from

an earlier Woodland component, meaning the available sample was simply too small to yield meaningful results.

Summary of Sites

If anything, this review of excavations at Late Mississippian sites in the Alabama River drainage demonstrates the need for further excavations at nearly every site. For future research, archaeologists should focus on systematic testing across sites to determine whether discrete areas of occupation associated with each ceramic tradition are present. Additionally, further controlled stratigraphic excavations are necessary in order to understand how artifacts from Late Woodland occupations and Mississippian occupations at many of the sites are related to one another. Excavations prior to the completion of this project have generated some useful ceramic samples, but more information about even the most basic nature of these sites is sorely needed. This is especially true because several sites largely have been destroyed or are currently being impacted by agricultural practices, gravel pit mining, or looting.

CHAPTER 6
METHODS AND RESULTS OF CERAMIC ATTRIBUTE STUDY

The previous chapter provided an inventory of excavations at the best known Late Mississippian sites in the Alabama River Valley, and demonstrated the need for more excavations and a better means of ceramic analysis to understand the social composition of these towns. Because of the inadequacies of existing ceramic classification systems discussed at length, a method of studying sherds that does not create mutually exclusive and exhaustive categories was needed. The data to be observed from the pottery assemblages also had to best reflect the series of decisions made by an individual potter during the process of ceramic manufacture. For the present study, the most suitable means for analyzing the ceramic assemblages without imposing any sort of typological assumptions upon the sherds was to record attributes present on each individual sherd in an assemblage. In the present study, attributes are equivalent to variable states; thus, a flattened lip or a rounded lip on a bowl sherd are two attributes. This led to a large data set in which each case represented a single sherd. In the analysis of those data, the sherds were first separated into two vessel classes, jars and bowls. It quickly became evident the data set for the bowls should be further subdivided into two analyses. One of these, the analysis of bowl decoration, subsumed multiple bowl forms, while the other focused solely on attributes associated with rims of a specific bowl form, the casuela. Casuelas made up the overwhelming majority of the bowls in the ceramic assemblage.

Among the Late Mississippian sites in central Alabama, only four had ceramic assemblages large enough to be included in an attribute analysis. Fortunately, these four sites, consisting of Matthew's Landing , Durant Bend, Bear Creek, and Kulumi are geographically distributed relatively evenly across the Alabama and Lower Tallapoosa river valleys. One

weakness of this sample is the lack of a site with a ceramic assemblage composed primarily of Moundville-related ceramics. Unfortunately, none of the four mound sites believed to have the ceramic collections composed primarily of pottery from the Moundville tradition have yielded ceramic collections substantial enough to include in an attribute analysis. Nonetheless, the assemblages at Bear Creek, Durant Bend, and Kulumi all possess a substantial quantity of pottery clearly Moundville-related, meaning that a significant sample of the Moundville-related pottery from the Alabama River Valley was entered into the attribute analysis. Because of fundamental differences in vessel morphology and use wear patterns, bowl and jar forms are believed to have served two functional purposes (Hally 1983, 1986). Globular jars have been interpreted as cooking and storage wares, while bowls are thought to have functioned in a serving capacity. Because of the fundamental differences inherent in these vessel forms, a separate set of attributes was recorded for each form class. Bowl attributes were further divided into two classes: attributes of rim form and decoration. This was because numerous sherds were complete enough to collect data related to decoration, but were not complete enough to record data from the rim, or vice versa. If a sherd had both a discernible incised motif and a complete rim, it was included in both bowl analyses. This was rather infrequent, because the rim sherds tended not to have any of the body of the pot attached.

Attributes Observed on Globular Jar Sherds

Attributes recorded from the assemblage of globular jar sherds were grouped into ten variables. The variables fell into two categories, paste composition and vessel construction. Because jars in this area are typically undecorated utilitarian vessels, no

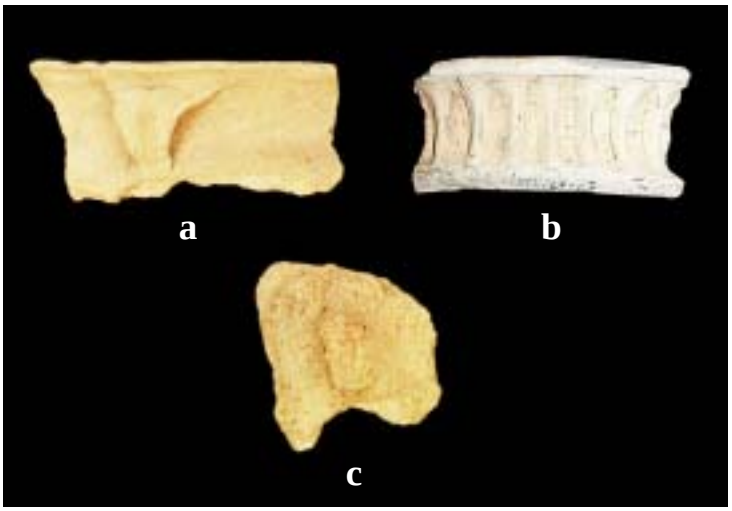

Figure 95. Globular jar rims showing various rim attributes: (a) strap handle, (b) vertical applique strips, and (c) handle scar.

attributes of decoration were examined for this vessel form. All jar sherds examined came from the rim of the vessel. Because it is difficult to distinguish a sherd from the lip of a jar from that of a simple hemispherical bowl, all jar sherds had to exhibit one of two diagnostic features. The first of these is the presence of what is termed a collar break. Essentially, a collar break is visible evidence that the vessel had a constricted mouth rather than the straight walls of a hemispherical bowl. The second characteristic differentiating a jar sherd from that of a hemispherical bowl is the presence of handles, appliqué strips of clay, or scars in the places where handles or appliqué strips have broken off from the vessel (Figure 95). Handles and appliqué strips do not occur on simple hemispherical bowls; therefore, even if a sherd lacks evidence of a collar break, the presence of any of either of these characteristics indicates it is part of a globular jar.

Four of the ten variables recorded from globular jar sherds were related to the composition of the clay paste used to construct the vessel. Most obvious among these is the tempering agent, which is added to the clay in order to make the vessel more resistant to breakage. In the study area, potters selected one of three options: (a) fine crushed shell, (b) coarse crushed shell, or (c) sand/grit (loosely defined as crushed rock). Coarse shell-tempered pottery was then examined for another attribute, whether the shell used was from recently-harvested mollusk shell or from fossilized shell. The latter is readily available over a substantial portion of the study area due to the presence of an exposed fossil-bearing Cretaceous chalk. The ceramic paste also was evaluated based on the presence of two inclusions. The first of these was the amount of mica included in the paste, coded as to whether it was absent to low, or alternatively moderate to heavy. While particles of mica likely do not represent an intentional inclusion in the clay paste, they may indicate the preferential use of different clay sources in and across groups of potters. The clay paste also was examined for the presence of grog, the term used to describe particles of crushed pottery and clay used as a tempering agent. While grog was never the primary temper material, it did occur in moderate to high amounts in some sherds, while other sherds had little to no grog added to their clay paste.

Figure 96. Flaring jar rim (left) compared with straight jar rim (right).

Figure 97. Jar lip shape attributes (l to r): sharply flattened, flattened with rounded edges, and rounded.

The remaining six attributes consist of choices in vessel construction. The first of these was whether the rim of the vessel, the portion between the lip and the mouth, was straight or flaring (Figure 96). Two attributes focused on the lip of the vessel. The shape of the lip, whether sharply flattened, flattened with rounded edges, or rounded, was recorded (Figure 97). It also was noted whether or not the clay at the edge of the lip was rolled over, creating a slight bulge just below the lip on the exterior (Figure 98). The final three attributes of vessel construction examined consist of various additions occurring around the rims of jars. First, the presence of small

Figure 98. Jar rims showing absence (l) and presence (r) of a rolled lip.

buttons of clay attached to the exterior of the vessel known as nodes was noted. Second, the presence of appliqué strips around the rim on the exterior of the vessel also was noted. The orientation of these strips also was recorded, whether vertical, diagonal, or a triangle (Figure 99), although these variations were not included in the final analysis. Finally, the presence and type of handles also were recorded. Handles, when present, were attached to the exterior of the vessel at the lip and just below the mouth. Handles came in four forms: (a) loop, being rounded pieces of clay attached at either end to the side of the vessel; (b) strap, being flattened pieces of clay attached at either end to the side of the vessel; (c) lug, being pieces of clay attached entirely to the side of the vessel; and (d) complex, a composite category consisting of several loops tied with a single piece of clay and elaborate handles made into ribbed shapes (Figure 100). Unfortunately, the sample of complex handles was too small for this form to be included in the final analysis.

Figure 99. Appliqué sherds from the Durant Bend and Bear Creek sites, showing the diagonal cross, triangle, and vertical configuration of the applied clay strips. The sherd on the bottom also contains red and white painting.

Figure 100. Elaborate handle form on a globular jar sherd from the Durant Bend (1Ds1) site.

Attributes Observed on Bowl Sherds

The variables recorded from the bowls consisted of three categories of choices made by potters, including paste composition, vessel construction, and decoration. The bowls included in the study fell into three forms: casuelas, flaring rim bowls, and simple bowls. Casuelas

have a globular body and a defined shoulder, above which the diameter of the vessel decreases gradually up to the mouth of the vessel. Casuelas typically are incised above the shoulder break and almost invariably have a complex rim, which itself reflects a series of attributes of vessel construction. Flaring rim bowls have a globular body, a well defined mouth and a sharply outflaring rim. These bowls are invariably incised on the interior of this rim. Finally, simple bowls are hemispherical in profile with no points of inflection along the body of the vessel. These vessels also frequently exhibit the complex rim variation found on casuelas.

A short time after beginning the analysis of sherd attributes, it became clear that the bowl data would have to be subdivided into two separate analyses. The first attribute analysis consisted of a set of variables related to incised decorative style. This analysis included sherds from all three bowl forms that exhibited a recognizable incised motif. Three variables related to paste composition also were included in this analysis. The first of these was primary temper, which was subdivided into very fine crushed shell, fine crushed shell, and sand/grit. Because a substantial quantity of bowl sherds had a very high level of mica inclusions, the amount of mica was subdivided into three attributes: little to no, moderate, and heavy mica inclusions. The amount of grog inclusions also was recorded as a binary variable, in the manner already described. To record the style of decoration, seven variables were examined. Two of these focused on surface finishes applied by potters. The first is the presence of burnishing, in which the vessel is left to dry slightly before the entire surface is smoothed with a hard, blunt instrument. Shepard (1956:191) suggested a water worn pebble as an example of an ideal tool for burnishing vessel surfaces.

The second option for surface treatments is the practice known as black filming, which is associated with the ceramics of the Moundville tradition. In cross-section, black filmed sherds display a reddish interior with a thin black outer layer. Initially, this surface finish was thought to be the result of an organic slip applied to the surface of the pot, although there is some disagreement in early considerations concerning whether this slip was applied after firing of the pot was completed or as part of a second firing episode (Steponaitis 1983:25).

Subsequent studies of ceramic production have that proven black filming is instead the result of smudging, in which soot from the fire is absorbed into the clay body, in combination with firing in a reduction atmosphere (Shepard 1956:88, 217). Steponaitis (1983:26) proposed a series of steps used to create the black filmed finish. During the first stage of firing, the pot was placed in an oxygen rich environment, which turned the surface and the core of the vessel a reddish color. In the final stage of firing, fresh fuel was added to create a sooty smoke that deposited carbon on the exterior of the vessel and turned the iron oxides in the clays a blackish color. Because the interior of the clay body remained a reddish color, Steponaitis (1983:26) argued that the amount of time any given vessel spent in an oxygen reduced environment must have been relatively short.

Five attributes were used to characterize the style of bowl decoration present. Invariably, decorative motifs were executed by incising or engraving the clay surface. The width of the incised lines was measured in millimeters. These continuous measurement data were then converted into three ordinal categories, fine line incising (between .5 and 1.0 mm), moderate width incising (between 1.1 and 2.0 mm), and wide line incising (between 2.1 and 2.9 mm). The distance between the incising lines was measured in millimeters and converted into ordinal measures, consisting of closely-spaced (0.6 – 3.1 mm), moderately-spaced (3.1 – 4.3 mm), and widely-spaced (4.3 – 15.2 mm). To be certain that these two variables were not redundant, a correlation was calculated between them using the continuous data. The two variables were moderately correlated ($r=.439$, $p<..001$); however, this correlation is not sufficiently large enough to suggest that they are redundant. Therefore, both variables were included in the analysis of decorative attributes.

The incised motif present on each sherd also was recorded. Initially, 14 incised motifs were recorded in the sample of sherds examined (Figure 101). When it became clear that some of these motifs occurred on a handful of sherds in the sample, the rare motifs were folded into larger groupings of motifs clearly similar to one another. For the final analysis, the incised motifs were grouped into five categories. The separate guilloche motif consisted of multiple separate

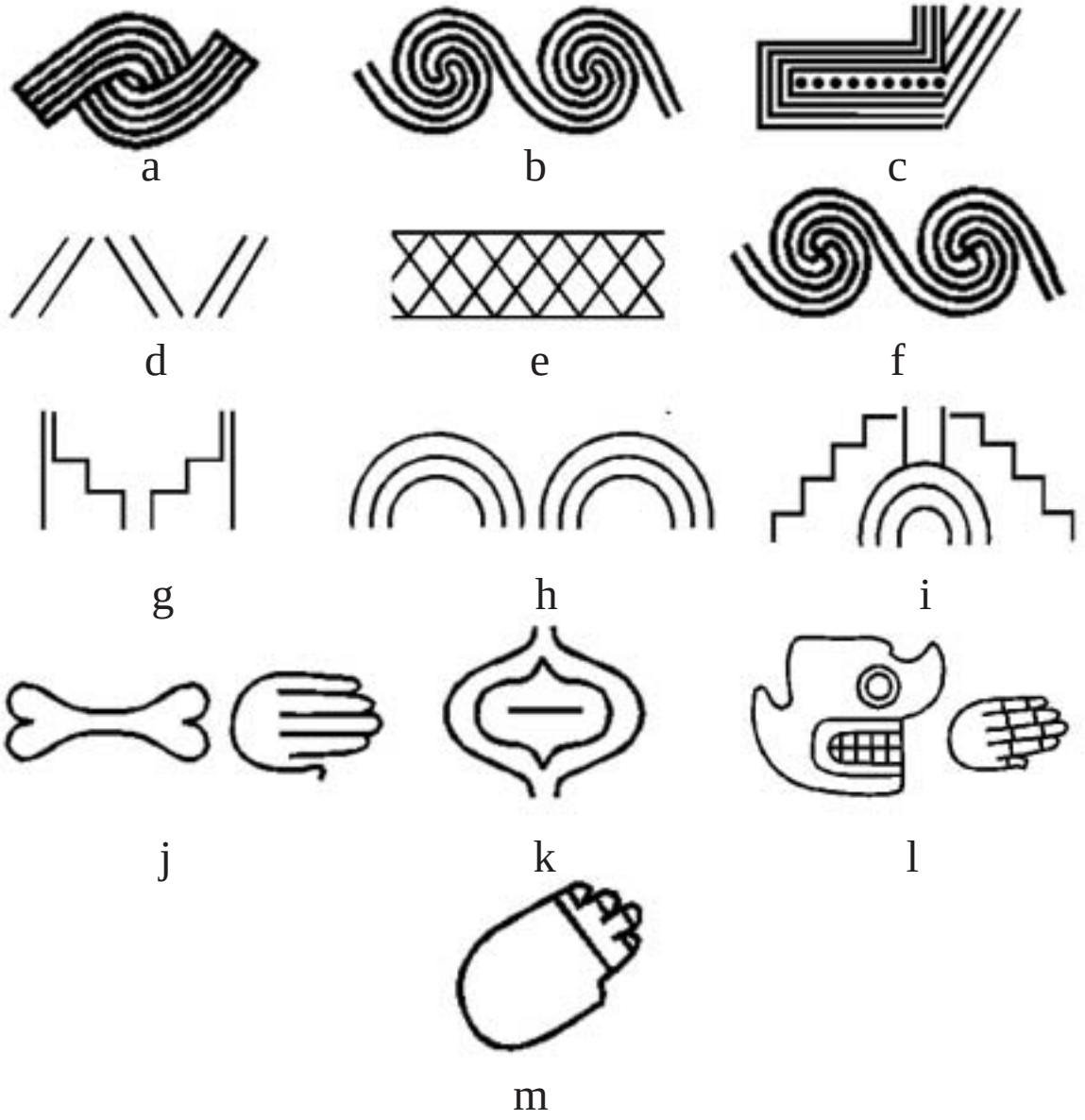

Figure 101. Incising motifs observed on bowl sherds included in the study: (a) separate guilloche, (b) guilloche scroll, (c) stylized skull, (d) chevrons, (e) cross-hatching, (f) swastika scroll, (g) rectilinear, (h) semicircles, (i) semicircles with stairs, (j) hand and long bone, (k) ogee, (l) realistic hands and skull, and (m) stylized hands.

images of interlocking curved lines executed with as few as three and as many as thirteen parallel lines (Figure 101a). The scrolling guilloche motif consisted of scrolls running around the entire vessel and are typically executed with two to four lines. Several variants of this motif were collapsed into a single category, including the classic guilloche scroll (Figure 101b) and the

swastika scoll (Figure 101f). The semicircle motif consisted of incised arches typically executed with two to four lines extending around the circumference of the vessel (Figure 101h). Three variants of this design were included in this motif category. These consisted of incised arches set off by rectilinear staircase elements (Figure 101i), rectilinear staircase elements (Figure 101g), which were clearly fragments of this larger motif, and chevrons (Figure 101d), which also appeared to occur with semicircle motifs. The parallel lines motif consisted of four to ten lines incised around the circumference of the vessel, typically just below the rim. The human skeletal elements category subsumed a variety of designs including some sort of representation of human bones or related elements. Among these were the stylized skull (Figure 101c), hand and long bone (Figure 101j), stylized hand (Figure 101m), realistic skull (Figure 101l), and ogee (Figure 101k), the latter of which always occured with skeletal element motifs. The shape of the stylized skull motif, whether rectangular or curvilinear, also was recorded as a separated variable. The final decorative style variable recorded was the presence or absence of punctation as a secondary design filler.

The data collected from the rims of casuelas and hemispherical bowls were analyzed separately for two reasons. First, in many cases data could be collected from the rims of plain vessels, which would have been excluded due to missing data if decoration and rim form were analyzed together. Additionally, if the two analyses were combined, all flaring rim bowl sherds

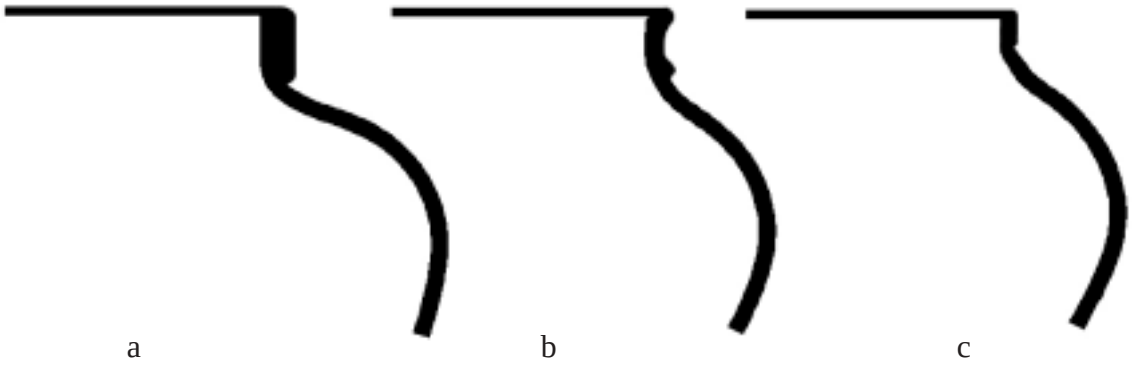

Figure 102. Three bowl rim modes found on casuelas and hemispherical bowls: (a) Bear Point, (b) short-necked, and (c) simple.

and any casuela and hemispherical bowl sherds with missing rim information would have been excluded from the analysis. The same three variables used to describe paste composition discussed earlier, including temper, mica, and grog inclusions, were employed in this analysis, along with seven attributes of rim construction. In existing taxonomies for Pensacola and Moundville pottery, there are four modes used to group the rims of casuelas from Late Mississippian sites. These consist of the Bear Point rim mode (Figure 102a), which is applied to bowls associated with late Pensacola sites, the short-necked bowl rim (Figure 102b) and the notched, everted lip, shown later, which are applied to bowls from Moundville sites, and simple rims (Figure 102c), which occur on bowls from all three cultural traditions. At the outset, it became clear that in each mode designation, there were a variety of different choices potters made in constructing their rims. Therefore, simply recording the rim mode meant that a great deal of other information about models of rim construction would be lost.

To construct a bowl rim, potters had to choose whether or not to add a fold of clay around the lip of the vessel (Figure 103). If present, this folded rim could be made either straight or curved in profile (Figure 104). The rim also could be demarcated by an incised line, which occurred on both folded and non-folded rims. The potter also made the choice whether

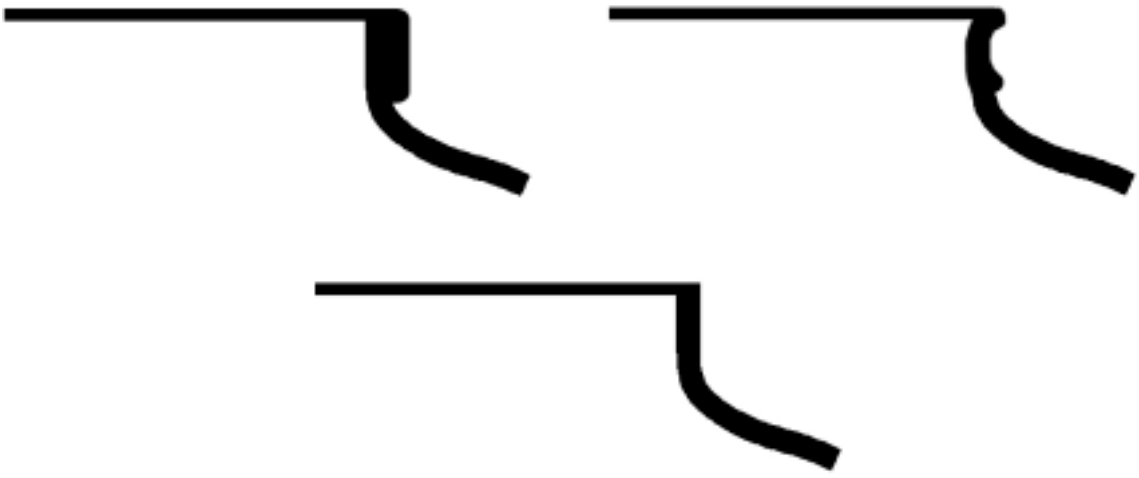

Figure 103. Bowl rim profiles showing two forms of folding on the top row and an unfolded rim on the bottom row.

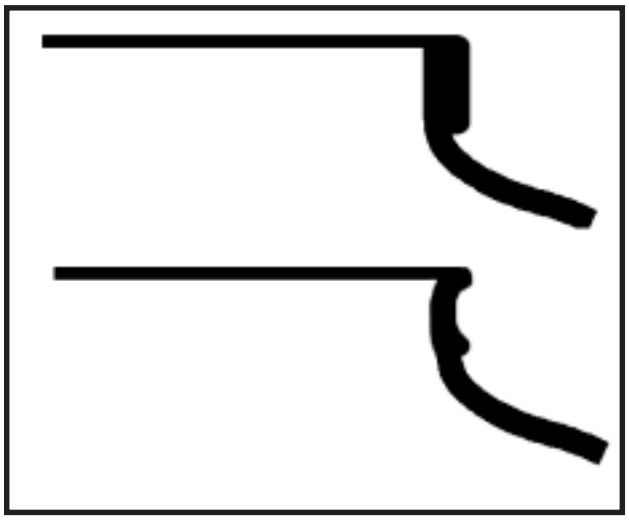

Figure 104. Straight and curved rim profiles found on casuelas and hemispherical bowls.

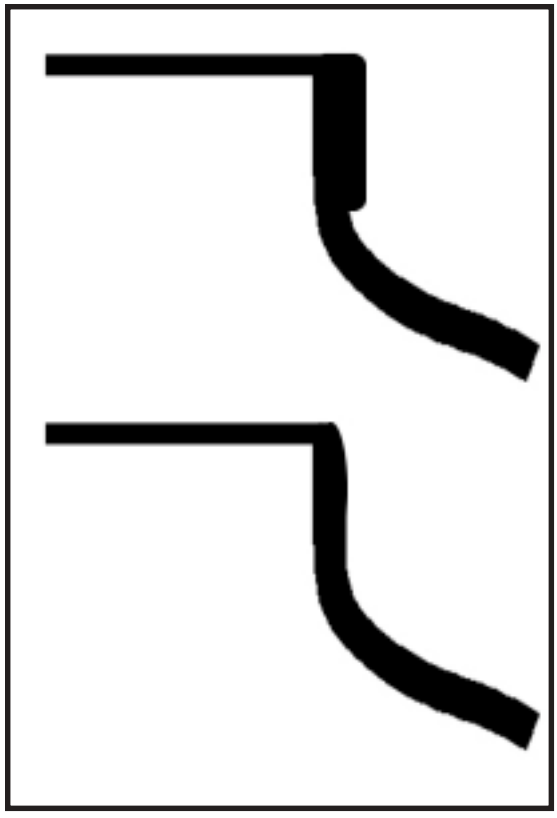

Figure 105. Bowl rim profiles showing a flat and a rounded lip shape.

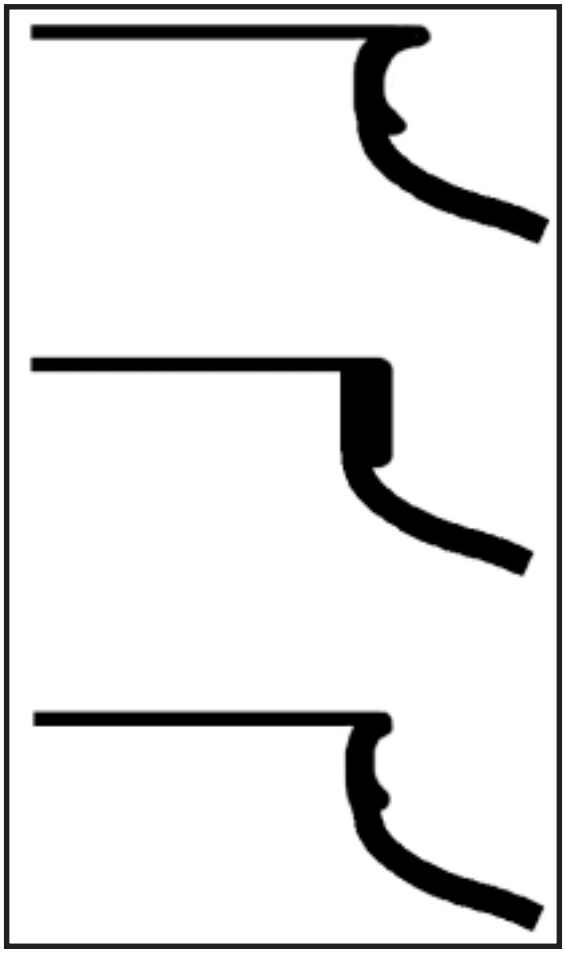

Figure 106. Bowl rim profiles showing eversion at top. The bottom two sherds show no evidence of lip eversion.

Figure 107. Bowl rims with examples of wide notching (top) and fine notching (bottom) along the exterior lip edge.

to flatten the lip or leave it rounded (Figure 105). The lip could also be everted (Figure 106). The potter could also choose to add either fine or wide notching around the exterior of the lip of the vessel (Figure 107). Additionally, the height of the rim in mm was recorded. These continuous data were then converted into three ordinal designations based on dividing the total sample of sherds into thirds: (a) short (3.9 – 10.1 mm), (b) medium (10.1 – 13.1 mm), or (c) tall (13.1 – 34.3 mm).

Cluster Analysis

Attributes were recorded on a total of 2,344 sherds. As is typical of any large data collection project, the attributes recorded changed slightly over the course of the study, as more sherd collections were examined and more potential points of variation were observed. This necessitated a few instances in which a sherd collection was reexamined in search of a particular attribute subsequently recognized. Among all analyzed sherds, Matthew's Landing represents the overwhelming majority (n=1,698), followed by Durant Bend (n=520), Bear Creek (n=168), and Kulumi (n=135). Matthew's Landing represents such a large proportion of the raw data set because it was the first collection to be analyzed. During this phase of analysis, all sherds from which any data could be recorded were included. By the time subsequent analyses were started, it was clear that sherds from an unknown vessel form with an indistinguishable motif would not be useful in the analysis of attributes.

Once the attribute data were collected and entered into SPSS 13.0, it was determined that the best way to examine which attributes, or choices made by potters, consistently grouped together was to perform a hierarchical cluster analysis of the sherds included in the study. Cluster analysis was selected because it allows the researcher to examine patterns in a data set with large numbers of cases and large numbers of variables (Shennan 1997:217). This form of numerical taxonomy allows patterns in a complex data set that would not otherwise be detected to emerge without having to impose any sort of arbitrary order on the data set (Shennan 1988:194). However, it must be kept in mind that the groupings generated by cluster analysis are not types in a typological sense; rather, they are groups of items more similar to one another than they are to members of any other group. With this caution in mind, cluster analysis is a powerful tool for understanding which attributes of pottery production, or choices made by potters, tend to occur together with the greatest frequency. In order to perform the cluster analysis, all nominal variables with multiple states were converted to dichotomous, or presence/absence, data, which increased the number of variables included in each of the three cluster analyses, because every possible variable state became a dichotomous variable. Any attribute present on fewer than 30 sherds was not included in the cluster analysis because it was too poorly represented to have any effect on the analysis. Additionally, because cluster analysis works from a matrix that quantifies the relationship between each case and every other case, all sherds with any missing data had to be excluded from the analysis.

Before performing a cluster analysis on a given data set, it is necessary to make several decisions concerning how the clusters are to be formed mathematically. First and foremost, it is necessary to determine which type of measure will be used to quantify the similarities between the sherds in the analysis, which are then entered into a matrix of values that compares each sherd to every other sherd in the analysis. These values can be computed in two different ways, as measures of similarity or of distance. Distance measures are most commonly used with continuous data. The most common distance measure is the Euclidean distance coefficient, which is a measure of the straight-line distance between data points calculated using the

Pythagorean Theorem (Shennan 1988:199). Similarity measures are typically used with dichotomous data and are calculated by matches in variable states between each individual sherd (Figure 108). Similarity measures can be calculated in a number of different ways, depending on the goal of the research. The primary difference in similarity measures lies in how negative matches, where neither sherd possesses a given attribute, are weighed (Shennan 1988:201). The Simple Matching Coefficient is a proportion of the positive and negative matches to the total number of attributes recorded as present. The Jaccard Coefficient disregards negative matches and is calculated by dividing the number of positive matches by the number of positive matches plus the number of attributes present in one case but not the other. The Coefficient of Dice weights positive matches doubly, and is calculated by dividing two times the number of positive matches by the sum of two times the number of positive matches plus the number of mismatches.

In choosing a similarity or distance measure, it is necessary to keep the nature of the data set in mind. Because pottery sherds are fragments of a whole vessel, coefficients that exclude negative matches are considered ideal for evaluating similarity in ceramic assemblages. This circumvents the danger of weighting negative matches in which an attribute was present on the complete vessel but not on the sherd. For data taken from artifacts that are fragments of a whole, the Coefficient of Dice is ideal for computing similarity measures because it doubly weights positive matches. Therefore, attributes held in common by individual

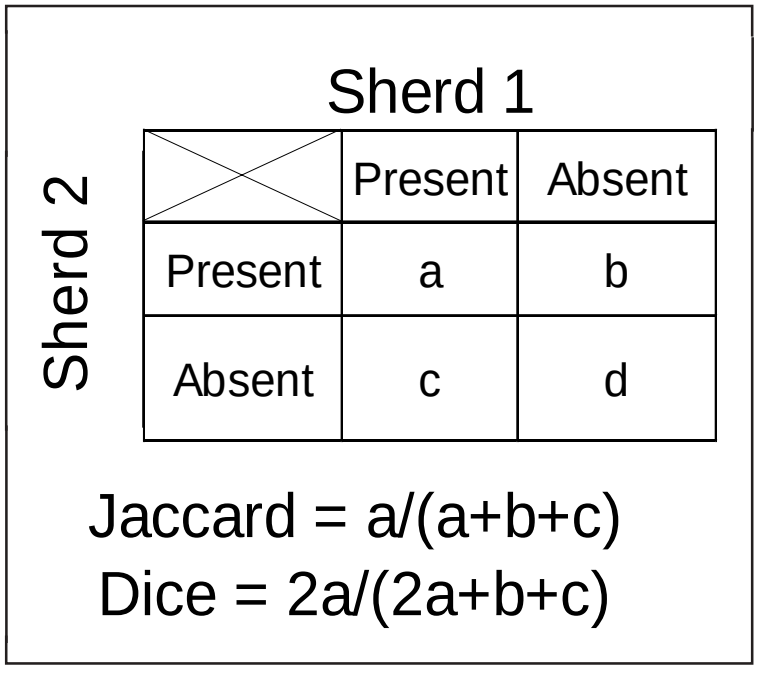

Figure 108. Illustration of the way in which two commonly used similarity coeffecients are calculated.

sherds, which are decisions in the pottery-making process, are given the most emphasis. Initially, the cluster analyses were attempted using a Coefficient of Dice; however, because many of the attributes included occurred infrequently in the data set, SPSS could not compute the algorithm used in the cluster analysis. The only explanation for this is, simply put, because there were too many zeroes in the similarity matrix. When this problem occurred, it became clear that it was necessary to employ a distance measure to create the proximity matrix. The final cluster analysis was performed using a squared Euclidean distance measure, which generated satisfactory results because the distance between objects was being calculated over a large number of traits, which made it unlikely that two sherds would be grouped together based on a shared absence of traits.

Once the type of measure used in the matrix has been selected, the next step is to determine which method of clustering is most appropriate. This involves choosing whether to use partitioning methods, in which the number of clusters is predetermined, and each sherd is placed assigned to the group with which it is closest, or hierarchical methods (Shennan 1988:197, 225). Hierarchical cluster analysis generates a dendrogram that demonstrates how individual sherds are similar to one another at different levels, without forcing them into a predetermined group membership (Shennan 1997:235). There are two techniques of hierarchical cluster analysis—agglomerative and divisive. Agglomerative techniques begin by surveying all the cases and grouping those that are most alike together. New members are then added to these groupings at decreasing levels of similarity until all cases are joined into a single group. Divisive techniques start with all cases together in a single group and then divide the group into clusters differentiated according to some criterion. The divisive techniques employed in archaeological studies have employed monothetic methods, meaning that the clusters are divided based on the presence of a specific attribute at a specific point in the analysis (Shennan 1988:220-221). For this study, an agglomerative hierarchical cluster analysis was employed. A hierarchical clustering method was selected because there was no expected number of clusters in any of the groups of sherds to be examined, and an agglomerative technique was selected

because the prospect of determining clusters based on a single decision made by an individual potter would not have provided any information about the entire cultural model upon which the potter was acting.

Once it had been reasoned that an agglomerative hierarchical cluster analysis would be the best method of cluster analysis, one methodological decision remained. Because there are multiple ways to evaluate the similarity between cases in a set of data, a variety of different techniques of agglomerative clustering exist (Shennan 1988:213). Each agglomerative clustering technique creates clusters in a slightly different manner, and the technique chosen determines the basic structure of the cluster. This is best illustrated by contrasting two clustering techniques. In single link, or nearest neighbor, cluster analysis, a given case is allowed to join a data cluster if it has a specified level of similarity to any of the other cases in that cluster. Ward's clustering method, on the other hand, allows a given case to join a cluster only if its similarity measure is close to the mean similarity measure for the rest of the cases in the cluster. By keeping the error sum of squares, or the sum of the distances from each case to the mean of the cluster, as low as possible, the clusters are kept as homogenous as possible (Shennan 1988:217). The difference between the clusters generated using each of these methods is substantial. Because a single link method admits individual cases based on a level of similarity with only one other group member, the resulting clusters exhibit a fair amount of internal variability. The best way to imagine the clusters generated by a single link analysis is as long, loose, linear clusters. Sherds chosen from either end of this cluster, which may be closely related to their nearest neighbor, may not be very similar to one another. In contrast, the clusters generated by Ward's method are as internally homogeneous as possible, and are therefore best conceived of as small, tight, circular clusters. The most appropriate technique of creating hierarchical agglomerative clusters for this study was Ward's method. The central goal of the clustering of attributes was to detect whether the individuals who made the ceramics were acting on shared mental models. Presumably, meaningful clusters that maximized internal

homogeneity would best reflect shared mental models acted upon by individual potters. The results of this analysis were compelling.

The agglomerative hierarchical cluster analysis was used to assign each of the sherds to a grouping based on a series of common attributes; however, this analysis does not generate an explanation of the attributes that determine group membership. With a small data set, it is relatively easy to obtain a cursory understanding of the clusters generated by examining the dendrogram that shows how the clusters were formed and determining which traits the sherds most closely linked hold in common. In an analysis with hundreds of cases, this is not feasible; further, this process does not provide a quantified analysis of the attributes that make up individual clusters. In order to better understand the variables that were most frequently represented in each cluster, the mean value for each variable in each cluster was calculated. Because the data are dichotomous, the closer this mean value is to one, the greater the contribution of that variable to the cluster. In addition to examining the variables that made up each cluster, a cross-tabulation of clusters by sites in the study was conducted to determine whether any patterning could be detected in how the clusters were distributed across the sites.

The best fit for the 614 sherds included in the bowl decoration data set was a four cluster solution. Because cluster analysis is a technique of numerical induction, the analyst must ultimately determine how many clusters comprise the best solution. This is done by examining a calculation known as the agglomeration coeffecient, which indicates the amount of within-cluster homogeneity. Once a cluster solution was chosen, those variables with the highest means within each cluster were examined to determine whether the variables comprising each cluster could provide meaningful results. The most strongly represented attributes in the first bowl decoration cluster (n=243, Figure 109) were the human skeletal elements motif (98 percent) and rectilinear stylized skull (74 percent). These elements typically were executed with fine line incising (54 percent) with punctated design filler (47 percent) on a burnished (52 percent) ware tempered with very fine shell (42 percent). The incised lines making up the design were frequently closely spaced (43 percent). Sherds exhibiting this grouping of traits clearly conform to the Pensacola

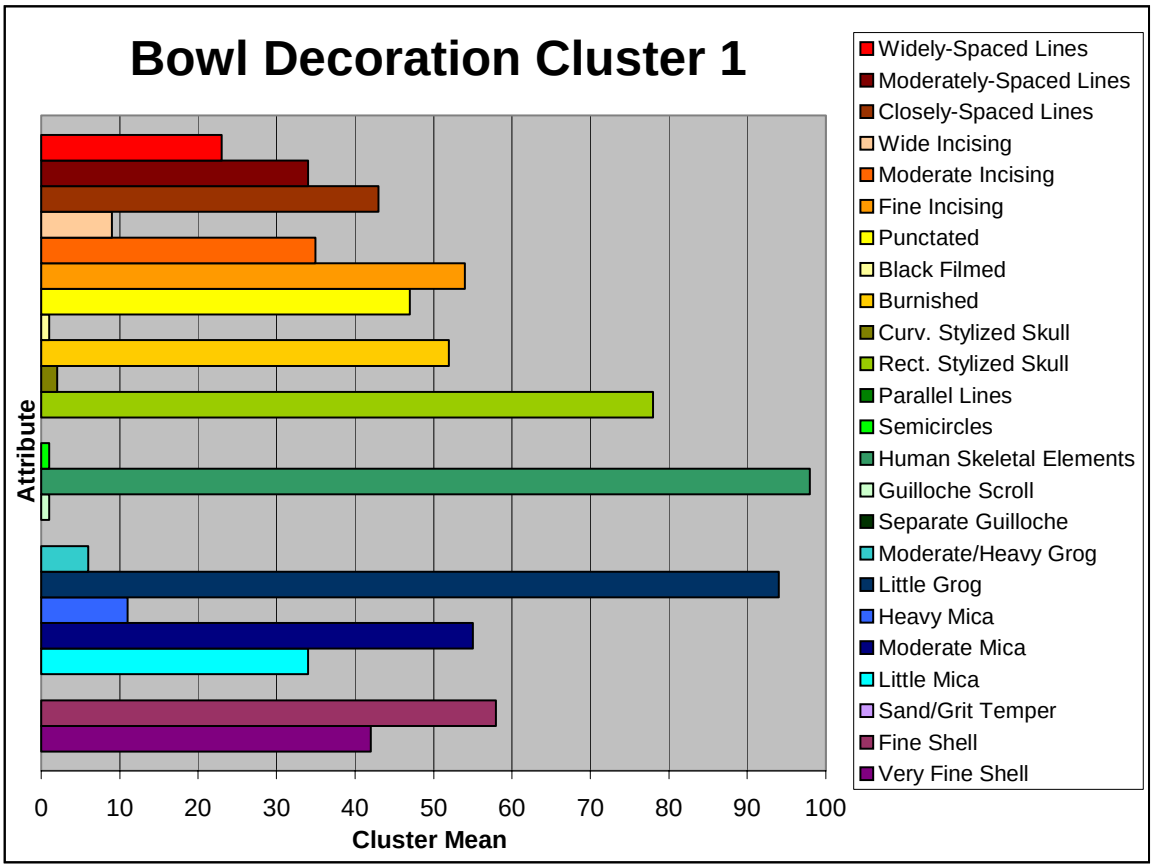

Figure 109. Mean values for pottery attributes in Bowl Decoration Cluster 1.

decorative tradition (Figure 110). This decorative style, with many closely-spaced lines on a very fine shell tempered burnished paste, appears to occur with much greater frequency in the interior than along the Gulf Coast and in the Mobile-Tensaw Delta, and may represent a localized stylistic development among potters in the interior who migrated up the Alabama River. The results of the cross tabulation by sites support this idea (Table 2), since the first decorative cluster is most strongly represented at Matthew's Landing (n=65, 52.0 percent), the site farthest downriver and closest to the core area of Pensacola culture. The contribution of this cluster to the whole of the assemblage drops off moving upriver to Durant Bend (n=52, 41.6 percent). Sherds from this cluster are nearly absent from the assemblages at Bear Creek (n=7, 5.6 percent) and Kulumi (n=1, 0.8 percent).

In the second cluster (n=228, Figure 111), the most strongly represented attributes were the separate guilloche incised motif (71 percent), executed on a burnished paste (64 percent).

Figure 110. Incised sherds from Matthew's Landing and Durant Bend that exhibit the rectilinear stylized skull executed with closely-spaced, finely incised lines assigned to Bowl Decoration Cluster 1.

These were the only attributes with a mean above fifty percent. This distribution of means could be the result of two factors. The first of these factors is related to how the variables were entered into the analysis. In the case in which a variable had three states and no null value, such

Table 2. Bowl Decoration Cluster Membership by Site.

Site	Cluster				Totals
	1	2	3	4	
Matthew's Landing	65	90	20	64	239
Durant Bend	52	106	49	10	217
Bear Creek	7	28	70	21	126
Kulumi	1	4	19	4	28
Totals	125	228	158	99	610

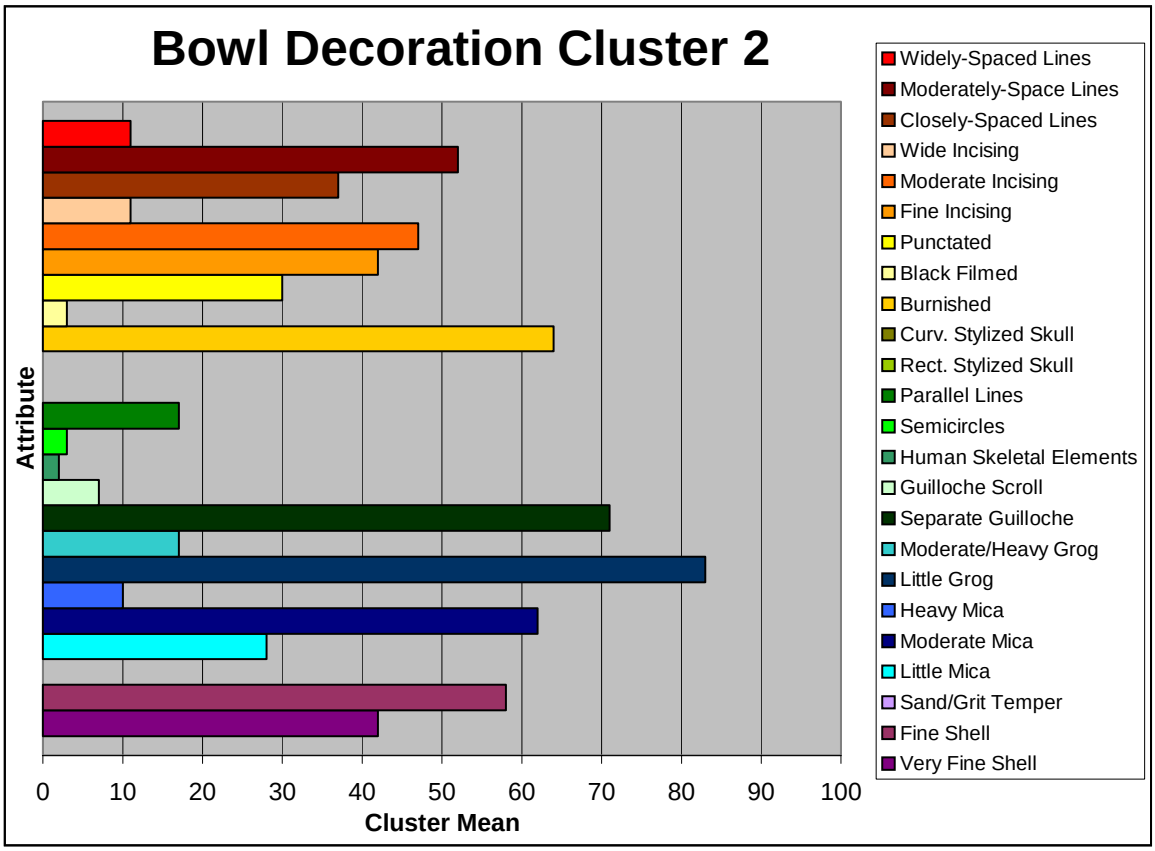

Figure 111. Mean values for pottery attributes in Bowl Decoration Cluster 2.

as temper, which was always very fine shell, fine shell, or sand/grit, and never absent, only two of the three dichotomous variables created from this nominal variable were entered into the analysis. This is because the third variable is redundant; if an attribute is absent in two of the dichotomous variables, it is therefore present in the third. When examining the cluster means, it is relatively easy to determine whether the missing variables represent a significant portion of a cluster. In the case of temper, if both very fine shell and sand/grit are poorly represented, then fine shell-temper must be a prominent attribute in the cluster. For example, because the mean for very fine shell temper is 42 percent and the mean for sand grit temper is zero percent, then the mean value for fine shell temper must be 58 percent, which suggests fine and very fine shell are nearly equally represented in this cluster. The same is true for fine incising (42 percent) and moderate incising (47 percent) and closely spaced (37 percent) and moderately spaced (52 percent) lines. In general, sherds in cluster 2 possessed a moderate amount of mica (62 percent) and few grog inclusions (83 percent) (Figure 112).

Figure 112. Incised sherds from the Matthew's Landing and Durant Bend sites assigned to Bowl Decoration Cluster 2.

The distribution of attribute means in the second cluster of decorated bowl sherds appears to be the result of a cultural factor. The separate guilloche motif has been identified by other researchers, such as Ford (1952:350-354) and Carleton (1994), as one of a series of contact-era horizon markers that occur across much of the Southeast, from the central Mississippi Valley to the Alabama River Valley. As a horizon marker, this motif crosscuts various potting traditions, meaning that it appears on a variety of pottery wares and is executed in a diverse array of styles. Taking this into account, the distribution of attribute means in Bowl Decoration Cluster 2 begins to make a little more sense. What holds this cluster together is the presence of the separate guilloche motif on a burnished paste; as a horizon motif, it is executed on multiple wares in a variety of sub-styles. With the contribution of each site to the sample of decorated bowls taken into account, cross-tabulation demonstrates this cluster makes up

between one quarter and nearly half of the assemblages in the study. It is most common at Durant Bend, making up 48.8 percent of the assemblage from the site, followed by Matthew's Landing at 37.6 percent, Bear Creek with 22.2 percent, and it makes up the smallest porion of the assemblage at Kulumi with 14.3 percent.

The third decorative cluster (n=162, Figure 113) is dominated by widely-spaced incising (85 percent) and wide-line incising (70 percent). The pottery occurs on a burnished ware (69 percent) with scrolling guilloche (49 percent) and semicircle (21 percent) motifs. Unlike the first two clusters, black filming (20 percent) may also occur on sherds in the third cluster. The prominence of these attributes suggests strongly that this cluster represents pottery derived from Moundville potting traditions (Figure 114). The presence of wide-line incising on a burnished paste with scrolling and semicircle motifs is clearly derived from types classified as Carthage Incised that occur earlier on sites in the Black Warrior Valley. Not surprisingly, the distribution of this cluster among sites was widely different from the other three clusters. The

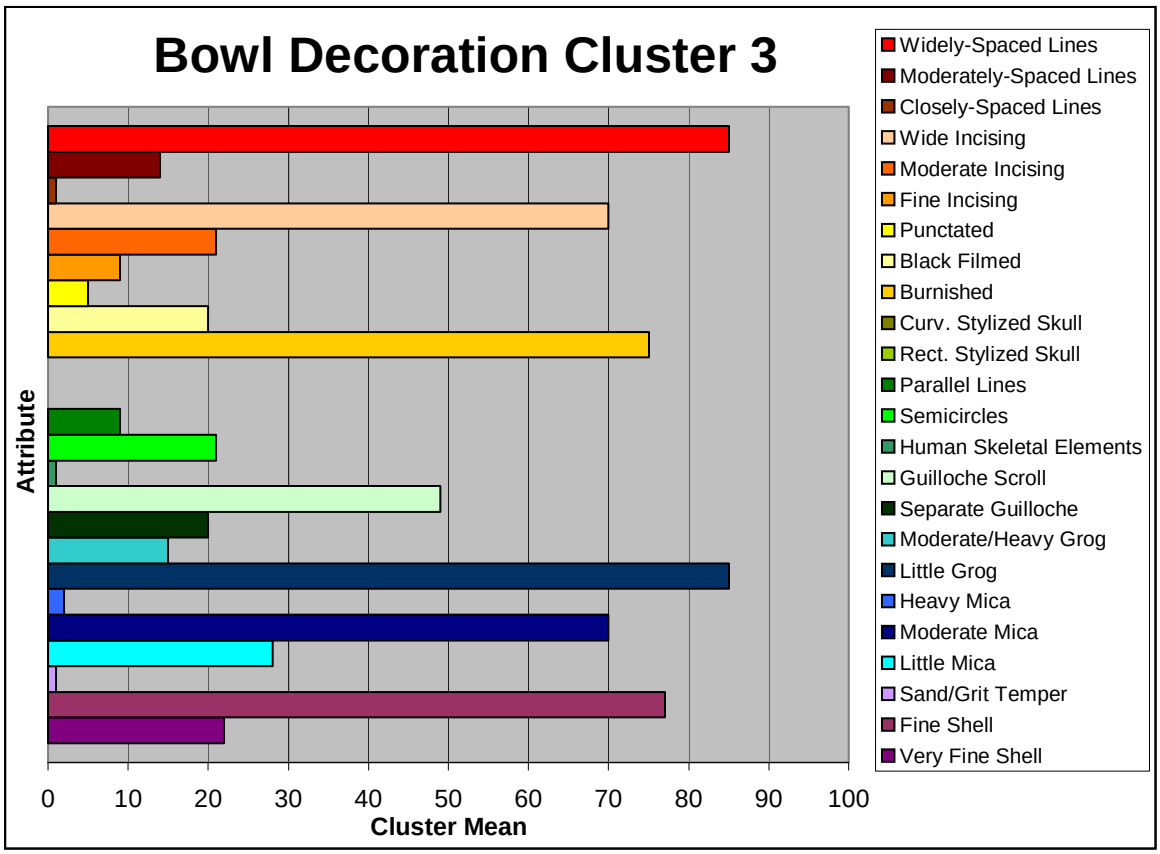

Figure 113. Mean values for pottery attributes in Bowl Decoration Cluster 3.

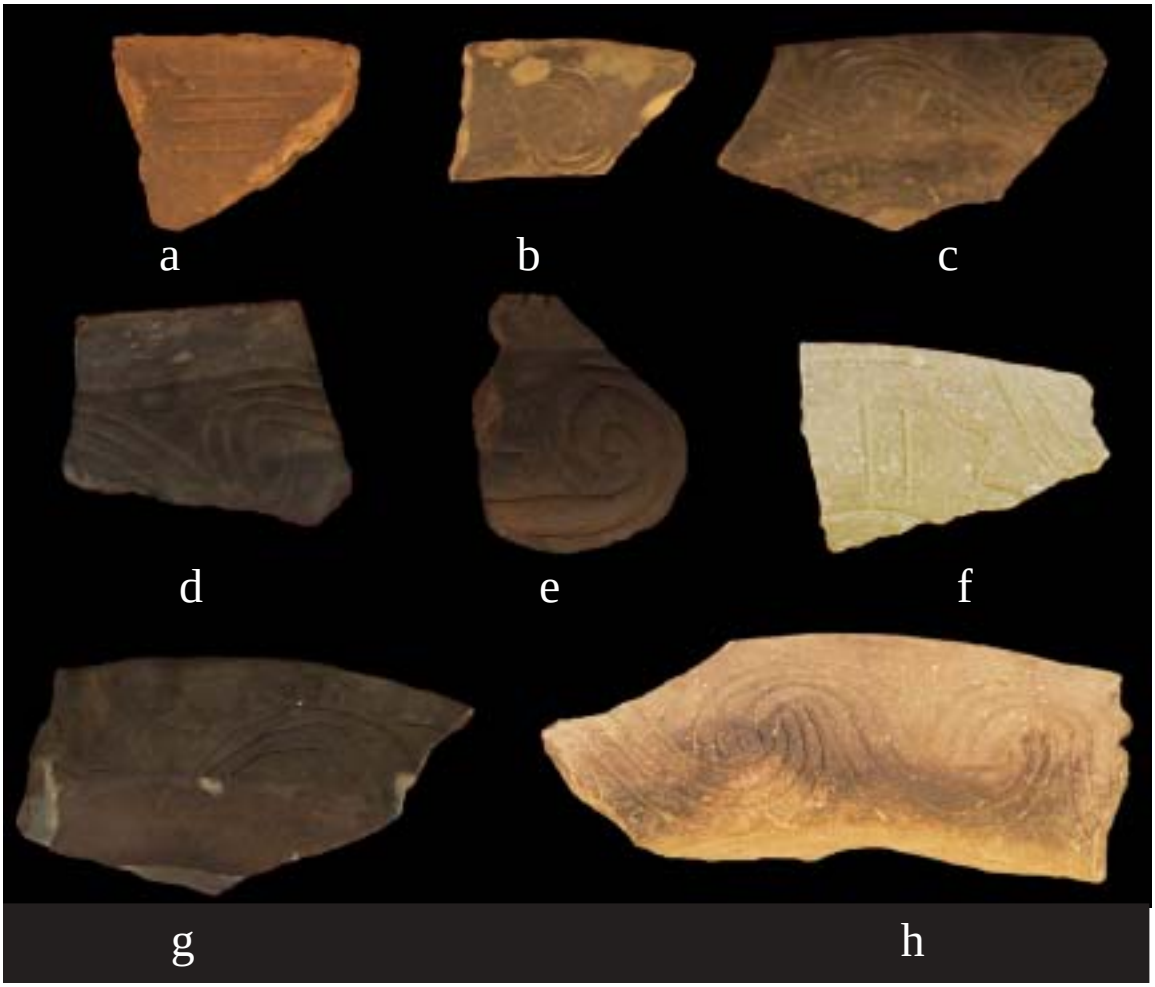

Figure 114. Sherds from the Durant Bend, Bear Creek, and Kulumi sites assigned to Bowl Decoration Cluster 3. The incised motifs represented are the (a) hand and long bone, (b-e,h) scrolling guilloche, and (f-g) semicircle.

third cluster made up 57.1 percent of the assemblage from Kulumi (n=19) and 55.6 percent of the assemblage at Bear Creek (n=70). Farther downriver at Durant Bend, the fourth cluster made up only 22.6 percent of the total assemblage (n=49), and at Matthew's Landing (n=20), it made up a relatively scarce 8.2 percent of the ceramic assemblage from the site.

The fourth and final bowl decoration cluster (n=99, Figure 115) is made up entirely of sherds with human skeletal element incised motifs (94 percent). These motifs are curvilinear (76 percent) rather than rectilinear and are often executed on a burnished paste (61 percent). They occur on a ware tempered with fine shell with a moderate amount of mica inclusions. This cluster includes the most sherds with moderate/heavy grog inclusions (21 percent), although this

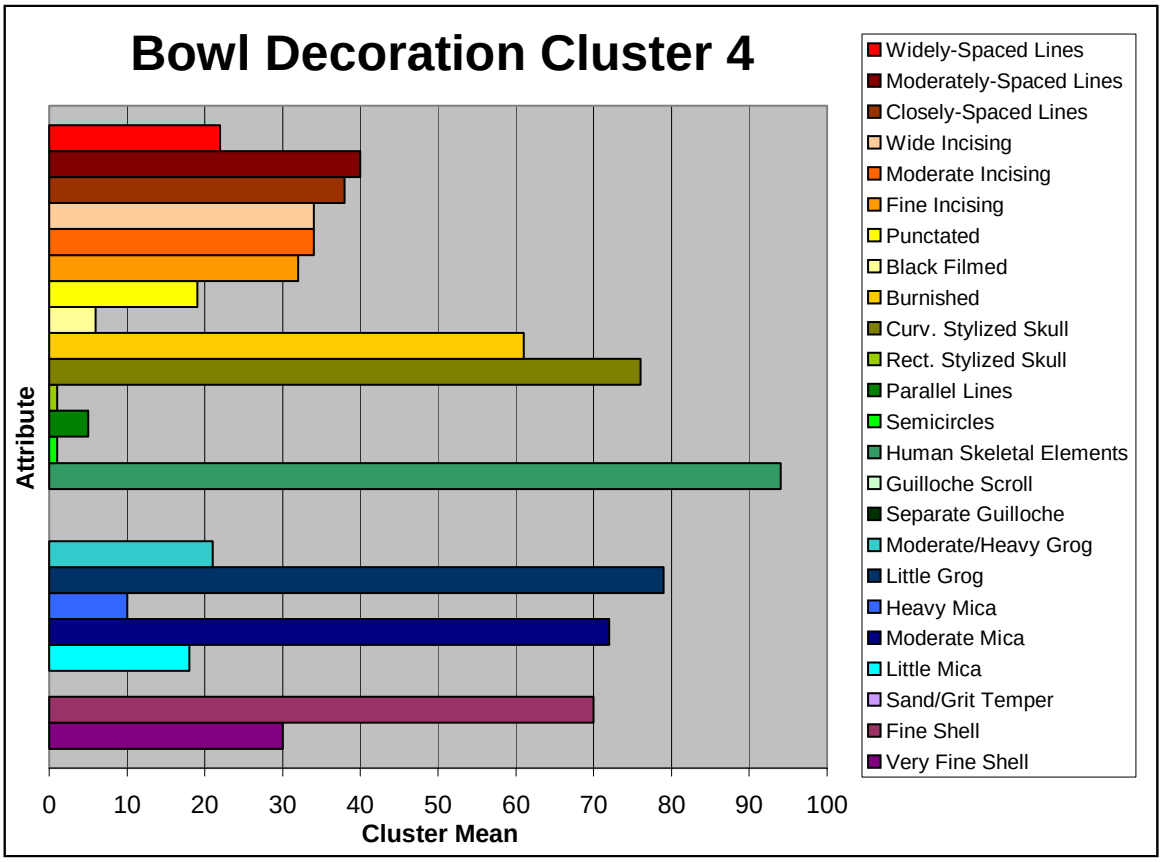

Figure 115. Mean values for pottery attributes in Bowl Decoration Cluster 4.

attribute is generally uncommon in the total assemblage. As with the first cluster, this decorative cluster appears to be derived from the Pensacola decorative tradition (Figure 116). However, while the first cluster appears to represent a localized stylistic development derived from Pensacola motifs, this decorative cluster is more directly related to pottery from the Mobile-Tensaw Delta, and would likely be classified there as Pensacola Incised, *var. Bear Point*. Predictably, this cluster is best represented at the site closest to Bottle Creek, Matthew's Landing (n=64), where it makes up 26.7 percent of the total assemblage. Somewhat surprisingly, it is not well-represented at the Durant Bend site (n=10), where it makes up only 4.6 percent of the total assemblage. It is far more common upriver at Bear Creek (n=21) and at Kulumi (n=4), where it respectively makes up 16.7 and 14.3 percent of the assemblages..

When the bowl rim data were analyzed (n=473), a five cluster solution proved most satisfactory. The majority of these clusters were easy to associate with their respective

Figure 116. Sherds from Matthew's Landing, Durant Bend, and Kulumi assigned to Bowl Decoration Cluster 4. All have some form of the curvilinear stylized skull incised motif.

Mississippian traditions. Others were slightly more difficult to understand. The first cluster (n=166, Figure 117) included sherds with a line demarcating the rim (96 percent), which was frequently flattened (54 percent). Approximately half the sherds exhibited notching around the rim, which was most often wide (33 percent), although fine notching (19 percent) also occured (Figure 118). These rims occurred on a ware tempered with fine shell (69 percent), and tended to have moderate to heavy amounts of grog inclusions (30 percent). This cluster of traits appears to be similar to the Bear Point rim mode, which is common at late Pensacola sites in the Mobile-Tensaw delta. However, the rims in the first cluster are not distinctly vertical and

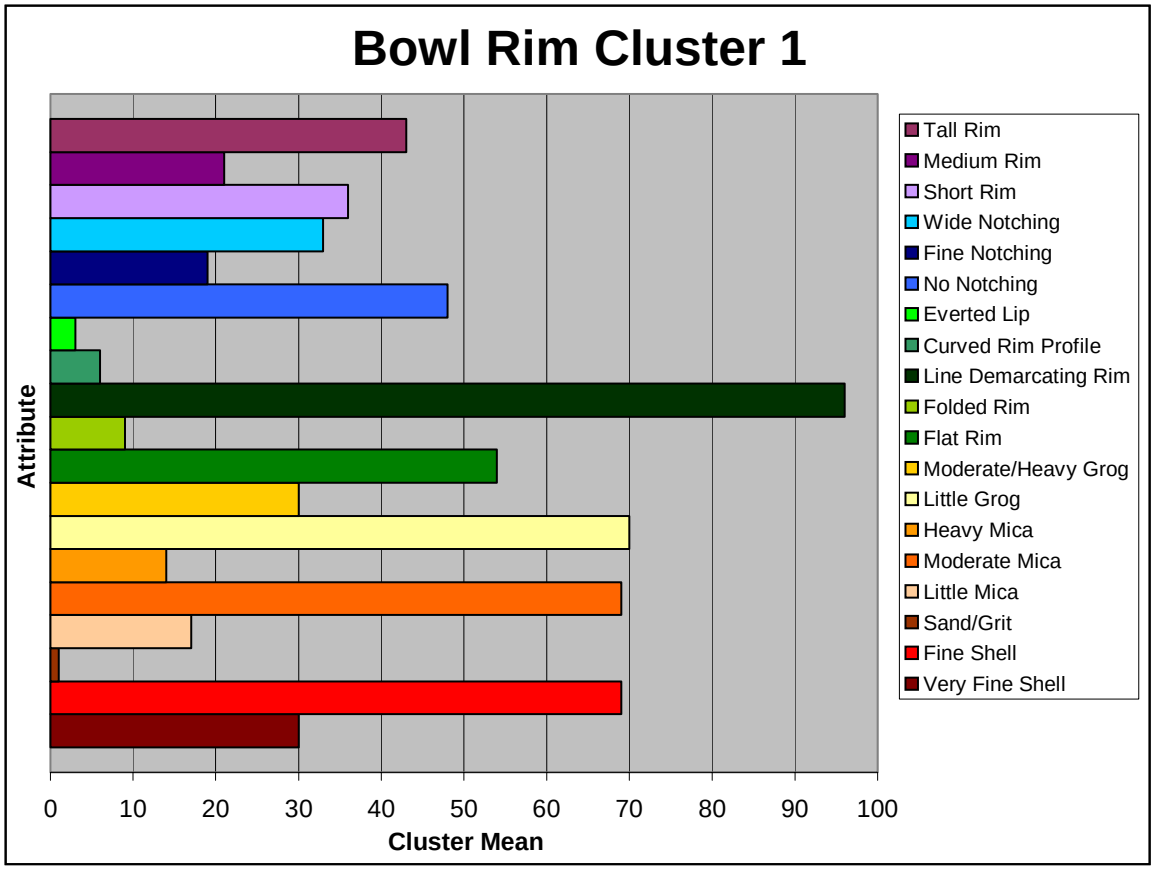

Figure 117. Mean values for pottery attributes in Bowl Rim Cluster 1.

thickened like typical Bear Point rims as defined on the Gulf Coast. The distribution of these rims across the four sites in the study is predictable given the connection between these rims and an established Pensacola pottery mode (Table 3). At Matthew's Landing, this cluster makes up 50.8 percent of the total site assemblage (n=135), as would be predicted, given the fact that the site is closest to the Mobile-Tensaw delta. At the Durant Bend site, rims from this cluster are nearly absent (n=8), at only 4.8 percent, which is unexpected since this site is nearest to Matthew's Landing. This cluster of rims is more common at Bear Creek (n=9), where it makes up 14.3 percent of the site assemblage. At Kulumi, rims from this cluster (n=14) make up 46.7 percent of the site assemblage.

There is, however, a likely explanation for this somewhat perplexing distribution of rims. It appears this cluster may subsume two different rim forms, the Pensacola-derived short notched rims and a short un-notched rim demarcated by a line on a hemispherical bowl more

Figure 118. Bowl rims from the Matthew's Landing site assigned to Bowl Rim Cluster 1

closely related to Lamar pottery traditions. A glance at the attribute means for this cluster shows sand/grit-tempered pottery, while generally poorly represented in the sample as a whole, appears more strongly in Bowl Rim Cluster 1. In these ceramic assemblages, the presence of

Table 3. Bowl Rim Cluster Membership by Site

Site	Cluster					Totals
	1	2	3	4	5	
Matthew's Landing	135	64	23	29	15	266
Durant Bend	8	22	28	17	39	114
Bear Creek	9	6	19	8	21	63
Kulumi	14	6	2	0	8	30
Totals	166	98	72	54	83	473

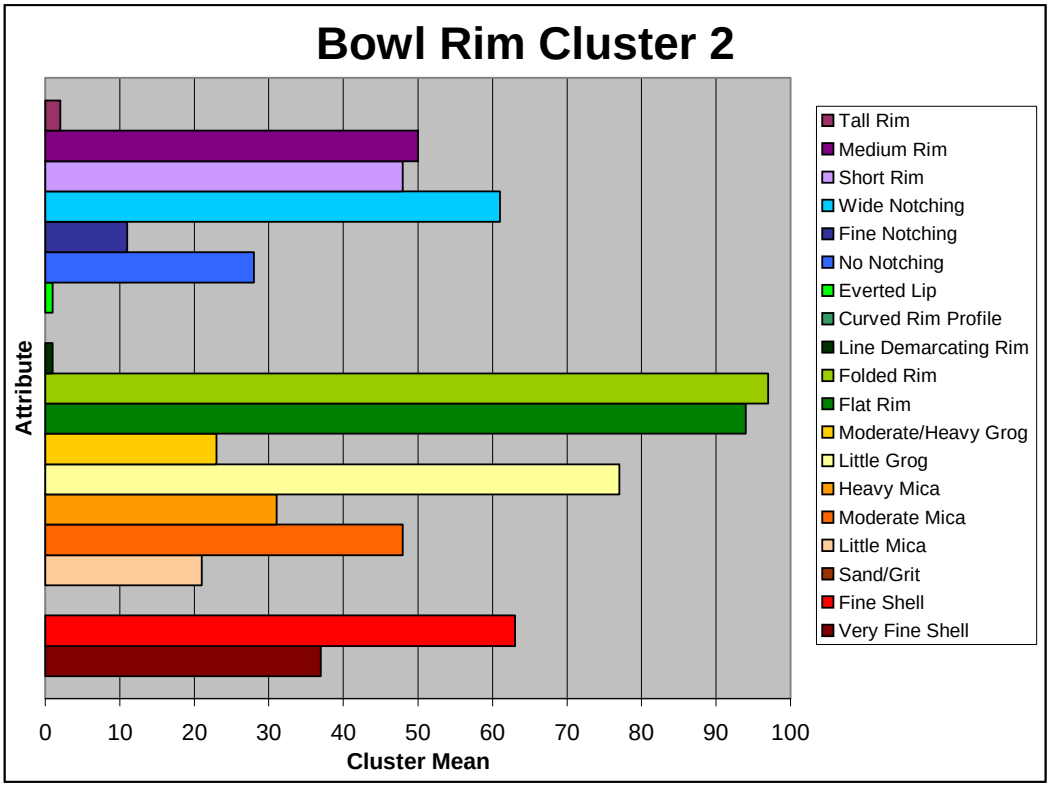

Figure 119. Mean values for each pottery attribute in Bowl Rim Cluster 2.

sand/grit-tempering is consistent only with Lamar-derived pottery, which may explain why this cluster of rims is also so well-represented at Kulumi.

Bowl Rim Cluster 2 (n=98) was a bit more straightforward (Figure 119). This cluster was comprised primarily of sherds with a vertical folded rim (97 percent) and a flattened lip (x=.94). These sherds most frequently exhibited wide notching around the lip (61 percent) and often occurred on a paste tempered with fine shell (73 percent) (Figure 120). The rim heights tended to fall in the lower (48 percent) and middle (50 percent) portion of the height range. This cluster of rims is clearly very closely related to the Bear Point rim mode in the Pensacola tradition, but the distribution of this rim type across the study area does not reflect the proximity of the sites to the Mobile-Tensaw Delta. At Matthew's Landing, Bowl Decoration Cluster 2 (n=64) makes up 24.1 percent of rims at the site. At Durant Bend (n=22) 19.3 percent of the assemblage was grouped into Bowl Decoration Cluster 2. At Kulumi, this cluster makes up 20 percent of the site assemblage (n=6). Finally, at Bear Creek (n=6), these sherds make up 9.5

percent of the assemblage. This rim mode occurs on pastes tempered with fine and very fine shell with all levels of mica inclusions, which may suggest that this rim mode is another Late Mississippian horizon style in the Alabama River Valley.

The third bowl rim cluster (n=72, Figure 121) consisted of tall rims (x=82 percent) that were folded (x=93 percent) and are again related to the Bear Point rim mode of the Pensacola tradition. All of the other attributes were distributed evenly in the cluster (Figure 122). Sherds in this cluster make up the greatest portion of the assemblages at Bear Creek (n=19) at 30.3 percent and at Durant Bend (n=28) at 24.6 percent. They make up only 8.1 percent of the assemblage at Matthew's Landing (n=23) and 6.7 percent of the assemblage at Kulumi (n=2). This cluster suggests the Bear Point-derived rims made by potters at Bear Creek and Durant Bend tended to be taller than those at Matthew's Landing and Kulumi.

Figure 120. Bowl rim sherds from the Durant Bend and Matthew's Landing sites assigned to Bowl Rim Cluster 2.

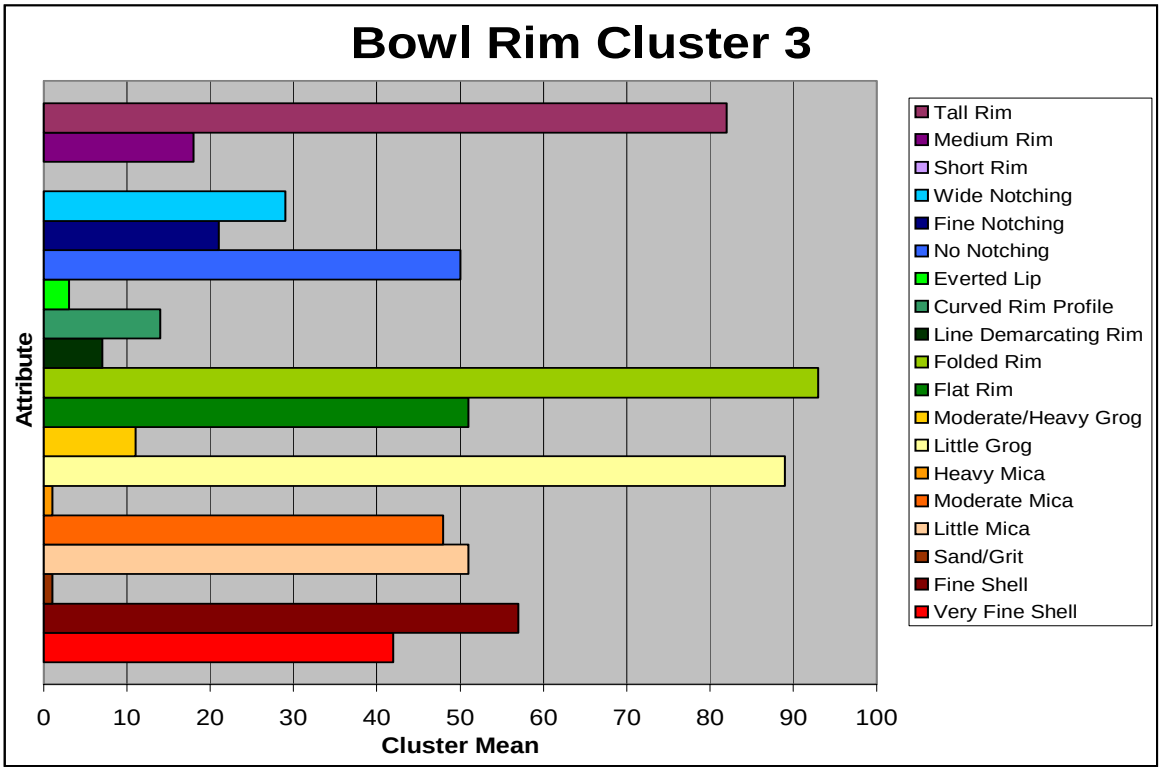

Figure 121. Mean values for each pottery attribute in Bowl Rim Cluster 3.

Figure 122. Bowl rim sherds from the Durant Bend site assigned to Bowl Rim Cluster 3.

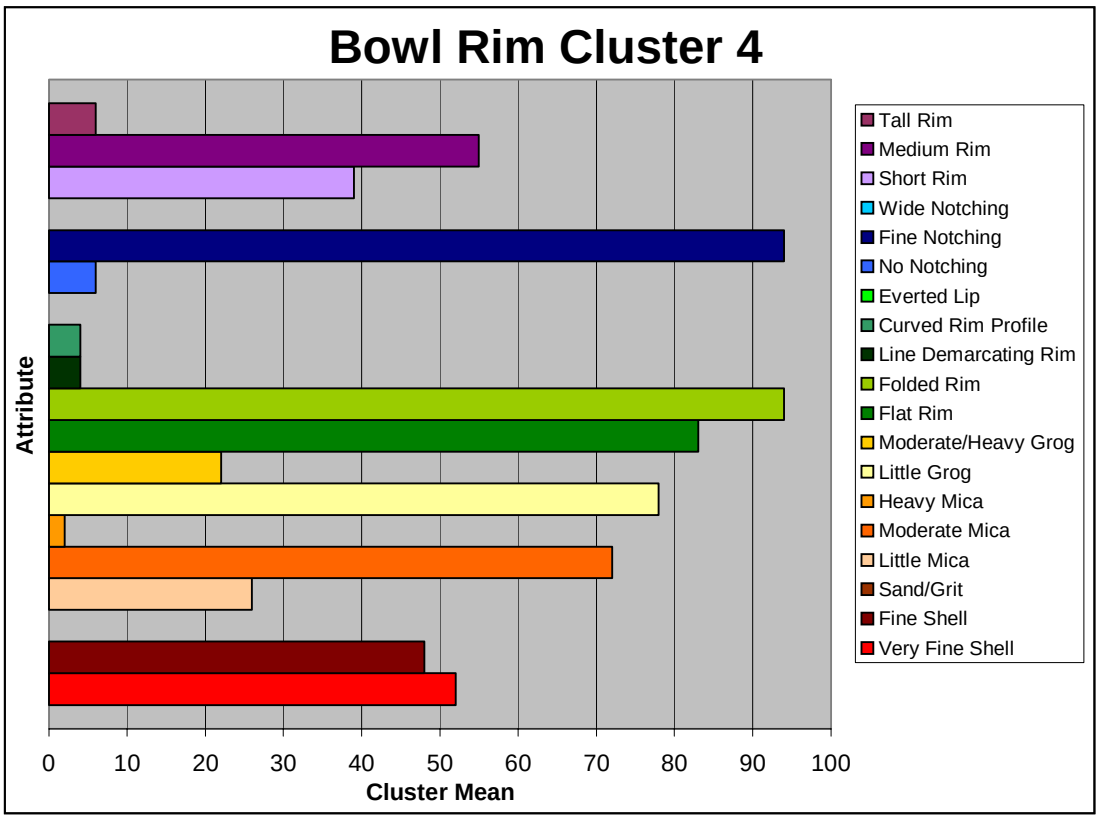

Figure 123. Mean values for each pottery attribute in Bowl Rim Cluster 4.

The fourth bowl cluster (n=54, Figure 123) was once again derived from Pensacola rim modes. Rims in this cluster typically exhibit fine notching (94 percent) on a folded (94 percent), flattened rim (83 percent). Sherds in this cluster also exhibited moderate mica inclusions (72 percent). This cluster demonstrates the expected distribution of a rim form closely associated with pottery of the Mobile-Tensaw Delta (Figure 124). It is most common at Durant Bend (n=17), where it makes up 14.8 percent of the assemblage, followed by Bear Creek (n=8), where it makes up 13 percent of the assemblage, and makes up 10.9 percent of the assemblage at Matthew's Landing (n=29). No sherds of this cluster occur at Kulumi.

The fifth and final cluster of bowl rims (n=71, Figure 125) includes sherds that appear to be derived from the Moundville tradition. Sherds in this category have folded rims (90 percent) that are curved (87 percent) (Figure 126). Frequently, the lips of these rims are everted (58 percent). These sherds typically exhibit moderate levels of mica inclusions (69 percent). These sherds appear very different from the previous three clusters in profile, and appear to be very

Figure 124. Bowl rim sherds from Matthew's Landing, Durant Bend, and Bear Creek assigned to Bowl Rim Cluster 4..

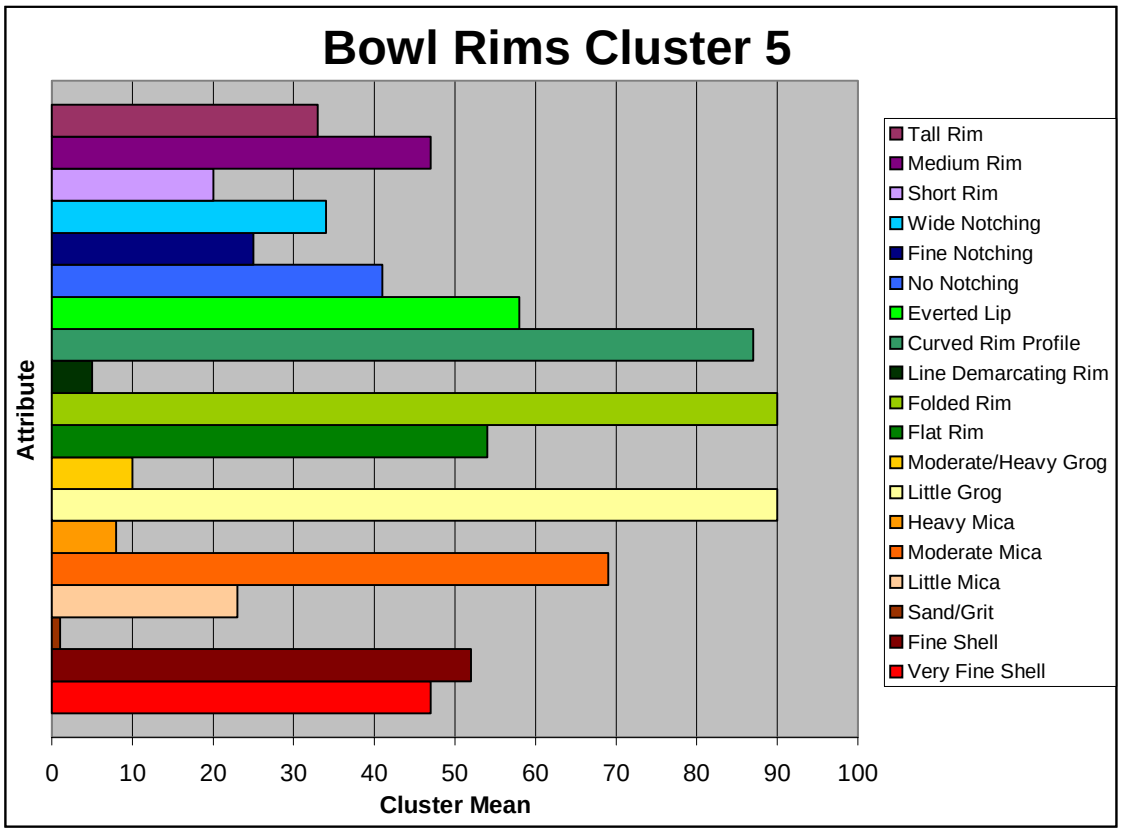

Figure 125. Mean values for each pottery attribute in Bowl Rim Cluster 5.

Figure 126. Bowl rim sherds from Durant Bend and Matthew's Landing assigned to Bowl Rim Cluster 5.

closely related to the short-neck bowl form associated with Moundville pottery. Predictably, the distribution of this cluster across the towns in the study was very different from the previous clusters. This cluster of rims made up the highest portion of the rim assemblage at 34.2 percent at Durant Bend (n=39), followed by Bear Creek (n=21), where it made up 33.3 percent of the rim assemblage. At Kulumi (n=6), Bowl Rim Cluster 5 made up 26.7 percent of the rim assemblage. This cluster was far less common at Matthew's Landing (n=15), where it made up only 5.6 percent of the rim assemblage.

A five cluster solution proved to be the best fit for the globular jar data (n=448). The first cluster generated by this analysis (n=116, Figure 127) was dominated by jar sherds decorated with appliqué ridges (100 percent). Many of the sherds with a rolled lip (57 percent) and fossil shell temper (22 percent) were assigned to this cluster (Figure 128). This cluster was represented most strongly at Durant Bend (n=54), where it made up 51.9 percent of the jar rim

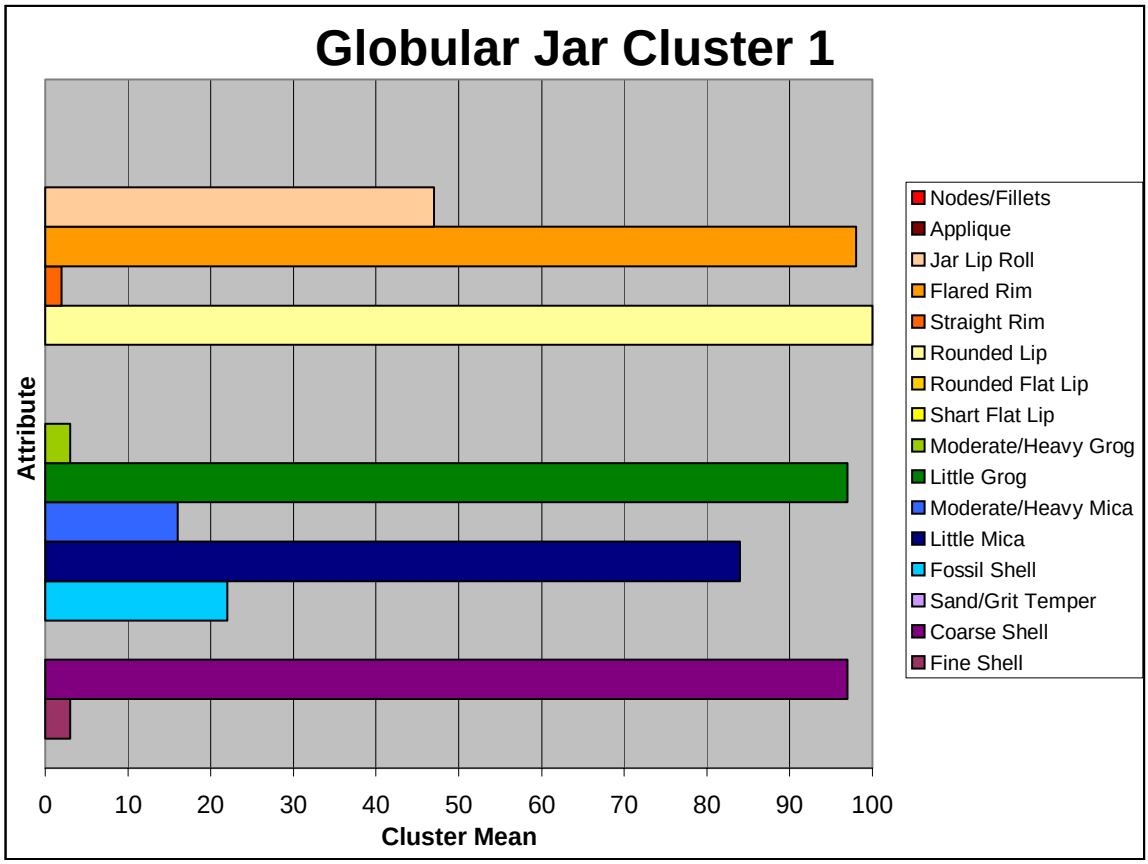

Figure 127. Mean values for each pottery attribute in Globular Jar Cluster 1.

Figure 128. Jar sherd from Durant Bend assigned to Globular Jar Cluster 1. This example has a flared rim and a lip that is both rounded and rolled.

Table 4. Globular Jar Cluster Membership by Site

Site	Cluster					Totals
	1	2	3	4	5	
Matthew's Landing	22	45	86	27	6	186
Durant Bend	54	1	11	17	21	104
Bear Creek	30	5	25	25	16	101
Kulumi	10	10	18	19	0	57
Totals	116	61	140	88	43	448

assemblage (Table 4). At Bear Creek (n=30), 29.7 percent of the assemblage was assigned to Cluster 1. At Kulumi (n=10), 17.5 percent of the assemblage was assigned to this cluster. At Matthew's Landing (n=22), the first cluster made up only 11.8 percent of the jar rim assemblage. The vast majority of sherds with a rolled lip were from the Durant Bend site, which may suggest that this attribute is a localized, community-wide development. Rolled lips also occurred quite frequently on appliqué pottery, which was common both at Bear Creek and Durant Bend. The use of fossil shell, rather than live mussel shell, as a tempering agent was also very common at the Durant Bend site; this is likely a matter of convenience since this site, more so than the others, lies in the heart of the region where fossil-bearing rock formations are exposed on the ground surface.

Globular Jar Cluster 2 (n=61, Figure 129) consisted of sherds with a sharply flattened lip (97 percent). This cluster had the strongest showing of sherds with sand/grit temper (10 percent), although the percentage represents the small number of these sherds in the sample (Figure 130). This cluster comprised 24.2 percent of the Matthew's Landing jar assemblage (n=45), and 17.5 percent of the jar assemblage at Kulumi. At both Bear Creek and Durant Bend, Globular Jar Cluster 2 made up less than five percent of the jar assemblages. This cluster appears to combine two different forms of jars. The sherds from Matthew's Landing come from straight-rimmed coarse shell-tempered jars similar to those occurring in the Mobile-Tensaw delta. The sherds from Kulumi, however, appear to be from sand/grit tempered Lamar jars, as is evidenced by the small contribution of this tempering agent to the cluster as a whole. This Lamar association also is evident in the number of jars with attached fillets or nodes (16

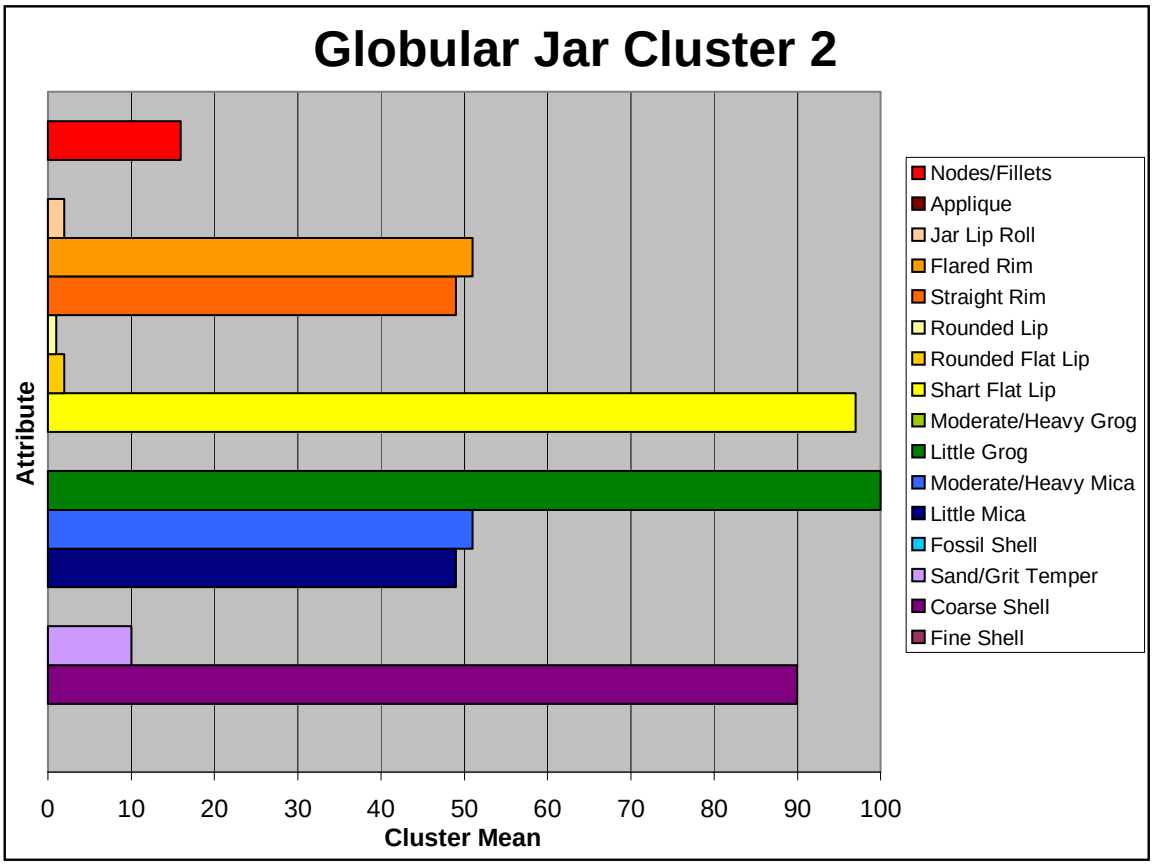

Figure 129. Mean values for each pottery attribute in Globular Jar Cluster 2.

Figure 130. Globular jar sherds from Kulumi and Matthew's Landing assigned to Cluster 2. The sherd on the left is sand/grit-tempered with a straight rim, sharp flat lip, and fillet strip, while the sherd on the right is tempered with coarse shell and has a straight rim, sharp flat lip, and nodes.

percent). Although jars with these attachments are a minority in the sample, the presence of attached fillets is common on Lamar jars, and nodes are common on straight rimmed Pensacola jars.

The third globular jar cluster (n=140, Figure 131) consisted of sherds with a rounded flat lip (63 percent), which occur frequently with a straight rim (53 percent). It appears most of the jars with moderate levels of grog inclusions (26 percent) were also assigned to this cluster (Figure 132). This cluster was most common at Matthew's Landing (n=86), where it made up 46.2 percent of the total assemblage. At Kulumi (n=18), this cluster made up 31.6 percent of the total site assemblage. Jar Rim Cluster 3 made up 24.8 percent of the total assemblage at Bear Creek (n=25). This cluster was far less common at Durant Bend (n=11), where it made up only 10.6 percent of the total assemblage. The way in which this cluster is distributed across

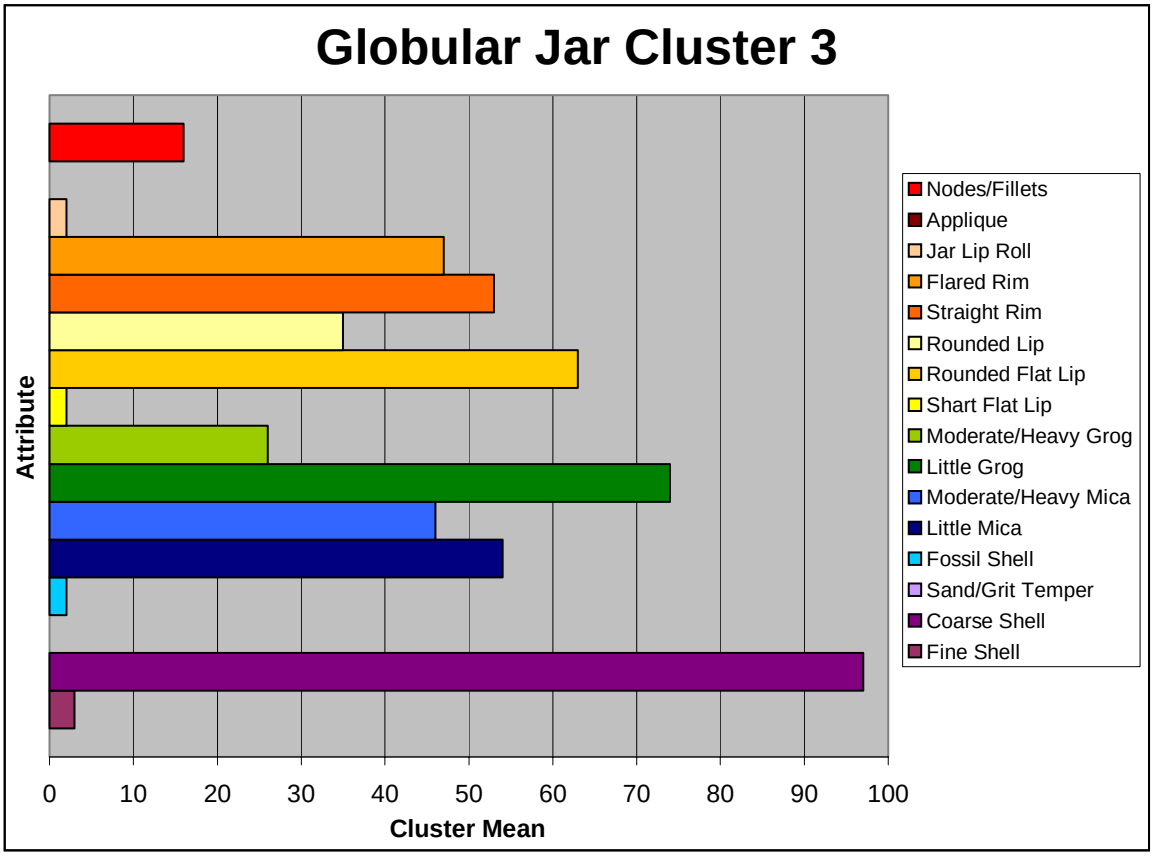

Figure 131. Mean values for each pottery attribute in Globular Jar Cluster 3.

Figure 132. Globular jar sherds from the Matthew's Landing site assigned to Cluster 3. The sherds have a straight rim and a rounded flat lip.

the sites does not appear to show any recognizable pattern. It is unclear what trends in ceramic manufacture, if any, this cluster may represent.

The fourth cluster of globular jars (n=88, Figure 133) consists of sherds with a flared rim (x=.86) and a rounded lip (84 percent). These jars frequently possess moderate to heavy mica inclusions (69 percent). A number of the jars with nodes or fillets (35 percent) and a sand/grit tempered paste (19 percent) were included in this cluster (Figure 134). While these numbers are relatively low, this cluster is one of two clusters where these attributes appear in any quantity above a few percent. This cluster is represented most strongly at Kulumi (n=19), where it makes up 33.3 percent of the ceramic assemblage. The next strongest representation is at Bear Creek (n=25), where 24.8 percent of examined sherds are classified as belonging to Globular Jar Cluster 4. These two sites are followed by Durant Bend (n=17), where 16.3 percent of sherds were grouped into this cluster. Finally, 14.5 percent of sherds at Matthew's Landing (n=27) were grouped as part of the fourth cluster. The stronger presence of sherds grouped into this cluster at Kulumi and Bear Creek suggest that this cluster also includes a number of sherds from the Lamar tradition. This also is evidenced by the relatively strong

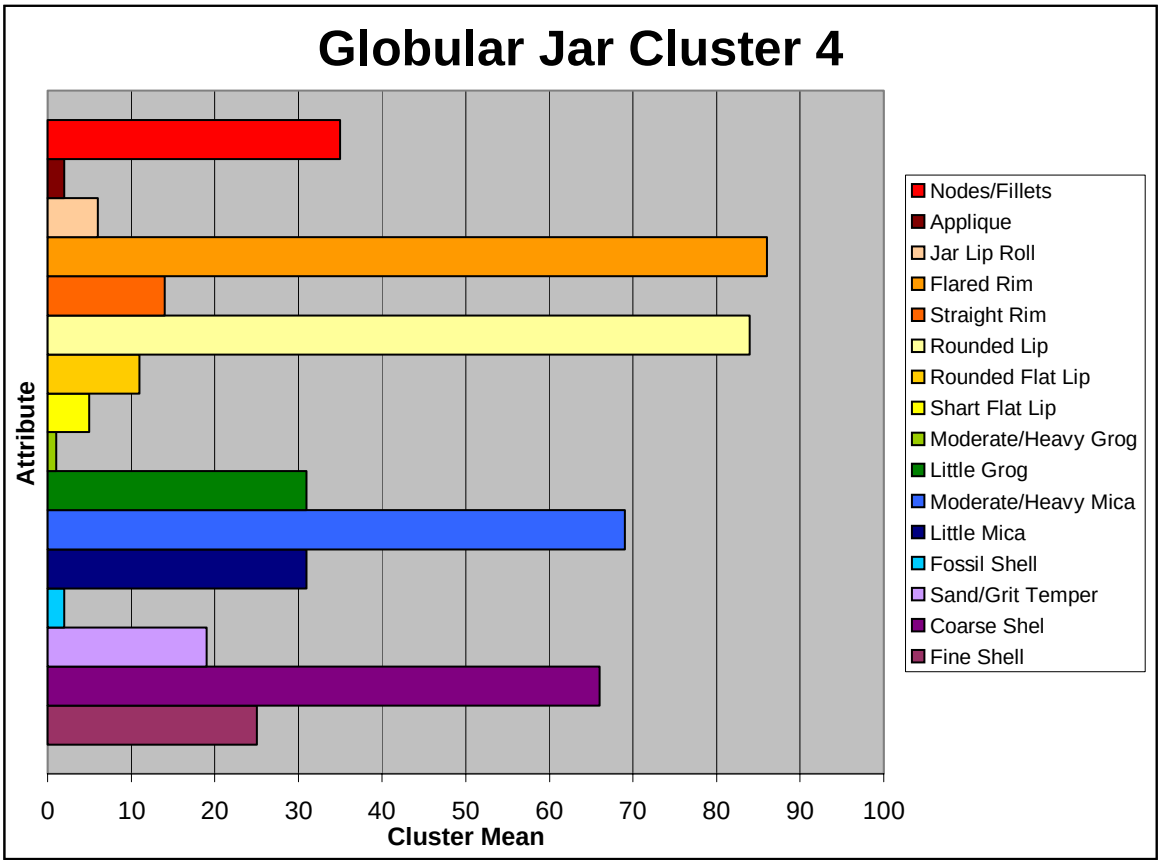

Figure 133. Chart showing the mean values for each pottery attribute in Jar Cluster 4.

Figure 134. Jar sherd recovered from the Bear Creek site assigned to Globular Jar Rim Cluster 4. The sherd is tempered primarily with sand/ grit and has a flared rim with a rounded lip.

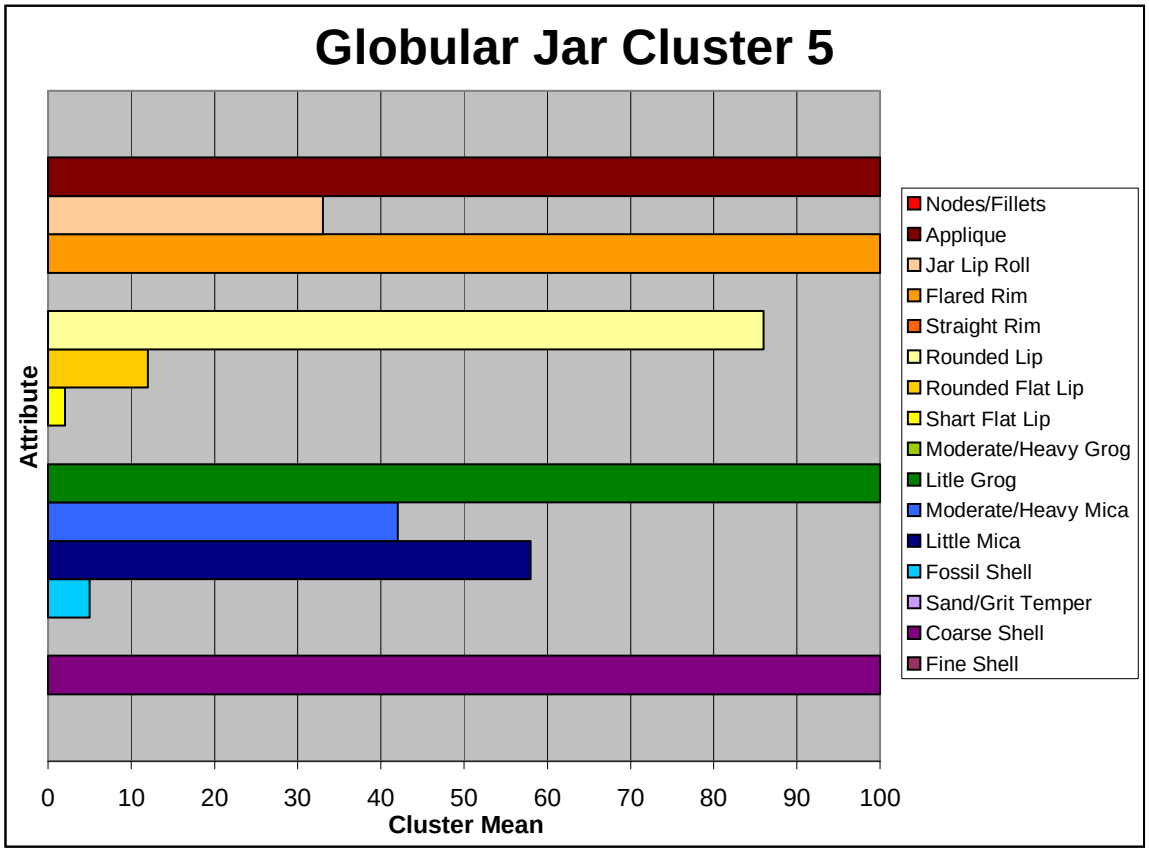

Figure 135. Mean values for each pottery attribute in Globular Jar Cluster 5.

representation of sand/grit tempering and nodes and fillets in this cluster. However, the mean value for coarse-shell tempering is high enough (66 percent) to suggest another pottery tradition may be included in this cluster.

Finally, the fifth cluster of globular jars (n=43, Figure 135) consisted of rims with appliqué (100 percent) and rounded lips (86 percent). Sherds in this cluster were always tempered with coarse shell (100 percent) with few grog inclusions (100 percent) (Figure 136). This cluster makes up the largest percentage of the assemblage at Durant Bend (n=21), at 20.0 percent. The next strongest representation is at Bear Creek (n=16), where 15.8 percent of sherds are classified as belonging to the fourth cluster. These two sites are followed by Matthew's Landing (n=6,), where only 3.2 percent of sherds were grouped into this cluster. No sherds at Kulumi were grouped as part of the fourth cluster. Once again, it appears appliqué, rolled lips, and fossil shell tempering are more prevalent at Bear Creek and Durant Bend.

Figure 136. Appliqué globular jar sherds from the Durant Bend site assigned to Cluster 5. The sherd on the left is tempered with fine shell and has a flared rim and a rounded lip. The surface has been painted with red and white pigment. The sherd on the right has a flared rim and rounded lip, as well as a strap handle. It is tempered with coarse shell.

Correspondence Analysis

The agglomerative cluster analysis generated a series of results useful in determining which attributes tended to co-occur in the broader sample, which suggests that there were several distinct models of pottery production in the assemblages from all four towns. By examining the occurrence of each cluster at the four sites, it was possible to examine how each basic potting model was represented in each assemblage. In more than one case, however, it appeared a cluster subsumed two distinct potting traditions. Additionally, while the results of the cluster analysis, demonstrated which attributes of pottery production made up each of the clusters, it did not provide a good characterization of which attributes distinguished the sites from one another. This is not the function of cluster analysis. Rather, a different statistical technique is needed to better understand how the sites are similar and different to one another based on the occurrence of a few key attributes at each site. Correspondence analysis is a statistical technique that allows the investigator to reduce the number of dimensions in a data set composed of nominal values of both presence/absence and abundance (counts). Much like

principal components analysis (PCA), correspondence analysis allows the investigator to detect major trends in the data and to determine which variables are involved in these trends (Shennan 1998:297). Unlike PCA and cluster analysis, correspondence analysis does not work from a matrix of similarities and distances. Instead, this technique works from a series of chi-square distance values that represent the differences between the expected and actual representation of a variable in an assemblage (Shennan 1998:315). As a statistical technique, correspondence analysis is rather new, having been developed in France in the early 1980s. Shennan (1998:308) noted that its popularity has spread to American archaeology only reatively recently, primarily because this technique has only been included in statistical software packages in the last decade.

Correspondence analysis is calculated by examining a series of data in rows and columns. An example of this process would be examining the distribution of three incising motifs, which make up the columns, in the ceramic assemblages at four archaeological sites, which make up the rows. In a correspondence analysis, chi-squared distances are initially calculated for each row and column. For the rows, this distance is a measure of how much the observed amount of an incising motif in an assemblage varies from the value expected if each motif was equally represented at each site. The differences between observed and expected values are then summed for each row and divided by the weight of each site assemblage in the whole data set, known as the mass of the row (Shennan 1998:315). Therefore sites, or rows with more observations in the data set have more influence on the outcome (Shennan 1998:315). When the chi-squared distances between observed and expected values are summed and divided by the mass, the resulting number, which represents the total departure from expected values, is known as the total inertia. The more a table differs from expected values, the greater the inertia value. The values generated using the rows provides a measure of how each site differs based on the distribution of ceramic types. The same calculations can be done for the column data as well, which generates a measure of how the different incising motifs are distributed across each assemblage (Shennan 1998:316). The chi-squared distances

between observed and expected values for each cell in the contingency table are then converted to Euclidean distance, so the data points can be plotted in space.

In an analysis with multiple dimensions, such as one that examines individual site ceramic assemblages based on multistate variables such as incised motif, vessel form, and rim mode, the calculation of total inertia and the plots of chi-square distances in Euclidean space quickly become very complicated. Like PCA, correspondence analysis attempts to create an axis line through the points accounting for a maximal amount of the variance in the sample. In the case of correspondence analysis, this line is placed along an axis accounting for the maximal amount of inertia in the data (Shennan 1998:318). To determine which line is the best fit, the distances from each data point to the line are computed as a sum of squared chi-square deviations. The line that results in the lowest value for the sum of squared deviations is considered to be the best possible fit for the data. The point of correspondence analysis is to be able to represent all of the variance in the data set in two dimensions (Shennan 1998:318). Correspondence analysis in the present case attempts to account for the variance in two dimensions, by examining both the variation in incised motifs at each site and how these motifs are differentially distributed across the sites. For a correspondence analysis to reveal an ideal solution, both dimensions must account for a substantial portion of the inertia in the data. A single dimension cannot account for all of the inertia in the sample. If the analysis does generate two strong dimensions that account for the vast majority of inertia in the data, the next step is to examine how the variance in the states of each variable are distributed in space. To this end, each row/column category, in this case each site and each incised motif, is assigned a score against each of the two dimensions extracted by the correspondence analysis. The dimension scores are then plotted on a Cartesian coordinate graph, which serves to spatially represent the distance between both categories of data. By examining the location of each point on the graphs relative to the other points, it is possible to understand the relationships among the nominal categories of data.

Because of the nature of the statistical technique of correspondence analysis, the analyses of jars and bowls were conducted in a slightly different fashion. While the analysis of

bowl rim and decorative attributes remained completely separate, all of the bowl sherds were included in the correspondence analysis of bowl paste, which included temper, mica inclusions, and grog inclusions. Clearly, not all possible combinations of temper choices and paste inclusions were represented in the sample. The correspondence analysis of bowl paste extracted two strong dimensions. As is demonstrated in Table 5, the first dimension accounted for 59.4 percent of the inertia, and the second accounted for 33.4 percent. The graph of the dimension scores depicted in Figure 137 shows the position of the sites and paste combinations relative to one another. The graph suggests the following trends. Sherds tempered with very fine shell and moderate mica inclusions are strongly associated with Matthew's Landing, Durant Bend, and Bear Creek. In general, bowl sherds from Durant Bend and Bear Creek are executed on very similar pastes, tempered with fine shell. Pastes with moderate levels of mica and very fine shell also occur there. At Matthew's Landing, sherds tend to be tempered with very fine crushed shell and have heavier mica inclusions. Additionally, grog is frequently added to the paste of sherds from Matthew's Landing. Kulumi is different because it possesses sand-grit tempered pottery, although the remainder of sherds appear to be more closely tied to Durant Bend and Bear Creek than Matthew's Landing. The presence of sherds with grog temper at Kulumi is not likely to be the result of any cultural ties to Matthew's Landing because grog does not occur along with mica at Kulumi as it does at Matthew's Landing.

For the analysis of bowl decoration, the five motifs collapsed for the cluster analysis were expanded back into fourteen motifs, illustrated, with the exception of parallel lines, in Figure 101. It was hoped that using the more specific motif criteria would help to bring out any

Table 5. Results of Correspondence Analysis of Bowl Paste

				Proportion of Inertia	
Dimension	Inertia	Chi-Square	Significance	Accounted for	Cumulative
1	0.181			0.594	0.594
2	0.102			0.334	0.928
3	0.022			0.072	1.000
Total	0.305	271.800	0.000	1.000	1.000

Bowl Paste CA Dimension Scores

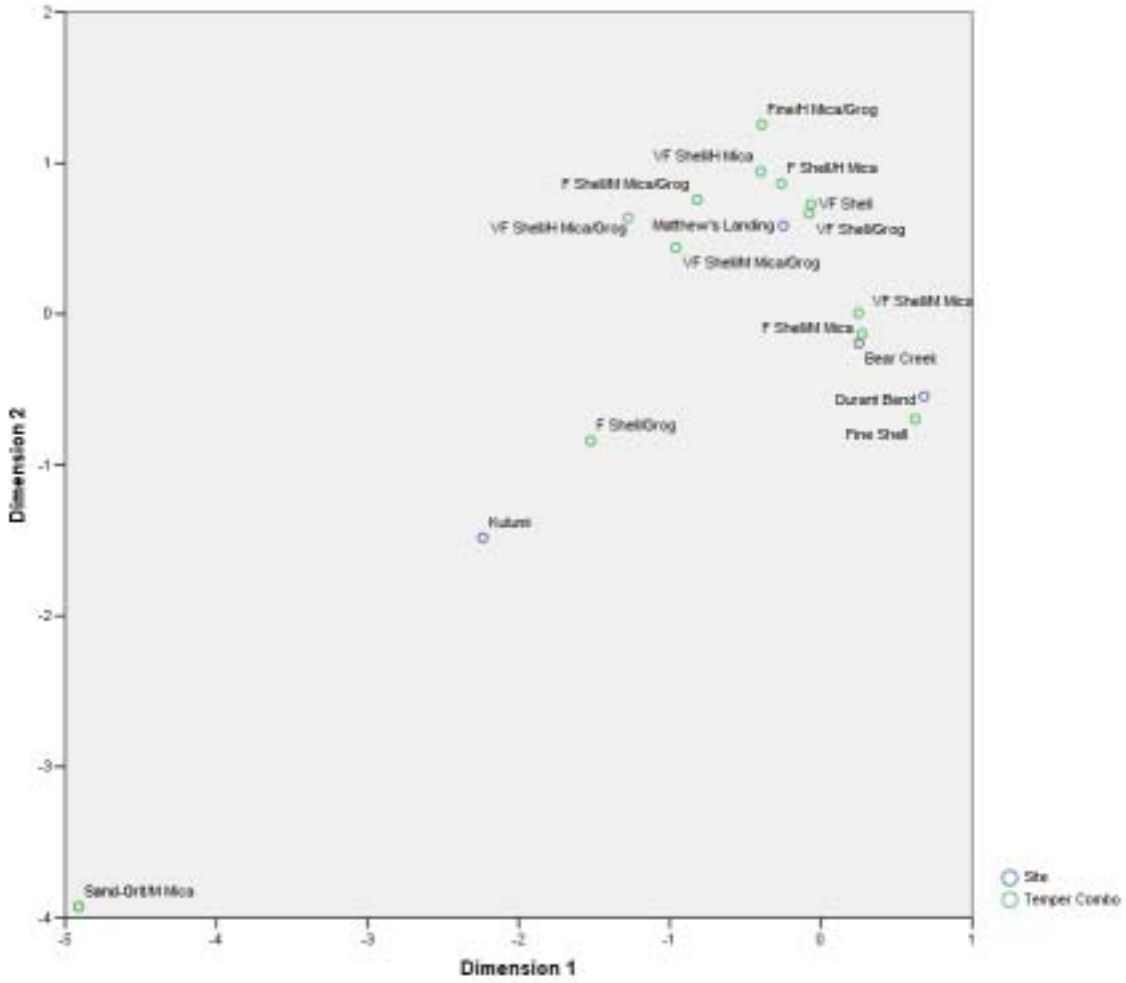

Figure 137. Plot of dimension scores for sites and paste combinations generated by correspondence analysis.

differences in decorative style among the four sites. The first dimension of the correspondence analysis accounted for 62.2% of the total inertia, while the second dimension accounted for 27.8% (Table 6). The graph of the dimension scores of each site and motif shown in Figure

Table 6. Results of the Correspondence Analysis of Bowl Incising Motifs

				Proportion of Inertia	
Dimension	Inertia	Chi-Square	Significance	Accounted for	Cumulative
1	0.307			0.622	0.622
2	0.137			0.278	0.901
3	0.049			0.099	1.000
Total	0.493	315.248	0.000	1.000	1.000

Bowl Incising Motif CA Dimension Scores

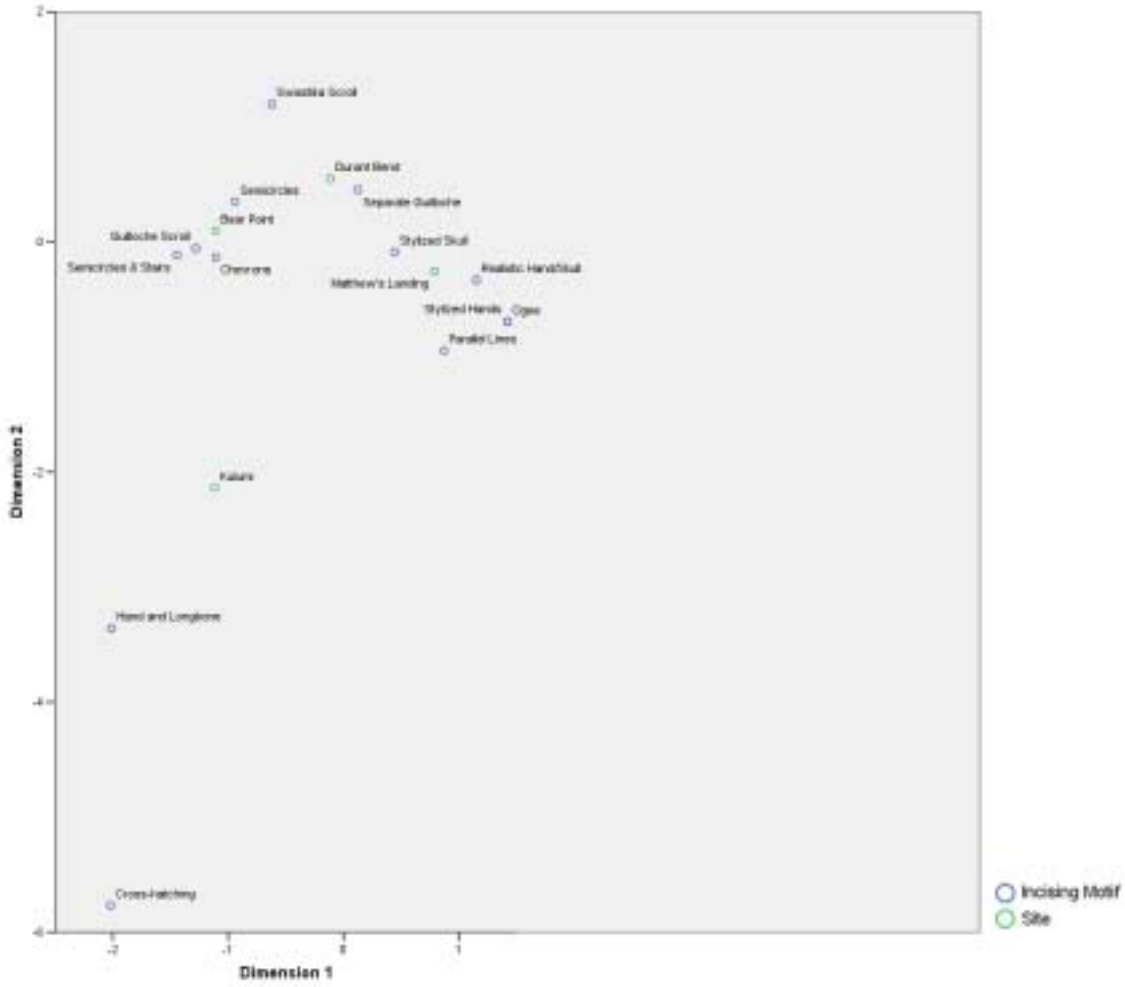

Figure 138. Plot of dimension scores for sites and incising motifs generated by the correspondence analysis

138 demonstrated the clear differences between the sites. Matthew's Landing is distinctive because it associates strongly with Pensacola pottery motifs, including ogees, realistic hands and skulls, parallel lines, and stylized hands. Durant Bend is distinctive based on the presence of the scrolling swastika motif, a motif that probably originated in the central Mississippi Valley (Phillips, Ford, and Griffin 1951:137-140; Sheldon and Jenkins 1986), and is closer to Bear Creek, which possesses various Moundville motifs, including semicircles, semicircles with stairs, chevrons, and the scrolling guilloche. It is interesting to note that Pensacola motifs like the separate guilloche and stylized skull situates between all three sites. Kulumi is once again

separated from the others, this time by the presence of a Moundville motif, the hand and long bone, and a Lamar motif, cross-hatching.

All of the sites were linked by the presence of the incised skylized skull motif, as previously demonstrated. However, during the course of analysis, it was clear that this motif was executed in a variety of ways, which appeared to be patterned. Therefore, where it was possible the style of skull execution was also recorded. There were five styles of executing a skull, which are illustrated in Figure 139. These included a rectilinear skull with a row of punctated teeth (Figure 139a), a rectilinear skull with a chevron motif and two rows of teeth (Figure 139b), a curvilinear skull with punctated teeth (Figure 139c), a curvilinear skull with

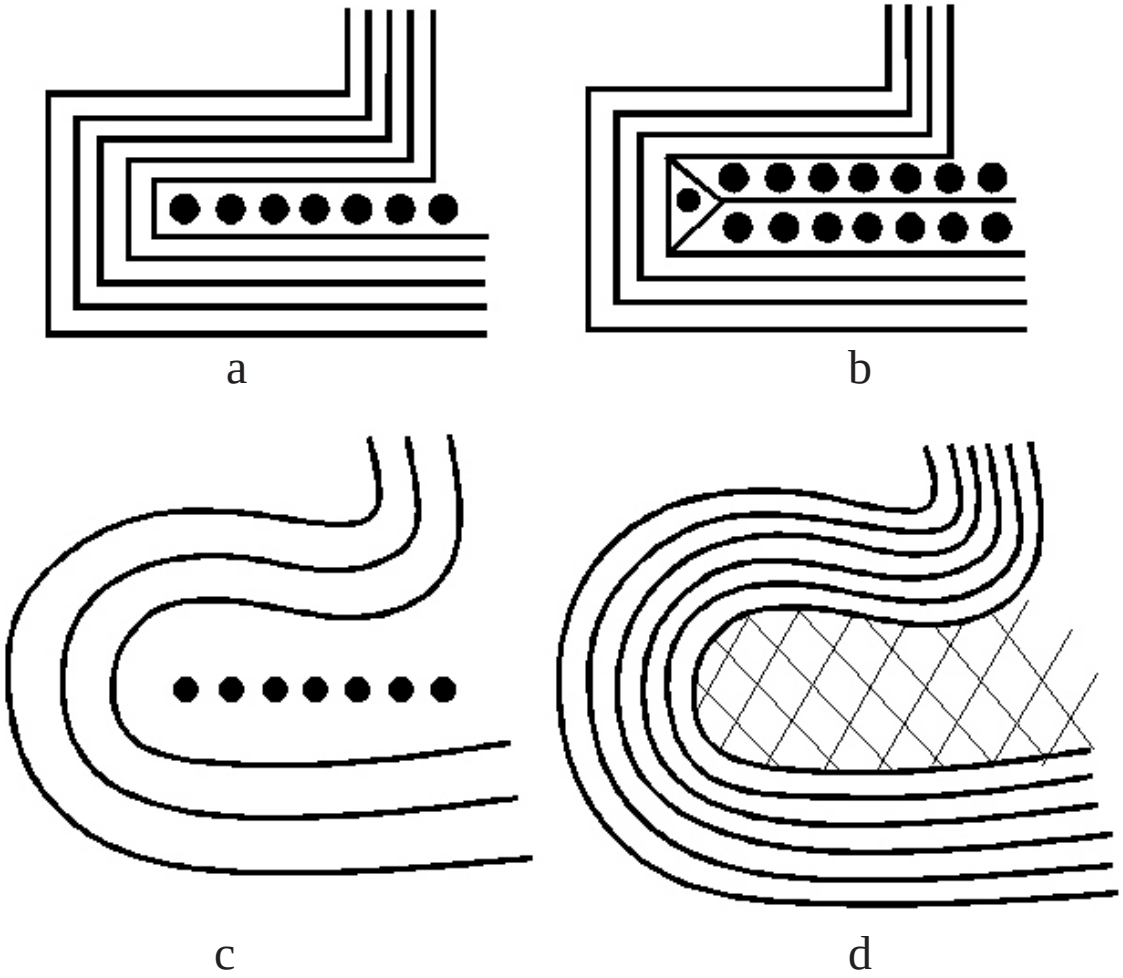

Figure 139. Four of the five stylized skull styles, including (a) rectilinear, (b) chevron, (c) curvilinear, and (d) curvilinear with cross-hatching. The fifth style is a skull with a secondary motif, such as an ogee or guilloche.

Table 7. Results of the Correspondence Analysis of Skull Execution Style

Dimension	Inertia	Chi-Square	Significance	Proportion of Inertia Accounted for	Proportion of Inertia Cumulative
1	0.210			0.784	0.622
2	0.056			0.210	0.994
3	0.002			0.076	1.000
Total	0.268	47.276	0.000	1.000	1.000

cross-hatched teeth (Figure 139d), and a curvilinear skull executed next to an ogee or separate guilloche that is not illustrated. When the data were subjected to a correspondence analysis, the first dimension accounted for 78.4 percent of the total inertia, while the second dimension accounted for 21.0 percent of the total inertia (Table 7). The graph of the dimension scores

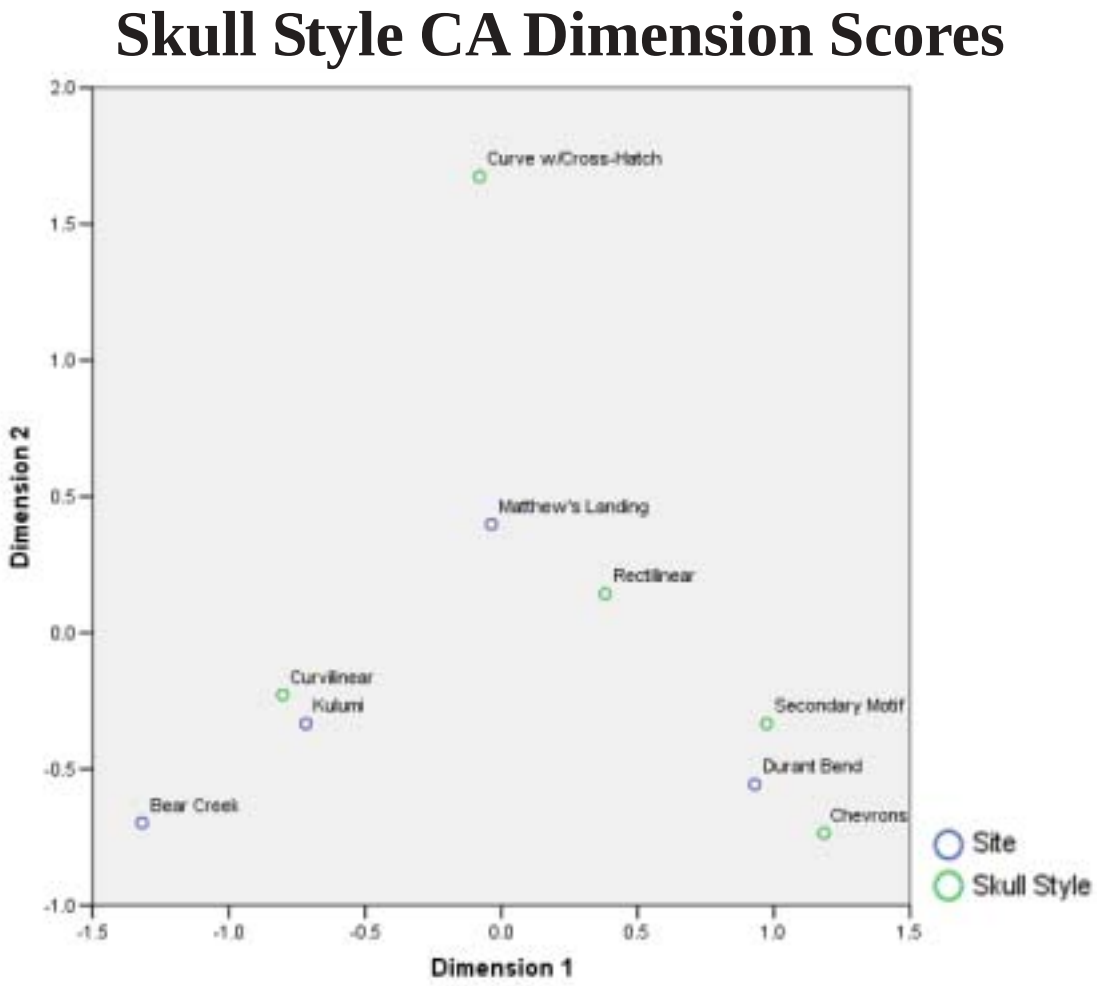

Figure 140. Plot of dimension scores for sites and skull styles generated by correspondence analysis

shown in Figure 140 illustrates the distinction among all of the sites. Matthew's Landing is clearly the only site with curvilinear skulls with cross-hatching. Otherwise, it is most closely similar to Durant Bend, since both sites clearly possess rectilinear skulls and those with secondary motifs. The chevron skulls only occur at Durant Bend. Bear Creek and Kulumi both are grouped strongly with curvilinear stylized skulls, which occur in substantial numbers at all four of the sites.

The attributes selected for the bowl rim analysis included the rim shape, lip shape, presence of a rim fold, and presence of an incised line. The correspondence analysis generated a solution in two dimensions (Table 8), with the first accounting for 60.4 percent of the total inertia and the second accounting for 31.9 percent of the total inertia. The graph of the scores of each rim combination and site against each dimension shown in Figure 141 demonstrates some clear distinctions in rim construction among the sites. In the center of the graph are straight rims with folding, flattening, and lines. Most of these are classic Pensacola forms, classified along the Gulf Coast as constituting the Bear Point rim mode. This class of rims occurs with some frequency at all four of the sites. Rims demarcated by an incised line, with either a folded rim, flat lip, or curved rim profile, are associated with the Matthew's Landing site. Rims from both Bear Creek and Kulumi are distinguished by the presence of a curved rim profile, although the two sites are separated by the frequent presence of incised lines below the lip on sherds from Kulumi. This curved rim appears to be a Moundville-derived trait, which occurs on the short-necked bowl vessel form there. Durant Bend falls partway between Matthew's Landing and Bear Point, with its high number of the more generalized, Pensacola-derived rims, as well as some complex curved profile rim sherds. Although lip eversion was not

Table 8. Results of Correspondence Analysis of Bowl Rim Data

				Proportion of Inertia	
Dimension	Inertia	Chi-Square	Significance	Accounted for	Cumulative
1	0.313			0.604	0.604
2	0.165			0.318	0.922
3	0.040			0.077	1.000
Total	0.518	245.184	0.000	1.000	1.000

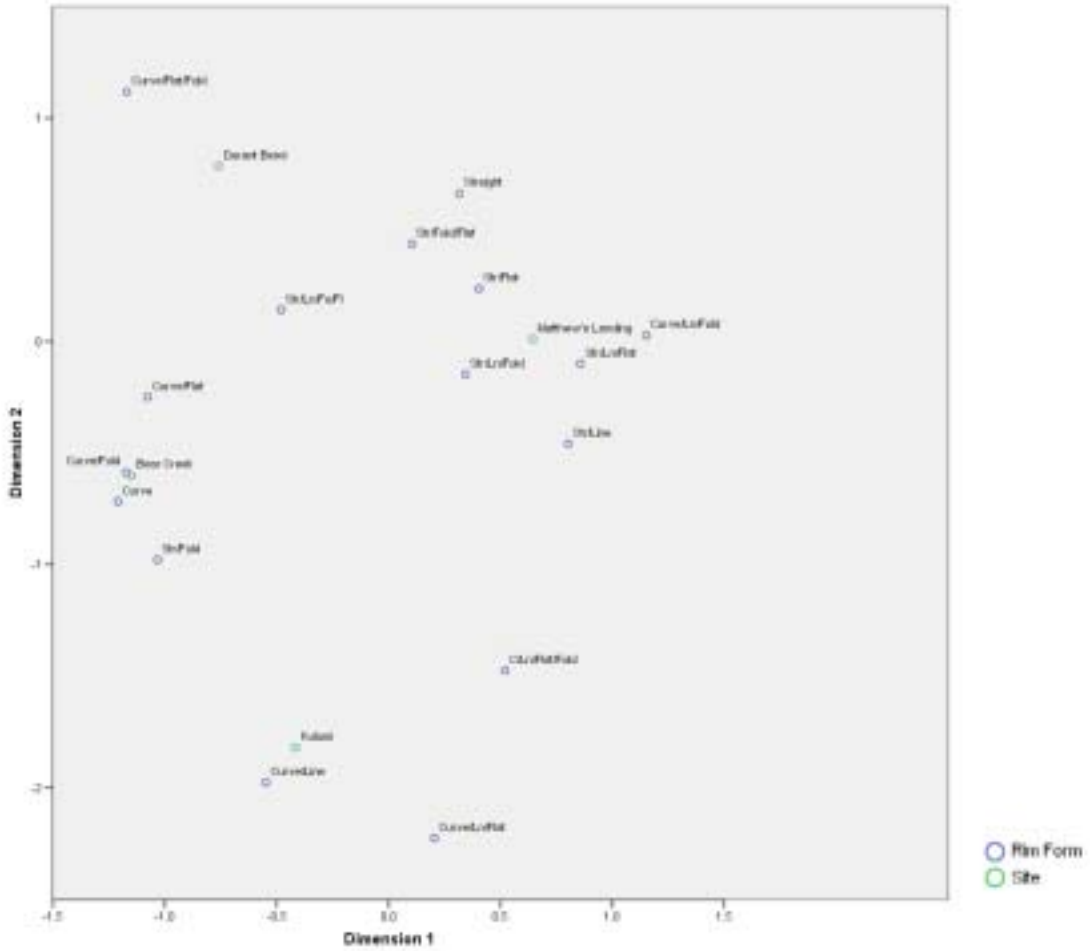

Figure 141. Plot of dimension scores for site and rim form generated by correspondence analysis.

included in this analysis, it is likely that those sherds with the complex rim from Durant Bend also likely had an everted lip, which would explain the curved profile in combination with a flattened lip so prevalent at that site.

Two correspondence analyses were executed using the jar data. The first analysis examines how the different paste recipes, consisting of temper, mica inclusions, and grog inclusions, were distributed at each of the sites. The correspondence analysis again generated two dimensions (Table 9), the first of which accounted for 80.8 percent of the inertia in the total sample. The second dimension accounted for 14.9 percent of the variance. The scores for each site and paste recipe against both of the dimensions are plotted on the graph in Figure 142.

Table 9. Results of Correspondence Analysis of Globular Jar Paste Data

Dimension	Inertia	Chi-Square	Significance	Proportion of Inertia Accounted for	Cumulative
1	0.764			0.510	0.510
2	0.458			0.305	0.815
3	0.277			0.185	1.000
Total	1.499	166.421	0.000	1.000	1.000

Durant Bend is isolated from the other sites because of the presence of fine shell tempered jars in the assemblage. Many of these jars are painted, with swastika scrolls incised about the shoulder, a trait present only at that site, and once again, likely derived from ceramic traditions of the central Mississippi Valley. Bear Creek also possesses numerous sherds tempered with fine shell, although in this case, the sherds have both mica and grog inclusions. Sherds tempered

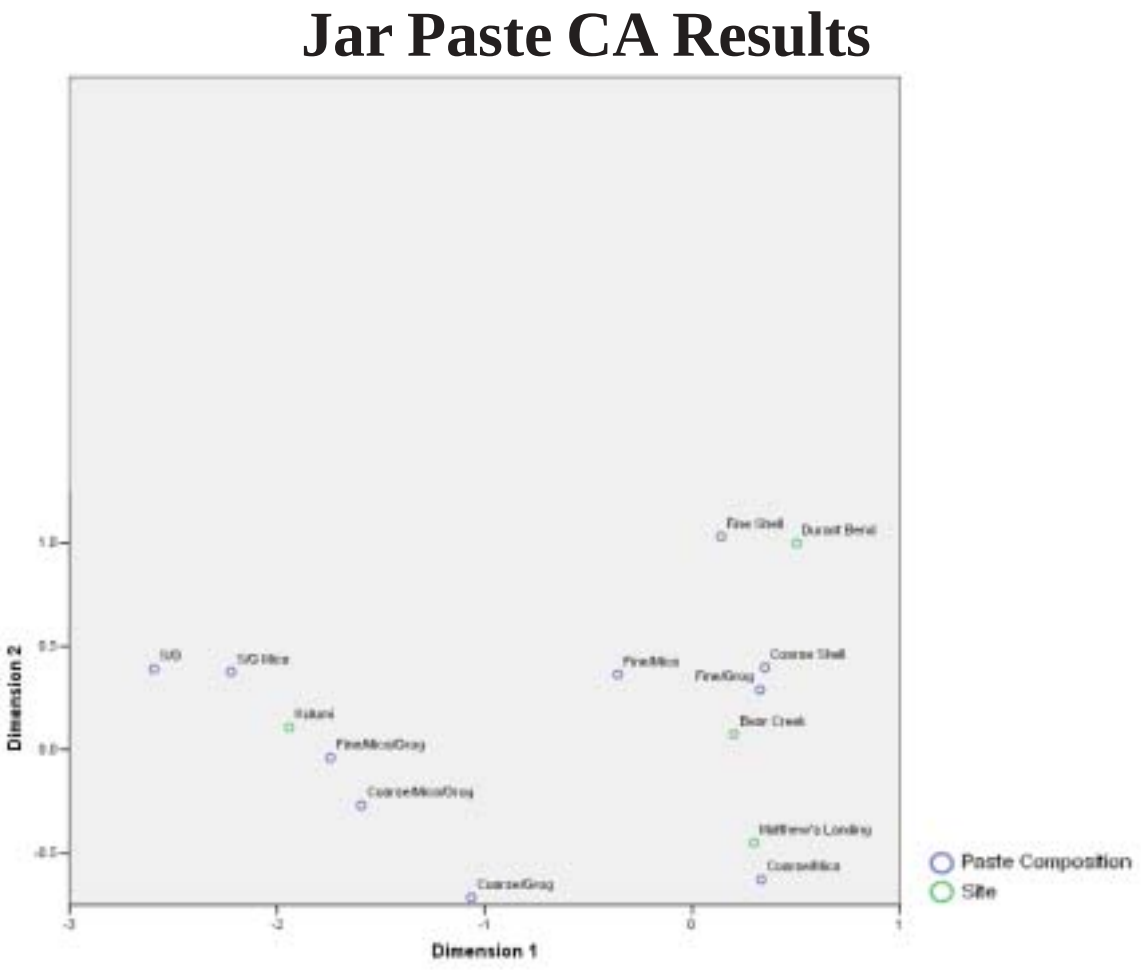

Figure 142. Graph of dimension scores for sites and jar paste combinations generated by correspondence analysis.

with coarse shell with no inclusions have values between both sites. This is in contrast to Matthew's Landing, which is closely associated with sherds tempered with coarse shell with mica inclusions. Predictably, sand-grit tempered sherds are strongly associated with Kulumi, as are jar sherds with grog inclusions. Those sherds with coarse shell and grog have values in between Kulumi and Matthew's Landing.

In addition to the analysis of paste recipes, an examination of globular jar rims forms at each site was also undertaken. Two attributes of rim construction, the rim shape and the lip shape, were examined. The correspondence analysis generated two dimensions (Table 10). The first accounted for 85.1% of the total inertia, while the second accounted for 14.0% of the total inertia. The graph of the scores for each site and rim type along both dimensions is shown in Figure 143. No other correspondence analysis generated such a distinction among sherd characteristics. Sherds with flared rims and rounded lips are clearly associated with Durant Bend and Bear Creek, while those with a rounded flat lip and flared rim group with Kulumi. All of the straight and sharply flattened rims are associated strongly with Matthew's Landing. The sherds from Kulumi clearly represent Lamar jars, while those at Matthew's Landing are clearly from Pensacola-derived jar rims. The rims at Durant Bend and Bear Creek are more closely derived from Moundville ceramic traditions.

Discussion of Cluster Analysis and Correspondence Analysis Results

The two separate forms of statistical analysis, cluster and correspondence analysis, conducted on the ceramic attribute data from the four Late Mississippian towns revealed two distinct sets of results that provide clues about the social composition of the communities included in the study. The cluster analysis generated a series of basic models of pottery production by demonstrating which attributes of ceramic production tended to co-occur in the

Table 10. Results of Correspondence Analysis of Globular Jar Rims

				Proportion of Inertia	
Dimension	Inertia	Chi-Square	Significance	Accounted for	Cumulative
1	0.264			0.851	0.510
2	0.044			0.140	0.991
3	0.003			0.009	1.000
Total	0.310	134.163	0.000	1.000	1.000

Jar Rim CA Results

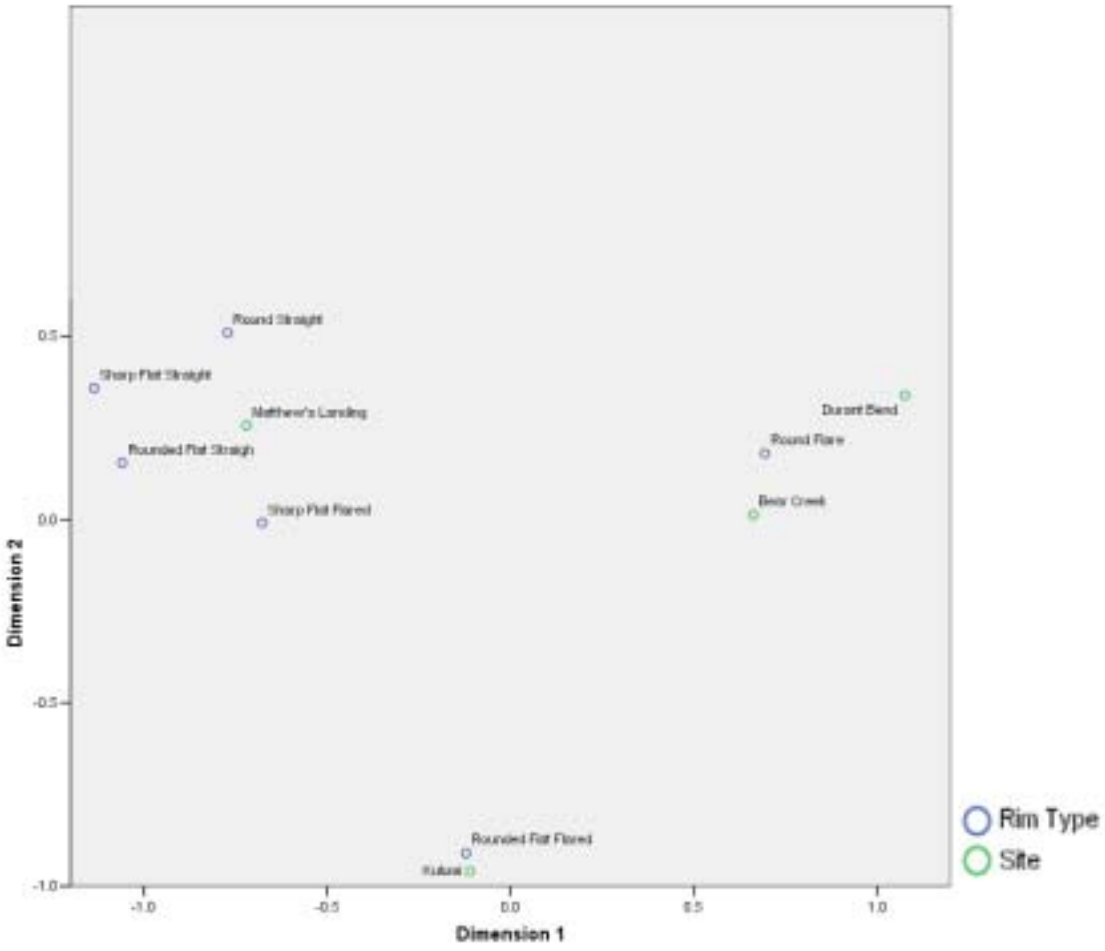

Figure 143. Graph of dimension scores for site and globular jar rim shapes generated by correspondence analysis.

larger sample; for the most part, these clusters tended to coincide with the pottery traditions associated with Moundville and Pensacola cultures. This was especially true for the analysis of bowl rims and decoration, although the analysis of decoration did reveal at least one cluster of decorative elements that may be part of a Late Mississippian horizon style found throughout the region. A closer examination of the distribution of clusters at each individual town has demonstrated that the mixture of culturally distinct potting traditions was different at each site. The site farthest down the Alabama River, Matthew's Landing, showed a predominance of pottery derived from Pensacola potting traditions, with a minority of Moundville pottery. Farther away from the Mobile-Tensaw delta, the Durant Bend site yielded a mixture of

Pensacola and Moundville-derived pottery. Continuing farther upriver, the assemblage at the Bear Creek site revealed the presence of primarily Moundville-derived pottery, with a small minority of Pensacola-derived sherds. The assemblage at Kulumi was similar to Bear Creek, although it possessed more Lamar-derived incised sand/grit-tempered sherds than were found at Bear Creek.

The distribution of clusters at each site supports the notion that the practicing potters residing in these four Late Mississippian towns came from a diverse ethnic background. In fact, the results of the cluster analysis suggest that in each group of practicing potters in a given town, there were females who had learned their craft in completely different cultural backgrounds. What the cluster analysis cannot demonstrate, however, is whether it is possible to see the development of a separate stylistic identity for each of the towns in the generations after they were settled. The correspondence analysis of bowl incised motifs and bowl rims provided some greater detail concerning ceramic styles at each town. It also provided clues concerning what may further fine tune the chronological position of each of the sites with respect to one another. Based on the incised motif and bowl rim correspondence analyses, it is clear the cultural models adhered to by potters at the Matthew's Landing site were primarily based in those of the Pensacola ceramic traditions, which emerged and were centered downriver at the Bottle Creek site. No other assemblage exhibited such a diversity of Pensacola-related motifs; nor did any other assemblage possess so many simple rims demarcated by a single incised line, typical of late Pensacola bowls (Figure 144). Some of the motifs found at Matthew's Landing, such as the more realistic hands and skulls, appear to have been holdovers from earlier Mississippian pottery production. Tying these motifs to the chronology of sites downriver suggests Matthew's Landing likely was occupied some time in the middle to late fifteenth century. Late Moundville-related ceramic traditions, such as wide-line incised bowls and red and white painting are extremely rare at Matthew's Landing. The analysis of stylized skull execution styles demonstrate the development of a distinctive style among the potters at the site, which involves the use of engraved cross-hatching as filler, suggesting the gradual emergence of

Figure 144. Examples of bowl rims demarcated with an incised line from the Matthew's Landing site.

cultural models in the Matthew's Landing community of potters. Indeed there are numerous sherds at Matthew's Landing with bizarre incised motifs with engraved cross-hatching or vertical lines used a design filler, which unfortunately could not be included in the decorative analysis because the motifs were unidentifiable (Figure 47). Additionally, at the Matthew's Landing site there is evidence of an additional stylistic development in the form of pottery tempered with very fine shell, a highly micaceous paste, and motifs executed with numerous closely-spaced, fine incised lines, which fell into the first cluster extracted from the bowl decoration data.

Farther upriver at Durant Bend, Pensacola-derived potting traditions are also apparent; however, this site possesses some distinct stylistic developments as well. There are clear ties to both Pensacola and Moundville traditions in the assemblage, as the analysis of both rims and motifs demonstrate. The distribution of bowl rim clusters demonstrates that the models acted

upon by potters at the Durant Bend site included both the folded, flattened rims of the Pensacola tradition and the curved folded rims of the Moundville tradition. This likely suggests that at least two groups of potters who learned their craft according to two ceramic traditions were living side by side at Durant Bend. Like Matthew's Landing, the assemblage atDurant Bend contained a distinct rim development as well, in the form of a flattened, everted lip on a rim form otherwise clearly derived from the Moundville short-necked bowl (Figure 145). Sherds with this rim exhibit both fine-line incised Pensacola-related rectilinear stylized skull motifs, seen on the sherd in the upper left corner of Figure 145, and Moundville-related wide line incising and black filmed wares, seen in the middle row of sherds in Figure 145. This stylistic development appears to represent the emergence of a distinctive model of rim production alongside the persistence of decorative models, which strongly suggests that models of ceramic production associated with two culturally distinct groups were being transmitted across the potting community at Durant Bend.

One of the most interesting stylistic traits revealed by the correspondence analysis of design motifs is the association of the swastika scroll motif with this site. As has been previously noted, this motif did not originate in the ceramic traditions of Pensacola, Moundville, or Lamar cultures, but is likely derived from central Mississippi Valley decorative traditions. The assemblage from Durant Bend also possessed a large quantity of red and white painted pottery (Figure 146), which unfortunately was not included in the decorative analysis because again the motifs could not be determined. The Durant Bend assemblage also exhibited a completely distinct manner of executing the stylized skull motif. The presence of ceramic models derived from the central Mississippi Valley, which appear to have spread to the Alabama River Valley in the early to mid-sixteenth century, and the heavy quantities of red and white pottery suggest that this site was initially occupied some decades later than Matthew's Landing. This notion is supported by the recovery of a brass candlestick base dating to the sixteenth century recovered from the site by a collector (Ned Jenkins personal communication, 2006). This and the presence of the urn burials excavated by Moore at the Durant Bend site has led archaeologists

Figure 145. Profile of everted lip, along with sherds bearing this attribute from the Durant Bend site.

to assign it a post-contact date. However, given the information gained from recent excavations at Matthew's Landing, whose people were likely burying their dead in urns at the nearby Dale site (1Wx77), it now appears that urn burial was occurring in the decades before European contact as well as after, meaning the site could easily have been occupied before contact. The pottery from Durant Bend suggests that the ethnic mix of peoples at this site was more complex than at Matthew's Landing, including potters who learned their craft in the Pensacola and Moundville potting traditions, and possibly individuals from the central Mississippi Valley as well.

Figure 146. Sherds decorated with red and white painting, and red and white painting and incising recovered from the Durant Bend and Bear Creek sites.

Initially, the Bear Creek site appeared to be the most stylistically complex of all four sites included in the study, based on the illustrations of sherds recovered during Dickens's (1971) excavations at the site. The analysis of motifs demonstrates that sherds made by potters acting on models of ceramic production associated with the Moundville tradition were most frequently-represented in the Bear Creek assemblage. There is also a significant amount of pottery reflecting cultural models associated with the Pensacola pottery tradition in the Bear Creek assemblage. Like Durant Bend, the assemblage includes a few sherds exhibiting a swastika scroll motif, incorporating a model that is likely derived from the Central Mississippi

Valley, although they occur in less frequency at Bear Creek. Finally, some portion of the potting community at Bear Creek made pottery according to Lamar-derived sand/grit-tempered models. Unfortunately, these sherds all were missing data and therefore could not be included in the bowl sample from the site. In general, the assemblage from Bear Creek suggests that this town, above all others, included the most diverse mix of models of pottery production, with ceramics from four groups of models present in the assemblage. The excavations at the site failed to yield any urn burials, although it appears the occupation at Bear Creek is roughly contemporaneous with the Durant Bend site. The assemblage at the Bear Creek site does not appear to reflect any site-specific stylistic developments, which is likely the result of the smaller sample from this site.

The conclusions regarding the assemblage at Kulumi are less certain, given the small sample size from the site. Because the ceramic sample is so small, and even the pattern of occupation at the site remains unknown, more excavations at this site are definitely warranted, since it did yield a mixture of ceramics incorporating models associated with both Moundville and Lamar pottery. The correspondence analysis demonstrates Moundville ceramic models, particularly the hand and long bone, were prominent in the Kulumi assemblage, which also included numerous rims that appear to be associated with the Moundville-associated short-necked bowl rim form. The Kulumi ceramics were strongly separated from the rest of the sample because they possessed the only sand-tempered incised ceramics in the entire sample. It is interesting to note that the motifs on these sherds, which are cross-hatched lines, are not typical of the Lamar Bold Incised type, although they are executed on a paste unmistakably typical of Lamar pottery (Figure 147). In fact, aside from the vessel form, they appear very similar to the Keith Incised types typical of Weeden Island ceramics dating to the Late Woodland period (AD 200 to 900). However, there were no other Weeden Island ceramics recovered from the site. Additionally, some of the incised sand-grit tempered sherds exhibited incised chevrons, on a flaring rim bowl, a Moundville vessel form. Sherds with this motif recovered from Moundville are classified as Carthage Incised, *var. Moon Lake*. Like Durant

Bend, the ceramic assemblage from Kulumi incorporated a set of models from two ceramic traditions. The analysis also indicates that as the potters who held different cultural models of pottery production lived and worked side by side at the site, there was some transmission of ceramic stylistic elements across groups with different models.

Figure 147. Incised sand/grit-tempered flaring rim bowl sherd with a cross-hatching motif.

The results of the analysis of globular jar paste and rims provides a somewhat different scenario. The cluster analysis extracted five clusters, although the significance of some of these clusters was unclear. The results of the cluster analysis hinted that jars from Durant Bend and Bear Creek were relatively similar. When the results of the correspondence analysis were examined, the trends in jar paste and rim form at each site were much easier to understand. For the most part, the Bear Creek and Durant Bend sites were very similar with respect to both paste and rim form. Potters at both sites, particularly at Durant Bend, appeared to develop slight stylistic differences in jar manufacture over time, including rolled lips, a variety of styles of appliqué, and fossil shell tempering. These additions were made to jar sherds that for the most part exhibited flared rims and rounded lips. The assemblage from Matthew's Landing also possessed a variety of jar rims and pastes associated with models of Pensacola pottery production. Although they were not included in the analysis of rim forms, the assemblage from Matthew's Landing also possessed sherds decorated with incised arches about the shoulders, which is typical of late Pensacola pottery (although this tradition is ultimately derived from Moundville ceramics). The correspondence analysis also demonstrated the jars from Kulumi were closely tied to Lamar

potting traditions. While there were obviously multiple traditions of jar manufacture present at all of the sites, for the most part, the sites tended to divide sharply along the lines of the potting tradition dominant in the assemblage. This is likely because there is less room for stylistic variability in jar manufacture, since they are not decorated and the rim forms are quite simple. It is likely that the globular jar form was produced primarily for use in domestic activities, such as food preparation, cooking, and storage, which did not mandate the elaborate decoration on bowls, which functioned as serving and display vessels.

The results of the statistical analyses of attributes of ceramic paste, form, and decoration generated results that support the notion that Late Mississippian towns founded in the middle to late fiftteenth century in the Alabama River Valley had a social composition best characterized as multi-ethnic. They also show the gradual development of certain distinctive potting traditions, which likely occurred as potters at each of the sites interacted and began to develop their own distinct stylistic identities. This analysis has much broader implication for understanding the prehistoric cultural landscape of the Alabama River Valley, as well as for understanding the documentary record of sixteenth-century Spanish expeditions in the region.

CHAPTER 7
CONCLUSIONS

Some four years ago, this research project got underway with a plan to conduct a series of test excavations at the Matthew's Landing site (1Wx169). Matthew's Landing, believed to be the largest and most important multiple mound site along a stretch of nearly 100 miles of the Alabama River Valley, was reported to have evidence of occupation before, during, and after the era of initial European contact in central Alabama. After the first season of systematic testing across the site, it quickly became evident that there was in fact only a single occupation component at the site, which was assigned to the Late Mississippi period, the era immediately prior to European contact. For the portion of the Alabama River drainage between present-day Montgomery and Wilcox counties, there was no published Mississippian chronology or a working understanding of the cultural relationships between Late Mississippian sites. Archaeologists working in the region were aware that there was no significant Mississippian occupation in the Alabama River drainage until relatively late in the Mississippian sequence, likely sometime during the middle to late fifteenth century. Archaeologists struggled both to classify Late Misssissippian sites using the standard southeastern culture historical unit, the phase, and to create viable ceramic classifications for the sites. A closer look into the history of these town sites has revealed that this difficulty exists because the Mississippian peoples who settled the Alabama drainage came from three cultural traditions, and founded new towns, each of which had its own distinctive mixture of peoples. Therefore, attempting to group multiple Late Mississippian town sites into phases represents a frustrating and likely inaccurate venture.

Because the Alabama River Valley was settled by peoples associated with three cultural traditions, Moundville, Pensacola, and Lamar, it became apparent that phase designations would not allow for a meaningful understanding of the cultural composition of these sites. The

systematics that underlie phase groupings and ceramic classifications rely on creating typological frameworks both mutually exclusive and exhaustive. Further, type designations are formulated based on a limited number of attributes, and in using a ceramic type system, any ceramic attributes that may crosscut those categories must be deemphasized, regardless of whether or not they provide important clues to understanding the past. Various archaeologists working in the Southeast have noted that because of this fact, many of the existing culture historical designations, although useful for ordering sites in space and time, do not allow the investigator to meaningfully examine stylistic, and therefore cultural, variation on a finer scale. The examination of ceramic style on a finer scale than is allowed by a traditional ceramic classification involved recording a series of attributes of vessel paste, form, and decoration taken from individual sherds recovered from four Late Mississippian towns in the Alabama and lower Tallapoosa River drainages.

The analysis of attributes of ceramic paste, vessel form, and decoration was grounded in theory drawn from cognitive anthropology, a theory that has not been applied previously to interpreting ceramic assemblages from the southeastern United States. Cognitive archaeologists conceive of culture as a matrix of meanings and understandings held in the minds of individuals as a series of cultural models governing the appropriate behavior in given situations (Dressler 2005). Presumably, a group of practicing potters who learned their craft in the same cultural environment would share similar mental models of ceramic production. The ceramic attribute study was designed to test whether cultural models of pottery production held in the minds of past potters could be extracted from a collection of pottery by applying several methods of multivariate data analysis to a series of attributes observed on individual sherds. The attribute analysis demonstrated that cultural models could indeed be extracted from ceramic assemblages. In fact, the distribution of these models at each archaeological site allowed for a better understanding of the social composition of the peoples at individual towns by tying specific models of ceramic production to broader Mississippian cultural traditions.

Beyond the issues surrounding the social makeup of towns lies another question, which incorporates evidence from the earliest European contact in the area. Based on the encounter of the Hernando de Soto expedition, some portion of the Late Mississippian towns in the Alabama River Valley were organized into a centralized polity led by a single chief, known as Tascalusa. During the course of the expedition, Tascalusa and his followers guided the expedition through his political realm, a trip that took several days. At the end of their journey, Tascalusa was able to summon enough warriors to mount a substantial attack on the expedition. These facts recorded by members of the expedition suggest that, although Tascalusa's chiefdom was in an area newly settled by diverse people, in the period of roughly a century some form of a centralized political entity arose out of these distinct peoples.

Cultural Models of Ceramic Production and the Social Makeup of Towns

Cluster analysis proved to be an effective tool for grouping those sherds with common attributes. When clusters generated by the analysis were further examined, the attributes most prominently represented in each cluster could be examined. It should be noted that it is unlikely the cluster analysis would have generated suchsuccessful results if Ward's Method of clustering, which generates small, tightly spaced clusters of cases, had not been employed. The cluster analysis was most successful at extracting patterns consistent with the use of a shared cultural model of ceramic production. The clusters extracted were interesting in that they included both decorative traditions associated with major Mississipian cultural traditions and a shared stylistic model occurring on ceramics from the sixteenth century across an area stretching from the Mississippi Valley eastward all the way into Georgia.

The group of practicing potters at each of these sites at any given time appears to have been made up of individuals who learned how to make and decorate pottery in one of three ceramic traditions, each of which had its own set of cultural models of paste composition, rim form, and decorative style. While there was clearly some transmission of these pottery styles among potters, it is not surprising that distinct ceramic traditions were detectable throughout the Late Mississippian occupations at each of these towns. The fact that the blending of ceramic

styles during the several generations that these towns were occupied was only minimal is likely tied to the matrilocal residence patterns typical of Mississippian society. Because female potters continued to reside and work in the households in which they learned their craft after marriage, there was only minimal opportunity for the transmission of different styles across the population of a given community. It was likely males from different social backgrounds who were more often introduced into a foreign household. Therefore, for the most part cultural models of ceramic production remained conservative during the Late Mississippian period, alhough there is evidence of some stylistic drift in existing models.

Major changes in ceramic traditions are not evident until the period after European contact, when decorated vessels from the Alabama River drainage show a clear blending of different ceramic traditions (Figure 148). This blending is probably the result of large-scale population loss due to warfare associated with slave-raiding, political destabilization, and disease epidemics caused by lethal pathogens introduced by Europeans. While the peoples who joined together to form the Late Mississippian towns of the Alabama River drainage were migrants moving from their home territories in the wake of political instability, it is highly unlikely they were facing the extreme pressures of the Protohistoric period. The stylistic blending of the Protohistoric period likely reflects a new amalgamation of cultures in the wake of the dissolution of even the most basic domestic structure wrought by population losses far more dramatic than the political turmoil of the Late Mississippian era. This does not, however, preclude the fact that some form of social coalescence must have occurred to create the political form witnessed by the de Soto expedition.

The term *coalescent society* has been used by Robbie Ethridge and Charles Hudson (2002) to describe the formation of many of the historically-documented Native American groups, such as the Creek, Choctaw, and Cherokee, during the seventeenth and eighteenth centuries. The many effects of initial European contact, which included sociopolitical instability, increased intergroup conflict, and population loss, have been well documented by a series of authors studying this era (for studies of these changes see Smith 1987, 2001; Thomas 1990).

Figure 148. Protohistoric sherds with Moundville interlocking scroll motifs and Lamar derived pinched rims. Both the incising and vessel construction are sloppily executed.

In the wake of these drastic changes, the Mississippian societies of the pre-contact era were transformed into the social forms encountered by early European explorers and settlers. Various researchers have noted that the so-called "tribes" of the historic era were loose political entities comprised of the remnants of multiple groups of people from different socioethnic backgrounds (Galloway 1995; Hickerson 1997; Hudson 2001; Knight 1994). Social integration in these emerging groups was aided by various institutions, such as the Calumet ceremony (Brown 1989), the Green Corn ceremony (Hudson 1976), the enhanced role of clanship, and leadership by political councils in lieu of an inherited chiefly office.

Kowalewski (2001, 2006) recently conducted an in-depth examination of the process of social coalescence, surveying various ethnographic and apparent archaeological examples of coalescent societies to generate a list of shared traits of new social forms emerging in the wake

of coalescence. Around the world, coalescence was generally spurred by a series of population stresses, including internal or external warfare, demographic decline, movement of peoples, and abandonment of large settled areas (Kowalewski 2006:117). According to Kowalewski, twelve basic traits tend to occur in societies that have experienced coalescence. It is my argument that the people who settled in the Alabama River Valley during the fifteenth century underwent a process of coalescence, which ultimately resulted in the formation of the polity led by Tascalusa documented by members of the Hernando de Soto expedition. The settling of the Alabama River Valley coincided with periods of political decline in both the Moundville and Bottle Creek chiefdoms, which led to the movement of fissioned elements of both populations into the same area, where they settled alongside a third group that likely migrated from the core area of the Etowah chiefdom. What remains to be seen is how the archaeological record of Late Mississippian towns in the Alabama River Valley match Kowalewski's common features of coalescent societies. It is important to note that all coalescent societies need not necessarily exhibit the entire suite of common traits. Those traits detectable in the archaeological record of Late Mississippian peoples are examined in depth.

Because coalescent societies are comprised of new settlers arriving from a variety of different social backgrounds, communities are typically multiethnic and multilingual (Kowalewski 2006:117). Clearly, the ceramic studies have demonstrated that each Late Mississippian town in the Alabama River Valley was composed of peoples from a distinctive mix of different social backgrounds who founded their towns in an area that was, for them, a new place, located between three formerly dominant polities. Kowalewksi (2006:117) also postulates that coalescent societies will settle in new places with sufficient natural resources and potential for increased security. Further, newly founded sites occupied by coalescent socieites will typically exhibit evidence of fortification and collective defenses (Kowalewski 2006:117). The location of Late Mississippian towns on alluvial terraces does not represent a major shift in the physiographic location from earlier sites. Mississippian settlement strategies already served to maximize natural resources by allowing access to fertile floodplain soils for maize cultivation, as

well as bottomland and upland wild resources (Peebles and Kus 1977). It is interesting to note that many of the larger Late Mississippian sites were either palisaded, as in the case of the site at Old Cahawba (1Ds32), or were located in an easily defensible area. For example, the Durant Bend (1Ds1) site is located on a narrow bend of the Alabama River, and is thus surrounded on three sides by the river. Additional evidence of collective defenses at sixteenth-century sites comes from the chronicles of the de Soto expedition, which mention the presence of multiple palisaded towns in defensible locations, including the site of Mabila, on the Spaniards' journey through Tascalusa's polity (Ranjel 1993:291-292).

The nature of the archaeological record and the limited data from the de Soto expedition make it difficult to supply any evidence supporting a number of the traits of coalescent societies. These include the presence of egalitarian, collective, and universalizing ideologies and cults, elaborate community integration by means of corporate kin groups, migration myths emphasizing incorporation and ordering of groups, and an emphasis on collective leadership through councils and confederacies at the expense of centralized, hierarchical authority and personal leadership. Evidence from the de Soto expedition suggests that Tascalusa may have indeed ruled some form of confederacy. Ranjel (1993:291-192) reported when the expedition party arrived at the town of Piachi, the chief resisted allowing them to cross the Alabama River by ordering residents of the town to fire arrows upon them. This events points to the conclusion that, although this town was in the territory governed by Chief Tascalusa, leaders of individual communities retained some degree of political autonomy. It is tempting to suggest that the many collective social forms believed to have emerged during the contact era may in fact have had their roots in the coalescent Late Mississippian groups in the Alabama River Valley. Some portion of these groups would eventually become part of the heart of the Upper Division of the Creek Confederacy, although the effects of European contact threw native societies into so much upheaval, it seems difficult to compare the scale of prehistoric population instability, movement, and loss to the changes that occurred after contact.

If the Late Mississippian towns in the Alabama River drainage in fact represented a series of coalescent towns, which the limited data from the archaeological record suggest, the question following is how a series of communities that had undergone such a process may have emerged as a politically centralized polity at the time of Tascalusa. The archaeological record suggests that for the upper Alabama River Valley, which was likely the heartland of Tascalusa's chiefdom, there was some form of political organization unifying towns under at least a loose political order. If these towns had very different ethnic makeups and were separated by rather wide geographic distances, it seems unlikely the towns of the Upper Alabama River functioned as a single complex chiefdom. Rather, they were likely organized into some form of a confederacy, with each town having its own autonomous rulers who showed some degree of deference to Chief Tascalusa. While the chroniclers of the de Soto expedition attributed a great degree of nobility, power, and even physical stature to Tascalusa, it must also be remembered that the Spaniards interpreted the Mississippian political system through their own feudal system of petty nobles, not to mention the fact that they likely inflated the chief's nobility and stature as a means of rationalizing the demoralizing blow Tascalusa's warriors delivered to the expedition party. Regardless, it appears that Tascalusa's polity was composed of people from a variety of ethnic backgrounds and only a few generations old. Tascalusa's ability to muster a large number of warriors for the attack at Mabila may have been grounded in the confederacy's somewhat tenuous status as a newly coalesced political entity.

For some time, archaeologists studying initial European contact, particularly the routes of the sixteenth-century Spanish expeditions into the interior Southeast, have been interested in the European material recovered from the Charlotte Thompson mound. If Moore's (1899) report is correct, this mound yielded European artifacts from top to bottom, suggesting the possibility the mound was built up and used in the era immediately following first contact. This possibility runs counter to what many archaeologists have suggested about the half century after contact in the Alabama River Valley. Certainly the peoples of the Alabama River Valley were not immune to the population depletion and widespread migration of the post-contact era. Sites

like Matthew's Landing were abandoned, as new communities of migrants from other regions were established, exemplified by the village at the Liddell site (1Wx1). At other sites, such as Durant Bend (1Ds1), occupation endured for some period after European contact, and the ceramic assemblage at the site reflects the blending of ethnic groups, likely as the result of depletion. It does not, however, appear that the Protohistoric population of the Durant Bend site ballooned with refugees migrating from other regions.

By the middle of the seventeenth century, the stretch of river below present-day Montgomery and above Mobile Bay appears to have been largely abandoned. This abandonment is evidenced archaeologically by the lack of any European trade goods of that age at large Protohistoric villages in this portion of the Alabama River drainage. After abandonment, it appears that the peoples who made up the coalescent Late Mississippian towns in this region migrated in different directions. Some of them joined with the Upper Creek confederacy, and it seems likely that those with stronger cultural ties to Gulf Coast peoples ended up as part of the amalgamation of groups that became known as the Mobile tribes.

In the Upper Alabama River drainage, Native American occupation continued well into the historic period. As Knight (1994) pointed out, the area around the Coosa-Tallapoosa forks was the center of a provincial polity that increased in size as refugees from the east were folded into the existing social order during the seventeenth century. The ceramics being produced during this area at sites that would eventually make up the major Upper Creek towns of the confederacy were clearly the stylistic descendants of Moundville and Lamar pottery. The question that has puzzled many researchers is why this area, and not unsettled portions of the interior, was an attractive place for refugees to settle. Part of the reason that the Coosa-Tallapoosa forks region was so attractive to native peoples was likely because it was geographically out of reach of the slave raiding parties, especially those led by the Westo Indians. Even as late as 1686, six years after the European colonists put a stop to the Westo raids, the Spanish emissary Marcos Delgado documented the continued arrival of refugees into the area, noting the presence of multiple ethnic groups fleeing conflict in both the north and west (Boyd 1937).

The area remained free of sustained European contact until 1717, when the French established Fort Toulouse at the Coosa-Tallapoosa junction.

The question remaining is what made the Coosa-Tallapoosa junction so attractive to refugees? Certainly there were other areas of the Southeast out of reach of both native raiding parties and European settlement. The Coosa-Tallapoosa junction was unusual in the lower Southeast because it was home to a coalescent society formed only a few generations *before* European contact. In other words, based on both the archaeological and ethnohistoric records, the social mechanisms allowing ethnolinguistically distinct peoples to be absorbed into the existing order were already in place in advance of the social disruptions wrought by early contact. If this was indeed the case, then it may be possible to trace the roots of what would eventually become the social order of the Creek confederacy back to the coalescence of Late Mississippian peoples that occurred during the fifteenth century. Numerous archaeologists, including Knight (1994), Wesson (2002), and King (2003) have presented evidence strongly suggesting that Creek society in the eighteenth century could still be considered a unified, albeit fragile, political entity, although the funds of power exploited by chiefs in the nascent Creek confederacy were certainly transformed from those of the Mississippian era.

It is likely that chiefdom-level hierarchy was able to persist in the Coosa-Tallapoosa forks well into the historic era for two reasons. Perhaps the most basic reason is the fact that the continuing influx of refugees helped maintain a robust population, which is necessary for the perpetuation of a politically-organized chiefdom. The second reason for the perpetuation of this hierarchy is a bit more complex, and is what likely drew in the refugees in the first place. During the fifteenth century, the three groups of Mississippian peoples who settled in the upper portion of the Alabama River drainage were unified to some extent, as is evidenced by the accounts recorded by the members of the Hernando de Soto expedition in AD 1540. Based on the different social composition present at each town apparently associated with Tascalusa's province, as evidenced by the ceramic study, it is likely these groups were only loosely politically consolidated into some form of confederacy. The towns of the Alabama River Valley

were socially distinct enough that they probably functioned politically as a single unit only during times of threat, such as the arrival of an expedition led by a hostile soldier from an alien society, or lean resources. This loose political order is very similar to what has been described during the historic era for the Creek confederacy. Historically, each individual Creek town functioned independently of one another, with alliances only being formed in response to threats such as European encroachment. Following the archaeological and ethnohistoric evidence from fifteenth-century sites, it is possible that the political precedent for the loose political body that became known as the Creek confederacy was already in place with the coalescence of Mississippian peoples during the fifteenth centuries.

A Theory of Cultural Models and the Archaeological Record

The question that follows from the evidence presented is how a theory of cultural models can be integrated with the concept of coalescent societies. The process of coalescence would have led to the merging of peoples, each of whom held different cultural models about every aspect of life, not just those governing the production of pottery. The broad cultural similarities among Mississippian peoples in the Southeast likely meant that some cultural models of politics, religion, and subsistence were shared on a general level. However, as the material culture reflects, the Late Mississippian towns in the Alabama River drainage brought together peoples with distinctly different cultural models of ceramic production. In such a case, it is clear that the mechanisms integrating these societies had to change quickly. While an examination of the process of coalescence sheds some light on the basic traits of the newly emergent cultural forms, it does little to examine the process of culture change. Perhaps the best explanation of the mechanisms of cultural change is provided by Sahlins (1981).

Sahlins argues in any given situation, individuals act in line with their cultural conditioning, interpreting and reproducing traditions based upon prior experience. Typically, in day-to-day life, these structures are reproduced by individuals in any given society with little change; in other words, cultural continuity is generally maintained over time when a given culture is allowed to persist with no major disruptions. Cultural change, or transformation, occurs when circum-

stances present individuals with novel circumstances, which require individuals to make a novel response while still working in the same cultural framework. According to Sahlins (1981), therefore, cultural change occurs when individuals are faced with new circumstances and forced to create new cultural arrangements in reaction to them. In other words, culture changes as individuals are placed in novel relationships and must react to them. Even as new institutions are being created, Sahlins (1981:72) took care to note that, "action begins and ends in structure [culture]." In other words, even as it is being altered, culture still drives the bulk of human action.

Sahlins's idea of cultural change as rooted in novel relationships provides the mechanism for the integration and alteration of cultural models. As three groups of people settled in the Alabama River drainage, each group was met with a series of cultural forms most likely vaguely familiar. However, the differences between each of these cultures must have caused some degree of conflict as individuals were confronted at a personal scale with cultural models foreign to them. As each individual attempted to interpret what they saw of others through their own cultural models, change would have occurred. As the ceramic study demonstrated, however, potters were able to maintain some of their own cultural traditions, even while working within the same community as individuals trained in different ceramic stylistic traditions. Because of the political instability that caused Late Mississippian peoples to re-settle the Alabama River drainage, the cultural changes that occurred led to a coalescent society. The Late Mississippian coalescence that occurred in the Alabama River drainage was the first of many that occurred between the fifteenth and eighteenth centuries as refugees continued to migrate into the region because of the destabilization of the political lanscape resulting from European contact. It is likely that this example of coalescence and the subsequent emergence of new cultural models in the wake of stress was not confined to the Southeast or the Late Mississippian era. Both a theory of cultural models and the process of coalescence should be considered as an interpretive framework by archaeologists attempting to understand situations of culture contact in both the historic and prehistoric archaeological records. The use of such a theory allows for the

better understanding of how peoples from multiple ethnic backgrounds were able integrate and live side by side. The disruptions causing such a process were not an isolated trend of the contact era, meaning that such situations probably occurred frequently across North America in both the historic and prehistoric eras. Existing archaeological systematics, such as ceramic types and phases, while useful for understanding the basic problems of culture history, are simply too coarse-grained to provide a suitable intepretative framework for such situations. It is the responsibility of archaeologists to recognize such situations and tailor their research methods to appropriately understand the nature of and processes leading to the emergence of multi-ethnic societies in the past.

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