INTERACTION, SEDENTISM, AND AGGREGATION IN WOODLAND-STAGE CENTRAL ALABAMA

by

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A THESIS

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Abstract

In this thesis, Woodland-stage interaction and sedentism in central Alabama are addressed as they relate to the Armory site, a Late Middle Woodland mound center and village located in Dallas County, Alabama. These topics are examined along a chronological dimension by quantifying and comparing the stylistic diversity and dissimilarity of ceramic assemblages through time. Following these analyses, I suggest that the Armory site may have functioned as a nexus of inter-regional interaction during the Late Middle Woodland subperiod and that temporal fluctuations in mean ceramic dissimilarity may be the product of aggregation rather than sedentism.

Acknowledgments

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Chapter 1: Introduction

The Armory site (1Ds174) is a multi-component mound center and village located on an old alluvial terrace of the Alabama River in Selma, Alabama (Figures 1.1 and 1.2). While this site spans an area of at least two hectares, it is bordered to the north by a modern housing development which envelops an unknown portion of the site. Given that large quantities of artifacts were recovered along the property line adjacent to the housing development, it is possible that a considerable portion of the site remains unsurveyed.

This site contains the remnants of at least two mounds. The larger of these mounds, referred to in this thesis as the primary mound, was first documented by C.B. Moore in 1899. It has a height of 2 m and measures 20 m from north to south and 25 m from east to west. The smaller mound, referred to here as the secondary mound, was originally observed by Teresa Paglione and Ned Jenkins during the winter of 2007. This mound had not been previously noted due to its small size, measuring only 5 m north to south and 5 m east to west with a height of less than half a meter.

Situated between the primary and secondary mounds are the remains of a Late Middle Woodland (A.D. 300-500) village. This occupation constitutes the site's dominant component and is the focus of this research. Given the rarity of Late Middle Woodland mound and village sites in the study area, the examination of the Armory site offered in this thesis will aid in bridging a gap in the prehistory of central Alabama. Within this examination, the topics of inter-

Figure 1.1: Map of Alabama depicting the location of the Armory site.

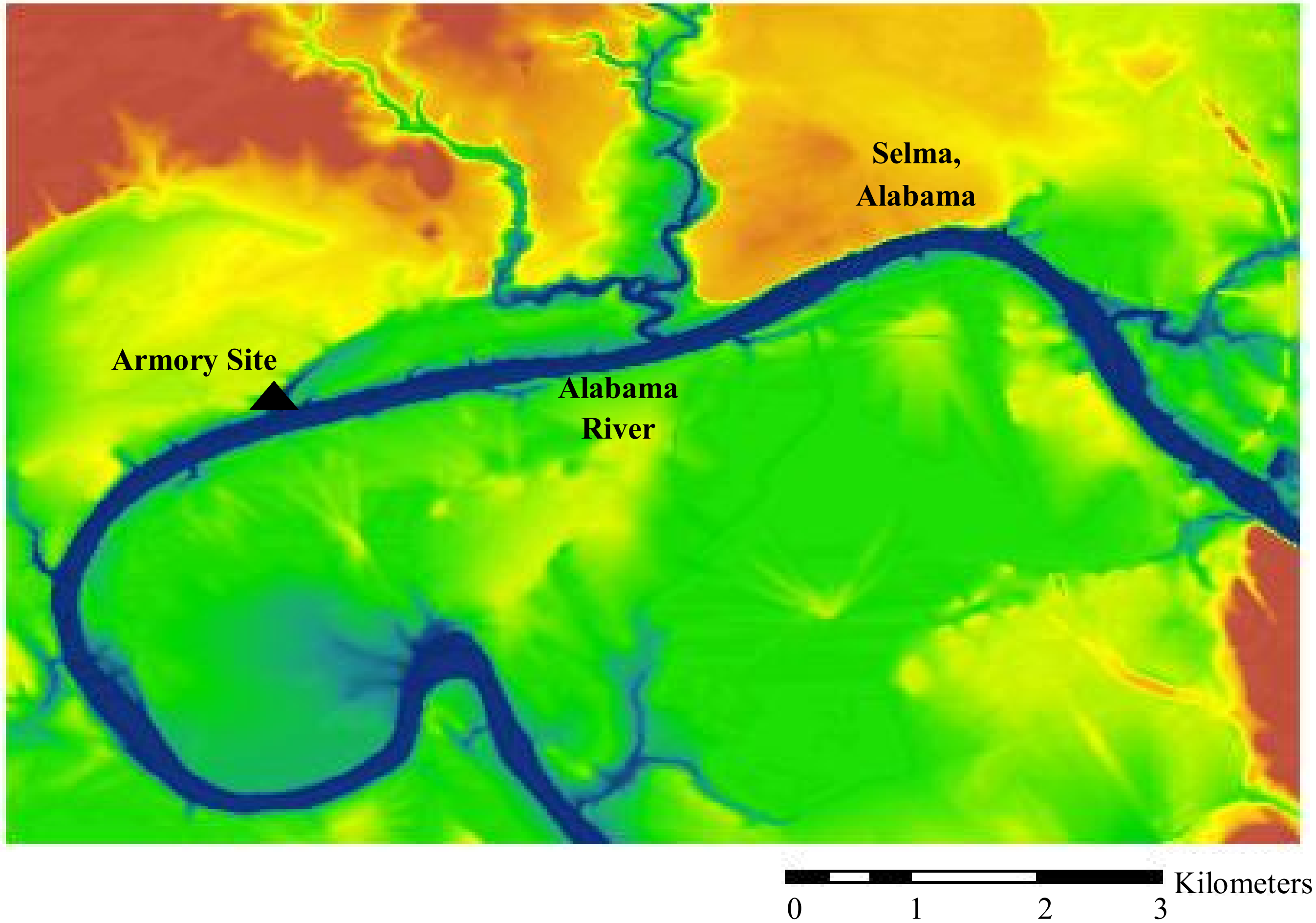


Figure 1.2: Digital elevation map depicting the location of the Armory site (Gesch 2007; Gesch et al. 2002).

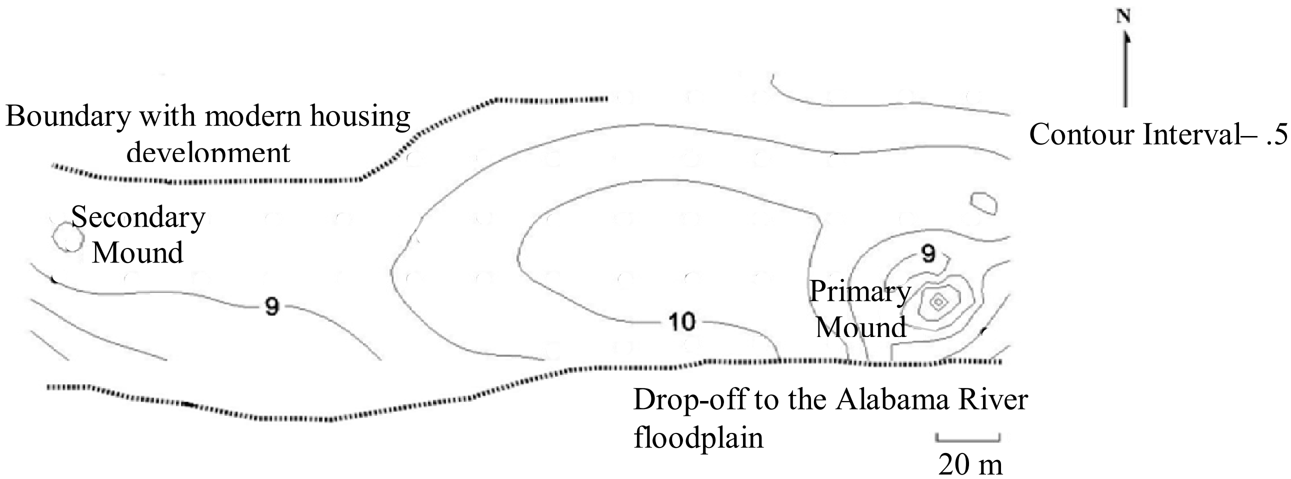


Figure 1.3: Contour map of the Armory site.

regional interaction, sedentism, aggregation, and ethnicity are considered, as these issues have yet to be thoroughly addressed from a regional and local perspective in central Alabama.

Interaction

The scale of inter-regional interaction in the Eastern Woodlands during the Middle Woodland period surpasses that of any preceding prehistoric period. Characteristic of this inter-regional interaction was the exchange of exotic materials and the sharing of ideas regarding the production of material culture, mound building, and mortuary ceremonialism (Chase 1998; Griffin 1967; Keel 1976; Kellar et al. 1962; Prufer 1964; Sears 1962; Wimberly and Tourtelot 1941). Noting that the intensity of this exchange network appeared greatest in the Midwest, Joseph Caldwell (1964) posited the existence of a Hopewellian “interaction sphere” with an epicenter located in the Midwest. In the decade to follow however, Caldwell’s interaction sphere was reconceived as a series of multiple, localized networks rather than a singular interaction sphere (Seeman 1979).

Due to a lack of study, the nature of inter-regional interaction as it relates to central Alabama remains largely unknown. In order to redress this lack of knowledge, this thesis aims to diachronically assess the intensity of inter-regional interaction in study region during the Woodland stage. Given that a high degree to cultural interaction is known to be present in the nearby southern Appalachian mountains during the Middle Woodland period (Dickens and Fraser 1984), it is hypothesized that Middle Woodland interaction in central Alabama will be relatively high when compared to the Late Woodland period.

Sedentism

By the beginning of the Late Woodland period (A.D. 500-900), throughout much of the Eastern Woodlands, the exchange networks of exotic trade items had all but collapsed, leading some archaeologists to refer to this period as the time of "good gray cultures" (Williams 1963:297). Despite this lessened interaction, cultures of the Late Woodland period were anything but static. Two general trends in particular are of interest given the subjects at hand. The first of these is a general increase in population size throughout the Eastern Woodlands (Emerson et al. 2000). While this trend is not applicable to every locality, settlement data from central Alabama suggest that population size increased substantially during the Late Woodland period (Jeter 1973:235; 1977:130). A second trend begins to emerge when the links between population size and sedentism are considered. Given the negative correlation between population size and mobility (e.g., Binford 2006:6; Kohler and Sebastian 1996:598-599; Smith 2009:144) it is assumed that an increase in sedentism also occurred during the Late Woodland period. While this trend is generally thought to be applicable to the study area (e.g., Graham 1967:69; Dickens 1968:163-164; Jenkins and Krause 1986:121-123; Shelby 2007:495), it has yet to be addressed from a regional perspective. Given the general trend toward increasing sedentism observed in the Eastern Woodlands during this period, it is hypothesized that Late Woodland populations in central Alabama were more sedentary than their Middle Woodland predecessors.

Aggregation and Ethnicity

Concomitant with an increase in inter-regional interaction during the Middle Woodland period was an increase in the direct contact between diverse ethnic groups. Part of this contact, according to Walthall (1985), occurred in the form of aggregation. Using data from five suspected aggregation sites in the southern Appalachian Highlands, Walthall argued that the artifact assemblages from these sites were appreciably dissimilar from those of nearby sites. This led Walthall to conclude that these sites functioned as aggregation centers where two or more ethnic groups congregated for a certain amount of time during the year. Following Griffin (1967), Walthall speculated that trading parties or pilgrimage participants from the Ohio River Valley and the southern Appalachian Highlands routinely ventured between these two areas.

Drawing upon ethnographic and archaeological data, Walthall suggested that a variety of activities were performed at aggregation centers such as mound construction, feasting, and mortuary rituals. As with the topics of inter-regional interaction and sedentism, the notion of aggregation has yet to be addressed adequately in central Alabama. As modes of surface finish on potsherds from the Armory site are appreciably distinct from neighboring sites, it is hypothesized that Armory may have functioned as a Late Middle Woodland aggregation center.

Expectations

Interaction. Given the increased flow of cultural information during the Middle Woodland period, it is thought that potters were exposed to a variety of cultural models regarding the manufacture of ceramics. Once exposed to these cultural models, potters may have reproduced them in their own craft or combined them with previously known models to create new models. If this was the case, then increases in inter-regional interaction should have been accompanied by concurrent increases in the decorative diversity of ceramic assemblages (Dickens 1980; Dickens and Fraser 1984). Thus, an attempt is made in this thesis to quantify ceramic diversity along a temporal dimension such that inter-regional interaction may be assessed chronologically.

Sedentism. Following Dunnell (1978), a distinction is made between stylistic and functional variation. Stylistic variation occurs in a selectively neutral environment where the reproductive fitness of a given variant in a set of variants is equal to that of the other variants in that set. Conversely, functional variation occurs in a selectively non-neutral environment where traits have differential degrees of reproductive fitness (Dunnell 1978:199; Neiman 1995:8). While functional variation is governed largely by natural selection, stylistic variation is affected by other selectively neutral forces such as innovation and cultural transmission (Neiman 1995:8).

When applied to the case at hand, the effects of stylistic drift associated with a group of ceramic assemblages can be measured by quantifying the amount of stylistic dissimilarity (also called "distance" in this thesis) between ceramic assemblages. In this quantification, the effects of stylistic drift serve as an analogue for the degree of relatedness between ceramic assemblages. Building on the work of Neiman (1995), Smith (2009:11-12), suggests that the relatedness of ceramic assemblages during the Woodland stage may be a function of population mobility. For instance, during periods of relatively high mobility, Smith expects that archaeological sites should represent the sequential occupation of multiple populations. Thus, the ceramic assemblages produced at these sites would be relatively homogeneous as each assemblage would have been produced by the same set of populations. Conversely, Smith (2009:11-12) predicts that as populations became more sedentary, local communities would have produced ceramic assemblages which, due to stylistic drift, would become relatively dissimilar from neighboring populations over time.

Given the experimental nature of the ceramic dissimilarity model, additional forms of evidence such as the number and sizes of sites, and relative midden and mound frequencies are examined in order to supplement this analysis. As with Smith's (2009:134-135) findings from the Chattahoochee River Valley, we will find that the model articulated above fails to account for the regional data from central Alabama, as the results of the supplementary analyses do not conform to what is predicted by the model. For instance, during the Middle Woodland period, when inter-assemblage distance (dissimilarity) was at its peak, there is minimal evidence of substantial midden accumulation, implying that Middle Woodland populations in central Alabama were relatively mobile during this period. It is therefore concluded that forces other than stylistic drift were shaping the ceramic assemblages of Woodland-stage central Alabama.

Ethnicity and Aggregation. Given that several distinct ceramic modes associated with separate cultural traditions were recovered at the Armory site, it is possible that Armory functioned as a Middle Woodland aggregation center. It is argued here that the cohabitation of multiple ethnic groups may account for the increased inter-assemblage distance (dissimilarity) during the Middle Woodland period. This interpretation is supported by a distributional study of check and rocker stamped sherds at the Armory site as well as a regional rank-size analysis of Middle and Late Woodland period sites in central Alabama.

Research Objectives

In order to examine interaction, sedentism, aggregation, and ethnicity as they relate to the Armory site and central Alabama, three objectives have been proposed:

1) To establish a Middle to Terminal Woodland chronology for the area immediately surrounding the Armory site by means of a frequency seriation augmented by radiometric dating and ceramic cross-dating.
2) To attempt to discern any changes through time in the extent of inter-regional interaction and sedentism during this interval as measured by the new chronology.
3) To address the effects of ethnicity and aggregation on settlement at the Armory site and in Woodland-stage central Alabama.

Chapter 2: Methods

This chapter provides a general overview of the methodological procedures employed in this thesis. As nearly all aspects of anthropological research are laden with methodological considerations, each major stage of this investigation is considered in some detail. Before these stages can be adequately addressed, however, a brief history of the fieldwork conducted at the Armory site must be presented. In doing so, the historical context framing the issues addressed in this thesis will be made clear. Once this foundation has been provided, the manner in which Armory's material culture was classified will be described. Following this description, the methods used to formulate the augmented frequency seriation and the resulting cultural chronology will be addressed. Using the periods delineated within this cultural chronology, spatial analyses involving ethnicity and aggregation along with regional analyses of inter-regional interaction and sedentism were conducted. Measures of inter-regional interaction were ascertained using an information-theoretic approach as defined by Claude Shannon and Warren Weaver (1948). Conversely, chronological differences in sedentism were addressed using the proportions of recorded mounds and midden accumulations per 100 sites during the Middle and Late Woodland periods. The number of Middle and Late Woodland sites along with each period's median site size, were also used to diachronically evaluate sedentism. Following these analyzes, the mean inter-assemblage distance (dissimilarity) of ceramic assemblages by period was quantified using a modified Brainerd-Robinson index in an attempt to discern whether this index could accurately measure changes in sedentism. In several instances, it was advantageous to present the results graphically; thus, the tools and techniques used to create these visual representations are also discussed.

Background to Fieldwork

Excavations of 1899. The first documented field excavations at the Armory site were undertaken by Clarence B. Moore in 1899. Moore visited this site, which he called the "Mound on the Hunter Place," during part of a three-month long archaeological expedition of the Mobile and Alabama rivers. Upon at his arrival at the site, Moore noted that a looter's trench bisected the primary mound along a north-south axis (Moore 1899:302-303). While much of the mound has eroded since Moore's visit in 1899, the remains of this trench are still visible today.

Given the disturbance left by the looters, only a partial excavation was attempted by Moore. While these excavations were concentrated along the western and eastern flanks of the mound, the debris pile from the looter's trench was also investigated. Curiously, this debris pile yielded Moore's most interesting find- a bicymbal Hopewellian copper ear spool. Though this was the only artifact that Moore reported, its association with the primary mound implies the presence of one or more Middle Woodland burials in the mound. During the course of his excavations, Moore observed, and briefly described, the primary mound's stratigraphy. While it is difficult to reconstruct a stratigraphic profile based on his description, it is evident that the mound was composed of at least one layer of sand and one layer of clay.

Reference to the Armory Site in 1910. While no formal excavations were conducted at the Armory Site in the decades immediately following Moore's expedition, the Mound at Hunter Place did receive mention in the *Handbook of the Alabama Anthropological Society*. As outlined by the society's president, Thomas M. Owen, the purpose of this handbook was to serve as a "working guide to collectors" who were interested in furthering the knowledge of past societies by the collection and curation of prehistoric materials (Owen 1910:3). It is therefore possible that the site was revisited by collectors and amateur archaeologists seeking to pursue the goals of the Alabama Anthropological Society. While this may be the case, there is no recorded mention of any excavations conducted by the Alabama Anthropological Society.

Survey in 1980. During the spring of 1980, Auburn University at Montgomery was contracted by the Alabama Historical Commission to survey an area along the Alabama River between Selma and Mobile Bay (Jenkins and Paglione 1980:1). The purpose of this survey was to locate and record prehistoric and historic sites within the study area and assess their potential for inclusion in the National Register of Historic Places. The Armory site was one of the 70 sites located or visited during this survey. The site's spatial boundaries were delineated via surface collection and shovel testing, and its location was recorded in the Alabama State Site Files (hereafter ASSF). Following this survey, it was determined that further testing was required in order to assess the eligibility of this site for nomination to the National Register of Historic Places (Jenkins and Paglione 1980:26). Few chronologically diagnostic artifacts were recovered during this survey; however, it was evident that the Armory site possessed occupations from the Middle Woodland, Late Woodland, and Mississippi periods. The artifacts recovered from this survey were curated at Auburn University at Montgomery, but are currently on loan to the University of Alabama for the purposes of this thesis.

Survey in 1987. During the summer of 1987, a University of Alabama field school, under the direction of Richard Krause, excavated portions of Historic Cahaba (1Ds32). In conjunction with these excavations, a survey was conducted by Robert Atchison with the hopes of acquiring data relevant to the De Soto expedition (Atchison 1988:1). Given that a Mississippian component was listed in the 1980 report submitted by Jenkins and Paglione, the site was revisited and a small surface collection was made. However, no artifacts diagnostic of the Mississippi or Protohistoric periods were recovered. While conducting this fieldwork, the surveyors noted that the Armory site had been recently visited by looters and that the mound was badly damaged. It was therefore recommended that the mound be protected to prevent additional damage and that the site be considered eligible for the National Register of Historic Places (Atchison 1988:21). The material recovered from this survey was curated at the Office of Archaeological Research in Moundville, Alabama and was reexamined for the purposes of this thesis.

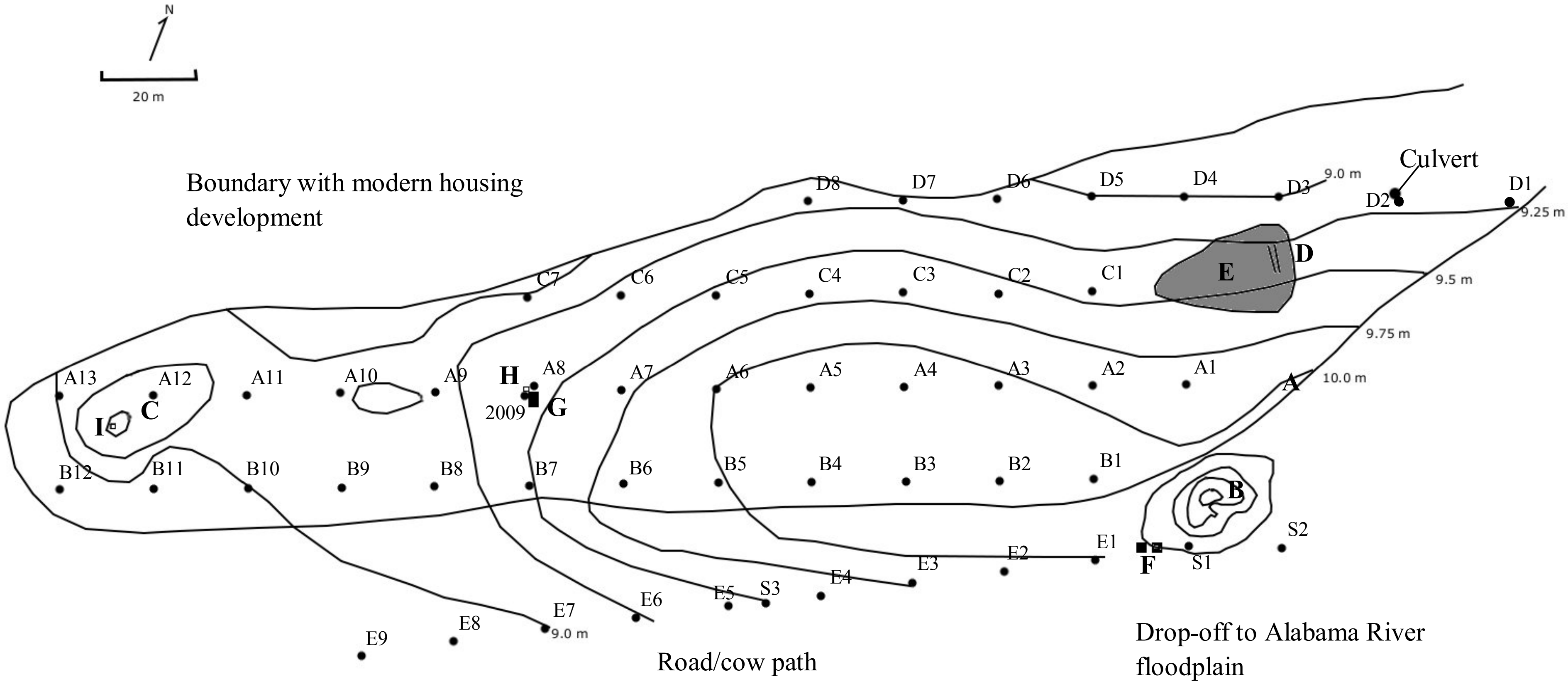
Excavations in 2007. In 2006, a multidisciplinary conference regarding the location of Mabila was held at the University of Alabama. Following the results of this conference, it was suspected that the Armory site may have the town of Piachi, a site visited by De Soto shortly before the Battle of Mabila (Knight 2009). This assumption was based largely upon two attributes of the site. First, as noted by the Spanish explorers, Piachi, like the Armory site, was situated along a river terrace. Second, the shell-tempered pottery recovered during the 1980 survey suggested that the site was occupied during the Mississippi or Protohistoric periods.

As a result of this conference, in 2007 Ned Jenkins and Teresa Paglione of the Alabama Historical Commission, revisited the Armory site and conducted several shovel tests. Before this survey, it was believed that the Armory site possessed only one mound. At this point however, Jenkins and Paglione suspected that a slight rise in the western portion of the site may have been the remnant of a second mound (Teresa Paglione, personal communication 2010). While several shovel tests were placed into this suspected mound, it was not yet determined if this rise was in fact a second mound.

Following the initial survey by Jenkins and Paglione, the University of Alabama Anthropology Club, under the direction of Vernon J. Knight, systematically shovel tested the site at 20 m intervals over the course of two days. In addition to these shovel tests, a 1x1 meter test unit (Unit 29A235) was placed into the possible secondary mound. Upon examination of the recovered artifacts and stratigraphy, Knight concluded that the rise noted by Jenkins and Paglione was indeed a prehistoric, artificial mound. A possible feature was also encountered in one of the shovel tests and, as a result, this test was expanded into a second 1x1 meter test unit (Unit 36A147).

As the shovel test pits were being excavated by the Anthropology Club, Ian W. Brown with the assistance of Ashley Dumas and Erin Phillips recorded elevation data adjacent to each shovel test pit. These data were obtained using a transit relative to an arbitrary datum and were plotted on a hand-drawn topographic map. The wide sampling interval of the shovel test pits necessitated the recording of additional data points in order to render a more accurate representation of the site. This map has since been digitized and modified to include the location of the excavations from the 2009 field season (Figure 2.1).

Immediately following the fieldwork of the Anthropology Club, the Alabama Archaeological Society, under the direction of Ashley Dumas, completed the unfinished shovel testing project and conducted several additional test excavations. During this phase of the project, Steven Meredith and Matthew Grunewald placed several small test pits into Armory's primary mound. While the excavations in the primary mound yielded little chronological information, the majority of the ceramics recovered from the site appeared to date to the Middle Woodland period. This, along with minor amounts of Late Archaic, Late Woodland, and Mississippi period material, led Knight to conclude that the site was a multi-component mound



Key

A– 10.0 m arbitrary datum (A0)
B– 12.07 m (primary mound)
C– 9.62m (secondary mound)
D– Modern drainage trench
E– Wooded area
F– Units 2A12 and 2A15 (2009)
G– Units 34A145 and 35A145 (2009)
H– Unit 36A147 (2007)
I– Unit 29A235 (2007)
● Shovel test pit
□ 2007 excavation unit
■ 2009 excavation unit

Figure 2.1 Digitized and updated version of the 2007 contour map.

center with a dominant Middle Woodland occupation rather than the Protohistoric village of Piachi, as was originally suspected. As noted by Knight, it was evident that the Middle Woodland ceramics from this site did not conform to either those of the local Middle Woodland Cobbs Swamp phase or the Late Woodland Henderson phase, as defined by Roy Dickens (1971) and David Chase (1998).

Excavations in 2009. The research topics addressed in this thesis required more data than what was available from the 1980, 1987, and 2007 expeditions at the Armory site. Therefore, it was judged necessary to conduct additional excavations in the form of two 2x2 meter test units. With the assistance of Brown and Knight, the author assembled a field crew of undergraduates, graduate students, and volunteers from the University of Alabama and revisited the site between May 30 and June 7, 2009. A local business owner, Bucky Henson, volunteered one of his hunting lodges at the Valley Creek Outdoors hunting camp to house the field crew for the duration of the project.

Using the data from the 2007 shovel test pits, potential locations were selected for excavation by Knight and the author based upon their probability of yielding Middle Woodland ceramics. Assuming that the primary mound was a Middle Woodland burial mound, it was suspected that the placement of the two 2x2 meter test units near this area would likely produce a large quantity of Middle Woodland ceramics. Thus, these test units were placed adjacent to the southwestern edge of the primary mound.

The field notes from 2007 indicated that abrupt soil changes in areas adjacent to the mound would be unlikely and, therefore, soil was excavated in 10 centimeter arbitrary levels rather than in stratigraphic zones. In the test unit closest to the mound (Unit 2A12), sterile subsoil was reached at 70 centimeters below the ground surface while in the adjacent unit (Unit

2A15) sterile soil was reached at 50 centimeters below the ground surface. Unit 2A12 contained three features: Feature 1, a thin clay lens (Figure 2.2), Feature 2, a hearth consisting of a concentration of fire-cracked rock (Figure 2.3), and Feature 4, another hearth (Figure 2.4).

Figure 2.2: Clay lens at the base of the primary mound in Level 1 of Unit 2A12.

Figure 2.3: Hearth found at the base of Level 4 in Unit 2A12.

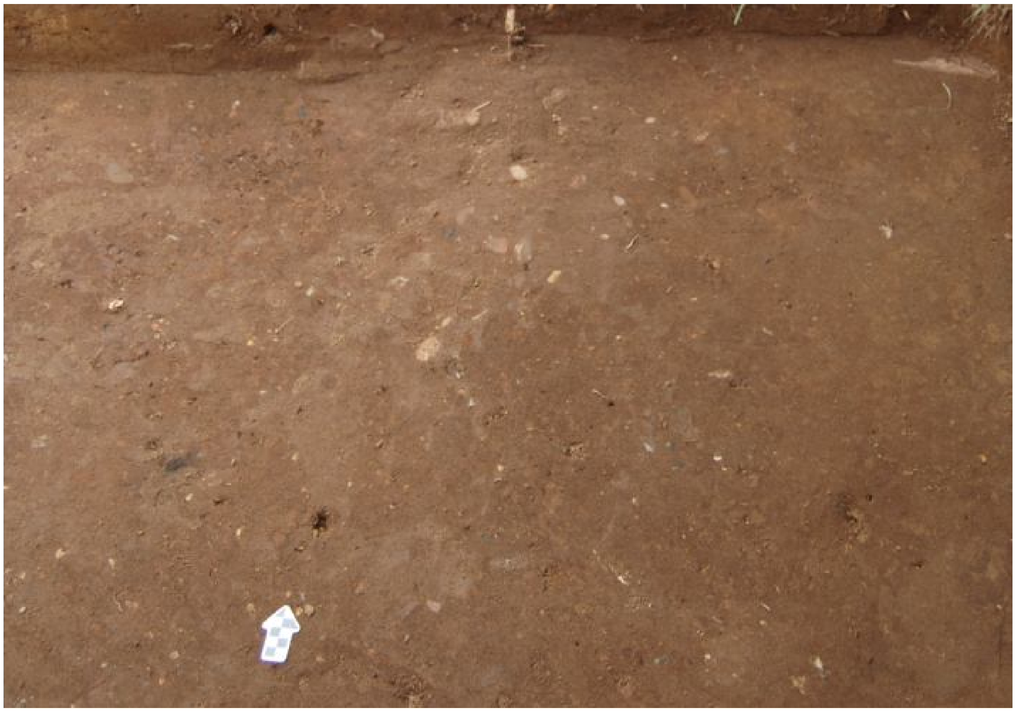


Figure 2.4: Hearth with fire-cracked rock found at the base of Level 1 in Unit 2A12.

It is possible that this clay lens was once a mound surface, as Woodland and Mississippian populations in central Alabama have been known to cover their mounds with clay (Morgan 2003: 64; Nance 1976:15-16). A small amount of sterile mound fill was recovered from beneath the clay lens, but no chronologically diagnostic artifacts were recovered from this context. Aside from a light scattering of mussel shell, no features were encountered in Unit 2A15.

Few ceramics were recovered from these units, especially below the first 20 centimeters; however, large quantities of lithic material and burned earth were found until subsoil was reached. Given the presence of fiber-tempered ceramics in these units, it was inferred that a Late Archaic accretional midden was located beneath or in the vicinity of the primary mound. As these test units, along with those from 2007, yielded sand/grit tempered ceramics with modes diagnostic of the Middle Woodland period, it is most likely that the primary mound dates to the

Middle Woodland period especially given the rarity of Late Archaic mound sites in central Alabama.

Following the excavation of Units 2A12 and 2A15 attention was directed toward an area approximately 150 m northwest of the primary mound. In 2007, it had been noted that this area contained a dense midden with a large quantity of Middle Woodland ceramics. Before test units were excavated in this location, a preliminary shovel test was conducted. The results of this shovel test did indeed yield sand/grit-tempered ceramics, so a 2x2 meter test unit (Unit 34A145) was placed in this location. This unit reached a depth of 50 centimeters and contained plow scars and small charcoal flecks until a depth of 30-40 cm below the ground surface. Considerably more sand/grit-tempered ceramics were found in this unit than in Units 2A12 or 2A15 adjacent to the primary mound. Once this unit was completed, time permitted the excavation of an additional 1x2 meter unit (Unit 35A145) directly to the north. As in Unit 34A145, this new test unit contained multiple plows scars along with a light scattering of charcoal.

Material Culture Classification

Artifacts recovered from the Armory site were organized using a two-tiered classification scheme. The first, and coarser of the two tiers, consisted of four categories: Ceramics, Lithics, Historics, and Miscellaneous. Artifacts within these categories were classified into smaller, more meaningful units of analysis. Given that the nature of this project necessitated a fine-grained analysis of Armory's Middle Woodland ceramic assemblage, the Ceramics category underwent the most thorough analysis. Once classified, the ceramic modes of decoration and surface treatment present at the Armory site were compared to nearby assemblages to form a cultural chronology on which the analyses of interaction and sedentism were based. An attempt was also made to describe thoroughly the projectile points recovered from the Armory site due to their utility in assessing cultural chronology.

Ceramics. In this thesis an effort was made to quantify the diversity and inter-assemblage distance (dissimilarity) of ceramic assemblages as they relate to surface treatment and decorative form. The method of classification required by these analyses could not be mutually exclusive or exhaustive (e.g., Phillips 1970), however, as some sherds have multiple relevant attributes in various combinations while other have none. Furthermore, in their quest for mutual exclusivity and exhaustiveness, type-variety systematics often overlook fine-grained distinctions which merit some consideration. For instance, in central Alabama, the type Henderson Plain, as defined by Roy Dickens (1971:59) includes both plain sherds and sherds with narrowly incised lines near the rim. Following Rouse (1960:313), if it is assumed that the presence of these incisions was determined by some cultural standard, then the use of the type Henderson Plain unnecessarily reduces the amount of historically significant data that can be gleaned from the archaeological record. Despite the shortcomings of the type-variety system, attempts were made to indicate resemblances to or synonymy with previously defined types so as to permit a coarse-grained comparison with typologically classified ceramic assemblages.

Given the nature of this thesis's research objectives, only the ceramic assemblage from the Armory site was classified in a purely descriptive manner. Following Rouse (1960:313), it was assumed that along with vessel temper, the determination of a surface treatment or decoration by a potter was the result of meaningful cultural standards held by that potter. Thus, all combinations of temper and decorative attributes were considered and described. Within this scheme, all sherds had at least one mode (temper), while others had several (e.g., a sand/grit-tempered, check stamped, and incised sherd). Given that proportional fluctuations in plainware

are at least partially the result of functional variation rather than stylistic variation, plainware is not usually considered adequate for measuring the passage of time (e.g., Phillips et al. 2003:220; Smith and Nieman 2007:49). It was therefore assumed that its worth in measuring interaction and sedentism would also be minimal. As a result, lack of surface decoration was not considered as a "plain" mode.

Lithics. Since stone artifacts were not the primary units of analysis considered in this research, they were not subjected to the same rigor of classification as their ceramic counterparts. However, care was taken to adequately describe Armory's lithic tool assemblage such that these descriptions may be used for assigning temporal affiliation. Projectile points were grouped into descriptive classes based on the similarity of their formal attributes. When possible, these classes were defined by their resemblances to a type cluster (e.g., Justice 1987) rather than to a specific point type (e.g., Cambron and Hulse 1975). Thus, analogies with chronologically diagnostic attributes could be made without relaxing or altering the current descriptions of previously defined point types. If the points in Armory's lithic assemblage to be used in a broader analysis, however, they should be reorganized and classified according to variables most relevant for the purposes of that research. As it was impossible to predict the modes that future researchers will use, an effort was made to provide as much description of these points as possible. It should also be noted that the relatively small number of complete points recovered from the Armory site (n= 23) limits the analyses that can be performed using this dataset alone.

Other lithic tools, such as bifaces and unifaces were weighed, counted, and described in some detail. Some lithic artifacts, such as fire-cracked rock, were only weighed or counted, as any form of further analysis of these materials would not have been directly relevant to the goals of this thesis. Stone debitage was also not analyzed beyond the most basic forms of description.

However, an attempt was made to distinguish between the debris of stone tool production and the shattering of fire-cracked rock.

Historics. This category includes both historic and modern artifacts. While not directly pertinent to the research objectives of this thesis, artifacts in this class were weighed, counted, and described in some detail. If ascertainable, the temporal affiliations of artifacts in this class were also included.

Miscellaneous. Artifacts in this category were weighed and in some instances counted. When applicable, descriptions of these classes along with their temporal affiliations were provided.

Woodland Cultural Chronology

In order to address the diachronic issues posed in this thesis, a chronological ordering of archaeological assemblages was required. This ordering was accomplished via the formulation of a cultural chronology derived from an augmented frequency seriation of fourteen ceramic assemblages from Middle to Terminal Woodland sites in central Alabama. The data used to generate this chronology were obtained from both published and unpublished literature and included assemblages from sites located near the Armory site, as well as the Armory site itself. Given the scope of this research, it was not possible to reanalyze the assemblages included in the augmented frequency seriation. As a result, the original classification of the modes of surface treatment or decoration was used to form the seriation. Fiber-tempered and shell-tempered ceramics were excluded from the chronology given that these ceramics predate or postdate the Woodland stage. When possible, the frequency seriation was augmented by the use of radiometric dating and cross-dating with types and modes that are better understood chronologically in adjacent regions. When assemblages with an unknown temporal affiliation were encountered, they were placed into a "Fordian diagram," the type of histogram traditionally used by archaeologists to arrange pottery that is most closely alike into "battleship curves." Thus, diachronic changes in the popularity of modes were ideally monotonic and assemblages with similar modal frequencies were considered to be nearer in time (O'Brien and Lyman 2000:291). In this manner, the position of an assemblage within the chronology was a function of its similarity to other assemblages as well as external information in the form of radiometric dates and cross-dating. Because external information has been used in the ordering, this is not a "pure" seriation. Once the most appropriate position of all the considered assemblages within the seriation was decided, chronological boundaries were established in a manner that maximized the degree of difference between adjacent periods.

To be included in the augmented frequency seriation, a ceramic assemblage had to fulfill a series of requirements. First, the assemblage needed to consist of at least 50 sherds, of which 30 were required to bear some form of decoration or surface treatment. It should be noted that while this requirement had a low threshold, regionally available data did not permit the use of a more robust criterion. Second, the assemblage needed to be the result of a relatively short-term occupation. Third, the assemblage needed to come from a site that is in geographical proximity to the Armory site such that the assemblages from multiple contemporaneous ethnic groups would not be considered (Dunnell 1970:311; Rowe 1961:326-327). Finally, there should be no evidence of abrupt migrations, as such a phenomenon would also result in the inclusion of multiple contemporaneous ethnic groups in the seriation.

Following its original classification, Armory's ceramic assemblage was reduced to a set of least common denominator variables to permit comparison with nearby, typologically classified, ceramic assemblages. For instance, sherds with narrowly incised lines were counted as plainware and thus ignored, as the type Henderson Plain used in several of the considered assemblages includes by definition both plain sherds and sherds with incised lines near the rim. This method of reorganization also had the benefit of ignoring various different typological classifications for the same mode of surface treatment or decoration. For example, the fact that the types Cobbs Swamp Check Stamped (Chase 1998:61) and Deptford Check Stamped (Nance 1976:68) could both be used to describe a Middle Woodland check stamped vessel from central Alabama has no bearing on the results of the seriation.

Once the selected assemblages were reduced to a common set of modes, they were entered into a database. Using a Visual Basic front-end to Microsoft Excel© designed by Tim Hunt (available at *people.virginia.edu/~fn9r/data/SeriationTool.xls)*, the relative proportions of modes within each assemblage were calculated and presented in a Ford diagram (see Lipo 2001; Lipo et al. 1997). The whiskers present on each bar of the diagram reflect an error estimate using a 90 percent confidence interval.

Critiques of Seriation. Over the last several decades, the utility of relative frequency seriation to chronologically order archaeological assemblages has been called into question (McNutt 1973; 2005). The distrust of frequency seriation arises from at least three perceived flaws inherent within this method. While these critiques have some merit, it can be demonstrated that they do not apply to the augmented frequency seriation presented in Chapter 4.

The first critique is known as the "closed sum effect," (Cowgill 1987:32; Davis 1973:81-82; McNutt 1973:47; McNutt 2005:210). This critique, as expressed by McNutt (1973:47; 2005:210), holds that the popularity of classes within a series of assemblages may only increase at the expense of other classes. The effect of this process is a combined bimodal or hourglass distribution for the resultant classes. This effect can be seen more clearly in a fictitious assemblage consisting of two classes- A and Not A. If the distribution for Class A is a unimodal, relative frequency distribution, then the distribution for Class Not A has to be a bimodal or hourglass distribution. This critique however, does not apply to the augmented frequency seriation used here as it is informed by outside data and contains more than two classes.

The second critique, originally noted by Spaulding (1978), deals with the validity of type-based seriations. As types are, by definition, combinations of attributes (Phillips 1970; Spaulding 1953), it is possible that a popularity curve may only be responding to changes in a single attribute rather than to all the attributes comprising a type. In this thesis, this problem was avoided by creating a seriation that utilized the frequencies of single attributes rather than attribute combinations (e.g., Marquardt 1978:289-292). In this manner, changes in the proportion of classes in assemblages through time represent changes in the entire class rather than only one aspect of the class.

The third critique, as noted by McNutt (1973:49-51; 2005:212), concerns a bias regarding the dominance of disproportionally large classes. According to McNutt, if one class increases from one assemblage to another, then it may mask increases in minority classes. Thus, while the specimens in a minority class may increase in raw frequency from one assemblage to the next, this occurrence may not be reflected when considered proportionately. If this critique were accepted, then all forms of proportional scaling would be rendered useless, as any measurement not containing raw counts would be misleading. It is argued here, instead, that such increases or decreases in the raw frequency of minority classes such are merely the effects of sample size and scaling. Further, the augmented frequency seriation presented in this thesis contains no overwhelmingly dominant class, and thus, temporal variability in minority classes is not obscured.

Spatial Analysis and Mapping

In an effort to facilitate the analysis of spatial data, this thesis employs the mapping applications Arc GIS and Surfer. Within these applications, analyses were conducted at both the site and regional levels. Contour maps of elevation and ceramic density at the Armory site were produced in an attempt to present the layout of the site along with its areas of occupation. The data embedded within the ceramic density map were used to address ethnicity and aggregation at the Armory site via an intra-site distributional analysis. In an effort to provide a regional perspective to site distributional analysis, a diachronic rank-size analysis of all single-component Middle and Late Woodland sites in central Alabama was also conducted.

Site-Level Analysis. Three site-level maps were produced using data from the Armory site (see Chapter 5). Of these maps, two were made using the contouring program Surfer version 8. In these maps, contours were used to indicate spatial differences in elevation. The spatial data for the x and y axis of the Armory site were plotted using the data used to create the hand-drawn topographic map from 2007. These two dimensional spatial data remained constant across both maps; however, the data presented in the z axis did not. On the first map, differences in elevation were recorded on the z axis, resulting in a digital version of the original hand-drawn topographic map. For the second map, however, the data from the 2007 shovel test pits were used to plot the weights of sand/grit-tempered ceramics larger than half an inch on the z axis. In this manner, the Middle Woodland activity areas at the Armory site could be accurately reconstructed given the constant 20 m sampling interval of the shovel test pits.

The final site-level map was produced using Arc GIS version 9.2. Given that check and rocker stamping, the two most dominant decorative modes at the site, are associated with separate ceramic traditions it is possible that two distinct populations were living contemporaneously at the Armory site. Thus, the distributions of these sherds along with their mean centers were plotted against the topographic map of the Armory site. It was assumed that if a statistical difference was found between these distributions along the x or y axis, then the presence of (at least) two ethnic enclaves could be inferred. Given the non-parametric nature of these distributions, the significance of the difference between these two groups was tested using a Wilcoxon rank sum test with a .1 alpha level.

Regional-Level Analysis. A rank-size analysis was also conducted in order to supplement the results of intra-site distributional analysis. Using Arc GIS and the ASSF, the Universal Transverse Mercator (hereafter UTM) coordinates for single-component Middle and Late Woodland sites were plotted on a map of central Alabama. The temporal affiliations of these sites were determined using the most recent cultural chronology for this region (Jenkins and Sheldon 2009:41). However, due to the small sample sizes of many of the assemblages included in this analysis, only coarse chronological distinctions could be made. As a result, sites could only be coded as Middle or Late Woodland.

For a site recorded in the Alabama State Site File to be included in the rank-size analysis it had to meet several requirements. First, a site had to be located within an arbitrarily selected 100 km radius of the Amory site (Figure 2.5). Second, a site had to contain at least 5 sherds such that its dominant period of occupation could be determined. Thus, sites yielding minimal amounts of material culture, such as ephemeral hunting camps, may not be well-represented in

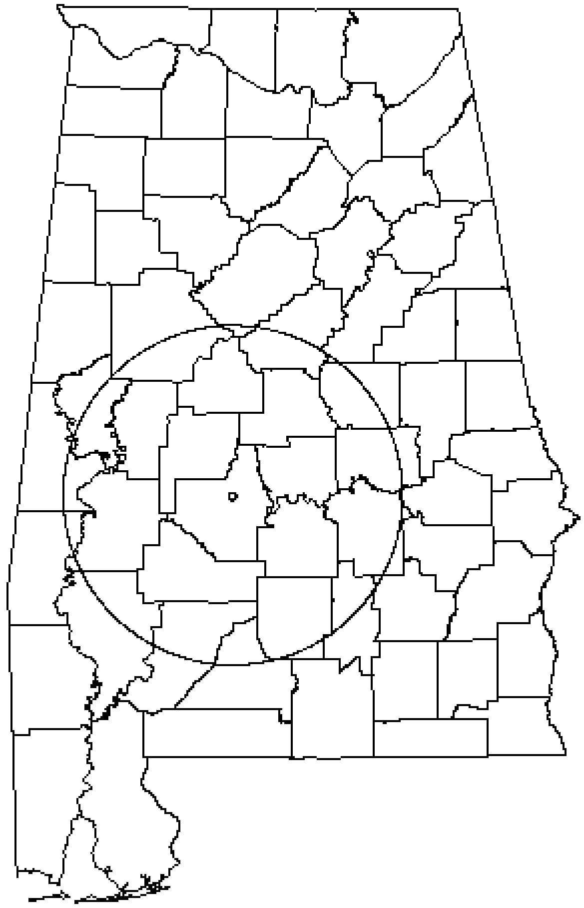


Figure 2.5: 100 km radius surrounding the Armory site.

these analyses. If such sites as these were proportionally more common during one period compared to the others, the analyses presented here will not account for this phenomenon. Third, a site must have its dominant period of occupation listed in the ASSF in order to be included. Thus, it is possible that Middle or Late Woodland sites were excluded from these analyses because they were not classified as such in the ASSF. Fourth, if a site's dominant period of occupation was listed in the ASSF and corresponded to either the Middle or Late Woodland periods, then its occupation had to be verified using diagnostic artifact data from published or unpublished literature or such information included in the original ASSF forms. Following the application of these sorting criteria, totals of 18 and 64 single-component sites were obtained for the Middle and Late Woodland periods respectively.

The locations and sizes of sites meeting these requirements were entered into the rank-size analysis program RSBOOT (available online at www.pitt.edu/~drennan/ranksize.html). Developed by Robert Drennan (2007), this program logarithmically plots the distribution of site-sizes and their corresponding size-ranks. Using the bootstrap method advocated by Drennan and Peterson (2004:539-541), 90% confidence intervals were ascertained via resampling with replacement of the original number of observations from each period's site-size dataset. Following the inclusion of these confidence intervals, the significance of the differences between the Middle and Late Woodland site size distributions was evaluated.

Given that rank-size analyses have proven useful for assessing the integration of settlements systems (e.g., Carballo and Pluckhahn 2007; Haggett 1966; Hodder and Orten 1976; Johnson 1977), it was hoped that this analysis could also provide insight into the potential effects of aggregation on regional settlement structure. In this analysis, it was assumed that if populations across a given area routinely aggregated at select locations, then this phenomenon should be reflected in a rank-size distribution of sites from that area. Thus, when conducting the rank-size analysis, it was assumed that aggregating populations would have produced numerous small non-aggregation sites as well as one or a few disproportionately large aggregation centers. Conversely, groups of autonomous, non-aggregating populations, while continuing to utilize numerous smaller sites, would have been more likely to create a greater number of disproportionately large sites as such sites would have no longer been shared by multiple populations. Therefore, assuming that aggregation was the only force shaping site size, one would expect to find a non-convex, or primate, rank-size distribution of sites during periods of aggregation as one or a few disproportionately large sites would be driving the rank-size distribution. For non-aggregating populations, on the other hand, it was expected that these disproportionately large sites would disappear, thus resulting in a convex rank-size distribution. It is important to note, however, that aggregation was undoubtedly not the only force shaping the sizes of sites during the Middle and Late Woodland periods, and as such, this analysis should be seen as supplementary to the intra-site distributional analysis rather than as inherently conclusive.

In order to analyze the rank-size distributions for the Middle and Late Woodland periods, a log-normal line was included. This line is the logarithmic expression of the rank-size rule, which states that the second largest site will be half as large as the largest and the third largest site will be one-third as large as the largest (and so forth) (Zipf 1949). Following Drennan and Peterson (2004), the area of the site-size departure from this line was calculated and presented as an *A* coefficient on a scale of -1 to 1. Positive *A* coefficients are said to be reflective of an overall convex distribution while negative *A* coefficients are said to be indicative of a primate distribution. The direction and magnitude of these distributions was gauged by the degree of divergence of their *A* coefficients from log-normality (i.e., an *A* coefficient of 0). Thus, a highly convex distribution may have an *A* coefficient of .8 while a highly primate distribution may have an *A* coefficient of -.8.

Interaction

Following the establishment of a regional chronological order of short-term ceramic assemblages, inter-regional interaction was measured along a temporal dimension as it related to these assemblages. Drawing from information theory, indices of diversity were calculated for each assemblage within each chronological period and were plotted on a diagram in order to illustrate temporal fluctuations in ceramic diversity. These diversity scores were scaled from 0-1 so as to permit comparison with subsequent analyses.

Sears (1973:36) argued that prehistoric inter-regional interaction involved both the exchange of cultural models regarding the production of material culture, as well as the material culture itself. If this is the case, then the amount of variability within a given cultural domain such as pottery should increase as local potters are exposed to foreign cultural models. Thus, it is assumed here that the cultural model governing a prehistoric potter's craft was confined to a limited range of production. However, once this potter was exposed to different forms of vessel decoration, such as those used by a different culture, then the amount of variability within that potter's cultural model is thought to have increased.

According to the mathematical theory of communication (Shannon and Weaver 1948:18-20), the amount of variability associated with a given variable can be discussed in terms of its entropy and redundancy. In this manner, the cultural models of potters exposed to a high degree of inter-regional interaction are said to have more entropy, or variability, regarding the manner in which these potters may decorate or treat a vessel. Conversely, the cultural models of potters not exposed to high degrees of inter-regional interaction are said to have a high amount of redundancy if their modes of decoration are limited in number or are highly repetitive. Thus, if interaction is positively correlated with the flow and exchange of ideas regarding the production of ceramics, then the entropy of these cultural models may serve as a measure for the degree of inter-regional interaction associated with the cultures of these potters.

Following the work of Dickens and Fraser (1984), the amount of information contained within an assemblage was measured via a quantification of entropy and redundancy. This was done using the Shannon-Weaver (1948) formula for the calculation of information.

$$I = - \sum_{f=1}^{k} P_f \log_2 P_f$$

Where I is the amount of information, k is the number of possible surface treatments and decorations (11 in the case of Armory's Middle Woodland ceramic assemblage), P_f is the probability that a sherd has the f*th* surface treatment or decoration, and $\sum_f P_f = 1$. When adapted to the purposes at hand, this formula is modified as follows.

$$I_i = - \sum_{f=1}^{k} P_{if} \log_2 P_{if}$$

Where I_i is the amount of information contained in the i*th* ceramic assemblage and P_{if} is the probability that a sherd from the i*th* assemblage has an f*th* surface treatment or decoration. The information contained within the assemblages was calculated once for each assemblage, thus producing a total of 14 i's. For each calculation $\sum_{if} P_{if} = 1$.

As noted by Dickens and Fraser (1984), in order to calculate P_{if}, it was necessary that the proportion of sherds having the j*th* surface treatment or decoration be known. As this proportion is partially dependent upon the total number of sherds from the considered assemblage, P_{if} may be calculated as follows.

$$P_{if} = X_{if}/N_i$$

Where N_i is the number of sherds in the i*th* ceramic assemblage and X_{if} is the number of sherds from the i*th* assemblage with the f*th* surface treatment or decoration. The proportion of X_{if}/N_i is termed the maximum likelihood estimate of P_{if} (Dickens and Fraser 1984; Shannon and Weaver

1948). Thus, to obtain a maximum likelihood estimate, or information statistic, for each assemblage the following adaptation of Shannon and Weaver's (1948) formula was used.

$$\hat{I} = N_i^{-1} \sum {}^{k}_{f=1} X_{if} \log_2 X_{if} + \log_2 N_1$$

After the information statistics for each assemblage in the augmented frequency seriation were calculated, they were averaged according to their associated chronological period from the cultural chronology presented in Chapter 4.

It should be noted that the information statistics produced by these calculations attempt to quantify two distinct concepts using a single index. These concepts, according to Keith Kintigh (1984:44-45) are richness and evenness where richness is a measure of the number of categories in a group and evenness is the amount of variability between these categories. Thus, if a ceramic assemblage contains five categories with twenty sherds in each category and a second assemblage contains the same categories but has ninety-six sherds in the same category and one sherd in the others, then these assemblages are said to highly uneven but equally rich.

Kintigh's (1984) measures of richness and evenness successfully capture both concepts inherent within Shannon and Weaver's (1948) notion of information. Here, however, a single measure of diversity was required in order to permit a scaled comparison with the Brainerd-Robinson indices described in the following section. Thus, the information statistic used to gauge interaction is really a combination of two variables which need not necessarily covary.

Sedentism

In addition to analyzing inter-regional interaction, an attempt was made to assess the degree to which populations were sedentary during the Middle and Late Woodland periods. It was assumed that relative degrees of sedentism could be inferred via a quantitative analysis of reported mound and midden frequencies from single-component Middle and Late Woodland sites within a given radius of the Armory site. Additionally, the number of sites and median site-size per period were also calculated and used to evaluate sedentism along a temporal dimension. The same sorting criteria used to select single-component Middle and Late Woodland sites for the rank-size analysis were applied in this context. Thus, 18 Middle Woodland sites and 64 Late Woodland sites were considered in these analyses.

Following these more traditional means of analyzing sedentism, measures of inter-assemblage distance (dissimilarity) were calculated in order to determine if this approach could adequately address fluctuations in sedentism as it relates to central Alabama. In this manner, it was assumed that stylistic drift would cause the ceramic assemblages of sedentary and relatively self-sufficient populations to become increasingly dissimilar over time. In order to quantify this dissimilarity, a dissimilarity index was needed for which a modified version of the Brainerd-Robinson index was used (O'Brien and Fox 1994:63). This index was normalized to a 0-1 scale to permit simultaneous comparison with data from the interaction analysis.

Analyses of Sedentism. It was assumed that changes in the relative frequencies of mounds and middens by period were indicative of fluctuations in sedentism. Given the small sample size and the fact that the distributions of mounds and middens by period did not meet the requirements of normality, Fisher's exact tests were conducted with .1 alpha levels in order to test the significance of differences between the Middle and Late Woodland periods. Among the measures of sedentism employed in this thesis, preference was given to middens as these debris accumulations were generally not produced by highly mobile populations (Binford 1980:7). Further, interpretations regarding sedentism as based upon mound frequency were tempered by a growing body of evidence, which indicates that relatively mobile populations were not precluded from mound construction (e.g., Gibson 2006; Saunders et al. 2006:665). Thus, if the Late Woodland period had significantly more midden accumulation than the Middle Woodland period, then the relative sedentism of Late Woodland populations could be said to be greater than that of Middle Woodland populations irrespective of minor differences in mound frequency.

The size and number of sites during the Middle and Late Woodland periods were also addressed in an attempt to further evaluate differences in sedentism. Using data from the ASSF, the sizes of single-component sites were calculated by multiplying their minor axes by their major axes, as these were the only measurements consistently recorded in the ASSF. While this figure falsely portrayed all sites as rectangles and overestimated their true size, this bias uniformly applies to both Middle and Late Woodland sites, and thus the measure can be used appropriately as an *index* of size. Given the non-parametric distribution of site-sizes by period, a Mann-Whitney *U* test was conducted using an alpha level of .1 to test the significance of any size differences in the data between the Middle and Late Woodland periods. The significance of the difference in the number of sites by period was assessed using a Chi-square goodness of fit test. The number of sites by period by itself, however, was not assumed to be a reliable indicator of sedentism, as an increase in the number of sites may be merely functions of increasing population size, smaller mean settlement size, or greater mobility.

Inter-assemblage Distance (Dissimilarity). The 14 assemblages used in the analysis of interaction were also used to measure inter-assemblage distance (dissimilarity). Indices of distance for all pairs of assemblages were ascertained using the Brainerd-Robinson formula (O'Brien and Fox 1994:63).

$$BRS = 200 - \sum_{I}^{N} | P_{ia} - P_{ib} |$$

Where BRS is the Brainerd-Robinson similarity coefficient, P_{ia} is the number of specimens in a given class from a certain assemblage and P_{ib} is the number of specimens in the same class for a comparison assemblage. Once the differences between the percentages of these classes are obtained, their absolute value is taken, and this step is repeated until every class in an assemblage has been subtracted from its corresponding class in the other assemblage. The percentage differentials between each class are then summed and subtracted from a maximum distance of 200. This produces a coefficient of similarity, where assemblage pairs with higher scores are said to be more similar than assemblage pairs with lower scores.

In its current state however, this formula yields a measure of assemblage similarity rather than dissimilarity or stylistic distance. As such, the formula must be modified as to exclude the subtraction of the summed values from 200.

$$BRD = \sum_{I}^{N} | P_{ia} - P_{ib} |$$

Once calculated in this manner, the formula will yield a coefficient of dissimilarity (BRD), or distance. A pair of assemblages with high scores are then said to be more stylistically distant than a pair of assemblages with lower scores. Mean inter-assemblage distance (dissimilarity) scores for each assemblage pair were calculated for each chronological period derived from the augmented frequency seriation by summing the distance scores for that period and dividing by the total number of paired assemblages. These scores were then scaled from 0-1 as to permit simultaneous comparison with the analysis of inter-regional interaction.

Similar to his critiques of frequency seriation, McNutt (2005) has also pointed out several difficulties associated with the Brainerd-Robinson index. However, it is argued here that these critiques should serve as a caution rather than grounds for dismissal, as the Brainerd-Robinson index is a valuable tool when properly applied. First, McNutt (2005:215) observes that the conversion of raw counts to percentages obscures any difference between the sample sizes of the considered assemblages. While this is true, the limitations associated with this problem were kept to a minimum in this thesis, and the raw counts of assemblages are presented in tandem with their Brainerd-Robinson coefficients for comparison (see Appendix A). Second, according to McNutt (2005:215) a Brainerd-Robinson index is "virtually meaningless," since two assemblages may or may not share the same types. As with the first critique, if the raw data from each assemblage are presented alongside a Brainerd-Robinson index, then indices that are misleading in the manner described may be pointed out and highlighted as possible limitations. Third, as noted by McNutt (2005:215), since the absolute value of percentages are used to form a Brainerd-Robinson index, it is possible to subtract any given percentage from one type in an assemblage pair and add it to another type within that assemblage pair without changing their Brainerd-Robinson index. Again, this critique can be overcome by presenting the raw data used to obtain the Brainerd-Robinson index. Finally, McNutt (2005:215) claims that the Brainerd-Robinson technique cannot easily be applied to cases where three or more assemblages are compared, since comparative indices are derived for only two assemblages at a time. In this thesis, this problem has been avoided by obtaining a Brainerd-Robinson index for each possible assemblage pair within a given chronological period and taking the mean of the indices. While this solution may amplify the previous limitations highlighted by McNutt, if raw data counts are presented in tandem with Brainerd-Robinson indices, as is done here, the effects of these limitations are kept to a minimum.

Chapter 3: Material Culture

In this chapter, a descriptive analysis of the material culture recovered from the Armory site is presented. This analysis includes the material from the fieldwork conducted in the 1980, 1987, 2007, and 2009 seasons. A brief description of the copper ear spool recovered by C.B. Moore is also provided, but as this was the only artifact reported and described by Moore, descriptions of other artifacts from the fieldwork in 1899 are not included. The artifacts discussed in this chapter are categorized in terms of their association with one of the following categories: Ceramics, Lithics, Historics, and Miscellaneous. These categories are further divided into classes for which class descriptions are provided. Provenience information is also included; however, in the case of the 1980 and 1987 surveys, such information could not be determined and as such the provenience for these artifacts is listed as "survey."

Ceramic Artifacts

Within the ceramic category, modes of surface treatment and decoration, rim modes, and basal modes are presented for each vessel temper. The majority of recovered ceramics are tempered with sand/grit, and thus this category constitutes the majority of the descriptive analysis. The dominant tempering agent within this category is quartz, although mica and chert are also present. An attempt is also made to highlight resemblances between the ceramic categories and previously defined ceramic types in an effort to permit comparisons with typologically classified assemblages.

Fiber-Tempered, Plain. Fiber-tempered ceramics are thought to have originated in the Savannah River region of Georgia (Stoltman 1972). This ware, often termed Millbrook Plain (Futato 1998:41) or Wheeler Plain (Jenkins 1981:167-168) in central Alabama, was introduced into this region during the Late Archaic period (Chase 1998:56; Gibson and Melancon 2004:169-192). The only radiometric date associated with this ware comes from a context associated with a Millbrook Plain, *var. Millbrook* sherd which produced a date of 3606 +/- 305 B.P. (Chase 1998:56). The popularity of fiber-tempering began to decline during the Early Woodland period following the introduction of the Alexander Series, a coiled sand/grit-tempered ware. While the Alexander series is not well-represented in central Alabama, radiocarbon dates from adjacent areas, particularly the Tombigbee River Valley, suggests that populations producing Alexander pottery were present in or near the study region from 600 B.C. to A.D. 100 (Atkinson et al. 1980:195; Jenkins and Krause 1986:47; Meredith 2007:13), occupying the Early Woodland position in the local cultural chronology.

Sample: 35 body sherds

Illustration: Figure 3.1

Provenience: Survey, S2, 2A12 (levels 1-3), 2A15 (level 2), 34A145 (level 3), 35A145 (levels 3-4)

Grog-Tempered, Plain. First described in northern Alabama by William Haag (1939:15), this ceramic class appears to correspond to Phillip's (1970:47-48) concept of Baytown Plain. Jenkins (2003:4) attributes the presence of grog-tempered ceramics to the Baytown variant. Such variants are defined as cultural taxa having less content but greater temporal and spatial boundaries than a phase (Lehmer 1971:32; Jenkins 1982:10; Krause 1977:10). Jenkins's Baytown variant has five manifestations present within Alabama: the Carthage, Ellis, McKelvey, Miller III, West Jefferson phases. Of these phases, Carthage, Miller III, and West Jefferson occupy portions of the study area. While grog-tempered ceramics first appear in central Alabama during the Late Middle Woodland subperiod, by the middle of the Late Woodland period grog-tempered sherds dominate the ceramic assemblages of the Black Warrior and Tombigbee River valleys (Jenkins 2003:25-26). Given the general dearth of Late Woodland material from the Armory site, it is possible that the presence of this sherd is indicative of Late Middle Woodland contact with populations in the Black Warrior or Tombigbee River valleys.

Sample: 1 body sherd

Illustration: Figure 3.1

Provenience: Survey

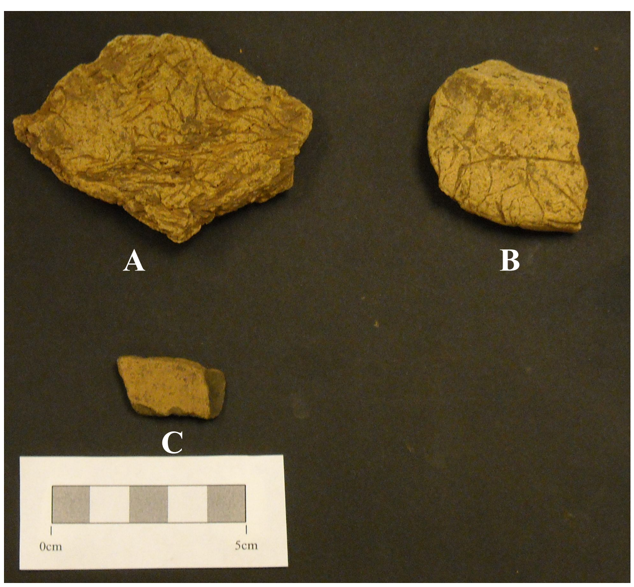


Figure 3.1: Fiber-tempered, plain sherds (A-B) and grog-tempered sherd (C) from the Armory site.

Grog and Sand/Grit-Tempered, Incised, Rocker Stamped, and Punctated. This sherd bears a loose resemblance to the types Marksville Stamped, *var. Troyville* (Phillips 1970:125-127) and Alligator Bayou Stamped (Willey 1949:372-373). These types are characterized by zoned rocker stamping and are tempered with grog in the case of Marksville Stamped, *var. Troyville* and sand/grit and grog for Alligator Bayou Stamped. Both of these types are assigned to the Middle Woodland period, and therefore, this sherd may the product of external contact with populations from the Gulf Coast or eastern Mississippi. It should be noted however, that this sherd does not wholly correspond to these types as defined as it is not only zoned rocker stamped but also possesses a series of circular punctations.

Sample: 1 body sherd

Illustration: Figure 3.2

Provenience: B7

Figure 3.2: Grog and sand/grit-tempered, incised, rocker stamped, and punctated sherd from the Armory site.

Sand/Grit-Tempered, Plain. The earliest known manifestation of a sand/grit-tempered ware in central Alabama occurs with the introduction of the Alexander ceramic series during Early Woodland period (Chase 1998:56-57; Meredith 2007:15-17). While there are several ceramic types in central Alabama dedicated to the description of sand/grit-tempered plainware, the determination of a typological classification for this ware in central Alabama is governed largely by the presence of other chronologically diagnostic traits. If the Armory site sample were to be placed into a typology they would most accurately be described as Armory Plain- an entirely new type dedicated to the sand/grit tempered plainware of the Armory site, as it does not conform exactly to any previously published type definition.

Sample: 716 body sherds, 6 rim sherds, 1 basal sherd

Illustration: Figure 3.3

Provenience: Survey, AO, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, B1, B2, B4, B5, B6, B7, B8, B9, B10, B11, B12, C1, C2, C3, C4, C5, C6, C7, D7, D8, E1, E2, E3, E4, E5, E6, E7, E8, E9, F1, S1, S2 (Test 1), 2009STP1, 2A12 (levels 1-4), 2A15 (levels 1-3), 29A235 (zones 3,4,6, and 7), 34A145 (levels 1-5), 35A145 (levels 1-5), 36A147 (midden layer)

Sand/Grit- Tempered, Check Stamped. Sand/grit-tempered check stamped pottery constitutes the majority of the decorated ceramic assemblage at the Armory site. The checks on a vessel represent the negative imprint of a wooden paddle. This surface treatment first appears in the Southeast around 500 B.C. as part of the Deptford ceramic complex and Southern Appalachian Tradition (Brown 1982:12; Brown 2009: 73; Caldwell 1958:34-35). Check stamping is found in central Alabama during the Early Middle Woodland subperiod in the form of Cobbs Swamp Check Stamped (Chase 1998:61). As with sand/grit-tempered plainware, the classification of a check stamped sherd as specifically Cobbs Swamp Check Stamped is determined by attributes external to the sherd, namely the presence of other ceramic modes in the same assemblage such as complicated stamping, simple stamping, and podal supports.

Following the Early Middle Woodland subperiod, there is a decrease in the relative frequency of check stamping for the ceramic assemblages roughly comparable in age to the Armory site. However, during the Late Woodland period check stamping comes strongly back into vogue in the form of Henderson Check Stamped (Dickens 1971:52-58). Several radiocarbon dates have been obtained for this phase and it is suggested that Henderson series ceramics date between A.D. 500 and A.D. 1000 (Chase 1998:75). During the subsequent Whiteoak phase (A.D. 900-1200), check stamping, in the form of Whiteoak Check Stamped (Chase 1968b:20), remains the dominant mode of surface finish. As is indicated by the seriation in presented in Chapter 5, check stamping is found in assemblages spanning the Middle, Late, and Terminal Woodland periods. Thus, presence of this decoration by itself in a ceramic assemblage has minimal chronological significance, and attempts to assess variation in the size or depth of these indentations along a temporal dimension have proven unsuccessful elsewhere (Brown 1982:89).

Sample: 34 body sherds

Illustration: Figure 3.3

Provenience: Survey, A4, A7, A8, A9, B1, B4, B5, B6, C6, E4, E5, F1, S1, 2A15 (level 1), 34A145 (levels 1-4), 35A145 (levels 3-4), 36A147 (midden layer)

Sand/Grit- Tempered, Diamond Check Stamped. One sherd at the Armory site is classified under this heading. Few studies in central Alabama address this form of surface treatment, and it is often simply classified as "check stamped." Consequently, it is unclear when this technique first appears.

Sample: 1 body sherd

Illustration: Figure 3.3

Provenience: 36A147 (midden layer)

Figure 3.3: Sand/grit-tempered, plain (A), check stamped (B-C), and diamond check stamped (D) sherds from the Armory site.

Sand/Grit- Tempered, Complicated Stamped. Complicated stamped ceramics first developed along the Gulf Coast shortly prior to A.D. 1 and diffused into northern Georgia shortly thereafter (McMichael 1960:132-138). The presence of these sherds at the Armory site may be indicative of contact between the populations of central Alabama and those associated with Southern Appalachian or Gulf Traditions where this mode is more common (Caldwell 1958:34-35; Holmes 1903; Sears 1952:101).

Figure 3.4: Sand/grit-tempered, complicated stamped sherds from the Armory site.

Complicated stamped sherds at the Armory site all have curvilinear designs. The design on some of these sherds forms a bull's-eye or a spiral, while on others it is difficult to determine the nature of the design due to small sherd size. The typologically distinguishable sherds of this class bear a resemblance to the types Swift Creek Complicated Stamped (Willey 1949:378-383) and Kolomoki Complicated Stamped (Sears 1951; 1953). The utility of the distinction between these two types has been called into question given their similarities (e.g., Jenkins 1978; Pluckhahn 1998:113-114; Smith 1977). These designs have been noted elsewhere in central

Alabama during the Middle Woodland period where they have been referred to as Cobbs Swamp Complicated Stamped (Chase 1968a:12).

Sample: 7 body sherds

Illustration: Figure 3.4

Provenience: Survey, A4, A11, B1, 2A12 (level 1), 36A147 (midden layer)

Sand/Grit- Tempered, Rocker Stamped. This design is associated with the Early to Middle Woodland Gulf Tradition (Caldwell 1958:54; Willey 1949:371-372; Wimberly 1960:74-76). Given the abundance of this ware at the Armory site, it seems likely that some form of interaction occurred during the Middle Woodland period between the peoples of this site and those along the Gulf Coast where rocker stamping is more common. The rows of rocker stamping on the sherds recovered from the Armory site do not overlap, but there is an appreciable amount of diversity in terms of the size of the instrument used to make the design and spaces between the designs themselves. In most cases, these designs appear to be the result of rocking the edge of a smooth shell back and forth along the surface of an unfired vessel. However, in one instance, a dentate instrument appears to have used, a common technique along the Gulf Coast during the Late Middle Woodland subperiod and the Late Woodland period (Willey 1949:441). These sherds closely resemble the types Santa-Rosa Stamped defined by Gordon Willey (1949:376-278) for northwestern Florida and David Chase's (1966:99; 1998:64-66) Tensaw Stamped for central Alabama.

Sample: 33 body sherds

Illustration: Figure 3.5

Provenience: A8, A12, A13, B9, C6, E4, E7, E8, 29A235 (zones 6-7), 34A145 (levels 1-5), 35A145 (levels 1 and 3), 36A147 (midden layer)

Figure 3.5: Sand/grit-tempered, rocker stamped sherds from the Armory site.

Sand/Grit- Tempered, Punctated. There is a considerable amount of variation regarding the implementation of punctated designs at the Armory site. Punctations were made using reeds, fingernails, and other blunted or pointed instruments. Designs include rows of banded punctations, fingernail punctations, circular punctations, and hemiconical punctations. At present, the manner in which a vessel is punctated appears to have little historical significance. The presence of these decorative modes at the Armory site is suggestive of interaction with the Gulf Coast where similar variation in the manner of punctation has been observed during the Middle Woodland period (Willey 1949:425). Two of these sherds however, bear a resemblance to the type Whiteoak Pinched, which suggests an ephemeral Late Woodland occupation at the Armory site (Chase 1968b:19-20).

Sample: 3 body sherds, 3 rim sherds

Illustration: Figure 3.6

Provenience: D8, 2A12 (level 1), 2A15 (levels 1-2), S2 (Test 1), 36A147 (midden layer)

Figure 3.6: Sand/grit-tempered, punctated sherds from the Armory site.

Sand/Grit- Tempered, Trailed Incised. Ceramics of this category contain one or more broadly incised lines. These incised lines are U-shaped in cross section and are at least 2 mm wide. This decorative mode is found in abundance along the Gulf Coast during the Middle Woodland period where it is termed Basin Bayou Incised on sand/grit-tempered ware (Willey 1949:375-376). A grog-tempered counterpart, Marksville Incised (Phillips 1970:110-111), is also found in the Lower Mississippi River Valley during the Middle and Late Woodland periods.

Sample: 14 body sherds, 1 rim sherd

Illustration: Figure 3.7

Provenience: A8, B10, C3, C6, E3, E4, 29A235 (zone 6), 34A145 (level 1), 36A147 (midden layer)

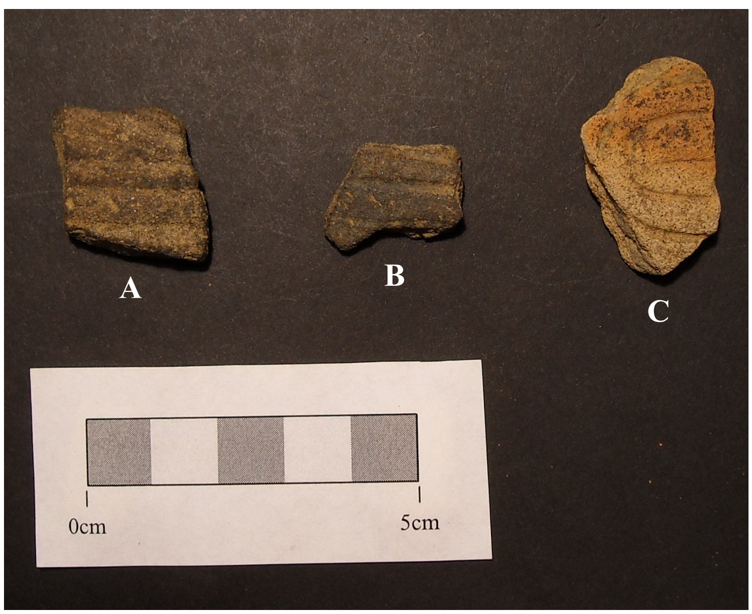


Figure 3.7: Sand/grit-tempered, trailed incised (A-B), and curvilinear incised (C) sherds from the Armory site.

Sand/Grit- Tempered, Curvilinear Incised. The incising on this sherd is curvilinear and less than 2 mm wide. Judging from the shape and size of the incisions, this decoration appears to have been made with a sharpened or pointed instrument. Sherds such as this are found in large quantities along the Gulf Coast during the Late Middle Woodland subperiod and the Late Woodland period where they are termed Weeden Island Incised (Willey 1949:409-419).

Sample: 1 body sherd

Illustration: Figure 3.7

Provenience: 34A145 (level 3)

Sand/Grit- Tempered, Cord Marked. Originating in the Midwest, this surface treatment is typically associated with Caldwell's (1958) Northern Tradition. Cord marked ceramics likely diffused south into Alabama along the Tombigbee River where they are typologically referred to as Furrs Cord Marked (Jennings 1944:412; Cotter 1950:25; Jenkins 1981). This surface treatment is created by malleating the exterior of an unfired vessel with a cord wrapped paddle or dowel. While cord marking is a dominant form of surface treatment for Miller Culture populations along the Tombigbee River (Jenkins 1981:132), this surface treatment is rarely found in central Alabama. Thus, this sherd is may be indicative of contact with Miller Culture populations from the Tombigbee River Valley.

Sample: 1 body sherd

Illustration: Figure 3.8

Provenience: 2A12 (level 1)

Sand/Grit- Tempered, Fabric Impressed. This mode of surface treatment is found predominantly throughout the central Eastern Woodlands and is said to constitute a diagnostic trait of Caldwell's (1958) Middle Eastern Tradition. This surface treatment is formed by malleating the exterior of an unfired vessel with one or several fabric or cord wrapped dowels (Jenkins 1981:140). At the Armory site, fabric impressed sherds appear to have been treated using multiple dowels connected a by a closely woven fabric. These sherds bear a resemblance to the type Saltillo Fabric Marked, *var. Tombigbee* which is characterized by the use of multiple fabric-woven dowels to create fabric impressions on the exterior of an unfired vessel (Jenkins 1981:142-143). This mode of surface treatment is most commonly found along the Tombigbee River or near Alabama's northern border with Georgia. However, following the Early Woodland period fabric impressed ceramics occur less frequently in eastern Alabama and the Georgia Piedmont (see Keel 1976:254; Wauchope 1966:71 for exceptions). Conversely, along the Tombigbee River the sand/grit-tempered Saltillo Fabric Marked, *var. Tombigbee* persists until the beginning of the Late Woodland period (Jenkins 1981:140; Jenkins and Krause 1986:65-66). It is therefore possible that the fabric impressed sherds from the Armory site represent pre-Late Woodland contact with Miller Culture populations from the Tombigbee River Valley.

Sample: 2 body sherds

Illustration: Figure 3.8

Provenience: E5, 34A145 (level 3)

Sand/Grit- Tempered, Roughened. Termed Whiteoak Roughened by David Chase (1968b:18), this surface treatment is created by scoring or striating the surface of an unfired vessel with a fingernail, roughened object, or a fabric covered paddle. Its presence in central Alabama is associated with the Late Woodland period (Chase 1998:73). The single roughened sherd present at the Armory site may suggest an ephemeral Late Woodland occupation at the Armory site. Alternatively, it is possible that abrasion present on this sherd's exterior is a result of a natural, post-depositional process such as erosion rather than an intentional design.

Sample: 1 body sherd

Illustration: Figure 3.8

Provenience: 2A15 (level 1)

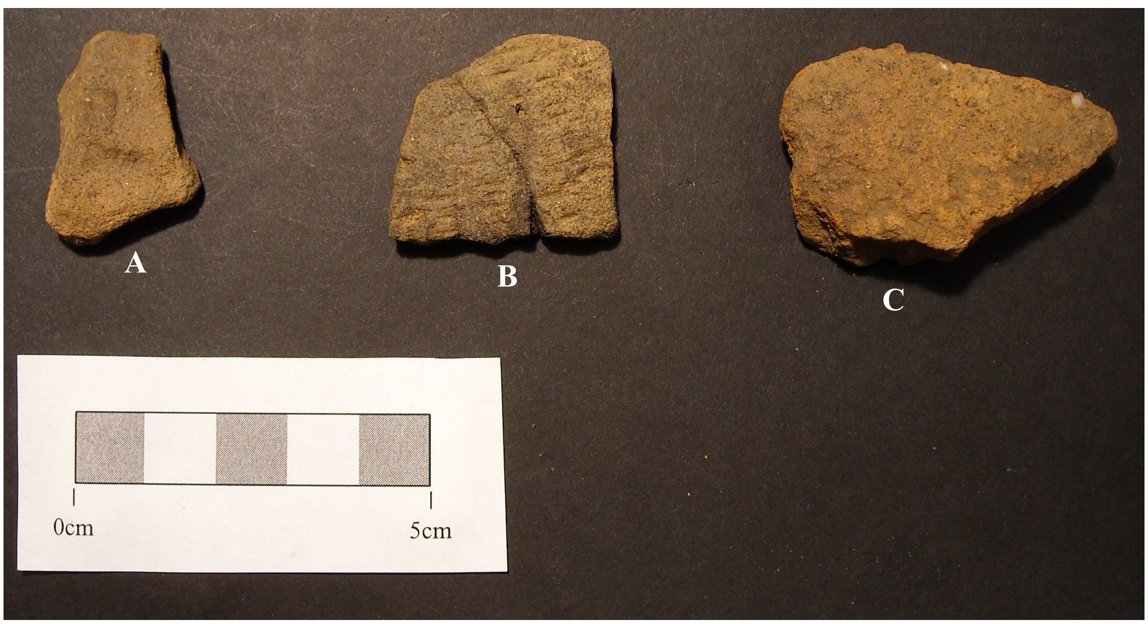


Figure 3.8: Sand/grit-tempered, cord marked (A), fabric impressed (B), and roughened (C) sherds from the Armory site.

Sand/Grit- Tempered, Check Stamping on Folded Rim. Sherds with rim folds at the Armory site are also check stamped, in which the stamping is superimposed on the exterior of the fold. It has been suggested that check stamped rim folds were added to vessels to strengthen their lip, in order to provide additional support for food storage (Nance and Mentzer 1980). Other modifications, such as an increase in the relative use of check stamping and an increase in vessel thickness are thought to correspond with the need of stable, Late Woodland populations to store food (Price 1999:90). In central Alabama, such rim folds are common on ceramics associated with the Henderson ceramic complex of the Late Woodland period (Dickens 1971:59). At the Armory site, there are only two check stamped sherds with slightly folded rims. The small quantity and unpronounced nature of these rim folds suggests an affiliation with the end of the Middle Woodland period or the beginning of the Late Woodland period.

Sample: 2 rim sherds

Illustration: Figure 3.9

Provenience: B6

Sand/Grit- Tempered, Narrowly Incised Rim. One rim sherd from the Armory site was decorated with a narrowly incised line 15 mm below the lip of the lip of the vessel. This decorative mode closely corresponds to Dickens's (1971:59) description of Henderson Plain, and is referred to here as a "false rim fold" given that the single incised line below the lip makes the vessel appear as though it had a rim fold. As this rim mode is only present on one vessel, it is likely that this mode has a Late Middle Woodland or Late Woodland temporal affiliation.

Sample: 1 rim sherd

Illustration: Figure 3.9

Provenience: E7

Sand/Grit- Tempered, Check Stamped on Unmodified Rim. Two check stamped sherds were found at the Armory site with checks extending to the lip of a vessel with an unmodified rim. These sherds closely represent the rims of the Middle Woodland type Cobbs Swamp Check Stamped (Chase 1998:62).

Sample: 2 rim sherds

Illustration: Figure 3.9

Provenience: E4, B5

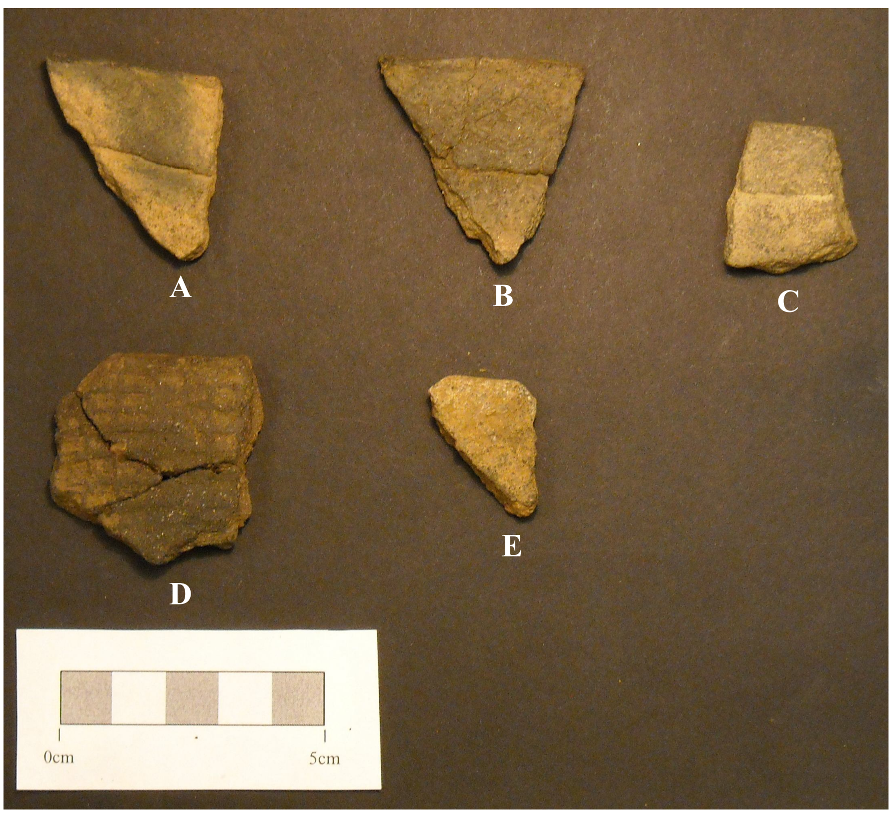


Figure 3.9: Sand/grit-tempered, folded rim with check stamping (A-B), narrowly incised rim (C), and unmodified rim with check stamping (D-E) sherds from the Armory site.

Sand/Grit- Tempered, Pinched Rim. Often termed a "piecrust rim," this mode is defined by a ring of pinched crests along a vessel's exterior rim. David Chase (1968a:20; 1998:64-65) combines this rim mode and notched rims under the type Tensaw Creek Plain, *var. Tensaw Creek* if the vessel is plain, or Tensaw Creek Stamped if the vessel is rocker stamped. Given that piecrust rims are often found in similar contexts as assemblages having notched rims and other chronologically diagnostic modes such as rocker stamping and small podal supports, it is likely that the piecrust rims at the Armory site date to the Middle Woodland period (Chase 1998:64-65).

Sample: 2 rim sherds

Illustration: Figure 3.10

Provenience: 34A145 (level 2), 35A145 (level 2)

Sand/Grit- Tempered, Mammiform Rim. Mammiform rims appear to have been created by placing the rim of the vessel on a flat surface and rolling a finger or plant stem back and forth in a confined area along the lip of a vessel. This results in a ring of nodes around the rim of a vessel. Similar to their pinched rim counterpart, these sherds are thought to date to the Middle Woodland period and are classified as Tensaw Creek Plain, *var. Tensaw Creek* if the vessel is plain and Tensaw Creek Stamped if the vessel is rocker stamped (Chase 1998:64-65).

Sample: 1 rim sherd

Illustration: Figure 3.10

Provenience: 34A145 (level 3)

Figure 3.10: Sand/grit-tempered, pinched rim (A-B), and mammiform rim (C) sherds from the Armory site.

Sand/Grit- Tempered, Podal Support. The majority of basal sherds found at the Armory site are podal supports. These supports are attached to the base of the vessel before firing and always occur in groups of four. This basal mode is associated with Caldwell's (1958) Gulf Tradition and is frequently found in northwestern Florida, Georgia, and Alabama. During the Middle Woodland period the size of these supports steadily decreases until their eventual disappearance sometime before the Late Woodland period (Chase 1966; 1968a; Kellar et al. 1962; Kelly and Smith 1975; Sears 1956; Willey 1949). Thus, the occurrence of small podal supports or "nubbins" (Knight and Mistovich 1984:219) at the Armory site suggests a temporal affiliation with the end of the Middle Woodland period.

Sample: 6 basal sherds

Illustration: Figure 3.11

Provenience: B10, C5, 2A15 (level 1), 34A145 (levels 2 and 4), 35A145 (level 2)

Shell-Tempered, Plain. A minority of the ceramics recovered from the Armory site are tempered with crushed shell. Ceramics such as these are commonly found in the Eastern Woodlands during the Mississippi and Terminal Woodland periods and are diagnostic of Mississippian interaction or the presence of Mississippian populations. This is the dominant ware found at Mississippi period sites in central Alabama such as Moundville (Steponaitis 1983:20), and thus the presence of these sherds at the Armory site suggests that the site was briefly occupied during the Terminal Woodland or Mississippi periods.

Sample: 3 body sherds

Illustration: Figure 3.11

Provenience: Survey, B7

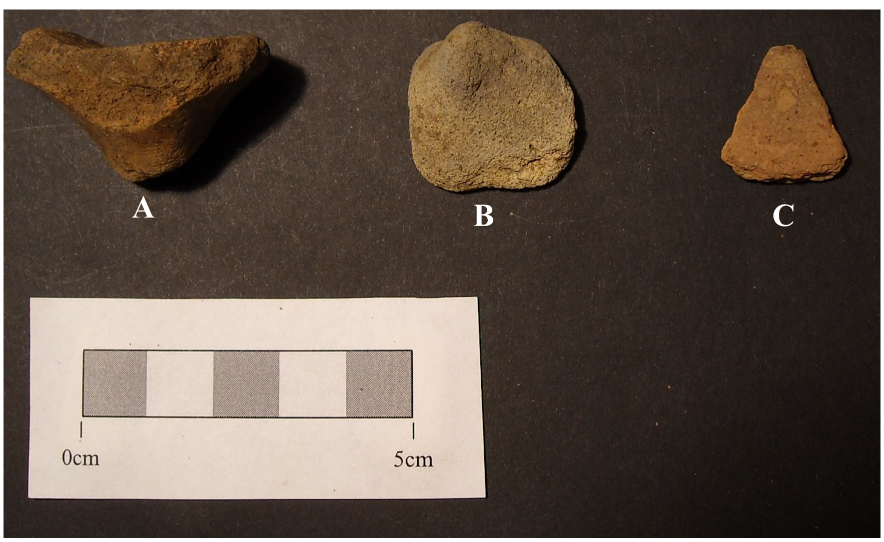


Figure 3.11: Sand/grit-tempered, podal supports (A-B), and shell-tempered, plain (C) sherd from the Armory site.

Lithic Artifacts

In this section, a descriptive classification of the lithic material recovered from the Armory site is provided. Special attention is devoted to the description of projectile points, as these artifacts are often used to determine chronological affiliation or to examine social processes such as inter-regional interaction. Complete projectile points are grouped arbitrarily into classes based upon the similarities of their formal attributes. When applicable, resemblances between these classes and previously defined point clusters or types are provided. Other lithics including bifaces, partial/crude projectile points, debitage, and fire-cracked rock are also briefly described.

Point Class 1. Points in this class are stemmed, biconvex in cross-section, made of quartz, and have straight blades. They have tapered shoulders, acute distal ends, and straight or slightly excurvate basal edges. The largest specimen has length of 41 mm, a width of 31 mm at the shoulders and 14 mm at the stem, and is 11 mm thick. The smallest example has a length of 35 mm, a width of 25 mm at the shoulders and 18 mm at the stem, and has a thickness of 10 mm. The average lengths, shoulder widths, stem widths, and thicknesses for this class are 37.5 mm, 26.25 mm, 16.25 mm, and 10.25 mm respectively. All of these points were found at the base of Armory's primary mound and bear a resemblance to points of the Savannah River Cluster, which dates to the Late Archaic and Early Woodland periods (Justice 1987:163-167).

Sample: 4

Illustration: Figure 3.12

Provenience: 2A12 (levels 1 and 3), 2A15 (levels 1 and 3)

Point Class 1a. This class bears a general resemblance to Class 1; however these specimens are either too damaged or too crude to be included into the first class. There are two quartz points in this class, the larger of which is at 39 mm long with a severed distal end, 30 mm wide at the shoulders and 24 mm at the stem, and has a thickness of 11 mm. The smaller point is 36 mm long, 28 mm wide at the shoulders and 24 mm at the stem, and has a thickness of 9 mm. As in Class 1, these points resemble points of the Late Archaic-Early Woodland Savannah River Cluster (Justice 1987:163-167) and were found at the base of the primary mound.

Sample: 2

Illustration: Figure 3.12

Provenience: 2A12 (levels 2-3)

Point Class 2. This class contains two quartz points both of which are similar in to the points of Classes 1 and 1a. These points can be distinguished however by a rind of cortex at their base. The larger of the two points has a length of 40 mm, a width of 30 mm at the shoulders and 20 mm at the stem, and is 11 mm thick. The smaller point has a length of 36 mm, a width of 26 mm at the shoulders and 12 mm at the stem, and is 9 mm thick. Like their Class 1 and Class 1a counterparts, these points were found at the base of Armory's primary mound and resemble points in the Late Archaic-Early Woodland Savannah River Cluster (Justice 1987:163-167).

Sample: 2

Illustration: Figure 3.12

Provenience: Survey, 2A15 (level 1)

Figure 3.12: Class 1 (A-B), Class 1a (C), and Class 2 (D) points from the Armory site.

Point Class 3. This class contains one quartz point. It has an expanded stem, tapered-horizontal shoulders, a straight and slightly serrated blade, a broad distal end, an incurvate stem base, and is biconvex in cross-section. This point has a length of 29 mm, a width of 25 mm at the shoulders and 19 mm at the stem, and is 9 mm thick. Found at the base of the primary mound, this point also bears a resemblance to the Savannah River Cluster (Justice 1987:163-167).

Sample: 1

Illustration: Figure 3.13

Provenience: 2A15 (level 1)

Point Class 3a. This point's formal attributes are nearly identical to Class 3; however, it is made of Tallahatta sandstone and its basal edge appears to have accidently been chipped away. It is 27 mm long, 25 mm wide at the shoulders, 20 mm wide at the stem, and has a thickness of 8 mm. As with the previous classes, this point class also bears a resemblance to points of the Savannah River Cluster (Justice 1987:163-167) and was found at the base of the primary mound.

Sample: 1

Illustration: Figure 3.13

Provenience: 2A15 (level 1)

Point Class 4. One quartz point was classified under this heading. It is biconvex in cross-section, stemmed, and has tapered shoulders and has an acute distal end. It has a length of 42 mm, a width of 29 mm wide at the shoulders and 20 mm at the stem, and is 11 mm thick. It is unique in that one blade edge is straight while the other is incurvate. Given the difficulties inherent in flaking quartz, it is suspected that the asymmetrical blades edges may be of accidental rather than purposeful design. Similar to the points of the previous classes, this point resembles points classified of the Savannah River Cluster (Justice 1987:163-167) and was found at the base of the primary mound.

Sample: 1

Illustration: Figure 3.13

Provenience: 2A15 (level 3)

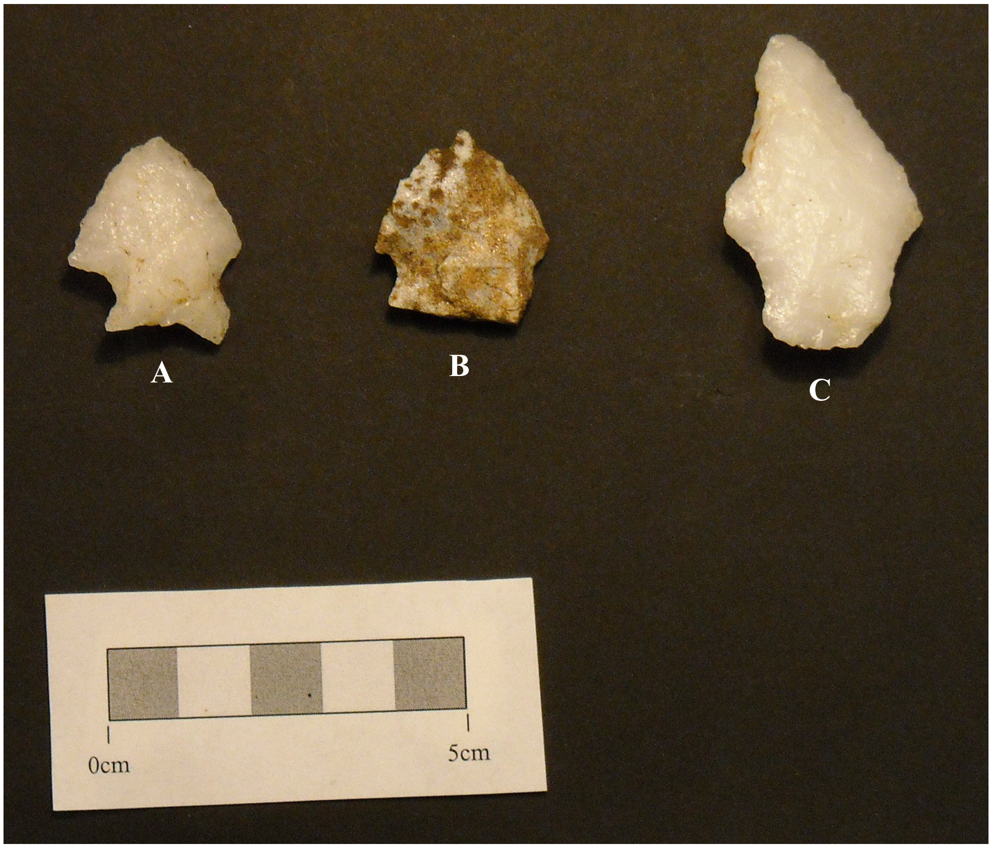


Figure 3.13: Class 3 (A), Class 3a (B), and Class 4 (C) points from the Armory site.

Point Class 5. The point in this class is stemmed and plano-convex. It has an acute distal end, a straight blade, tapered shoulders, and a slightly rounded-pointed basal edge. It is made of quartz and is distinguished from the previous points by its small size measuring only 18 mm in length, with a thickness of 4 mm, a width of 13 mm at the shoulders and 6 mm at the stem. This point was found at the base of the primary mound and does not resemble any previously defined point type or cluster; however, due to its small size, it is likely that it functioned as an arrow point.

Sample: 1

Illustration: Figure 3.14

Provenience: 2A15 (level 1)

Point Class 6. The points in this class are median-ridged in cross-section and are made of quartz. It has tapered shoulders, a sharply acute distal end, a straight blade, and a contracted-pointed stem. The smaller point has a length of 31 mm, a width of 15 mm at the shoulders, a width of 4 mm at the stem, and is 6 mm thick. The larger point has a length of 38 mm, a width of 14 mm at the shoulders, a width of 9 mm at the stem, and is 9 mm thick. Both of these points were found at the base of the primary mound and resemble point type Bradley Spike (Cambron and Hulse 1975:19). Spike cluster points such as these, are common in northern and central Alabama during the Late Middle Woodland subperiod (Ensor 1981:93-94).

Sample: 2

Illustration: Figure 3.14

Provenience: 2A12 (levels 1 and 3)

Point Class 7. The point in this class is stemless, biconvex-slightly plano-convex in cross-section, and has a straight-excurvate blade shape, an acute distal end, a straight basal edge, and a thinned base. It is 42 mm long, 30 mm wide at the shoulders, and is 10 mm thick. It is made of quartzite and resembles the points of the Copena or Greenville Clusters (Justice 1987:204-208; Knight 1990:93). Points of this type and cluster date to the Middle Woodland period in central Alabama (Walthall 1972:144). Like the specimens from the previous classes, the point was also found at the base of the Armory's primary mound.

Sample: 1

Illustration: Figure 3.14

Provenience: 2A12 (level 6)

Point Class 7a. Similar to their Class 7 counterpart, these points are stemless, biconvex-slightly plano-convex in cross-section, and have a straight-excurvate blade shape, an acute distal end, and a straight basal edge. Unlike their Class 7 counterparts however, the bases of these points have been chipped away rather than thinned. The larger specimen is 44 mm long, 28 mm wide at the shoulders, and is 8 mm thick, while the smaller is 23 mm long, 21 mm wide at the shoulders, and 7 mm thick. They are both made of quartz and resemble the point type Copena Triangular of the Middle Woodland Greenville Cluster (Justice 1987:204-208; Walthall 1972:144). The larger point was found near the secondary mound while the smaller was located at the base of the primary mound.

Sample: 2

Illustration: Figure 3.14

Provenience: A13, 2A12 (level 5)

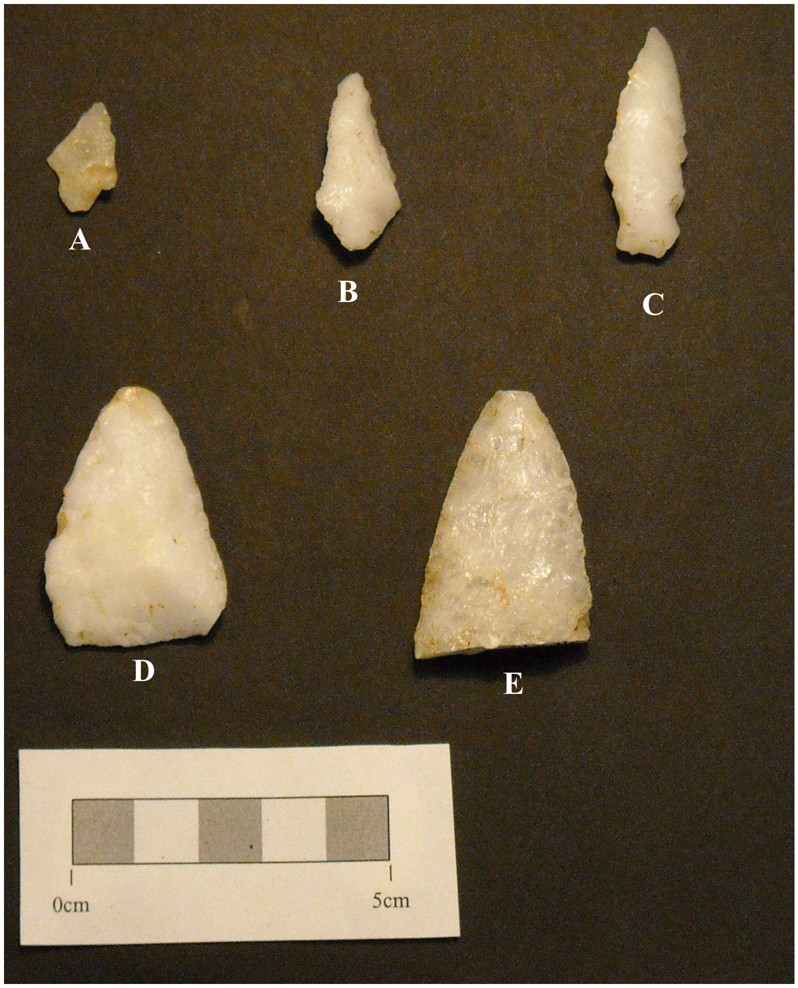


Figure 3.14: Class 5 (A), Class 6 (B-C), Class 7 (D), and Class 7a (E) points from the Armory site.

Point Class 8. This class contains one quartz point; it is biconvex in cross-section, has tapered shoulders, an expanded stem, an acuminate distal end, a straight basal edge, and is shallowly notched. Its blade is incurvate on one edge and excurvate on the other. It is 36 mm long, 21 mm wide at the shoulders, 19 mm wide at the stem, and is 10 mm thick. It was found at the base of the primary mound and resembles points in the Lowe Cluster, which dates to the Middle Woodland period (Justice 1987:208-214).

Sample: 1

Illustration: Figure 3.15

Provenience: 2A12 (level 7)

Point Class 9. The point in this class is made of Tallahatta sandstone. It is biconvex in cross-section, has horizontal-inversely tapered shoulders, a straight stem, an acute distal end, and a straight-excurvate blade edge that is beveled on one side. Its basal edge is straight except for a small concave indention. It is 43 mm long, 30 mm wide at the shoulders, 14 mm wide at the stem, and has a thickness of 9 mm. This point was found approximately 50 m southeast of the secondary mound and conforms to the Justice's (1987:97-98) description of the Middle Archaic Stanley Stemmed Cluster.

Sample: 1

Illustration: Figure 3.15

Provenience: E9

Point Class 10. This class has one quartz point. It is biconvex-plano-convex in cross section, has inversely tapered shoulders, an acute distal end, a straight and slightly serrated blade, shallow side notching, and expanded basal edge that is straight and thinned. It is 27 mm long, 20 mm wide at the shoulders, 17 mm wide at the stem, and 7 mm thick. It was found in the secondary mound and bears some resemblance to the point type Coosa Notched, which dates to the Middle Woodland period (Cambron and Hulse 1975:30).

Sample: 1

Illustration: 3.15

Provenience: 29A235 (zone 7)

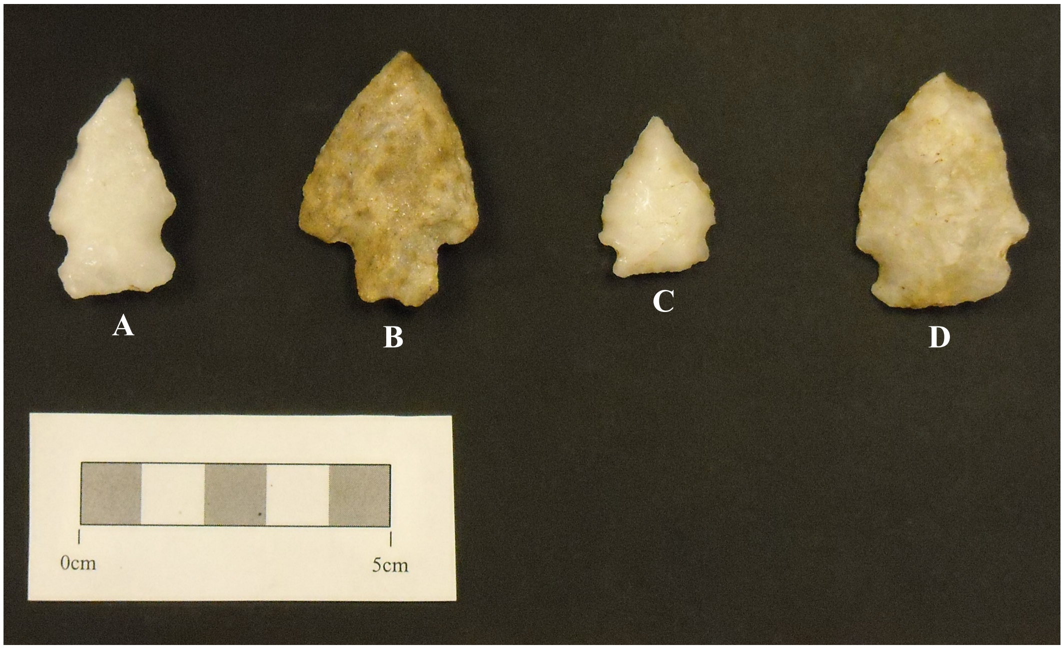


Figure 3.15: Class 8 (A), Class 9 (B), Class 10 (C), and Class 10a (D) points from the Armory site.

Point Class 10a. One quartz point was classified under this heading. It is biconvex in cross-section, has tapered shoulders, one of which is expanded, a broad distal end, a straight basal edge, and is shallowly notched. Its blade is incurvate on one edge and excurvate on the other. It is 39 mm long, 29 mm wide at the shoulders, 23 mm wide at the stem, and 11 mm thick. This point was found approximately 130 m northwest of the primary mound, and as with Class 10 bears a resemblance to the type Coosa Notched, which dates to the Middle Woodland period (Cambron and Hulse 1975:30).

Sample: 1

Illustration: 3.15

Provenience: C6

Point Class 11. There is one quartz point in this class. It is biconvex in cross-section, has tapered shoulders, excurvate and slightly serrated blade edges, a broad distal end, and a straight-excurvate basal edge. It is 34 mm long, 30 mm wide at the shoulders, 18 mm wide at the stem, and 12 mm thick. This point was found approximately 130 m northwest of the primary mound and resembles points of the Elora type, which dates to the Late Archaic period (Cambron and Hulse 1975:46-47; Justice 1987:153-154).

Sample: 1

Illustration: 3.16

Provenience: 36A147 (midden layer)

Point Class 12. There is one point in this class. It is short stemmed, made of Tallahatta sandstone, and is median-ridged in cross section. One shoulder is tapered and expanded while the other is horizontal-slightly tapered. It has an acute distal end, straight blade and a straight-slightly excurvate basal end. It is 46 mm long, 31 mm wide at the shoulders, 24 mm wide at the stem, and is 11 mm thick. It was recovered at the base of Armory's primary mound and bears some resemblance to the White Springs Cluster, which dates to the Middle and Late Archaic periods (Justice 1987:108-110).

Sample: 1

Illustration: 3.16

Provenience: 2A12 (level 4)

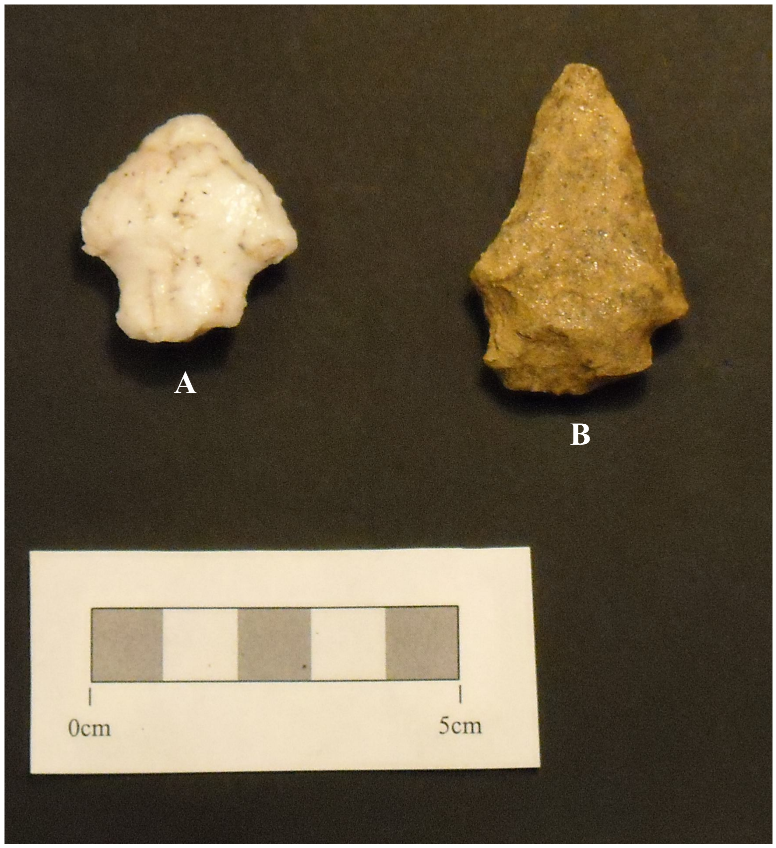


Figure 3.16: Class 11 (A), and Class 12 (B) points from the Armory site.

Partial/Crude Points. Six partial or crude projectile points were recovered from the Armory site. Of these six points, three are made from quartz and three from Tallahatta sandstone. Given the partial or crude nature of these points, no attempt made to assess their chronological affiliation.

Sample: 6

Provenience: Survey, A3, F1, 2A14 (level 4), 29A235 (Zone 7)

Biface. Twenty-two bifaces and biface fragments other than projectile points are present in Armory's lithic assemblage. Of these bifaces, ten are preforms. These preforms display signs of thinning, have lenticular cross-sections and flake scars on at least half of their edge and are thus said to conform to Price's (1999:98) later stages of reduction or Callahan's (1979) stages 3-6 of reduction. Nine of these preforms are made of quartz and one is made of Tuscaloosa gravel.

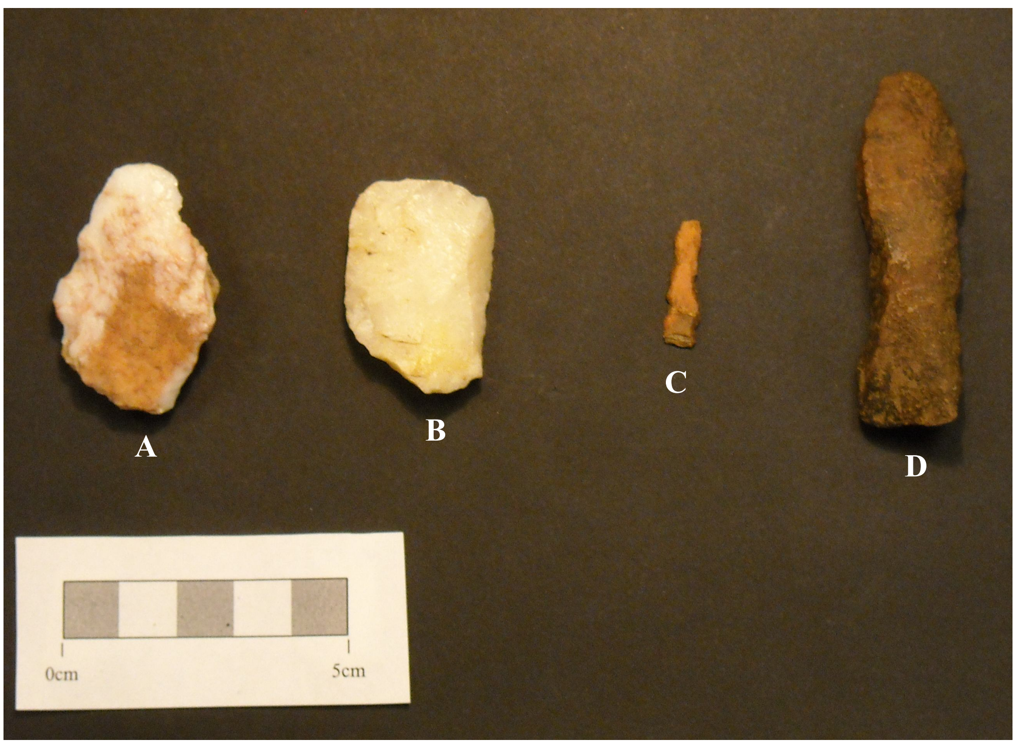


Figure 3.17: Biface preform (A), scraper (B), microdrill (C), and celt fragment from the Armory site.

Several bifacial tools were also recovered from the Armory site. These tools include three quartz scrapers, one Tallahatta sandstone scraper, one Fort Payne chert scraper, one

Tuscaloosa gravel microdrill, one serrated ferruginous sandstone scraper, and one Tuscaloosa gravel celt fragment. Four unidentified bifacial tool fragments made were also found. Three of these are made of quartz while the other is made of Tallahatta sandstone.

Sample: 22

Illustration: Figure 3.17

Provenience: Survey, E4, S2 (Test 2), 2A12 (Feature 2 and levels 2, 4, and 6), 2A15 (level 1), 34A145 (level 1)

Uniface. Six quartz unifaces were found at the Armory site. Four of these are large cobble choppers and two are scrapers.

Sample: 6

Illustration: Figure 3.18

Provenience: Survey, A0, A7, S2 (Test 1), 2A12 (level 3)

Core. Two cores were recovered from the Armory site. Both are polyhedral, but one is made of Tuscaloosa gravel while the other is made of Fort Payne chert.

Sample: 2

Provenience: 2A12 (level 6), 34A145 (level 4)

Figure 3.18: Uniface chopper (A) and scraper (B) from the Armory site.

Debitage. Debris from the manufacturing of flaked stone tools was found throughout the Armory site. The majority of this debitage is quartz (3,443.8 g), but Tallahatta sandstone (301.2 g), ferruginous sandstone (158.5 g), Fort Payne chert (116.2 g), Knox chert (78.8 g), and Tuscaloosa gravel (52.8 g) are also present.

Weight: 3914.0 g

Provenience: Survey, A0, A1, A2, A3, A4, A5, A6, A7, A8, A9, A11, A12, B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, C1, C2, C3, C4, C5, C6, C7, D1, D3, D7, E1, E2, E3, E4, E5, E6, E7, E8, E9, F1, S1, S2 (Test 1), Test 2, Test 3, 2A12 (levels 1-7, features 2 and 4) 2A15 (levels 1-5), 29A235 (zones 2,3,4,6, and 7), 34A145 (levels 1-5), 35A145 (levels 1-4), 36A147 (midden layer)

Fire-Cracked Rock. A large quantity of Fire-Cracked Rock (hereafter FCR) was recovered from the Armory site, especially at the base of the primary mound. Feature 2, a hearth located at the base of level 1 in Unit 2A12 containing 933.8 g of FCR, represented the densest concentration of this artifact found at the site.

Weight: 42,411.9 g

Provenience: Survey, A0, A1, A2, A3, A4, A6, A7, A8, A9, A10, A11, A12, A13, B2, B3, B4, B6, B7, B8, B9, B10, B11, B12, C1, C2, C3, C4, C5, C6, C7, D1, D2, D3, D4, D6, D7, D8, E1, E2, E3, E4, E5, E6, E7, E8, E9, F1, S1, S2 (Test 1), Test 3, 2009STP1, 2A12 (levels 1-7, features 2 and 4), 2A15 (levels 1-5), 29A235 (zones 3-7), 34A145 (levels 1-5), 35A145 (levels 1-5), 36A147 (midden layer)

Ground Ferruginous Sandstone. Several fragments of ground ferruginous sandstone were scattered across the site.

Sample: 20

Illustration: Figure 3.19

Provenience: Survey, B1, B7, C6, E6, S2 (Test 1), 2A12 (levels 1, 2, 4, 5, and 6), 34A145 (level 3).

Figure 3.19: Ground ferruginous sandstone fragments from the Armory site.

Petrified Wood. Several small pieces of petrified wood were recovered from the base of the primary mound.

Sample: 3

Provenience: 2A15 (levels 1 and 4)

Red Ochre. One piece of red ochre was found near the base of the primary mound. It is probable that stones such as this were ground into a red pigment and used as a staining agent.

Sample: 1

Provenience: 2A12 (level 5)

Unmodified Stone/Naturally Modified Stone. Given the large amounts of FCR found at the Armory site, it is suspected that most stones in this artifact class were used as hearth stones but were not broken during heating.

Weight: 22900.9 g

Provenience: A6, B6, B12, C1, C5, S2 (Test 1), 2A12 (levels 1-7, features 2 and 4), 2A15 (levels 1-5), 34A145 (levels 1-5), 35A145 (levels 1-4)

Historic Artifacts

In this section, a brief description of Armory's historic and modern artifacts is provided. This description includes the counts or weights of each class along with its provenience information. Given that the artifacts in this class were not pertinent to the research objectives posed in this thesis they did not undergo the same rigors of description as their prehistoric ceramic counterparts. Nevertheless, when ascertainable, chronologically diagnostic attributes of artifacts were highlighted in an attempt to better understand the extent of the historic occupation at the Armory site.

Brick. Multiple pieces of modern red brick were recovered throughout the Armory site. In particular, the upper levels of the test units placed near the primary mound and into the secondary mound produced several pieces of brick indicating that these mounds were utilized in some manner during the Historic period.

Sample: 64

Provenience: Survey, A4, A6, A8, A9, A12, B3, C2, C4, C5, 2009STP1, 2A15 (level 1), 29A235 (zone 2), 34A145 (levels 1-2)

Coin. One United States seated liberty silver dime, minted in 1888, was recovered from the Armory site.

Sample: 1

Illustration: Figure 3.20

Provenience: F1

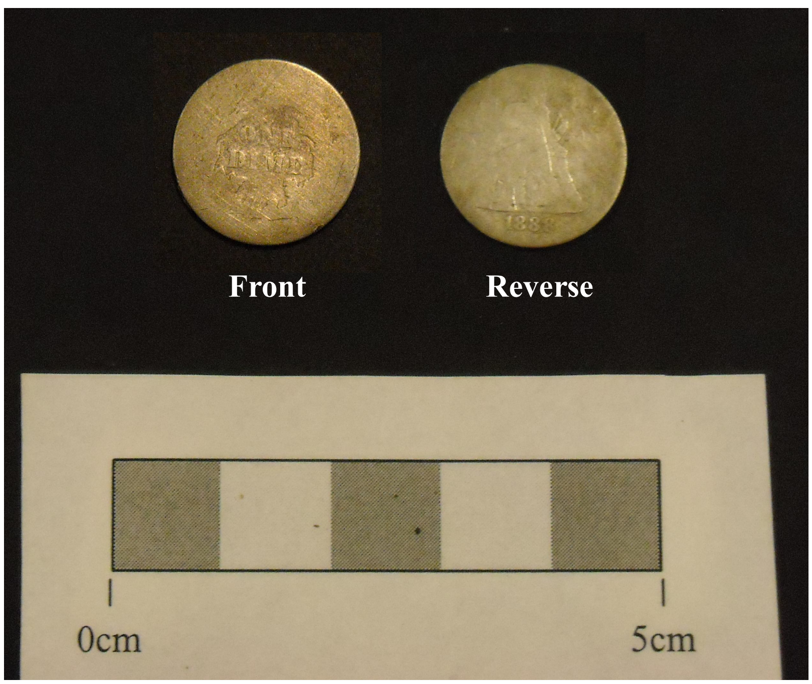


Figure 3.20: 1888 dime from the Armory site.

European-American Ceramics. Nineteenth historic ceramic sherds were recovered from the Armory site. Of these sherds, eleven are whiteware, three are pearlware, three are salt-glazed stoneware, and two are plain stoneware. Most of the whiteware sherds are likely date to the nineteenth or twentieth centuries as this ware is often found in contexts dating to this period (e.g., Padgett 1979:30). Stoneware, on the other hand, was first manufactured in Europe during the early eighteenth century and its production continued into the twentieth and twenty-first centuries (Noël Hume 1969:114-115; 2001:199). In the United States, stoneware is typically found in context dating between the nineteenth and twentieth centuries (Walker 1971:140). Pearlware, though first produced in the late eighteenth century, is most commonly found in contexts dating to the early nineteenth century (Noël Hume 1969:130-131; Padgett 1979:30).

Sample: 19

Illustration: Figures 3.21 and 3.22

Provenience: Survey, A4, B1, B2, C2, C4, E8, 34A145 (levels 1-2)

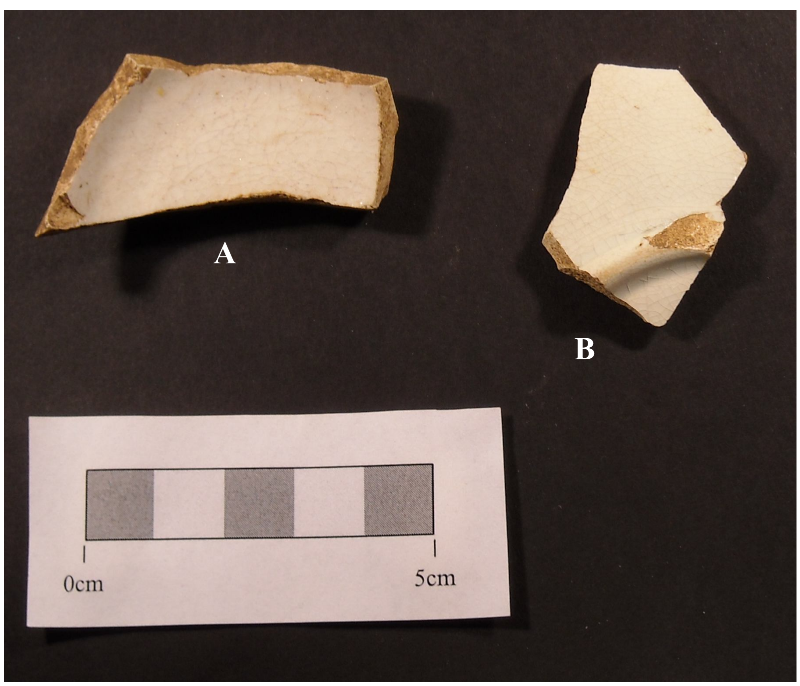


Figure 3.21: Whiteware (A) and pearlware (B) sherds from the Armory site.

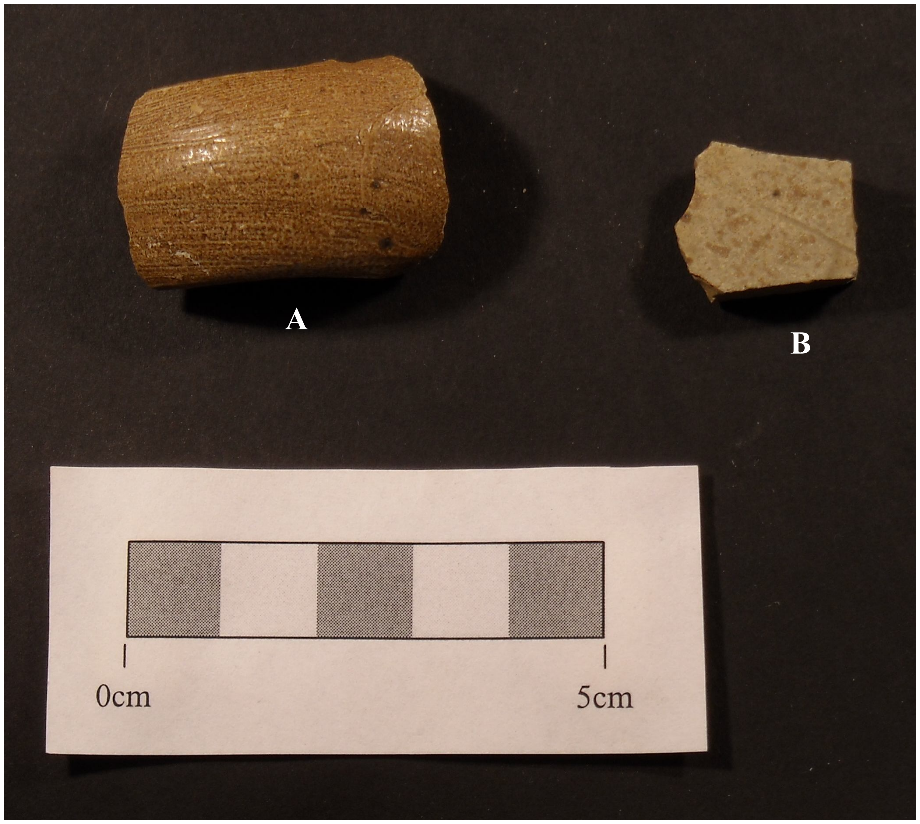


Figure 3.22: Salt-glazed stoneware (A) and non-glazed stoneware (B) from the Armory site.

Glass. Of the 46 glass fragments found at the Armory site, 43 are classified as bottle fragments. The remaining three fragments are too small to be identified, but were also likely bottle fragments. Thirty-five of the artifacts in this class are colorless although three of these have a slightly purple tint. This purple coloration results from prolonged exposure to sunlight and the inclusion of manganese dioxide, a common decoloing agent from the mid nineteenth century until the early twentieth century (Jones and Sullivan 1989; Lindsey 2006). Eight fragments are aquamarine in color due to the inclusion of iron impurities during the glass production process. While the popularity of aquamarine bottles declined following the 1920s, these bottles were still used to store soda later in the twentieth century (Lindsey 2006). Some of the aquamarine fragments such as those from shovel test pit S2 are determined to be from Pepsi Cola soda bottle© due to the inscription of the letters "EPSI COL" on the base of the bottle. Two amber-colored fragments and an olive-colored fragment were also recovered. These bottle colorations were used throughout the nineteenth and twentieth centuries (Lindsey 2006).

Sample: 46

Illustration: 3.23

Provenience: Survey, A0, A4, A5, A6, B2, B4, B5, B7, C2, C5, E1, E2, S2, 2009STP1, 2A15 (level 1), 34A145 (levels 1-2), 35A145 (levels 1-2)

Figure 3.23: Colorless (A), slightly purple (B), aquamarine (C), Pepsi Cola © (D), and amber-colored (E) glass bottle fragments from the Armory site.

Nails, Spikes, and Unidentified Historic/Modern Metal. This category includes 35 steel wire nails, 1 hand wrought spike, and 55 unidentified metallic fragments. Still used today, steel wire nails become popular in the United States during the late nineteenth century (Adams 2002:69-71). While the exact function of the steel spike is unknown, it may have been used as part of a railroad tie, since hand wrought spikes are commonly used in this manner. The remaining metallic fragments were too small to identify.

Sample: 87

Illustration: Figure 3.24

Provenience: Survey, A4, A8, B1, B2, B3, B4, B5, C1, C4, E2, E3, F1, 2A12 (level 1), 2A15 (level 1), 29A235 (zone 3), 34A145 (levels 1-2)

Figure 3.24: Steel wire nails (A-B) and hand wrought spike (C) from the Armory site.

Modern Ammunition. One shotgun shell was found at the Armory site.

Sample: 1

Provenience: 34A145 (level 1)

Plastic. Two pieces of plastic were recovered during the 2007 fieldwork at the Armory site.

Sample: 2

Illustration:

Provenience: D8, 29A235 (zone 2)

Miscellaneous Artifacts

As the scope of this research did not require a thorough analysis of material culture in this category, only cursory descriptions are provided for many of these artifact classes. However, at minimum, counts or weights along with provenience information are provided. When warranted, illustrations are also presented for some classes. Within this category, the label “ecofact” has been avoided as this term by definition encompasses all “culturally relevant nonartifactual data” (Binford 1964: 432). However, if artifacts are defined as portable objects manufactured or used by humans or the debris from their production, then the term “ecofact” becomes unnecessary as all culturally relevant materials have been used by humans in some form.

Bone. Among the bone fragments recovered from the Armory site, most are too small to identify. However, shovel test pit D8 yielded the faunal remains of a medium-sized mammal, possibly a deer.

Sample: 18

Provenience: D8, 2A12 (level 4), 34A145 (levels 3-5)

Burned Earth. Artifacts in this class are amalgamations of burned sand and clay. They were concentrated at the base of the primary mound in Feature 4 of Unit 2A12.

Weight: 19255.4 g

Provenience: Survey, A0, A2, A3, A4, A6, A13, B3, B4, B5, B6, B8, C1, C3, D1, D8, E1, E2, E3, E4, E6, S1, S2 (Test 1), Test 3, 2009STP1, 2A12 (levels 1-7, features 2 and 4), 2A15 (levels 1-5), 29A235 (zones 3, 6, and 7), 34A145 (levels 1-5), 35A145 (levels 1-5), 36A147 (midden layer)

Charcoal. Multiple, small pieces of charcoal were recovered from the Armory site. Most of these pieces however, are too small to be radiometrically dated.

Sample: 170

Provenience: A6, A9, A11, B7, B11, C1, D1, 2A12 (levels 1-5), 2A15 (levels 1-4), 29A235 (zone 6), 34A145 (levels 3-4), 35A145 (levels 1, 3, and 4), 36A147 (midden layer, and features 5-7)

Copper Ear Spool

During his excavations in 1899, C.B. Moore recovered a copper ear spool from a debris pile near the primary mound left by looters who had previously visited the site (Moore 1899:302-303). Given its bicymbal morphology, it is assumed to be Middle Woodland in age and indicative of Hopewellian interaction (e.g., Ruhl and Seeman 1998:651-652). The artifact is curated at the Smithsonian Institution's National Museum of the American Indian.

Sample: 1

Illustration: Figure 3.25

Provenience: Debris pile from looter's trench

Figure 3.25: Copper ear spool from the Armory site. Reprinted with permission from the Smithsonian Institution's National Museum of the American Indian.

Shell. Multiple river mussel shells were recovered from the Armory site. These shells were concentrated in Levels 1 and 2 of Unit 2A15. Given the presence of the hearth features found in Unit 2A12, it is suspected that shellfish were prepared and possibly consumed near the base of the primary mound.

Sample: 102

Provenience: Survey, A1, C4, 2A12 (levels 1-3), 2A15 (levels 1-4)

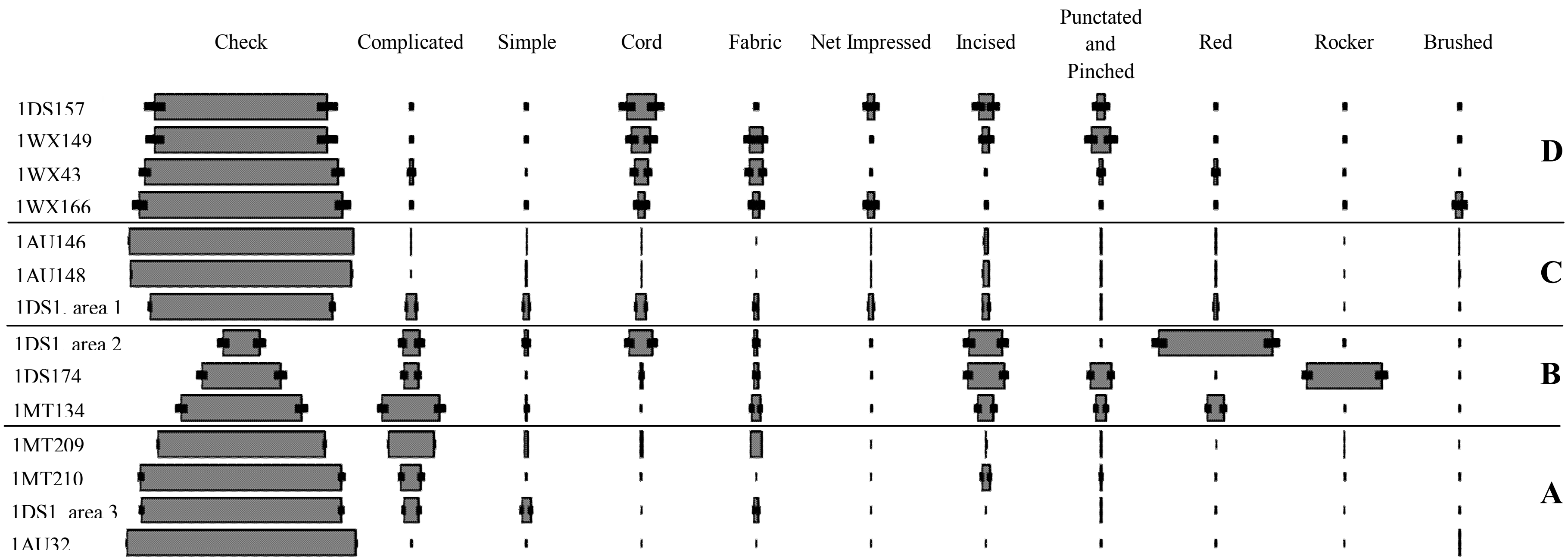
Chapter 4: Woodland Cultural Chronology of the Middle Alabama River Valley

The discipline of anthropological archaeology is inherently comparative along both spatial and temporal dimensions. Therefore, units of analysis capturing these dimensions are required in order to conduct anthropological research. In archaeology, such units of analysis often take the form of phases, cultures, periods and the like. These units are derived from cultural chronologies, which are often formed through the seriation of archaeological assemblages. Thus, in an attempt to create a cultural chronology for the middle Alabama River Valley, a frequency seriation was formed using fourteen ceramic assemblages ordered in terms of their modes of decoration and surface treatment. This seriation, however, does not rely solely upon gradual changes in the relative popularity of modes through time (e.g., O'Brien and Lyman 2000:291); rather, it is augmented by external information including cross-dating with modes that are better understood in adjacent regions and radiometric dating. In this manner, chronologically understood modes may serve to guide the placement of the assemblages within the seriation while radiometric dates permit its affixation to an absolute time scale.

The relative frequencies of modes of surface treatment and decoration presented in the augmented frequency seriation are discussed in terms of Joseph's Caldwell's (1958) Southern Appalachian, Gulf, Middle Eastern, and Northern traditions. Given that central Alabama is located at the convergence of these four traditions, fluctuations in the intensity of inter-regional interaction through time may be addressed by examining, along a temporal dimension, the degree to which modes diagnostic of one or more of Caldwell's traditions diffused into central

Alabama. In assessing the origins and directions of interaction, it should be recognized that each tradition listed above has a complex historical geography and that the name of each tradition does not necessarily imply anything concrete about the origins or the directions from which interaction occurs during the Middle and Late Woodland periods. Thus, the direction of cultural contact and diffusion is discussed in terms of specific cultures, rather than the traditions themselves. For instance, according to Caldwell, all carved paddle stamped ceramics are diagnostic of the Southern Appalachian Tradition. Elements of this tradition however, such as complicated stamping, are known to have origins along the Gulf Coast (McMichael 1960). Despite their association with various traditions, the paddle stamped ceramics present in the Middle Alabama River Valley most likely diffused down the Coosa, Tallapoosa, and Alabama rivers via regional cultures such as Cartersville, Swift Creek, Cleveland, and Crooked Creek. Conversely, cord marked and fabric impressed ceramics, hallmarks of the Northern and Middle Eastern Traditions respectively, diffused into central Alabama through the Miller Culture of the Tombigbee River Valley (Jenkins 1981). Net impressed, incised, pinched, punctated, red filmed, and rocker stamped ceramics, modes of surface finish typically associated with the Gulf Tradition, likely diffused into the Middle Alabama River Valley via contact with proximate source cultures such as Santa Rosa-Swift Creek, Porter, and Marksville (Willey 1949; Wimberly 1960).

Four arbitrarily demarcated periods have been delineated within the cultural chronology derived from the augmented frequency seriation (Figure 4.1). These periods will serve as the basic units of comparison for the analyses of interaction and sedentism in the chapters to follow. Correspondences between these periods and previously defined archaeological phases have been provided only for the purposes of comparison, as these rigid phase constructs obscure the more



Key

A: Early Middle Woodland subperiod (A.D. 1-300)

B: Late Middle Woodland subperiod (A.D. 300-500)

C: Late Woodland period (A.D. 500-900)

D: Terminal Woodland period (A.D. 900-1200)

Figure 4.1: Augmented frequency seriation of ceramic assemblages from sites located near the Armory site.

gradual cultural changes highlighted by the augmented frequency seriation (e.g., Smith and Neiman 2007). It should be noted however that this chronology does not apply to the entirety of central Alabama, as this region is too large to be described by a single seriation. Rather, only assemblages from sites along the middle Alabama River Valley that are less than 65 km away from the Armory site exhibit the necessary cultural continuity required by a frequency seriation (Dunnell 1970:311; Rowe 1961:326).

Period A: Early Middle Woodland

Due to a scarcity of components and a lack of study, the Early Woodland subperiod in central Alabama is poorly understood (Chase 1998:57; Meredith 2007:17). Thus, no attempt was made to address this period in the cultural chronology. Rather, this chronology begins with the Early Middle Woodland subperiod. This period was defined using assemblages from Site 1Mt209 (Price 1999; Shelby 2007), Site 1Mt210 (Price 1999, Shelby 2007), Durant Bend (1Ds1) (Nance 1976), and Site 1Au32 (Dickens 1968). This period corresponds roughly to the Cobbs Swamp phase as defined by David Chase (1998:61-63). The majority of ceramics from assemblages in this period are check stamped, and are typologically referred to as Cobbs Swamp Check Stamped, the local equivalent of check stamped ceramics from the Deptford-Cartersville complex in western Georgia (Chase 1998:61). By the end of the subperiod, however, there is a slight decrease in relative frequency of check stamping. This subperiod's largest decorative minority mode is complicated stamping. The presence of complicated stamped sherds along with check stamped sherds in these assemblages is possibly indicative of contact with the Swift Creek populations of western Georgia or northwestern Florida where this mode is found in abundance (McMichael 1960:162). The popularity of this mode increased at the expense of simple stamping prior to the Late Middle Woodland subperiod in western Georgia. The effects of this trend are observed in this seriation, as relatively few simple stamped sherds are represented during this subperiod. There are also small amounts of fabric and cord marked sherds. Given that cord marking and fabric impressing are associated with Caldwell's (1958) Middle Eastern and Northern Traditions, it is inferred that some contact existed between the inhabitants of the middle Alabama River Valley and those of the Miller culture from the Tombigbee River Valley (Jenkins 1981), or in the case of fabric impressed pottery, the Kellog and post-Kellog cultures of northwestern Georgia and northeastern Alabama (Knight 1998) since these modes of surface finish are much more common in these areas. Finally, though not presented in the seriation used to generate this chronology, large podal supports are a common form of basal modification found during this subperiod.

The Early Middle Woodland assemblage from Site 1Au32 contains a relatively small amount of complicated stamped pottery, often referred to typologically as Swift Creek Complicated Stamped (Willey 1949:378-383), and is thus thought to represent the earliest assemblage in the seriation. This assertion is further supported by the presence of a Copena-style hoe and a check stamped vessel with large podal supports from the site, both of which suggest an Early Middle Woodland affiliation (Dickens 1968:84-91). If complicated stamped ceramics diffused into central Alabama shortly following their inception, then a date of sometime after A.D. 1 may be inferred for the beginning of this chronology. Radiometric dates obtained from Features 3, 5, 6, 7, 8 and 30 at Site 1Mt209 (Price 1999; Shelby 2007), yielded a mean calibrated date of A.D. 390. Given that podal supports disappear in the lower Chattahoochee River Valley by A.D. 300 (Knight and Mistovich 1984:219-220), a date of A.D. 390 may postdate the end of this period. If this is the case, then a terminal date for the Early Middle Woodland subperiod of around A.D. 300 or earlier may be inferred.

Period B: Late Middle Woodland

The Late Middle Woodland subperiod includes assemblages from the Lower Antioch Branch site (1Mt134) (Cottier 1979; Oakley and Watson 1977), the Armory site, and Durant Bend (1Ds1) (Nance 1976). This subperiod does not neatly correspond to a previously defined taxonomic unit of this region's culture history; however, it does bear some resemblance to the Porter, Santa Rosa/Swift Creek, and early Weeden Island phases along the Gulf coasts of Florida and Alabama (Walthall 1980:155-157; Willey 1949). Given its resemblance to these phases, this chronological unit may represent a poorly documented ceramic transition in the context of a local resident population that will ultimately be duplicated elsewhere in the middle Alabama River Valley (i.e., a post-Cobbs Swamp or pre-Henderson phase). Alternatively, as is suggested in Chapter 5, the assemblages used to generate this subperiod may represent an admixture of styles formed by the potential aggregation of populations from the Gulf Coast and middle Alabama River Valley. If this is the case, then the relative frequency of modes of surface treatment and decoration for one tradition is diminished due to the inclusion of elements foreign to that tradition. In either case, both of these scenarios would account for the decrease in the relative frequency of check stamping, the hallmark of the Cobbs Swamp and Henderson phases, during this subperiod.

Complicated stamping, the second most popular mode of decoration or surface treatment during the Early Middle Woodland subperiod peaks in popularity at the beginning of the Late Middle Woodland subperiod but is only the fourth most popular surface treatment by the end of the period. There is a slightly larger proportion of cord and fabric marked ceramics relative to the assemblages from the previous subperiod, which suggests a slight increase in the degree of contact with Miller Culture populations from the Tombigbee River Valley. A relatively high degree of contact with the Gulf Coast specifically with Porter and related peoples during the Late Middle Woodland subperiod may be inferred due to the relatively high frequency of Gulf Tradition modes found in these assemblages. For instance, trailed broad-line incising, typologically referred to as Basin Bayou Incised (Willey 1949:375-376), is found in abundance along the Gulf Coast, and peaks in popularity during this period. Further support for contact with Gulf Coast populations is evidenced in the presence of pinched and punctated sherds, often referred to as Tensaw Creek Plain (Chase 1998:64), and Weeden Island Punctated or Carrabelle Punctated (Willey 1949:419-425), which were found at both the Armory site and the Lower Antioch Branch site (1Mt134). In the upper clay mound cap assemblage from Durant Bend (1Ds1), the dominant mode of decoration is red filming. This mode is found in abundance at sites near the junction of the Coosa and Tallapoosa rivers, upstream from the Armory site (Chase 1998:70-72), and has a suspected origin along the Gulf Coast (Chase 1968a:17-26) where it is more common in Weeden Island-related assemblages in the form of Weeden Island Zoned Red (Willey 1949:422; Wimberly 1960:160). At the Armory site, check stamping remains the dominant mode of surface treatment or decoration; however, rocker stamping, typologically referred to as Santa Rosa Stamped (Willey 1949:377; Willey and Woodbury 1942:242) and Tensaw Stamped (Chase 1998:64-66), constitutes a substantial minority class. The frequency of this mode, along with red filming, pinching and punctating, and incising suggest that a relatively high degree of contact, possibly in the form of aggregation, occurred between populations from the middle Alabama River Valley and those along the Gulf Coast.

While not represented in the guiding seriation that underpins this chronology, the podal supports of this period are much smaller relative to their Early Middle Woodland subperiod counterparts. Unlike earlier Middle Woodland assemblages, a number of vessels have rim folds or false rim folds although they are not present in large quantities. Chase (1998:72) suggests that red filming peaks in popularity sometime after A.D. 700; however, other archaeologists (e.g., Dickens 1971:71) support an earlier range of A.D. 300 - A.D. 600. Here, the latter is supported given the fit of the assemblage from the upper clay cap at Durant Bend within the augmented frequency seriation. While there are no radiometric dates from the sites in this period, the scant presence of rim folds and false rim folds along with the small podal supports is suggests a date range of around A.D. 300 – A.D. 500.

Period C: Late Woodland

The Late Woodland period, as discussed here loosely, corresponds to the Henderson phase described by Roy Dickens (1971:52-60). For the purposes of this thesis, the period was defined using assemblages from Durant Bend (Nance 1976), Site 1Au146 (Cottier 1982), and Site 1Au148 (Cottier 1982). Following a decline in the Late Middle Woodland subperiod, check stamping returns as the dominant mode of surface treatment among these assemblages, possibly due to the decline of aggregation following the Late Middle Woodland subperiod. Complicated stamped ceramics continue to decline in popularity until their virtual disappearance by the end of this period. In the assemblage from the northern midden at Durant Bend (1Ds1), there is a minority of fabric impressed and cord marked ceramics, which may suggest a minor degree of contact with populations from the Tombigbee River Valley. Small amounts of red filmed ceramics, possibly indicative of continued southern contact with Weeden Island peoples, are also present during this period. Given the abundance of this mode at the Late Woodland sites of Chase's (1998:70-72) Hope Hull phase near the junction of the Coosa and Tallapoosa rivers, it is inferred that some, albeit minor, contact occurred between the populations of the middle Alabama River Valley and those of the Gulf Coast or Coosa/Tallapoosa River valleys. Net impressing, a common decorative mode for Weeden Island populations there referred to as Mound Field Net-Marked (Willey 1949:440), also begins to appear during this period. Some incised and punctated and pinched ceramics, typologically referred to as Weeden Island or Henderson Incised and Weeden Island Punctated respectively (Futato 1998:29; Willey 1949:411-422), are also present in these assemblages, which suggests that populations of the middle Alabama River Valley may have remained in contact with those along the Gulf Coast following the Late Middle Woodland subperiod. However, the scale of interaction between the Gulf Coast and middle Alabama River Valley lessens appreciably relative to the Late Middle Woodland subperiod.

The podal supports of the Early and Late Middle Woodland subperiods are no longer present in the assemblages considered in the augmented frequency seriation. However, rim folds and false rim folds are found in larger quantities relative to the Late Middle Woodland subperiod. While the assemblages represented in this seriation have no associated radiometric dates, nearby Henderson phase contexts have yielded two sigma calibrated dates ranging from A.D. 410 – A.D. 1300. Despite this wide chronological breadth, it is generally assumed that the Henderson phase lasted from about A.D. 500 – A.D. 900 (Chase 1998:75; Vernon J. Knight, personal communication 2010). Given that the Late Woodland period as defined here corresponds roughly to the Henderson phase, a chronological range of A.D. 500 – A.D. 900 is suggested for this period.

Period D: Terminal Woodland

This period includes assemblages from Georges Atlatl Weights (1Wx166), Beauford Landing (1Wx43), Phillipi (1Wx149), and Mollette Bend (1Ds157) (Jenkins and Paglione 1980). In Chase's (1998:72-74) chronology, most or all of these assemblages would likely be classified as representing the Whiteoak phase. During this period, cord and fabric marking reappear following a hiatus during much of the Late Woodland period. The relatively high frequency of these modes, suggests that the people responsible for the production of these assemblages may have witnessed a relatively high degree of contact with populations associated with the Northern and Middle Eastern Traditions, specifically the Miller Culture of the Tombigbee River Valley. Contact with Weeden Island populations along the Gulf Coast also appears to increase, as is evidenced by an increase in the proportion of net impressed, incised and pinched and punctated sherds relative to the Late Woodland period. The extent of inferred contact with the Gulf Coast during this period however, does not exceed that of the Late Middle Woodland subperiod.

There are no radiometric dates for any Whiteoak phase context in central Alabama. As a result, there is some disagreement regarding the chronological placement of these assemblages. Some (e.g., Jenkins and Sheldon 2009:35) argue that the Whiteoak phase lasts from A.D. 900 to A.D. 1200, while others (e.g., Chase 1998:73) argue that this phase occurred somewhat earlier beginning around A.D. 600 or A.D. 800. If the latter were the case, then one would expect there to be a degree of spatial separation between Henderson and Whiteoak phase sites. As this spatial separation does not appear to exist, the A.D. 900 – A.D. 1200 date range for this phase is supported here. This assertion is reinforced by the culture history of the Cedar Creek mound site, in Dallas County, which has both Moundville I-like and Whiteoak components (Jenkins and

Sheldon 2003:18; Regnier 2006:57). Referred to as the Cedar Creek phase (Jenkins and Sheldon 2003: 18), the Early Mississippi period in the middle Alabama River Valley is only sparsely expressed and was thus not considered in the cultural chronology.

Chapter 5: Spatial Mapping and Analysis

In this chapter several site and regional-level maps are presented in order to provide a visual representation of the Armory site and to serve as the basis for spatial analyses regarding aggregation and sedentism. As there are two dominant ceramic classes represented at the Armory site-check and rocker stamping on a grit/sand-tempered ware, an intra-site distributional analysis was conducted to determine if these artifact classes were produced by two distinct ethnic groups. In an effort to provide regional insight to this distributional analysis, a diachronic rank-size analysis was also performed using data from the ASSF.

Site-Level Data

Contour Map of the Armory Site. Using the data from the mapping aspect of the fieldwork conducted in 2007 and the contouring graphics package Surfer version 8, a digital contour map of the Armory was created (Figure 5.1). The data used to create this map included a total of 107 elevation points which were taken relative to a 10 m arbitrary vertical datum. Forty-one of these points were located on or near the primary mound whereas most of the other points occurred at 20 m intervals corresponding to the 2007 shovel test pits. In an attempt to reduce the amount of surface curvature due to the wide sampling interval, contours were plotted using the minimum curvature gridding method. The derived contour lines generally approximated those of the hand-drawn topographic map (Figure 2.1), however, two notable differences were observed. First, the digital contour map did not accurately reflect changes in elevation at the margins of the

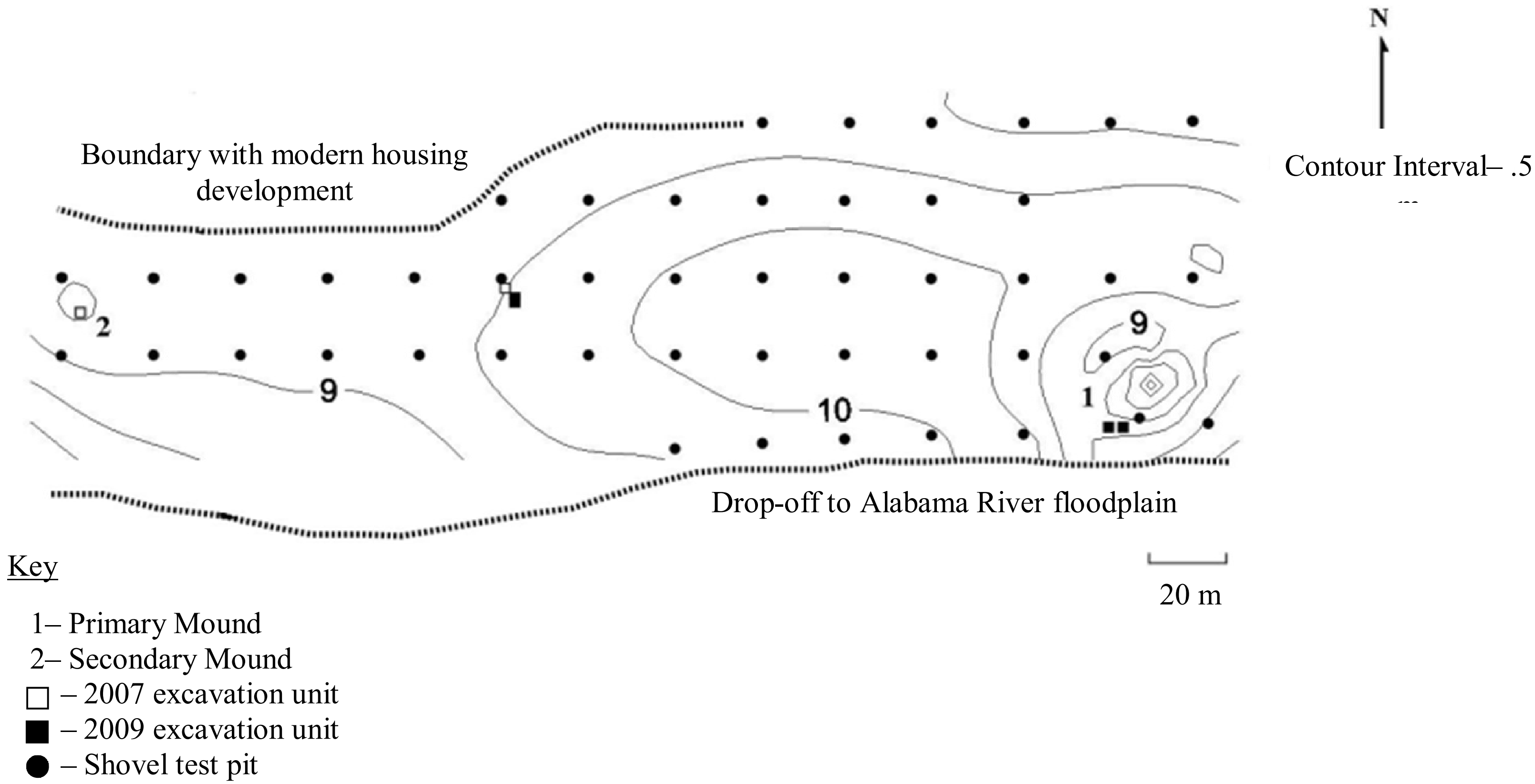


Figure 5.1: Contour map of the Armory site with excavation units and shovel test pit grid.

survey area and were thus removed. Second, the hand-drawn topographic map did not depict the looter's trench noted by C.B. Moore; however, this feature was visible on the digital contour map.

Using the elevation points embedded within the contour map of the Armory site, a three-dimensional digital elevation map was constructed where areas colored red and orange are higher in elevation relative to areas colored green (Figure 5.2). On this map, as well as the original contour map, the location and relative elevation of the site's primary and secondary mounds are visible. It is clear, however, that both of these mounds have sustained heavy damage due to plowing and looting.

Ceramic Density Map. The representation of intra-site activity areas can be reconstructed using a variety of analytical procedures (Clarke 1977; Johnson et al. 1988, Wheatley and Gillings 2002; Wood 2004). In this instance, however, a three-dimensional representation of a density contour was produced and overlain with Armory's original elevation contour map. In this manner, activity areas could be readily delineated as they relate to their location within the Armory site.

Using the data from the 2007 shovel test pits, the summed weights of ceramic sherds larger than half an inch in diameter were recorded and entered into Surfer as z axis data. These data were interpolated to form a continuous, two dimensional distribution, which was then overlain over the topographic contour map presented above (Figure 5.3). In the resulting map, areas colored in red possessed the highest densities of ceramics by weight while areas in green contained the lowest densities. From this analysis it is apparent that majority of Amory's occupation occurred between the primary and secondary mounds. If the activity areas in yellow, orange, and red are the remains of individual houses, then the Middle Woodland village at the

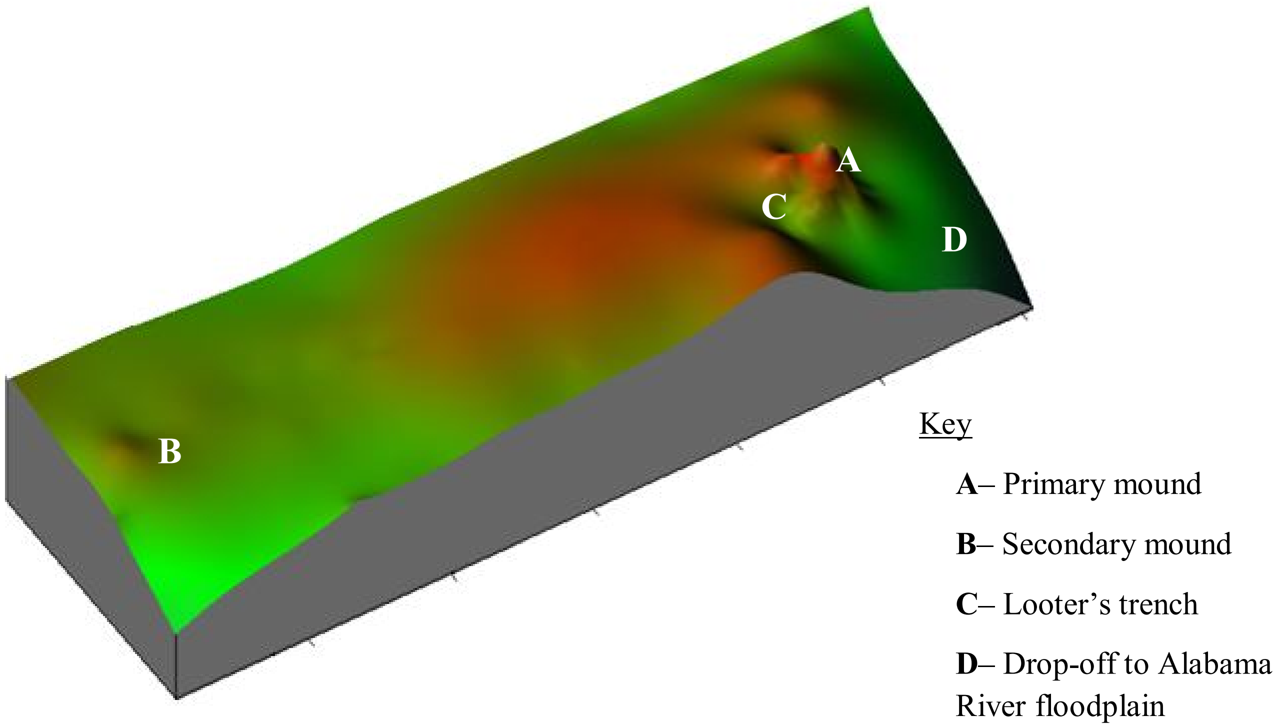


Figure 5.2: Three dimensional reconstruction of the Armory site.

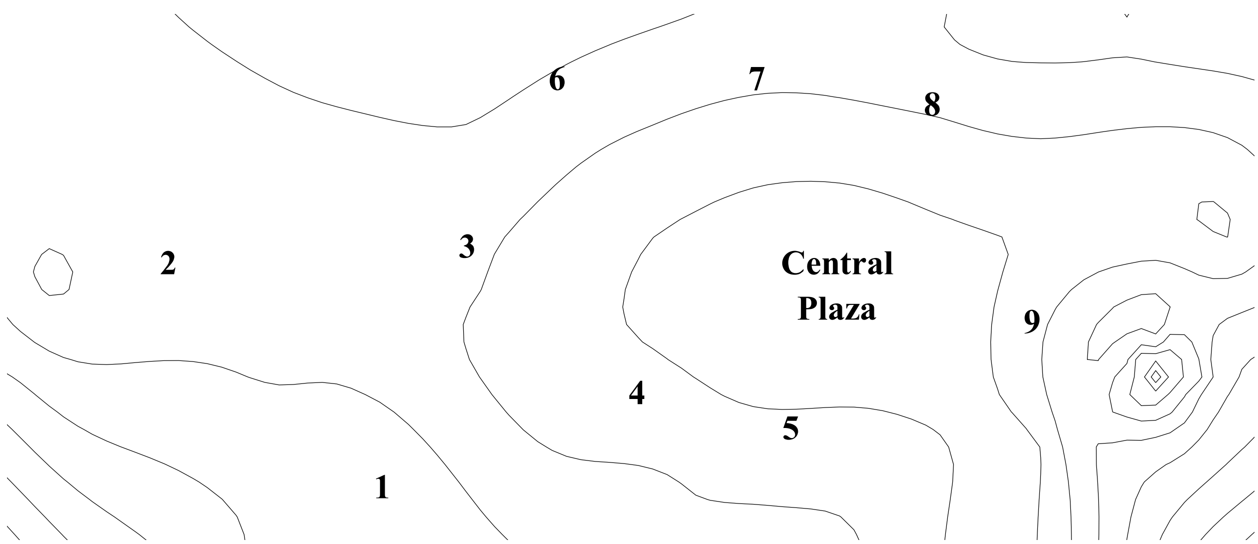
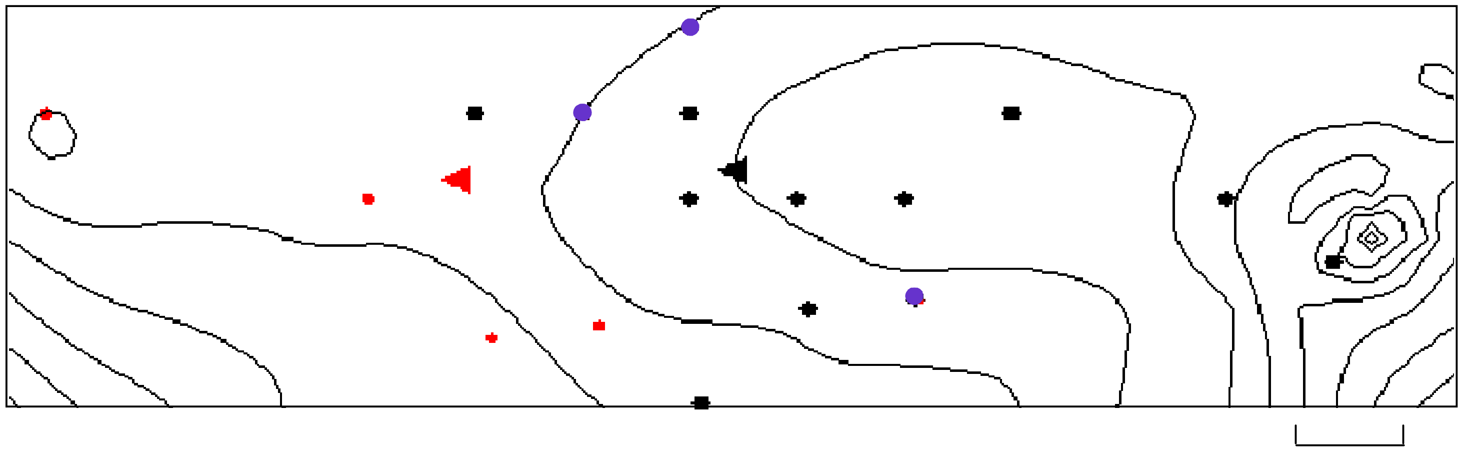


Figure 5.3: Distribution of the nine identified activity areas at the Armory site as defined by ceramic density.

Armory site may have had at least nine houses most of which were situated around a small plaza similar to that of the Walling site's Middle Woodland component in the Tennessee Valley (Knight 1990:157).

Intra-Site Distributional Analysis. Following the 2007 excavations, it became clear that the material culture of several distinct cultural traditions was represented at the site. For instance, check stamping, the most frequently represented mode of surface treatment is diagnostic of the Southern Appalachian Tradition while rocker stamping, the second most frequent mode, is a hallmark of the Gulf Tradition. Given that these modes represent separate cultural traditions, it was hypothesized that distinct populations living in ethnic enclaves may have been present at the Armory site. In order to test this hypothesis, the counts of check (n= 22) and rocker stamped (n=10) sherds from the 2007 shovel test pits were plotted on the digital contour map. The mean centers of these distributions were then calculated using the number of ceramics per shovel test pit as a weighting mechanism (Figure 5.4).

The distributions of check and rocker stamped sherds along the north-south and east-west axes of the site were calculated and compared using a Wilcoxon rank sums test. It was assumed that if these distributions were statistically different along either axis then they were representative of distinct activity areas where these sherds were deposited. At a .1 alpha level, the distribution along the north-south axis was not significant ($p = .281$) (Table 5.1); however, the distribution of sherds along the east-west axis was significant ($p= .068$) (Table 5.2). The results of this statistical analysis indicated that check stamped ceramics were more likely to be deposited in areas east of the mean center for rocker stamped ceramics and vice versa. Though the difference between the depositions of these two ceramic classes was statistically significant,



20 m

Key

● Shovel test with check stamped ceramics

● Shovel test with rocker stamped ceramics

● Shovel test with check and rocker stamped ceramics

▲ Mean center for check stamped ceramics

▲ Mean center for rocker stamped ceramics

Figure 5.4: Distribution of check and rocker stamped ceramics at the Armory site.

Table 5.1: Significance of difference between the north-south distribution of check and rocker stamping.

	Count	Mean Rank	Sum of Ranks
Rocker stamped count < check stamped count	6	5.25	31.5
Rocker stamped count > check stamped count	3	4.5	13.5
Rocker stamped count = check stamped count	4		
Wilcoxon rank sums test 2-tailed significance	.281		

Table 5.2: Significance of difference between the east-west distribution of check and rocker stamping.

	Count	Mean Rank	Sum of Ranks
Rocker stamped count < check stamped count	4	2.5	10
Rocker stamped count > check stamped count	0	0	0
Rocker stamped count = check stamped count	1		
Wilcoxon rank sums test 2-tailed significance	.068		

they were not mutually exclusive. Thus, if rocker and check stamped ceramics were produced by distinct ethnic groups, then some areas of the site may have been reserved for common usage.

The observed distribution of check and rocker stamped sherds may be accounted for through a variety of explanations. First, an appreciable amount of time may have elapsed between the depositions of the two ceramic classes. However, following the cross-dating of ceramic modes presented in Chapter 3, it is likely that the site's dominant occupation occurred primarily during the Late Middle Woodland subperiod. Further, as it has been suggested that the thickness of ceramic vessels steadily increases during the Late Middle Woodland and Early Late

Woodland subperiods (Nance and Mentzer 1980), the thicknesses of check and rocker stamped body sherds at the Armory site were compared using a Mann-Whitney *U* test (Table 5.3). The differences between the thicknesses of these sherds was not significant at the .1 alpha level (p = .342). There was also no stratigraphic evidence suggesting that a significant amount of time occurred between the deposition of these ceramic classes. This evidence, however, must be tempered with the fact that much of the site's stratigraphy has been disturbed by modern cultivation.

Table 5.3: Significance of difference between the thicknesses of check and rocker stamped ceramics.

	Count	Mean Rank	Sum of Ranks
Check Stamped	33	36.89	1217.5
Rocker Stamped	35	32.24	1128.5
Mann-Whitney *U* test 2-tailed significance	0.319		

Second, a single population living at the Armory site may have reserved certain areas of the site for the usage of specific ceramics. In this scenario, one would expect either ceremonialism or social stratification to play a role in the differential distribution of artifacts. However, this seems unlikely, as there is little evidence supporting the existence of social stratification during the Middle Woodland period nor are there any apparent ceremonial features near the mean centers for check and rocker stamped sherds.

Third, the differential distribution of check and rocker stamped sherds may be the result of intra-community preference. However, if it is assumed that such preferences transcend the generational level or at least beyond the occupation of a single site, then one would expect to find additional sites with a similar assortment of ceramics. Aside from the single component defining Chase's (1998:63-64) Timberlands phase, such sites have yet to be documented in central Alabama. Furthermore, the creation of this phase was determined by the presence of only one rocker stamped sherd and one incised sherd. The ceramic assemblage from the Armory site however, differs appreciably as considerably more rocker stamped and incised sherds were recovered despite the fact that fewer total sherds were recovered. Thus, if it is assumed that preference transcends the occupation of a single site, then there is minimal evidence to support the notion that preference was driving the differential distribution of ceramics at the Armory site.

Fourth, Karen Smith (2009) demonstrates that increased mobility in the Chattahoochee River Valley during the Woodland periods resulted in a semi-annual form of residential aggregation. Thus, the Armory site may have functioned as an aggregation center for (at least) two contemporaneous ethnic groups. At minimum, these groups would have included people whose potters participated in the Gulf Tradition, producing rocker stamped ceramics, and people whose potters participated in the Southern Appalachian Tradition producing check stamped ceramics.

At present, the fourth explanation seems to be the most plausible. It should be noted however, that the non-systematic nature of survey and test unit excavations from 1980s and 2000s prohibited the inclusion of many of the recovered sherds in this analysis. Thus, only a perilously small fraction of the check (n= 22) and rocker stamped (n= 10) sherds from the Armory site were utilized in the distributional analysis. Given this limitation, a regional scale rank-size analysis was conducted in order to supplement the results of the intra-site distributional analysis.

Regional-Level Data

Rank-Size Analysis. Using data from the ASSF, the location and size of all sites with a Middle or Late Woodland component within a 100 km radius of the Armory site were ascertained. From these sites, single-component Middle and Late Woodland sties were teased out for use in the rank-size analysis (Figures 5.5 and 5.6). Robert Drennen's RSBOOT program (available at http://www.pitt.edu/~drennan/rsboot.exe), was then used to rank and logarithmically graph the sizes of these single-component sites.

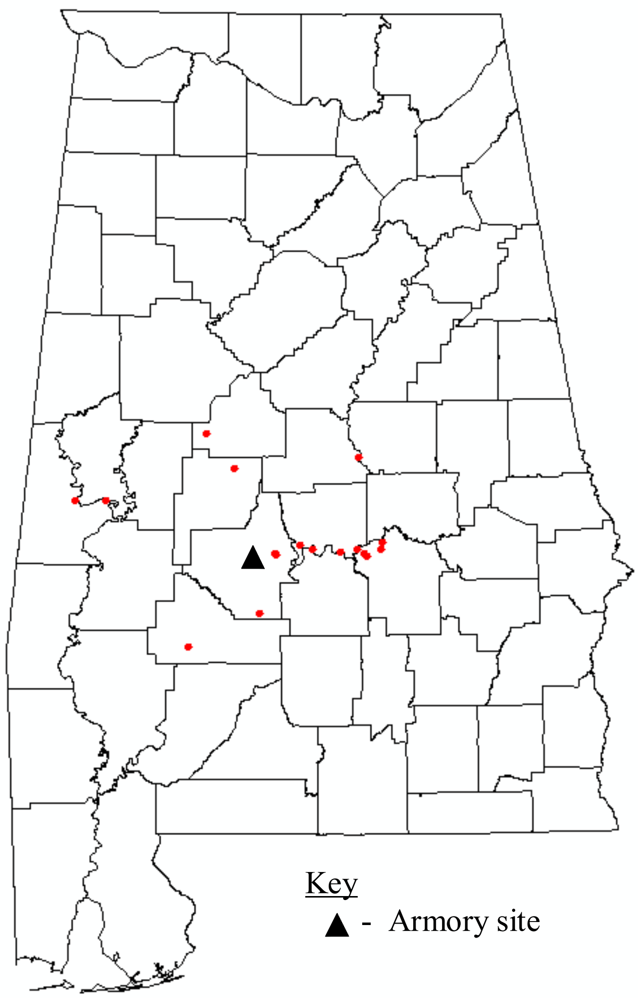


Figure 5.5: Single-component Middle Woodland sites within 100 km of the Armory site.

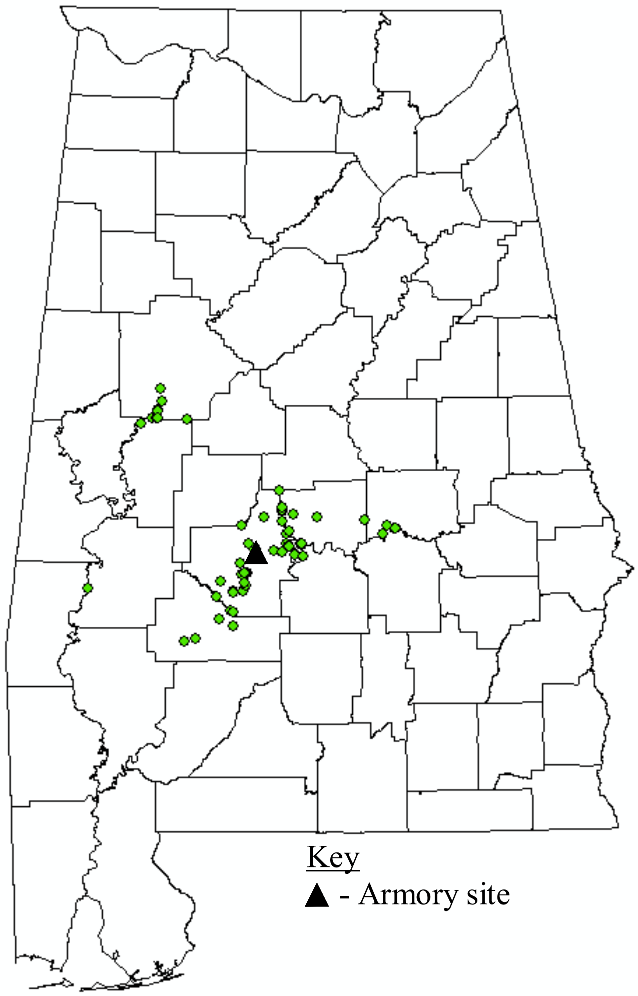


Figure 5.6: Single-component Late Woodland sites within 100 km of the Armory site.

Figure 5.7 presents a rank-size diagram of single-component Middle Woodland sites in central Alabama with 90% confidence intervals. The observed site size differs from log-normality with an *A* coefficient of -.390, and is characterized as slightly primate. Sites at the smaller end of the distribution deviate greatly from log-normality, but this was expected as these sites were likely only ephemeral hunting camps. This distribution supports the notion that a few disproportionately large sites functioned as aggregation centers during the Middle Woodland period. However, while the rank-size line adheres to what was predicted given the intra-site

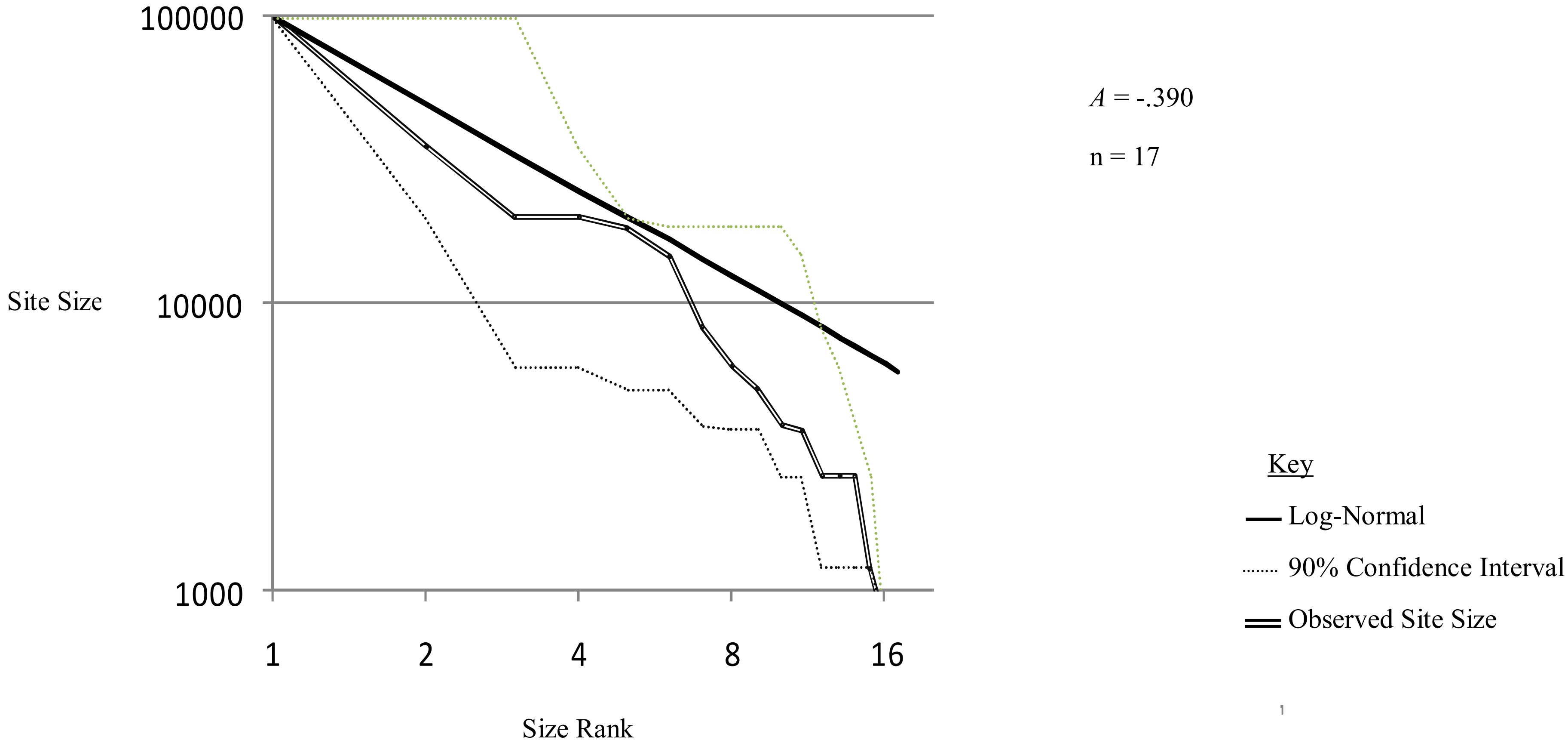


Figure 5.7: Rank-size diagram of Middle Woodland sites in central Alabama.

distributional analysis, the small sample size (n= 17) for the Middle Woodland period limits the value of this analysis as its upper confidence interval exceeds log-normality for the majority of the distribution.

Figure 5.8 presents a rank-size diagram of single-component Late Woodland sites in central Alabama with 90% confidence intervals. With a sample size of 64, these confidence intervals are much narrower and more conclusive than those of the Middle Woodland period. The *A* coefficient for the Late Woodland sites increases to .266, and the rank-size distribution shifts from slightly primate to convex implying that there are more relatively large sites compared to the Middle Woodland period. As with the Middle Woodland period, the drop of the observed line below log normality at the lower size ranks is likely a result of the inclusion of ephemeral hunting camps in the analysis. It should be further noted that the upper 90% confidence interval for the Middle Woodland period overlaps with the lower 90% confidence interval for the Late Woodland period. However, when these intervals are reduced to 85%, the ranges of the *A* coefficients do not intersect and the confidence intervals only overlap at the upper end of the distribution (Figure 5.9). Thus, if it is assumed that aggregation was the only force shaping the size of sites, then it can be said with 85% certainty that Middle Woodland populations exhibited a tendency toward aggregation while Late Woodland populations did not.

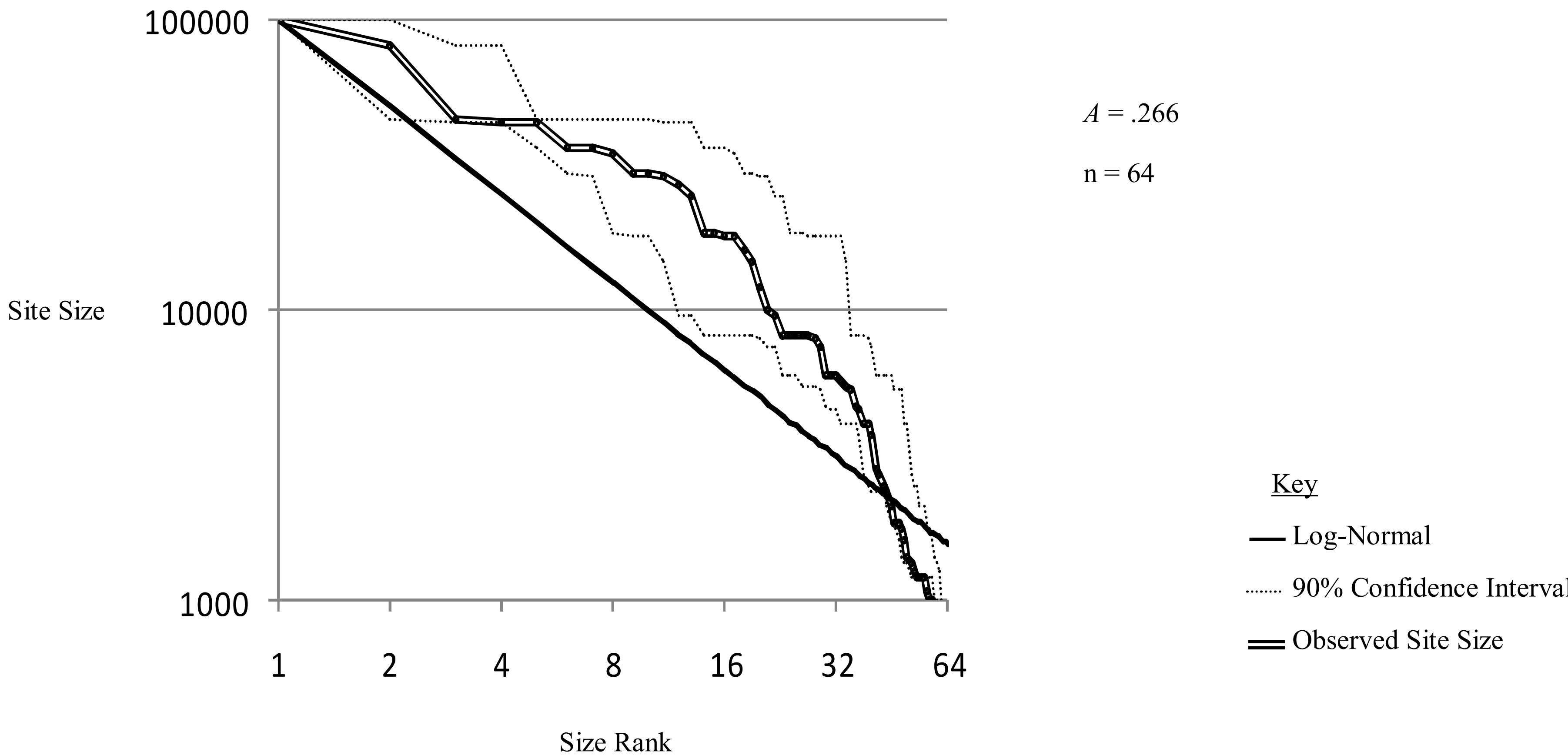


Figure 5.8: Rank-size diagram of Late Woodland sites in central Alabama.

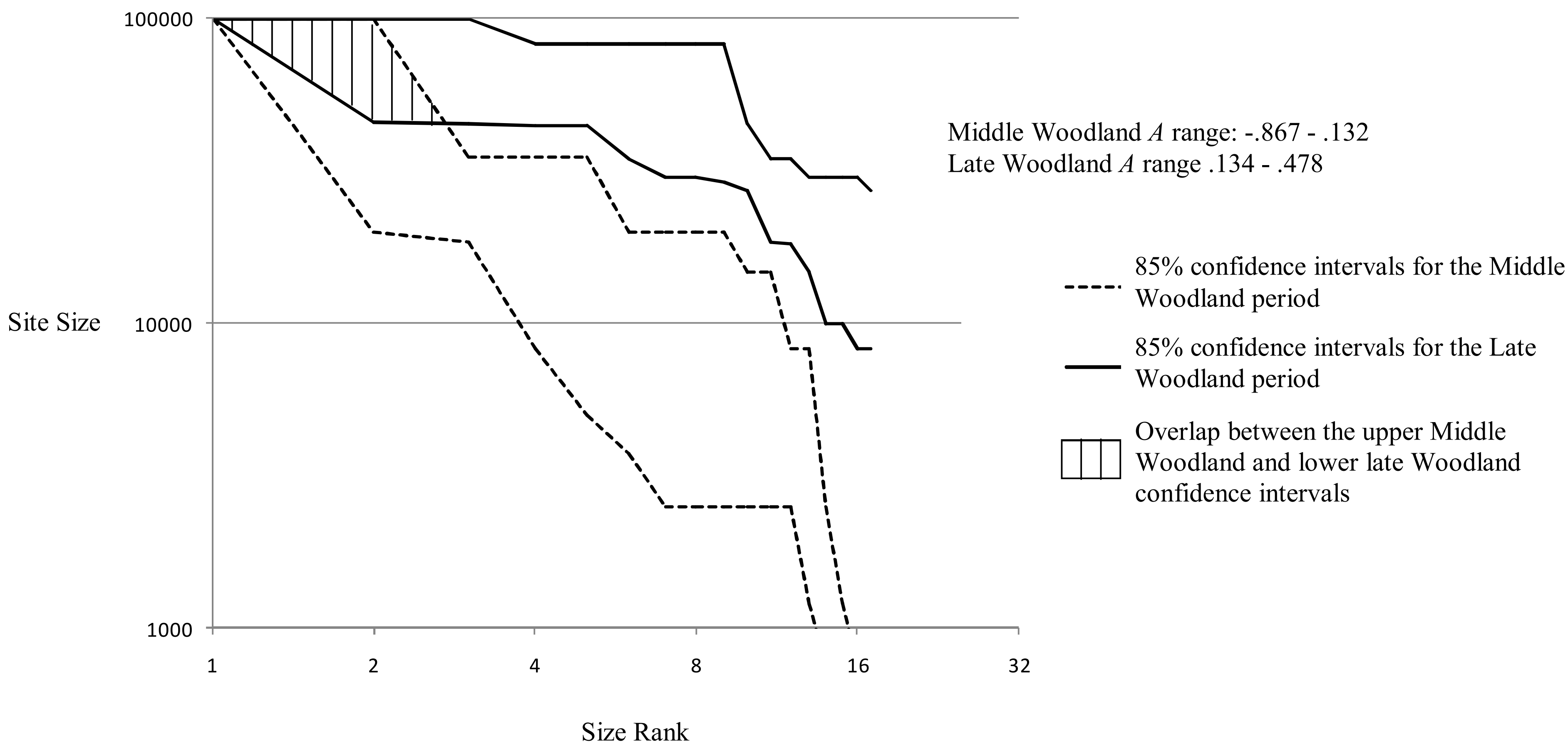


Figure 5.9: Rank-size diagram for the Middle and Late Woodland periods using 85% confidence intervals.

Chapter Six: Interaction

Using the information-theoretic approach described in Chapter 2, the average ceramic diversity associated with each period in the cultural chronology presented in Chapter 4 was calculated by taking the mean information score of the ceramic assemblages included in each period. These scores were then scaled from 0-1 so as to permit comparison with the analyses of inter-assemblage distance (dissimilarity) discussed in Chapter 7 (Tables 6.1 and 6.2).

Table 6.1: Diversity scores for assemblages in the Woodland cultural chronology.

Site	Diversity Score	Scaled Diversity Score
1DS157	1.25	0.42
1WX149	0.99	0.33
1WX43	0.96	0.32
1WX166	0.76	0.25
1AU146	0.19	0.06
1AU148	0.30	0.10
1DS1	1.31	0.44
1DS1	2.12	0.71
1DS174	2.19	0.73
1Mt134	1.94	0.65
1MT209	1.21	0.40
1MT210	0.69	0.23
1DS1	0.76	0.25
1AU32	0.04	0.01

Figure 6.1 displays the results of the ceramic diversity analysis graphically. As with the results of Dickens and Fraser's (1984: 149-150) study in the southern Appalachian region,

Table 6.2: Mean and scaled mean of diversity scores by period defined in the cultural chronology.

Period	Mean	Scaled 0-1 Mean
A- Early Middle Woodland	1.12	.37
B- Late Middle Woodland	2.08	.69
C- Late Woodland	.60	.20
D- Terminal Woodland	.99	.33

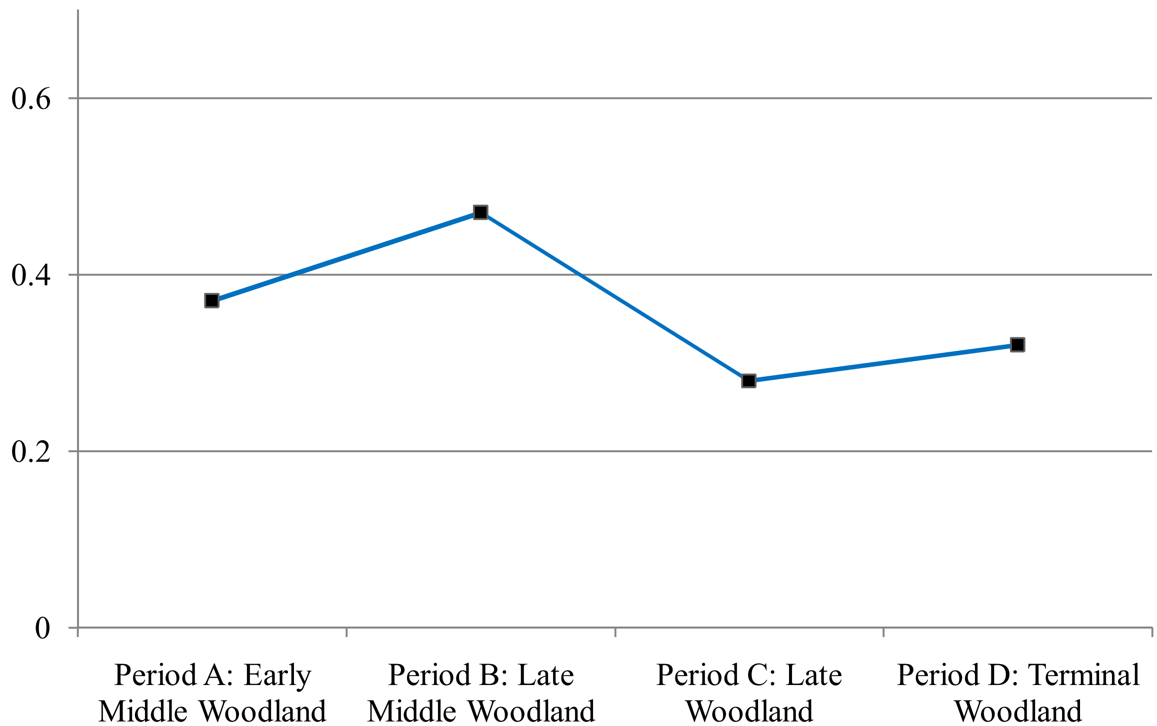


Figure 6.1: Ceramic diversity for each period delineated in the cultural chronology.

ceramic variability was highest during the Late Middle Woodland subperiod. Among the ceramic assemblages of this period, Armory's had the highest information score, indicating that this site witnessed an extraordinarily high degree of inter-regional interaction during the Late Middle Woodland subperiod. Assemblages from the Early Middle Woodland subperiod also had relatively high information scores, but their mean score was lower than that of the Late Middle Woodland subperiod. Assemblages of the Late Woodland period contained the smallest amount of information, but a slight resurgence in variability occurred during the Terminal Woodland period.

The Late Middle Woodland subperiod represents the height of ceramic variability among the assemblages considered within the cultural chronology. Presently, there is no available evidence suggesting that a similar pattern would not be found throughout all of central Alabama rather than just in the middle Alabama River Valley. Furthermore, if it is assumed that ceramic variability serves as a measure of domestic, inter-regional interaction, then this form of interaction was highest during the Late Middle Woodland subperiod and lowest during the Late Woodland period. Given the increased domestic interaction of the Late Middle Woodland subperiod, it is likely that a concomitant increase in mortuary-ceremonial interaction also occurred locally during this period. While not formally quantified, this assertion is supported by the relatively high frequency of non-local mortuary and ceremonial objects (e.g., the copper ear spool at the Armory site) and features (e.g., burial mounds) found during the Late Middle Woodland subperiod.

When interpreting these results, two limitations must be kept in mind. First, the collections used in this analysis were not reanalyzed following their initial classification by the original researchers. Consequently, the individual sorting biases to which the ceramic assemblages were subjected may have affected the outcome of this analysis. However, due to the implication of the least common denominator method described in Chapter 2, the effects of this limitation should be minimal. Second, while general trends regarding interaction through time were detected, a finer-grained chronology than that presented in Chapter 4 would be required to observe any variability within these trends.

Chapter Seven: Sedentism

It is generally assumed that Late Woodland populations in central Alabama were more sedentary than their Middle Woodland predecessors. The basis for this assumption hinges upon a qualitative assessment of increasing site size and midden accumulation following the Middle Woodland period. The validity of this assumption however, has yet to be quantitatively addressed as it relates to central Alabama. Thus, in an attempt to redress this lack of study, quantitative analyses of sedentism for single-component Middle and Late Woodland sites within 100 km of the Armory site were conducted. While these analyses addressed changes in relative mound frequency, the number of single-component sites per period, and median site size per period, it was assumed that relative midden frequency would be the most reliable indicator of sedentism (e.g., Binford 1980:7).

Following the completion of these analyses, the inferences regarding sedentism were compared to measures of inter-assemblage distance (dissimilarity). In this manner, conventional methods of assessing sedentism were able to provide insight into the potential value of inter-assemblage distance (dissimilarity) as an index of sedentism. While inter-assemblage distance (dissimilarity) was addressed using the periods defined in the cultural chronology, due to a lack of chronologically diagnostic material in the broader sample studied from the ASSF, only coarse Middle or Late Woodland chronological distinctions could be determined for sites in the supplementary analyses of sedentism.

Analyses of Sedentism

Middens. Of the 18 single-component Middle Woodland sites located within 100 km of the Armory site, none had any substantial midden accumulation reported. When the Middle Woodland midden found at Armory was included in this calculation, only 6% of Middle Woodland sites had midden accumulation. However, of the 64 single-component Late Woodland sites, 12 (or 19%) had substantial reported midden accumulation. A Fisher's exact test was conducted to determine if this difference was statistically significant at the .1 alpha level (Table 7.1). The results of this test indicated that midden accumulation was significantly more common during the Late Woodland period ($p = .06$). Assuming that midden accumulation is indicative of sedentism (e.g., Binford 2006:6; Kohler and Sebastian 1996:598-599; Smith 2009:144), then populations during the Late Woodland period in central Alabama were more sedentary than their Middle Woodland predecessors. While Middle Woodland middens have been documented in central Alabama (e.g., Nance 1976; Price 1999; Shelby 2007) they were either found at multi-component sites or the existence of these middens has not been recorded in the ASSF. There is no indication of biased reporting, however, and the same sorting criteria were applied to both the Late and Middle Woodland periods in this study.

Mounds. Among the single-component Middle Woodland sites, one out of eighteen (or 6%) contained at least one mound. In the Late Woodland period, there were three single-component mound centers out of sixty-four sites (or 5%). A Fisher's exact test was conducted to determine if there was a statistical difference between the number of mounds present during the Middle and Late Woodland periods (Table 7.2). No statistical difference was found at the .1 alpha level ($p = 1.00$). While the frequency of mound centers thus remained relatively constant throughout the Middle and Late Woodland periods, the implications of this test for sedentism are

Table 7.1: Expected and observed middens frequencies for the Middle and Late Woodland periods.

Middle Woodland midden frequencies	
expected	2.6
observed	0
Late Woodland midden frequencies	
expected	9.4
observed	12
Fisher's exact test, 2-tailed significance	.06

Table 7.2: Expected and observed mound frequencies for the Middle and Late Woodland periods.

Middle Woodland mound frequencies	
expected	0.9
observed	1
Late Woodland mound frequencies	
expected	3.1
observed	3
Fisher's exact test, 2-tailed significance	1.00

limited, as relatively mobile populations are not necessarily precluded from mound construction (e.g., Gibson 2006; Saunders et al. 2000:665).

Site Size and Number. Assuming that relatively sedentary populations produce larger sites than more mobile populations, a Mann Whitney *U* test was conducted to determine if there is a significant difference between the sizes of single-component Middle and Late Woodland sites. The median site sizes for the Middle and Late Woodland period were 5,000 m^2 and 5,888 m^2 respectively. While sites were slightly larger on average during the Late Woodland period, this difference is not statistically significant at the .1 alpha level ($p = .963$) (Table 7.3). It should also be noted that the number of single-component sites more than the triples following the Middle Woodland period. A Chi-square goodness of fit test was conducted to determine if this difference was significant. Given that a total of 82 sites were present for both periods, it was expected given the null hypothesis, that the number of sites in each period would be 41. The number of sites present per period differed from these expectations, as 18 single-component Middle Woodland sites and 64 single-component Late Woodland sites were observed. The probability of this distribution being due to chance is negligible ($p = < .001$) (Table 7.4). Assuming that an increase in the quantity of sites is only the result of increasing population size or mobility, it is inferred here that an increase in population size was responsible for the increase in the number of sites given the results of the midden analysis.

Table 7.3: Significance of difference between site size for the Middle and Late Woodland periods.

	Count	Mean Rank	Sum of Ranks
Median Middle Woodland site size	17	41.42	701
Median Late Woodland site size	64	40.94	2620
Mann-Whitney *U* test, 2-tailed significance	.963		

Table 7.4: Expected and observed number of sites for the Middle and Late Woodland periods.

Number of Middle Woodland sites	
Expected	41
Observed	18
Number of Late Woodland sites	
Expected	41
Observed	64
Chi-square goodness of fit test significance	<.000

Inter-assemblage Distance (Dissimilarity). Scaled indices of ceramic stylistic distance for each paired combination of assemblages in the cultural chronology provided in Chapter 4 were ascertained using a modified version of the Brainerd-Robinson formula (Table 7.5). Given that this index measures dissimilarity rather than similarity, assemblage pairs with lower scores are said to be relatively similar stylistically, while assemblage pairs with higher scores are said to be relatively dissimilar or stylistically "distant." Using the assemblage pair dissimilarity scores, the average dissimilarity by chronological period was calculated (Table 7.6). These scores are scaled from zero to one and presented in a graphic format to permit simultaneous comparison with the analysis of inter-regional interaction (Figure 7.1).

Table 7.5: Scaled dissimilarity indices for each assemblage in the cultural chronology.

	1DS157	1WX149	1WX43	1WX166	1AU146	1AU148	1DS1, area 1	1DS1, area 2	1DS174	1MT134	1MT209	1MT210	1DS1, area 3
1DS157													
1WX149	0.14												
1WX43	0.18	0.14											
1WX166	0.19	0.19	0.10										
1AU146	0.23	0.23	0.16	0.12									
1AU148	0.22	0.22	0.15	0.12	0.02								
1DS1, area 1	0.15	0.16	0.11	0.14	0.18	0.17							
1DS1, area 2	0.68	0.71	0.74	0.80	0.82	0.81	0.68						
1DS174	0.56	0.57	0.60	0.63	0.64	0.63	0.55	0.61					
1MT134	0.38	0.41	0.40	0.44	0.45	0.44	0.35	0.61	0.47				
1MT209	0.26	0.22	0.20	0.24	0.27	0.27	0.18	0.73	0.56	0.23			
1MT210	0.21	0.22	0.14	0.13	0.11	0.10	0.13	0.73	0.56	0.35	0.18		
1DS1, area 3	0.25	0.23	0.12	0.11	0.13	0.12	0.11	0.75	0.58	0.38	0.17	0.06	
1AU32	0.25	0.25	0.16	0.11	0.02	0.04	0.20	0.84	0.65	0.47	0.27	0.12	0.13

Table 7.6: Mean dissimilarity indices for each period in the cultural chronology.

Period A: Early Middle Woodland	0.16
Period B: Late Middle Woodland	0.56
Period C: Late Woodland	0.12
Period D: Terminal Woodland	0.16

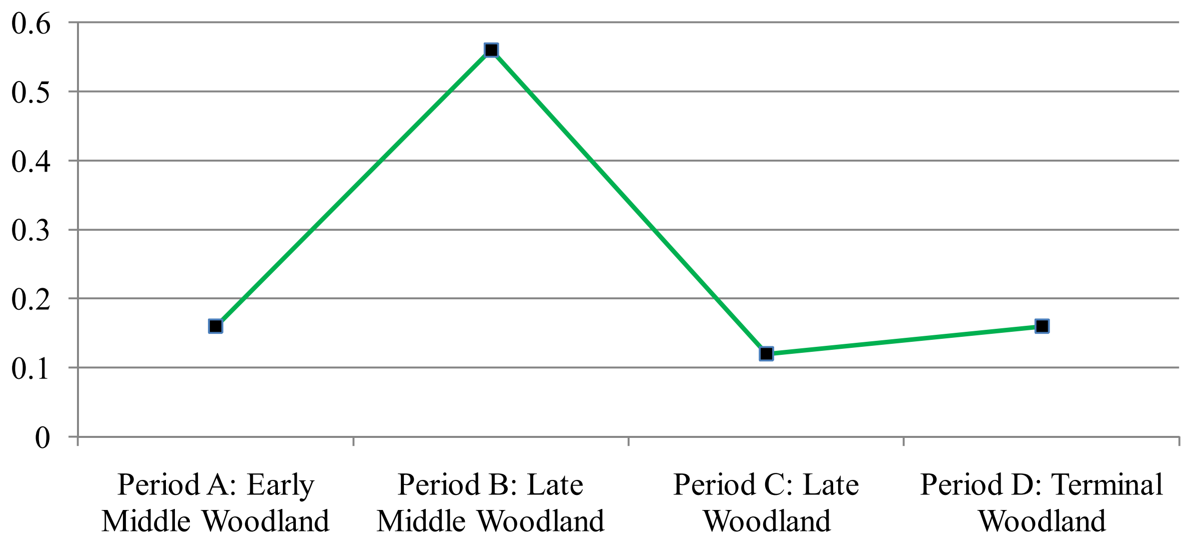


Figure 7.1: Inter-assemblage distance (dissimilarity) during the Middle and Late Woodland periods.

Inter-assemblage Distance (Dissimilarity) and Ceramic Diversity. Figure 7.2 presents the results of the ceramic diversity and inter-assemblage distance (dissimilarity) analyses. A Pearson correlation value of .964 was ascertained for these data indicating that inter-assemblage distance (dissimilarity) and diversity are strongly and positively correlated. Using a .1 alpha level, the two-tailed significance of this correlation was tested in order to determine if the correlation was significantly different from a zero correlation value (i.e., no correlation). Despite the small number of delineated periods, the results of this test indicated that this correlation was statistically significant (p = .036). Therefore, it was concluded that as populations in the study area became more sedentary, they tended to interact less while producing relatively more homogeneous ceramic assemblages.

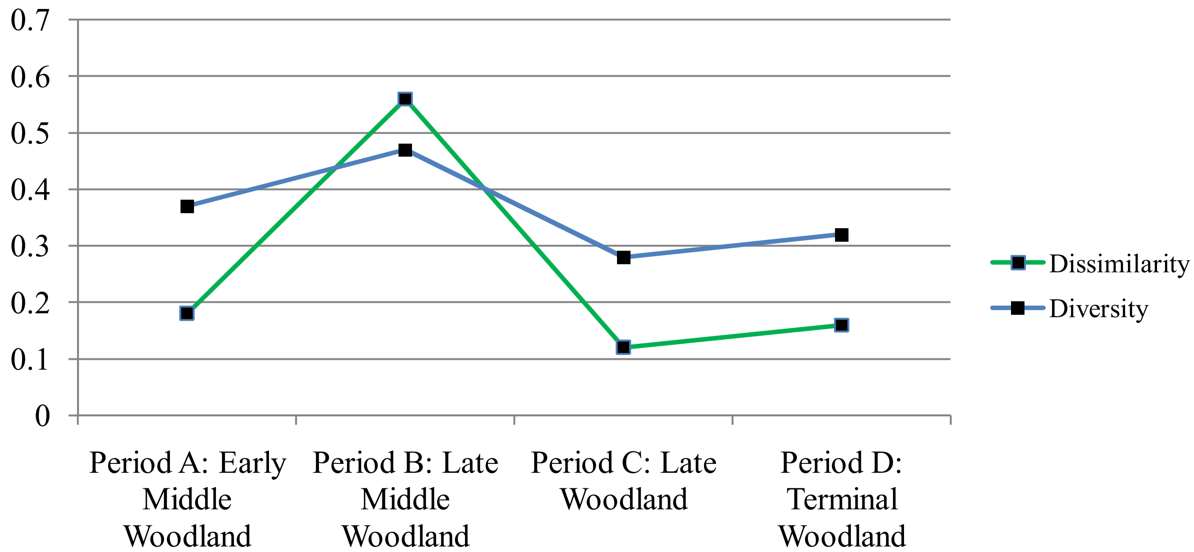


Figure 7.2: Inter-assemblage distance (dissimilarity) and ceramic diversity during the Middle and Late Woodland periods.

Chapter 8: Interpretation

In this chapter, interpretations regarding the age and occupation of the Amory site are discussed. Following this discussion, two models are proposed which attempt to account for the correlation between inter-assemblage distance (dissimilarity) and diversity as well as the lack of unimodal relative frequency distributions present in the augmented frequency seriation during the Late Middle Woodland subperiod. The first model is based solely upon the changing qualities of inter-regional interaction, while the second incorporates the notions of ethnicity and aggregation as well as interaction. Here, the second model is supported given its ability to account for the differential distribution of check and rocker stamped sherds at the Armory site as well as the correlation between inter-assemblage distance (dissimilarity) and diversity.

Age and Occupation of the Amory Site

Given the quantities of fiber-tempered ceramics and Late Archaic projectile points found at the base of Armory's primary mound, it is evident that the site's initial use predated the Middle Woodland period. While the Late Archaic component is present at the base of the mound, it is probable that the main or at least upper portion of the mound was built and used during the Middle Woodland period. As a formal assessment of the primary mound's chronology was beyond the scope of this thesis, this assertion is based upon the recovery of Middle Woodland artifacts from or near the mound (e.g., C.B. Moore's bicymbal copper ear spool), the frequent presence of mounds at aggregation centers (e.g., Walthall 1980), and the rarity of Late Archaic mound sites in central Alabama. Chronologically diagnostic artifacts from the secondary mound indicate that this mound was built and used primarily, if not exclusively during the Late Middle Woodland subperiod. Additionally, the majority of the chronologically diagnostic artifacts recovered from non-mound contexts suggests that the site was occupied primarily during the Late Middle Woodland subperiod. From the spatial analysis of ceramic density presented in Chapter 5, it is inferred that the site's Middle Woodland occupation was centered around a plaza located to the northwest of the primary mound. While minor Late Woodland and Mississippian components are present, there does not appear to have been any further considerable activity at the site until the nineteenth and twentieth centuries.

Proposed Models Regarding Interaction and Sedentism

The results of the inter-assemblage distance (dissimilarity) and diversity analyses can be accounted for through a variety of explanations. At present however, the two models presented here seem most plausible given the available data. According to the first model, the intensity of inter-regional interaction among Woodland populations in central Alabama gradually ebbed and flowed through time. During the late Middle Woodland period however, interaction became erratic as brief but intense pulses of cultural contact occurred between various geographically distant regions. Considering the ephemeral nature of such interaction, a fine-grained cultural chronology would be required in order to verify this phenomenon diachronically. If such a chronology were available in the form of a frequency seriation, then the unimodal relative frequency distributions reflecting the popularity of ceramic modes through time during the Late Middle Woodland subperiod would tend to be relatively abrupt with steeper slopes as a result of this short-lived interaction. It is important to note that this model is limited by the fact that the hypothesized ceramic assemblages comprising these unimodal relative frequency distributions have yet to be documented.

The utility of the first model is also called into question as it does not take into account the spatial distribution of ceramic modes at the Armory site. In the second proposed model, interaction ebbed and flowed as it does in the first model; however, during the Late Middle Woodland subperiod distinct ethnic groups aggregated at certain sites, such as Armory, for some portion of the year. As with the first model, the differential admixture of various ceramic traditions in the form of inter-regional interaction results in the positive covariation of inter-assemblage distance (dissimilarity) and diversity.

This model also proposes that aggregation centers may have been divided into distinct ethnic enclaves. At the Armory site, check stamped ceramics tended to be found on the eastern side of the site while rocker stamped ceramics were concentrated in the western portion of the site. As this distribution is statistically significant at the .1 alpha level, it is suggested that populations producing check stamped pottery associated with the Southern Appalachian Tradition primarily inhabited the eastern side of the site, while populations producing rocker stamped pottery of the Gulf Tradition primarily occupied the western side of the site. An area of overlap between these two ceramic classes possibly implies that part of the site would have been used by both groups. If similar scenarios were shaping the Late Middle Woodland ceramic assemblages included in the augmented frequency seriation, then this would account for the lack of unimodal relative frequency distributions present during this period.

This model also explains the general dearth of Late Middle Woodland sites in central Alabama. If multiple populations were living at the same site for at least part of the year, then fewer sites may have been produced. It should be noted however, that this model relies heavily upon a limited amount of data from the Armory site and central Alabama. It is therefore suggested that additional testing be conducted at suspected aggregation centers in Central Alabama in order to determine if they were inhabited by multiple ethnic groups.

While the second model is supported in this thesis, it does have several additional limitations. First, a substantial amount of time may have passed between the depositions of the rocker and check stamped sherds at the Armory site. As it has been suggested that the thickness of ceramic vessels increased during the Late Middle Woodland and Early Late Woodland subperiods (Nance and Mentzer 1980), the thicknesses of check and rocker stamped body sherds were tested using a Mann-Whitney *U* Test (Table 5.3). From this test, it was concluded that the difference between the thicknesses of these sherds was not significant at the .1 alpha level ($p = .319$). There is also no stratigraphic evidence suggesting that an appreciable amount of time occurred between the depositions of one ceramic class from the other. However, this stratigraphic evidence must be tempered with the fact that this is a shallow site, much of which has been disturbed by modern cultivation.

An additional limitation is that a single population living at the Armory site may have reserved certain areas of the site for the usage of specific ceramics. In this scenario, one would expect either ceremonialism or social stratification to play a role in the differential distribution of artifacts. However, this seems unlikely as there is no documented evidence supporting the existence of social stratification during the Middle Woodland period nor are there any apparent ceremonial features located near the mean centers of these two ceramic classes (see Figure 5.3).

At present, it is unclear why populations would have only aggregated during the Late Middle Woodland subperiod, or in the case of the first model, why interaction would suddenly become erratic. While Smith (2009:173) suggests that climate change may be the driving force behind aggregation, it is unclear whether or not this is the case in central Alabama. Before this question can be considered, however, a more refined cultural chronology must first be established. In this manner, potentially causal factors such as climate change or population pressure can be adequately addressed.

Chapter 9: Conclusion

The goal of this research was to assess Woodland-stage interaction and sedentism in central Alabama. In order to address these topics from a diachronic perspective, a cultural chronology was established for central Alabama. Using the periods defined in this chronology, interaction was measured using an information-theoretic approach. This analysis was conducted under the assumption that changes in ceramic diversity positively covaried with inter-regional interaction. The results of this analysis indicated that inter-regional interaction in central Alabama peaked during the Late Middle Woodland subperiod. During the Late Woodland period however, interaction declined sharply, but experienced a slight resurgence during the Terminal Woodland period. Among all the assemblages in the proposed cultural chronology, Armory's was the most diverse. It was suggested, therefore, that the Armory site may have functioned as a nexus of inter-regional interaction during the Late Middle Woodland subperiod.

An attempt was also made to measure the degree to which Middle and Late Woodland populations in central Alabama were sedentary. Given the small sample size of many assemblages included in the analyses of sedentism, only coarse chronological distinctions could be made. As such, Woodland-stage components were classified only as Middle or Late Woodland. The size and quantity of single-component sites, along with their midden and mound frequencies, were analyzed using data from published and unpublished reports as well as the Alabama State Site Files. Among these analyses, relative midden frequency was assumed to be the most reliable indicator of sedentism. Using a Fisher's exact test, it was concluded that middens tended to accumulate more often during the Late Woodland period. There was also a statistically significant increase in the number of sites during the Late Woodland period. None of the other measures produced statistically significant results; however, there was a tendency for Late Woodland sites to be larger than their Middle Woodland counterparts. Given these results, it was inferred that Late Woodland populations were more sedentary relative to their Middle Woodland predecessors.

Building upon the work of Neiman (1995), the mean dissimilarity between ceramic assemblages used to establish the cultural chronology was calculated to determine if inter-assemblage distance (dissimilarity) was an adequate measure of sedentism. It was expected that autonomous and sedentary communities would have relatively dissimilar ceramic assemblages due to the effects of stylistic drift. This was not the case, however, as inter-assemblage distance (dissimilarity) was highest during the Early and Late Middle Woodland subperiods when populations were relatively mobile. Two models were proposed that attempted to account for this phenomenon. The first of these posited that the Late Middle Woodland subperiod was characterized by brief but intensive pulses of interaction. A second, more robust model, was also proposed. According to the latter model, interaction in the form of aggregation caused the ceramic assemblages of the Late Middle Woodland subperiod to become increasingly dissimilar and diverse as various ethnic groups inhabited the same sites for a given period of time. In this manner, the distinctive ethnic groups present at each aggregation center would have created ceramic assemblages that were relatively dissimilar from one another. This scenario is supported by the large quantities of non-local decorative modes present in the Late Middle Woodland components of the proposed Woodland cultural chronology.

An intra-site distributional analysis of the ceramics at the Armory site further supported the second model. At Armory, check stamping, a ceramic mode associated with the Southern Appalachian Tradition and rocker stamping, a mode associated with the Gulf Tradition, were found in two distinct but not mutually exclusive areas of the site. Using a Wilcoxon rank sums test, it was determined that the spatial distribution of these modes was significantly different. It was therefore inferred that the Amory site may have been Late Middle Woodland aggregation center inhabited by at least two distinct ethnic groups.

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Appendix A: Ceramic Counts for Assemblages in the Proposed Cultural Chronology

Terminal Woodland period

	Check Stamped	Complicated Stamped	Simple Stamped	Cord Marked	Fabric Marked	Net Impressed	Incised	Punctated and Pinched	Red Filmed	Rocker Stamped	Brushed
1WX166 (Georges Atlatl Weights)	30	0	0	1	1	1	0	0	0	0	1
1WX43 (Beauford Landing)	57	1	0	4	4	0	0	1	1	0	0
1WX149 (Phillipi)	27	0	0	3	2	0	1	3	0	0	0
1DS157 (Mollette Bend)	24	0	0	4	0	1	2	1	0	0	0

Late Woodland period

	Check Stamped	Complicated Stamped	Simple Stamped	Cord Marked	Fabric Marked	Net Impressed	Incised	Punctated and Pinched	Red Filmed	Rocker Stamped	Brushed
1DS1 (Durant Bend), area 1	477	27	16	26	11	13	17	3	10	0	0
1AU148	1566	0	5	1	0	1	43	9	4	0	1
1AU146	10639	1	3	1	0	1	176	48	12	0	5
1MT209	2726	751	52	32	180	0	9	13	0	1	0

Late Middle Woodland subperiod

	Check Stamped	Complicated Stamped	Simple Stamped	Cord Marked	Fabric Marked	Net Impressed	Incised	Punctated and Pinched	Red Filmed	Rocker Stamped	Brushed
1MT134 (Lower Antioch Branch)	61	29	1	0	4	0	8	5	8	0	0
1DS174 (Armory)	39	7	0	1	2	0	18	10	0	37	0
1DS1 (Durant Bend), area 2	11	5	1	7	1	0	10	0	34	0	0

Early Middle Woodland subperiod

	Check Stamped	Complicated Stamped	Simple Stamped	Cord Marked	Fabric Marked	Net Impressed	Incised	Punctated and Pinched	Red Filmed	Rocker Stamped	Brushed
1AU32	265	1	0	0	0	0	0	0	0	0	1
1DS1 (Durant Bend), area 3	290	22	13	0	7	0	0	1	0	0	0
1MT210	151	15	0	0	0	0	6	1	0	0	0

Appendix B: Material Recovered from the Armory Site

Total number of ceramics larger than 1/2 inch (page 1 of 2)

	1980 Survey	1988 Survey	2007 Excavations	2009 Excavations	Total
Sand/Grit Tempered					
Body					
Plain	42	6	324	344	716
Check Stamped	4	1	19	10	34
Diamond Check Stamped	-	-	1	0	1
Complicated Stamped	1	-	5	1	7
Rocker Stamped	-	-	21	12	33
Dentate Rocker Stamped	-	-	1	1	2
Trailed Incised	-	-	13	1	14
Curvilinear Incised	-	-	-	1	1
Punctated (banded)	-	-	1	-	1
Punctated (fingernail)	-	-	-	2	2
Cord Marked	-	-	-	1	1
Fabric Impressed	-	-	1	1	2
Roughened	-	-	-	1	1
Rim					
Plain, Rolled Lip	-	-	1	-	1
Plain, Straight	-	-	2	3	5
Check Stamped	-	-	2	-	2
Check Stamped with slight rim fold	-	-	2	-	2
Narrowly Incised- false rim fold	-	-	1	-	1
Trailed Incised (2cm below lip)	-	-	1	-	1
Pinched	-	-	-	2	2
Mammiform	-	-	-	1	1
Punctated (circular)	-	-	-	1	1
Punctated (banded)	-	-	-	1	1
Punctated (hemiconical)	-	-	1	-	1
Base					
Plain	-	-	1	-	1
Podal Support	-	-	2	4	6

Total number of ceramics larger than 1/2 inch (page 2 of 2)

	1980 Survey	1988 Survey	2007 Excavations	2009 Excavations	Total
Fiber Tempered					
Body					
Plain	1	-	3	31	35
Grog and Sand/Grit Tempered					
Body					
Incised, Rocker Stamped, and Punctated	-	-	1	-	1
Grog Tempered					
Body					
Plain	1	-	-	-	1
Shell Tempered					
Body					
Plain	2	-	1	-	3
Total	51	7	404	418	880

Ceramic counts from Unit 2A12

	Sand/Grit Tempered Plain	Complicated Stamped	Cord Marked	Punctated (circular)	Fiber Tempered Plain	Total by Level
Level 1 (0-10cm)	40	1	1	1	17	60
Feature 1	-	-	-	-	-	-
Midden below Feature 1	6	-	-	-	3	9
Feature 2	-	-	-	-	0	-
Level 2 (10-20cm)	5	-	-	-	4	9
Level 3 (20-30cm)	1	-	-	-	2	3
Level 4 (30-40cm)	5	-	-	-	-	5
Feature 3	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-
Level 6 (50-60cm)	-	-	-	-	-	-
Feature 4	-	-	-	-	-	-
Level 7 (60-70cm)	-	-	-	-	-	-
Total by Surface Finish	57	1	1	1	26	

Ceramic weights from Unit 2A12

	Sand/Grit Tempered Plain	Complicated Stamped	Cord Marked	Punctated (circular)	Fiber Tempered Plain	Total by Level
Level 1 (0-10cm)	230.3g	5.1g	5.5g	18.1g	222.4g	481.4g
Feature 1	-	-	-	-	-	-
Midden below Feature 1	16.2g	-	-	-	10.4g	26.6g
Feature 2	-	-	-	-	-	-
Level 2 (10-20cm)	17.9g	-	-	-	30.0g	47.9g
Level 3 (20-30cm)	16.9g	-	-	-	8.1g	25.0g
Level 4 (30-40cm)	32.1g	-	-	-	-	32.1g
Feature 3	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-
Level 6 (50-60cm)	-	-	-	-	-	-
Feature 4	-	-	-	-	-	-
Level 7 (60-70cm)	-	-	-	-	-	-
Total by Surface Finish	313.4g	5.1g	5.5g	18.1g	270.9g	

Ceramic counts from Unit 2A15

	Sand/Grit Tempered					Fiber Tempered	Total
	Plain	Check Stamped	Fingernail Punctated	Podal Support	Roughened	Plain	by Level
Level 1 (0-10cm)	23	1	1	1	1	-	27
Level 2 (10-20cm)	2	-	1	-	-	1	4
Level 3 (20-30cm)	3	-	-	-	-	-	3
Level 4 (30-40cm)	-	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-	-
Total by Surface Finish	28	1	2	1	1	1	

Ceramic weights from Unit 2A15

	Sand/Grit Tempered					Fiber Tempered	Total
	Plain	Check Stamped	Fingernail Punctated	Podal Support	Roughened	Plain	by Level
Level 1 (0-10cm)	135.2g	6.8g	5.6g	14.3g	21.2g	-	183.1g
Level 2 (10-20cm)	8.2g	-	4.9g	-	-	2.3g	15.4g
Level 3 (20-30cm)	4.4g	-	-	-	-	-	4.4g
Level 4 (30-40cm)	-	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-	-
Total by Surface Finish	147.8g	6.8g	10.5g	14.3g	21.2g	2.3g	

Ceramic counts from Unit 29A235

	Sand/Grit Tempered Plain	Rocker Stamped	Trailed Incised	Complicated Stamped	Total by Level
Zone 1 (humus: 0-10cm)	-	-	-	-	-
Zone 2 (mound fill: approx. 10-20cm)	-	-	-	-	-
Zone 3 (mound fill: approx. 20-40cm)	4	-	-	-	4
Zone 4 (mound fill: approx. 40-50cm)	3	-	-	-	3
Zone 5 (mound fill: approx. 50-70cm)*	-	-	-	-	-
Zone 6 (mound fill: approx. 50-70cm)*	7	1	1	-	9
Zone 7 (mound fill: approx. 70-85cm)	3	1	-	1	5
Total by Decoration	17	2	1	1	

Ceramic weights from Unit 29A235

	Sand/Grit Tempered Plain	Rocker Stamped	Trailed Incised	Complicated Stamped	Total by Level
Zone 1 (humus: 0-10cm)	-	-	-	-	-
Zone 2 (mound fill: approx. 10-20cm)	-	-	-	-	-
Zone 3 (mound fill: approx. 20-40cm)	25.5g	-	-	-	25.5g
Zone 4 (mound fill: approx. 40-50cm)	4.7g	-	-	-	4.7g
Zone 5 (mound fill: approx. 50-70cm)*	-	-	-	-	-
Zone 6 (mound fill: approx. 50-70cm)*	22.7g	10.0g	6.5g	-	39.2g
Zone 7 (mound fill: approx. 70-85cm)	8.6g	12.7g	-	31.8g	53.1g
Total by Surface Finish	60.8g	22.7g	6.5g	31.8g	

*Zones 5 and 6 occur at approximately the same depth

Ceramic counts from Unit 34A145

	Sand/Grit Tempered									Fiber Tempered	Total
	Plain	Check Stamped	Rocker Stamped	Podal Support	Fabric Impressed	Curvilinear Incised	Trailed Incised	Pinched	Mammiform	Plain	by Level
Level 1 (0-10cm)	36	3	2	-	-	-	1	-	-	-	42
Level 2 (10-20cm)	51	2	1	1	-	-	-	1	-	-	56
Level 3 (20-30cm)	55	1	1*	-	1	1	-	-	1	2	61
Level 4 (30-40cm)	26	1	3	1	-	-	-	-	-	-	31
Level 5 (40-50cm)	12	-	2	-	-	-	-	-	-	-	14
Total by Surface Finish	180	7	9	2	1	1	1	1	1	2	

Ceramic weights from Unit 34A145

	Sand/Grit Tempered									Fiber Tempered	Total
	Plain	Check Stamped	Rocker Stamped	Podal Support	Fabric Impressed	Curvilinear Incised	Trailed Incised	Pinched	Mammiform	Plain	by Level
Level 1 (0-10cm)	125.5g	8.4g	16.1g	-	-	-	-	-	-	-	150.0g
Level 2 (10-20cm)	142.5	6.2g	1.9g	1.6g	-	-	-	3.7g	-	-	155.9g
Level 3 (20-30cm)	271.2g	11.3g	6.2g*	-	8.2g	5.6g	-	-	7.7g	5.7g	315.9g
Level 4 (30-40cm)	115.9g	9.4g	33.2g	11.0g	-	-	-	-	-	-	169.5g
Level 5 (40-50cm)	62.8g	-	9.1g	-	-	-	-	4.3g	-	-	76.2g
Total by Surface Finish	717.9g	35.3g	66.5g	12.6g	8.2g	5.6g	2.4g	8.0g	7.7g	5.7g	

* This sherd was stamped using a dentate instrument

Ceramic counts from Unit 35A145

	Sand/Grit Tempered					Fiber Tempered	Total
	Plain	Check Stamped	Rocker Stamped	Podal Support	Pinched	Plain	by Level
Level 1 (0-10cm)	12	-	3	-	-	-	15
Level 2 (10-20cm)	23	-	-	1	1	-	25
Level 3 (20-30cm)	24	1	1	-	-	1	27
Level 4 (30-40cm)	6	1	-	-	-	1	8
Level 5 (40-50cm)	2	-	-	-	-	-	2
Total by Surface Finish	67	2	4	1	1	2	

Ceramic weights from Unit 35A145

	Sand/Grit Tempered					Fiber Tempered	Total
	Plain	Check Stamped	Rocker Stamped	Podal Support	Pinched	Plain	by Level
Level 1 (0-10cm)	34.6g	-	10.2g	-	-	-	44.8g
Level 2 (10-20cm)	75.4g	-	-	8.1g	3.3g	-	86.8g
Level 3 (20-30cm)	129.8g	6.2g	16.8g	-	-	2.6g	155.4g
Level 4 (30-40cm)	28.0g	13.5g	-	-	-	1.9g	43.4g
Level 5 (40-50cm)	6.9g	-	-	-	-	-	6.9g
Total by Surface Finish	273.9g	19.7g	27.0g	8.1g	3.3g	4.5g	

Ceramic counts from Unit 36A147

	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Punctated (banded)	Diamond Check Stamped	Complicated Stamped	**Total by Level**
Midden (0-52cm)	52	1	10	5	2	1	1	72
Features 5-7	-	-	-	-	-	-	-	-
Total by Surface Finish	52	1	10	5	2	1	1	72

Ceramic weights from Unit 36A147

	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Punctated (banded)	Diamond Check Stamped	Complicated Stamped	**Total by Level**
Midden (0-52cm)	165.9g	6.4g	38.3g	18.1g	10.2g	5.5g	14.4g	258.8g
Features 5-7	-	-	-	-	-	-	-	-
Total by Decoration	165.9g	6.4g	38.3g	18.1g	10.2g	5.5g	14.4g	

Ceramic counts from primary mound test units

	Sand/Grit Tempered Plain	Punctated	Fiber Tempered Plain	**Total by Level**
Test 1 (STP S2)	9	1	3	14
Test 2	-	-	-	-
Test 3	-	-	-	-
Total by Surface Finish	9	1	3	

Ceramic weights from primary mound test units

	Sand/Grit Tempered Plain	Punctated	Fiber Tempered Plain	**Total by Level**
Test 1 (STP S2)	70.8g	8.9g	7.4g	87.1g
Test 2	-	-	-	-
Test 3	-	-	-	-
Total by Surface Finish	70.8g	8.9g	7.4g	

Ceramic counts and weights from shovel test pits (page 1 of 6)

Shovel Test Pits	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Curvilinear Incised	Complicated Stamped	Podal Support	Punctated	Fabric Impressed	Sand/Grog Tempered Incised, Rocker Stamped, and Punctated	Shell Tempered Plain
AO											
total count- 0	1	-	-	-	-	-	-	-	-	-	-
total weight- 1.3g	1.3g	-	-	-	-	-	-	-	-	-	-
A1											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
A2											
total count- 1	1	-	-	-	-	-	-	-	-	-	-
total weight- 9.0g	3.1g	-	-	-	-	-	-	-	-	-	-
A3											
total count- 1	1	-	-	-	-	-	-	-	-	-	-
total weight- 3.6g	3.6	-	-	-	-	-	-	-	-	-	-
A4											
total count- 3	1	1	-	-	-	1	-	-	-	-	-
total weight- 13.0g	1.9g	1.6g	-	-	-	9.5g	-	-	-	-	-
A5											
total count- 2	2	-	-	-	-	-	-	-	-	-	-
total weight- 5.7g	5.7g	-	-	-	-	-	-	-	-	-	-
A6											
total count- 2	2	-	-	-	-	-	-	-	-	-	-
total weight- 5.0g	5.0g	-	-	-	-	-	-	-	-	-	-
A7											
total count- 8	6	2	-	-	-	-	-	-	-	-	-
total weight- 36.9g	24.9g	12.0g	-	-	-	-	-	-	-	-	-
A8											
total count- 16	12	1	2	1	-	-	-	-	-	-	-
total weight- 56.8g	34.0g	8.8g	12.4g	1.6g	-	-	-	-	-	-	-
A9											
total count- 13	11	1	-	-	1	-	-	-	-	-	-
total weight- 35.6g	29.3g	2.4g	-	-	3.9g	-	-	-	-	-	-

Ceramic counts and weights from shovel test pits (page 2 of 6)

Shovel Test Pits	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Curvilinear Incised	Complicated Stamped	Podal Support	Punctated	Fabric Impressed	Sand/Grog Tempered Incised, Rocker Stamped, and Punctated	Shell Tempered Plain
A10											
total count- 2	2	-	-	-	-	-	-	-	-	-	-
total weight- 7.0g	7.0g	-	-	-	-	-	-	-	-	-	-
A11											
total count- 2	1	-	-	-	-	1	-	-	-	-	-
total weight- 18.5g	9.1g	-	-	-	-	9.4g	-	-	-	-	-
A12											
total count- 3	2	-	1	-	-	-	-	-	-	-	-
total weight- 8.7g	4.7g	-	4.0g	-	-	-	-	-	-	-	-
A13											
total count- 3	1	-	2	-	-	-	-	-	-	-	-
total weight- 14.7g	4.5g	-	10.2g	-	-	-	-	-	-	-	-
B1											
total count- 4	2	1	-	-	-	1	-	-	-	-	-
total weight- 23.3g	6.6g	2.5g	-	-	-	14.2g	-	-	-	-	-
B2											
total count- 2	2	-	-	-	-	-	-	-	-	-	-
total weight- 8.6g	8.6g	-	-	-	-	-	-	-	-	-	-
B3											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
B4											
total count- 2	1	1	-	-	-	-	-	-	-	-	-
total weight- 7.2g	6.1g	1.1g	-	-	-	-	-	-	-	-	-
B5											
total count- 14	13	1	-	-	-	-	-	-	-	-	-
total weight- 55.6g	39.8g	15.8g	-	-	-	-	-	-	-	-	-
B6											
total count- 13	9	4	-	-	-	-	-	-	-	-	-
total weight- 50.1g	25.7g	24.4g	-	-	-	-	-	-	-	-	-

Ceramic counts and weights from shovel test pits (page 3 of 6)

Shovel Test Pits	Sand/Grit Tempered									Sand/Grog Tempered	Shell Tempered
	Plain	Check Stamped	Rocker Stamped	Trailed Incised	Curvilinear Incised	Complicated Stamped	Podal Support	Punctated	Fabric Impressed	Incised, Rocker Stamped, and Punctated	Plain
B7											
total count- 7	11	-	-	-	-	-	-	-	-	1	1
total weight- 52.1g	46.5	-	-	-	-	-	-	-	-	7.9g	.9g
B8											
total count- 1	1	-	-	-	-	-	-	-	-	-	-
total weight- 9.7g	9.7g	-	-	-	-	-	-	-	-	-	-
B9											
total count- 4	3	-	1	-	-	-	-	-	-	-	-
total weight- 12.0g	6.4g	-	5.6g	-	-	-	-	-	-	-	-
B10											
total count- 3	1	-	-	1	-	-	1	-	-	-	-
total weight- 21.1g	2.3g	-	-	4.3g	-	-	14.5g	-	-	-	-
B11											
total count- 3	3	-	-	-	-	-	-	-	-	-	-
total weight- 15.5g	15.5g	-	-	-	-	-	-	-	-	-	-
B12											
total count- 2	2	-	-	-	-	-	-	-	-	-	-
total weight- 9.6g	9.6g	-	-	-	-	-	-	-	-	-	-
C1											
total count- 4	4	-	-	-	-	-	-	-	-	-	-
total weight- 7.3g	7.3	-	-	-	-	-	-	-	-	-	-
C2											
total count- 8	8	-	-	-	-	-	-	-	-	-	-
total weight- 35.3g	35.3g	-	-	-	-	-	-	-	-	-	-
C3											
total count- 6	5	-	-	1	-	-	-	-	-	-	-
total weight- 25.1g	22.8g	-	-	2.3g	-	-	-	-	-	-	-
C4											
total count- 24	24	-	-	-	-	-	-	-	-	-	-
total weight- 59.6g	59.6g	-	-	-	-	-	-	-	-	-	-

Ceramic counts and weights from shovel test pits (page 4 of 6)

Shovel Test Pits	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Curvilinear Incised	Complicated Stamped	Podal Support	Punctated	Fabric Impressed	Sand/Grog Tempered Incised, Rocker Stamped, and Punctated	Shell Tempered Plain
C3											
total count- 6	5	-	-	1	-	-	-	-	-	-	-
total weight- 25.1g	22.8g	-	-	2.3g	-	-	-	-	-	-	-
C4											
total count- 24	24	-	-	-	-	-	-	-	-	-	-
total weight- 59.6g	59.6g	-	-	-	-	-	-	-	-	-	-
C5											
total count- 18	17	-	-	-	-	-	1	-	-	-	-
total weight- 51.9	46.5g	-	-	-	-	-	5.4g	-	-	-	-
C6											
total count- 24	18	4	1	1	-	-	-	-	-	-	-
total weight- 96.5g	69.4g	21.2g	4.8g	1.1g	-	-	-	-	-	-	-
C7											
total count- 5	5	-	-	-	-	-	-	-	-	-	-
total weight- 10.3g	10.3	-	-	-	-	-	-	-	-	-	-
D1											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
D2											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
D3											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
D4											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
D5											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-

Ceramic counts and weights from shovel test pits (page 5 of 6)

Shovel Test Pits	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Curvilinear Incised	Complicated Stamped	Podal Support	Punctated	Fabric Impressed	Sand/Grog Tempered Incised, Rocker Stamped, and Punctated	Shell Tempered Plain
D6											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
D7											
total count- 1	1	-	-	-	-	-	-	-	-	-	-
total weight- 4.1g	4.1g	-	-	-	-	-	-	-	-	-	-
D8											
total count- 6	5	-	-	-	-	-	-	1	-	-	-
total weight- 14.6g	10.6g	-	-	-	-	-	-	4.0g	-	-	-
E1											
total count- 1	1	-	-	-	-	-	-	-	-	-	-
total weight- 7.0g	7.0g	-	-	-	-	-	-	-	-	-	-
E2											
total count- 3	3	-	-	-	-	-	-	-	-	-	-
total weight- 7.3g	7.3g	-	-	-	-	-	-	-	-	-	-
E3											
total count- 10	9	-	-	1	-	-	-	-	-	-	-
total weight- 22.7g	19.0g	-	-	3.7g	-	-	-	-	-	-	-
E4											
total count- 15	10	1	1	3	-	-	-	-	-	-	-
total weight- 44.9g	32.3g	4.1g	1.5g	7.0g	-	-	-	-	-	-	-
E5											
total count- 13	10	2	-	-	-	-	-	-	1	-	-
total weight- 66.4g	51.7g	5.1g	-	-	-	-	-	-	9.6g	-	-
E6											
total count- 9	9	-	-	-	-	-	-	-	-	-	-
total weight- 30.8g	30.8g	-	-	-	-	-	-	-	-	-	-
E7											
total count- 3	1	-	1	-	1	-	-	-	-	-	-
total weight- 12.2g	2.7g	-	1.6g	-	7.9	-	-	-	-	-	-

Ceramic counts and weights from shovel test pits (page 6 of 6)

Shovel Test Pits	Sand/Grit Tempered Plain	Check Stamped	Rocker Stamped	Trailed Incised	Curvilinear Incised	Complicated Stamped	Podal Support	Punctated	Fabric Impressed	Sand/Grog Tempered Incised, Rocker Stamped, and Punctated	Shell Tempered Plain
E8											
total count- 15	14	-	1	-	-	-	-	-	-	-	-
total weight- 75.3g	65.9g	-	9.4g	-	-	-	-	-	-	-	-
E9											
total count- 7	7	-	-	-	-	-	-	-	-	-	-
total weight- 22.9g	22.9g	-	-	-	-	-	-	-	-	-	-
F1											
total count- 6	4	2	-	-	-	-	-	-	-	-	-
total weight- 22.5g	14.1g	8.4g	-	-	-	-	-	-	-	-	-
S1											
total count- 2	1	1	-	-	-	-	-	-	-	-	-
total weight- 6.0g	2.5g	3.5g	-	-	-	-	-	-	-	-	-
S2 (Mound Test 1)											
total count- 2	2	-	-	-	-	-	-	-	-	-	-
total weight- 6.0g	6.0g	-	-	-	-	-	-	-	-	-	-
S3											
total count- 0	-	-	-	-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-	-	-	-	-
2009STP1											
total count- 7	7	-	-	-	-	-	-	-	-	-	-
total weight- 27.3g	27.3g	-	-	-	-	-	-	-	-	-	-

Lithic material from Unit 2A12

Counts in parentheses

	Core	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Red Ocher	Uniface	Unmodified or Naturally Modified Stone	**Total by Level**
Level 1 (0-10cm)	-	265.7g	6012.7g	3.6g (1)	10.6g (2)	-	-	-	3674.0g	9966.6g
Feature 1	-	-	-	-	-	-	-	-	-	0g
Midden below Feature 1	-	24.6g	603.6g	-	-	-	-	-	194.3g	822.5g
Feature 2	-	6.1g	933.8g	-	-	24.4g (1)	-	-	2258.7g	3223.0g
Level 2 (10-20cm)	-	323.3g	1952.9g	53.0g (1)	10.6 (1)	41.1g (3)	-	-	1885.2g	4266.1g
Level 3 (20-30cm)	-	241.6g	3131.9g	-	28.3g (3)	-	-	78.2g (1)	3175.9g	6655.9g
Level 4 (30-40cm)	40.9g (1)	307.9g	2568.0g	76.3g (4)	20.4g (2)	23.3g (1)	-	-	942.1g	3978.9g
"Feature 3" (root disturbance)	-	-	-		-	-		-	-	0g
Level 5 (40-50cm)	-	158.4g	1216.0g	61.1g (1)	3.5g (1)	-	13.5g	-	150.0g	1602.5g
Level 6 (50-60cm)	47.7g (1)	315.6g	389.9g	3.4g (2)	11.1g (1)	20.5g (1)	-	-	92.7g	880.6g
Feature 4	-	11.1g	129.8g	-	-	-	-	-	22.2g	163.1g
Level 7 (60-70cm)	-	21.1g	48.6g	-	7.8g (1)	-	-	-	7.7g	85.2g
Total by Category	88.6g (2)	1675.4g	16987.2g	197.4g (9)	92.3g	109.3g (6)	13.5g	78.2g (1)	12402.8g	

Lithic material from Unit 2A15

Counts in parentheses

	Debitage	Fire-Cracked Rock	Petrified Wood	Projectile Point	Other Biface	Unmodified or Naturally Modified Stone	**Total by Level**
Level 1 (0-10cm)	212.6g	1992.6g	4.2g (1)	38.6g (8)	32.7g (1)	1673.0g	3953.7g
Level 2 (10-20cm)	334.3g	4356.5g	-	-	-	3756.7g	8447.5g
Level 3 (20-30cm)	247.2g	1204.8g	-	22.1g (3)	-	1400.8g	2874.9g
Level 4 (30-40cm)	227.7g	437.6g	3.5g (2)	-	-	227.0g	895.8g
Level 5 (40-50cm)	122.2g	149.1g	-	-	-	59.5g	330.8g
Total by Category	1144.0g	8140.6g	7.7g (3)	60.7g (11)	32.7g (1)	7117.0g	

Lithic material from Unit 29A235

Counts in parentheses

	Debitage	Fire-Cracked Rock	Projectile Point	**Total by Level**
Zone 1 (humus: 0-10cm)	-	-	-	-
Zone 2 (mound fill: approx. 10-20cm)	-	.5g	-	.5g
Zone 3 (mound fill: approx. 20-40cm)	1.8g	115.6g	-	117.4g
Zone 4 (mound fill: approx. 40-50cm)	1.7g	1.3g	-	3.0g
Zone 5 (mound fill: approx. 50-70cm)*	-	11.6g	-	11.6g
Zone 6 (mound fill: approx. 50-70cm)*	2.2g	102.0g	-	104.2g
Zone 7 (mound fill: approx. 70-85cm)	15.2g	193.8g	8.7g (2)	217.7g
Total by Category	21.4g	424.3g	8.7g (2)	

*Zones 5 and 6 occur at approximately the same depth

Lithic material from Unit 34A145

Counts in parentheses

	Debitage	Ground Ferruginous Sandstone	Fire-Cracked Rock	Non-Projectile Point Biface	Unmodified or Naturally Modified Stone	**Total by Level**
Level 1 (0-10cm)	63.2g	-	1471.5g	9.9g (1)	76.5g	1621.1g
Level 2 (10-20cm)	104.9g	-	1802.4g	-	897.6g	2804.9g
Level 3 (20-30cm)	53.0g	29.7g (2)	1302.6g	28.4g (1)	194.5g	1608.2g
Level 4 (30-40cm)	34.1g	-	779.5g	-	231.1g	1044.7g
Level 5 (40-50cm)	3.8g	-	236.0g		134.1g	373.9g
Total by Category	268.0g	29.7g (2)	5592.0g	38.3g (2)	1533.8g	

Lithic material from Unit 35A145

Counts in parentheses

	Debitage	Fire-Cracked Rock	Unmodified or Naturally Modified Stone	**Total by Level**
Level 1 (0-10cm)	16.9g	674.8g	57.7g	749.4g
Level 2 (10-20cm)	47.4g	962.0g	205.3g	1214.7g
Level 3 (20-30cm)	42.5g	650.4g	389.3g	1082.2g
Level 4 (30-40cm)	11.2g	229.3g	40.2g	280.7g
Level 5 (40-50cm)	-	109.4g	-	109.4g
Total by Category	118.0g	2625.9g	507.5g	

Lithic material from Unit 36A147

Counts in parentheses

	Debitage	Fire-Cracked Rock	Projectile Point	**Total by Level**
Midden (0-52cm)	35.5g	393.7g	9.9g (1)	439.1g
Features 5-7	-	-	-	0g
Total by Category	35.5g	393.7g	9.9g (1)	

Lithic material from mound test units

Counts in parentheses

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Uniface	**Total by Level**
Test 1	50.0g	169.3g	97.6g (1)	91.7g (1)	408.6g
Test 2	?g (1)	-	-	-	?g (1)
Test 3	14.0g	283.0g	-	-	297.0g
Total by Category	>64.0g	452.3g	97.6g (1)	91.7g (1)	

Lithic material from shovel test pits (page 1 of 6)

Shovel Test Pits

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
AO							
count-	-	-	-	-	-	2	-
total weight- 1178.4g	32.0g	294.4g	-	-	-	852.0g	-
A1							
count-	-	-	-	-	-	-	-
total weight- 404.3g	22.7g	381.6g	-	-	-	-	-
A2							
count-	-	-	-	-	-	-	-
total weight- 300.1g	40.9g	259.2g	-	-	-	-	-
A3							
count-	-	-	-	1	-	-	-
total weight- 420.3g	16.8g	396.3g	-	7.2g	-	-	-
A4							
count-	-	-	-	-	-	-	-
total weight- 45.1g	35.6g	9.5g	-	-	-	-	-
A5							
count-	-	-	-	-	-	-	-
total weight- 20.4g	20.4g	-	-	-	-	-	-
A6							
count-	-	-	-	-	-	-	-
total weight- 570.0g	25.1g	292.7g	-	-	-	-	252.2g
A7							
count-	-	-	-	-	-	1	-
total weight- 894.0g	7.4g	137.0g	-	-	-	749.6g	-
A8							
count-	-	-	-	-	-	-	-
total weight- 130.0g	9.2g	120.8g	-	-	-	-	-
A9							
count-	-	-	-	-	-	-	-
total weight- 37.9g	3.7g	34.2g	-	-	-	-	-

Lithic material from shovel test pits (page 2 of 6)

Shovel Test Pits

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
A10							
count-	-	-	-	-	-	-	-
total weight- 3.5g	-	3.5g	-	-	-	-	-
A11							
count-	-	-	-	-	-	-	-
total weight- 177.8g	4.6g	173.2g	-	-	-	-	-
A12							
count-	-	-	-	-	-	-	-
total weight- 126.7g	6.9g	119.8g	-	-	-	-	-
A13							
count-	-	-	-	1	-	-	-
total weight- 204.6g	6.4g	187.0g	-	11.2g	-	-	-
B1							
count-	-	-	2	-	-	-	-
total weight- 85.0g	29.9g	-	55.1g	-	-	-	-
B2							
count-	-	-	-	-	-	-	-
total weight- 63.6g	10.8g	52.8g	-	-	-	-	-
B3							
count-	-	-	-	-	-	-	-
total weight- 251.3g	6.6g	244.7g	-	-	-	-	-
B4							
count-	-	-	-	-	-	-	-
total weight- 103.4g	17.4g	86.0g	-	-	-	-	-
B5							
count-	-	-	-	-	-	-	-
total weight- 18.8g	18.8g	-	-	-	-	-	-
B6							
count-	-	-	-	-	-	-	-
total weight- 530.2g	12.2g	511.4g	-	-	-	-	6.6g

Lithic material from shovel test pits (page 3 of 6)

Shovel Test Pits

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
B7							
count-	-	-	2	-	-	-	-
total weight- 297.8g	25.7g	227.7g	44.4g	-	-	-	-
B8							
count-	-	-	-	-	-	-	-
total weight- 29.9g	6.1g	23.8g	-	-	-	-	-
B9							
count-	-	-	-	-	-	-	-
total weight- 79.0g	3.2g	75.8g	-	-	-	-	-
B10							
count-	-	-	-	-	-	-	-
total weight- 100.6g	-	100.6g	-	-	-	-	-
B11							
count-	-	-	-	-	-	-	-
total weight- 39.3g	7.7g	31.6g	-	-	-	-	-
B12							
count-	-	-	-	-	-	-	-
total weight- 56.2g	-	48.6g	-	-	-	-	7.6g
C1							
count-	-	-	-	-	-	-	-
total weight- 221.7g	12.4g	188.9g	-	-	-	-	20.4g
C2							
count-	-	-	-	-	-	-	-
total weight- 213.2g	5.4g	207.8g	-	-	-	-	-
C3							
count-	-	-	-	-	-	-	-
total weight- 124.4g	3.7g	120.7g	-	-	-	-	-
C4							
count-	-	-	-	-	-	-	-
total weight- 84.4g	6.8g	77.6g	-	-	-	-	-
C5							
count-	-	-	-	-	-	-	-
total weight- 202.8g	29.9g	170.2g	-	-	-	-	2.7g

Lithic material from shovel test pits (page 4 of 6)

Shovel Test Pits

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
C6							
count-	-	-	1	1	-	-	-
total weight- 386.1g	3.8g	355.8g	14.9g	11.6g	-	-	-
C7							
count-	-	-	-	-	-	-	-
total weight- 61.9g	4.2g	57.7g	-	-	-	-	-
D1							
count-	-	-	-	-	-	-	-
total weight- 55.6g	1.4g	54.2g	-	-	-	-	-
D2							
count-	-	-	-	-	-	-	-
total weight- 26.8g	-	26.8g	-	-	-	-	-
D3							
count-	-	-	-	-	-	-	-
total weight- 12.4g	.2g	12.2g	-	-	-	-	-
D4							
count-	-	-	-	-	-	-	-
total weight- 18.6g	-	18.6g	-	-	-	-	-
D5							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D6							
count-	-	-	-	-	-	-	-
total weight- 19.5g	-	19.5g	-	-	-	-	-
D7							
count-	-	-	-	-	-	-	-
total weight- 50.7g	9.1g	41.6g	-	-	-	-	-
D8							
count-	-	-	-	-	-	-	-
total weight- 56.9g	-	56.9g	-	-	-	-	-
E1							
count-	-	-	-	-	-	-	-
total weight- 430.1g	60.5g	369.6g	-	-	-	-	-

Lithic material from shovel test pits (page 5 of 6)

Shovel Test Pits

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
E2							
count-	-	-	-	-	-	-	-
total weight- 228.4g	14.2g	214.2g	-	-	-	-	-
E3							
count-	-	-	-	-	-	-	-
total weight- 143.6g	38.4g	105.2g	-	-	-	-	-
E4							
count-	-	-	-	-	1	-	-
total weight- 214.1g	49.4g	141.1g	-	-	23.6g	-	-
E5							
count-	-	-	-	-	-	-	-
total weight- 311.1g	15.4g	295.7g	-	-	-	-	-
E6							
count-	-	-	1	-	-	-	-
total weight- 695.3g	2.2g	564.2g	128.9g	-	-	-	-
E7							
count-	-	-	-	-	-	-	-
total weight- 36.3g	7.2g	29.1g	-	-	-	-	-
E8							
count-	-	-	-	-	-	-	-
total weight- 54.4g	10.0g	44.4g	-	-	-	-	-
E9							
count-	-	-	-	1	-	-	-
total weight- 101.6g	21.5g	70.5g	-	9.6g	-	-	-
F1							
count-	-	-	-	1	-	-	-
total weight- 114.6g	14.5g	84.3g	-	15.8g	-	-	-
S1							
count-	-	-	-	-	-	-	-
total weight- 355.5g	10.5g	345.0g	-	-	-	-	-

Lithic material from shovel test pits (page 6 of 6)

Shovel Test Pits

	Debitage	Fire-Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
S2 (Mound Test 1)							
count-	-	-	1	-	1	1	-
total weight- 458.6g	50.0g	169.3g	97.6g	-	24.1g	91.7g	25.9g
2009STP1							
count-	-	-	-	-	-	-	-
total weight- 53.3g	-	53.3g	-	-	-	-	-

Lithic material from the 1980 and 1988 surveys

Counts in parentheses

	Debitage	Fire- Cracked Rock	Ground Ferruginous Sandstone	Projectile Point	Other Biface	Uniface	Unmodified/Naturally Modified Stone
1988 Survey	42.9g	8.8g	30.5g (1)	13.8g (3)	91.3g (5)	-	-
1980 Survey	131.7g	131.7g	344.8g (3)	8.5g (1)	43.0g (3)	14.8g (1)	-

Historic/modern material from Unit 2A12

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Level 1 (0-10cm)	-	-	-	-	19.7g (4)	-	-	19.7g
Feature 1	-	-	-	-	-	-	-	-
Midden below Feature 1	-	-	-	-	-	-	-	-
Feature 2	-	-	-	-	-	-	-	-
Level 2 (10-20cm)	-	-	-	-	-	-	-	-
Level 3 (20-30cm)	-	-	-	-	-	-	-	-
Level 4 (30-40cm)	-	-	-	-	-	-	-	-
"Feature 3" (root disturbance)	-	-	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-	-	-
Level 6 (50-60cm)	-	-	-	-	-	-	-	-
Feature 4	-	-	-	-	-	-	-	-
Level 7 (60-70cm)	-	-	-	-	-	-	-	-
Total by Category	-	-	-	-	19.7g (4)	-	-	-

Historic/modern material from Unit 2A15

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Level 1 (0-10cm)	61.0g (2)	-	-	.2g (1)	154.9g (24)	-	-	216.1g
Level 2 (10-20cm)	-	-	-	-	-	-	-	-
Level 3 (20-30cm)	-	-	-	-	-	-	-	-
Level 4 (30-40cm)	-	-	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-	-	-
Total by Category	61.0g (2)	-	-	.2g (1)	154.9g (24)	-	-	

Historic/modern material from Unit 29A235

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Zone 1 (humus: 0-10cm)	-	-	-	-	-	-	-	-
Zone 2 (mound fill: approx. 10-20cm)	1.5g (3)	-	-	-	-	-	1.6g (1)	3.1g
Zone 3 (mound fill: approx. 20-40cm)	-	-	-	-	.8g (2)	-	-	.8g
Zone 4 (mound fill: approx. 40-50cm)	-	-	-	-	-	-	-	-
Zone 5 (mound fill: approx. 50-70cm)*	-	-	-	-	-	-	-	-
Zone 6 (mound fill: approx. 50-70cm)*	-	-	-	-	-	-	-	-
Zone 7 (mound fill: approx. 70-85cm)	-	-	-	-	-	-	-	-
Total by Category	1.5g (3)	-	-	.6g (5)	.8g (2)	-	1.6g (1)	

*Zones 5 and 6 occur at approximately the same depth

Historic/modern material from Unit 34A145

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Level 1 (0-10cm)	78.1g (5)	-	.3g (1)	1.0g (1)	3.7g (2)	3.6g (1)	-	86.7g
Level 2 (10-20cm)	5.4g (1)	-	5.0g (4)	2.3g (2)	1.0g (4)	-	-	13.7g
Level 3 (20-30cm)	-	-	-	-	-	-	-	-
Level 4 (30-40cm)	-	-	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-	-	-
Total by Category	83.5g (6)	-	5.3g (5)	3.3g (3)	4.7g (6)	3.6g (1)	-	

Historic/modern material from Unit 35A145

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Level 1 (0-10cm)	-	-	-	5.2g (1)	-	-	-	5.2g
Level 2 (10-20cm)	-	-	-	21.7g (3)	-	-	-	21.7g
Level 3 (20-30cm)	-	-	-	-	-	-	-	-
Level 4 (30-40cm)	-	-	-	-	-	-	-	-
Level 5 (40-50cm)	-	-	-	-	-	-	-	-
Total by Category	-	-	-	26.9g (4)	-	-	-	

Historic/modern material from Unit 36A147

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Midden (0-52cm)	-	-	-	-	-	-	-	-
Features 5-7	-	-	-	-	-	-	-	-
Total by Category	-	-	-	-	-	-	-	-

Historic/modern material from mound test units

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic	**Total by Level**
Test 1	-	-	-	41.0g (10)	-	-	-	41.0g (10)
Test 2	-	-	-	-	-	-	-	-
Test 3	-	-	-	-	-	-	-	-
Total by Category	-	-	-	41.0g (10)	-	-	-	

Historic/modern material from shovel test pits (page 1 of 6)

Shovel Test Pit	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
AO							
count-	-	-	-	1	-	-	-
total weight- 1.4g	-	-	-	1.4g	-	-	-
A1							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A2							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A3							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A4							
count-	1	-	2	4	18	-	-
total weight- 28.7g	5.8g	-	3.1g	13.0g	6.8g	-	-
A5							
count-	-	-	-	2	-	-	-
total weight- 11.4g	-	-	-	11.4g	-	-	-
A6							
count-	1	-	-	1	-	-	-
total weight- 150.3g	148.6g	-	-	1.7g	-	-	-
A7							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A8							
count-	2	-	-	-	4	-	-
total weight- 2.9g	1.4g	-	-	-	1.5g	-	-
A9							
count-	2	-	-	-	-	-	-
total weight- 2.3g	2.3g	-	-	-	-	-	-

Historic/modern material from shovel test pits (page 2 of 6)

Shovel Test Pit

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
A7							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A8							
count-	2	-	-	-	4	-	-
total weight- 2.9g	1.4g	-	-	-	1.5g	-	-
A9							
count-	2	-	-	-	-	-	-
total weight- 2.3g	2.3g	-	-	-	-	-	-
A10							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A11							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
A12							
count-	17	-	-	-	-	-	-
total weight- 13.1g	13.1g	-	-	-	-	-	-
A13							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
B1							
count-	-	-	1	-	2	-	-
total weight- 13.5g	-	-	12.9g	-	.6g	-	-
B2							
count-	-	-	1	6	5	-	-
total weight- 25.4g	-	-	14.7g	9.2g	1.5g	-	-
B3							
count-	14	-	-	-	7	-	-
total weight- 24.0g	16.5g	-	-	-	7.5g	-	-

Historic/modern material from shovel test pits (page 3 of 6)

Shovel Test Pit

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
B4							
count-	-	-	-	2	2	-	-
total weight- 14.3g	-	-	-	11.9g	2.4g	-	-
B5							
count-	-	-	-	1	1	-	-
total weight- 1.6g	-	-	-	.1g	1.5g	-	-
B6							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
B7							
count-	-	-	-	1	-	-	-
total weight- 5.0g	-	-	-	5.0g	-	-	-
B8							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
B9							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
B10							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
B11							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
B12							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
C1							
count-	-	-	-	-	2	-	-
total weight- 14.7g	-	-	-	-	14.7g	-	-

Historic/modern material from shovel test pits (page 4 of 6)

Shovel Test Pit	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
C2							
count-	4	-	1	1	-	-	-
total weight- 21.0g	11.4g	-	9.1g	.5g	-	-	-
C3							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
C4							
count-	10	-	1	-	1	-	-
total weight- 48.0g	42.9g	-	2.8g	-	2.3g	-	-
C5							
count-	1	-	-	1	-	-	-
total weight- 2.0g	1.6g	-	-	.4g	-	-	-
C6							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
C7							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D1							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D2							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D3							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D4							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-

Historic/modern material from shovel test pits (page 5 of 6)

Shovel Test Pit

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
D5							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D6							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D7							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
D8							
count-	-	-	-	-	-	-	1
total weight- 16.5g	-	-	-	-	-	-	16.5g
E1							
count-	-	-	-	1	-	-	-
total weight- .6g	-	-	-	.6g	-	-	-
E2							
count-	-	-	-	3	5	-	-
total weight- 6.6g	-	-	-	5.0g	1.6g	-	-
E3							
count-	-	-	-	-	2	-	-
total weight- 1.6g	-	-	-	-	1.6g	-	-
E4							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
E5							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
E6							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-

Historic/modern material from shovel test pits (page 6 of 6)

Shovel Test Pit

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
E7							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
E8							
count-	-	-	1	-	-	-	-
total weight- 1.9g	-	-	1.9g	-	-	-	-
E9							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
F1							
count-	-	1	-	-	1	-	-
total weight- 3.9g	-	2.2	-	-	1.7g	-	-
S1							
count-	-	-	-	-	1	-	-
total weight- 7.1g	-	-	-	-	7.1g	-	-
S2 (Mound Test 1)							
count-	-	-	-	10	-	-	-
total weight- 41.0g	-	-	-	41.0g	-	-	-
S3							
count-	-	-	-	-	-	-	-
total weight- 0g	-	-	-	-	-	-	-
2009STP1							
count-	1	-	-	1	-	-	-
total weight- 5.3g	.4g	-	-	4.9g	-	-	-

Historic/modern material from the 1988 and 1980 surveys

Counts in parentheses

	Brick	Coin	European-American Ceramic	Glass	Nail, Spike, UID Metal	Modern Ammunition	Plastic
1988 Survey	12.1g (1)	-	48.6g (6)	9.4g (2)	-	-	-
1980 Survey	27.3g (2)	-	8.7g (2)	2.1g (1)	62.6g (1)	-	-

Miscellaneous material from Unit 2A12

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Level 1 (0-10cm)	-	1600.6g	.1g (1)	-	.9g (2)	1601.6g
Feature 1	-	-	-	-	-	-
Midden below Feature 1	-	92.2g	-	-	-	92.2g
Feature 2	-	601.6g	-	-	-	601.6g
Level 2 (10-20cm)	-	6055.1g	1.5g (12)	-	4.2g (11)	6060.8g
Level 3 (20-30cm)	-	5101.6g	.4g (3)	-	.6g (5)	5102.6g
Level 4 (30-40cm)	.2g (2)	1701.1g	.2g (3)	-	-	1701.5g
"Feature 3" (root disturbance)	-	-	-	-	-	-
Level 5 (40-50cm)	-	64.0g	.2g (2)	-	-	64.2g
Level 6 (50-60cm)	-	27.8g	-	-	-	27.8g
Feature 4	-	2761.6g	-	-	-	2761.6g
Level 7 (60-70cm)	-	6.8g	-	-	-	6.8g
Total by Category	.2g (2)	16411.8g	2.4g (21)	-	5.7g (18)	

Miscellaneous material from Unit 2A15

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Level 1 (0-10cm)	61.0g (2)	323.1g	.6g (7)	-	25.9g (47)	410.6g
Level 2 (10-20cm)	-	662.0g	.1g (1)	-	18.7g (15)	680.8g
Level 3 (20-30cm)	-	309.5g	.2g (2)	-	.4g (3)	310.1g
Level 4 (30-40cm)	-	15.1g	.1g (3)	-	.1g (1)	15.3g
Level 5 (40-50cm)	-	5.5g	-	-	-	5.5g
Total by Category	61.0g (2)	1315.2g	1.0g (13)	-	45.1g (66)	

Miscellaneous material from Unit 29A235

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Zone 1 (humus: 0-10cm)	-	-	-	-	-	-
Zone 2 (mound fill: approx. 10-20cm)	-	-	-	-	-	-
Zone 3 (mound fill: approx. 20-40cm)	-	22.5g	-	-	-	22.5g
Zone 4 (mound fill: approx. 40-50cm)	-	-	-	-	-	-
Zone 5 (mound fill: approx. 50-70cm)*	-	-	-	-	-	-
Zone 6 (mound fill: approx. 50-70cm)*	-	10.0g	.6g (5)	-	-	10.6g
Zone 7 (mound fill: approx. 70-85cm)	-	5.5g	-	-	-	-
Total by Category	-	38.0g	.6g (5)	-	-	

*Zones 5 and 6 occur at approximately the same depth

Miscellaneous material from Unit 34A145

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Level 1 (0-10cm)	-	19.8g	-	-	-	19.8g
Level 2 (10-20cm)	-	42.2g	-	-	-	42.2g
Level 3 (20-30cm)	3.8g (5)	97.8g	.2g (2)	-	-	101.8g
Level 4 (30-40cm)	.4g (2)	71.8g	6.2g (13)	-	-	78.4g
Level 5 (40-50cm)	.4g (1)	17.4g	-	-	-	17.8g
Total by Category	4.6g	249.0g	6.4g	-	-	

Miscellaneous material from Unit 35A145

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Level 1 (0-10cm)	-	8.5g	.3g (1)	-	-	8.8g
Level 2 (10-20cm)	-	8.1g	-	-	-	8.1g
Level 3 (20-30cm)	-	38.8g	2.2g (4)	-	-	41.0g
Level 4 (30-40cm)	-	43.8g	.3g (3)	-	-	44.1g
Level 5 (40-50cm)	-	13.1g	-	-	-	13.1g
Total by Category	-	112.3g	2.8g (8)	-	-	

Miscellaneous material from Unit 36A147

Counts in parentheses

	Bone	Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Midden (0-52cm)	-	117.4g	.6g (14)	-	-	118.0g
Features 5-7	-	-	5.8g (48)	-	-	5.8g
Total by Category	-	117.4g	6.4g (62)	-	-	

Miscellaneous material from mound test units

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell	**Total by Level**
Test 1	-	186.0g	-	-	-	186.0g
Test 2	-	-	-	-	-	-
Test 3	-	24.2g	-	-	-	24.2g
Total by Category	-	210.2g	-	-	-	

Miscellaneous material from shovel test pits (page 1 of 6)

Shovel Test Pit

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
AO					
count-	-	-	-	-	-
total weight- 3.9g	-	3.9g	-	-	-
A1					
count-	-	-	-	-	2
total weight- 1.9g	-	-	-	-	1.9g
A2					
count-	-	-	-	-	-
total weight- 34.1g	-	34.1g	-	-	-
A3					
count-	-	-	-	-	-
total weight- 19.8g	-	19.8g	-	-	-
A4					
count-	-	-	-	-	-
total weight- 174.4g	-	174.4g	-	-	-
A5					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
A6					
count-	-	-	6	-	-
total weight- 6.9g	-	5.9g	1.0g	-	-
A7					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
A8					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
A9					
count-	-	-	1	-	-
total weight- .1g	-	-	.1g	-	-

Miscellaneous material from shovel test pits (page 2 of 6)

Shovel Test Pit	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
A10					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
A11					
count-	-	-	1	-	-
total weight- .1g	-	-	.1g	-	-
A12					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
A13					
count-	-	-	-	-	-
total weight- 14.4g	-	14.4g	-	-	-
B1					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
B2					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
B3					
count-	-	-	-	-	-
total weight- 12.9g	-	12.9g	-	-	-
B4					
count-	-		-	-	-
total weight- 6.0g	-	6.0g	-	-	-
B5					
count-	-	-	-	-	-
total weight- 3.0g	-	3.0g	-	-	-
B6					
count-	-	-	-	-	-
total weight- 2.7g	-	2.7g	-	-	-

Miscellaneous material from shovel test pits (page 3 of 6)

Shovel Test Pit	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
B7					
count-	-	-	1	-	-
total weight- .3g	-	-	.3g	-	-
B8					
count-	-	-	-	-	-
total weight- 1.7g	-	1.7g	-	-	-
B9					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
B10					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
B11					
count-	-	-	1	-	-
total weight- .1g	-	-	.1g	-	-
B12					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
C1					
count-	-	-	30	-	-
total weight- 10.7g	-	.7g	10.0g	-	-
C2					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
C3					
count-	-	-	-	-	-
total weight- 10.4g	-	10.4g	-	-	-
C4					
count-	-	-	-	-	13
total weight- 30.1g	-	-	-	-	30.1g

Miscellaneous material from shovel test pits (page 4 of 6)

<u>Shovel Test Pit</u>	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
C5					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
C6					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
C7					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
D1					
count-	-	-	1	-	-
total weight- 1.4g	-	1.3g	.1g	-	-
D2					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
D3					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
D4					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
D5					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
D6					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
D7					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-

Miscellaneous material from shovel test pits (page 5 of 6)

Shovel Test Pit

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
D8					
count-	9	-	-	-	-
total weight- 46.8g	46.0g	.8g	-	-	-
E1					
count-	-	-	-	-	-
total weight- 2.2g	-	2.2g	-	-	-
E2					
count-	-	-	-	-	-
total weight- 3.0g	-	3.0g	-	-	-
E3					
count-	-	-	-	-	-
total weight- 100.4g	-	100.4g	-	-	-
E4					
count-	-	-	-	-	-
total weight- 139.7g	-	139.7g	-	-	-
E5					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
E6					
count-	-	-	-	-	-
total weight- 4.9g	-	4.9g	-	-	-
E7					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
E8					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
E9					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-

Miscellaneous material from shovel test pits (page 6 of 6)

Shovel Test Pit

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
F1					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
S1					
count-	-	-	-	-	-
total weight- 207.7g	-	207.7g	-	-	-
S2 (Mound Test 1)					
count-	-	-	-	-	-
total weight- 186.0g	-	186.0g	-	-	-
S3					
count-	-	-	-	-	-
total weight- 0g	-	-	-	-	-
2009STP1					
count-	-	-	-	-	-
total weight- 1.9g	-	1.9g	-	-	-

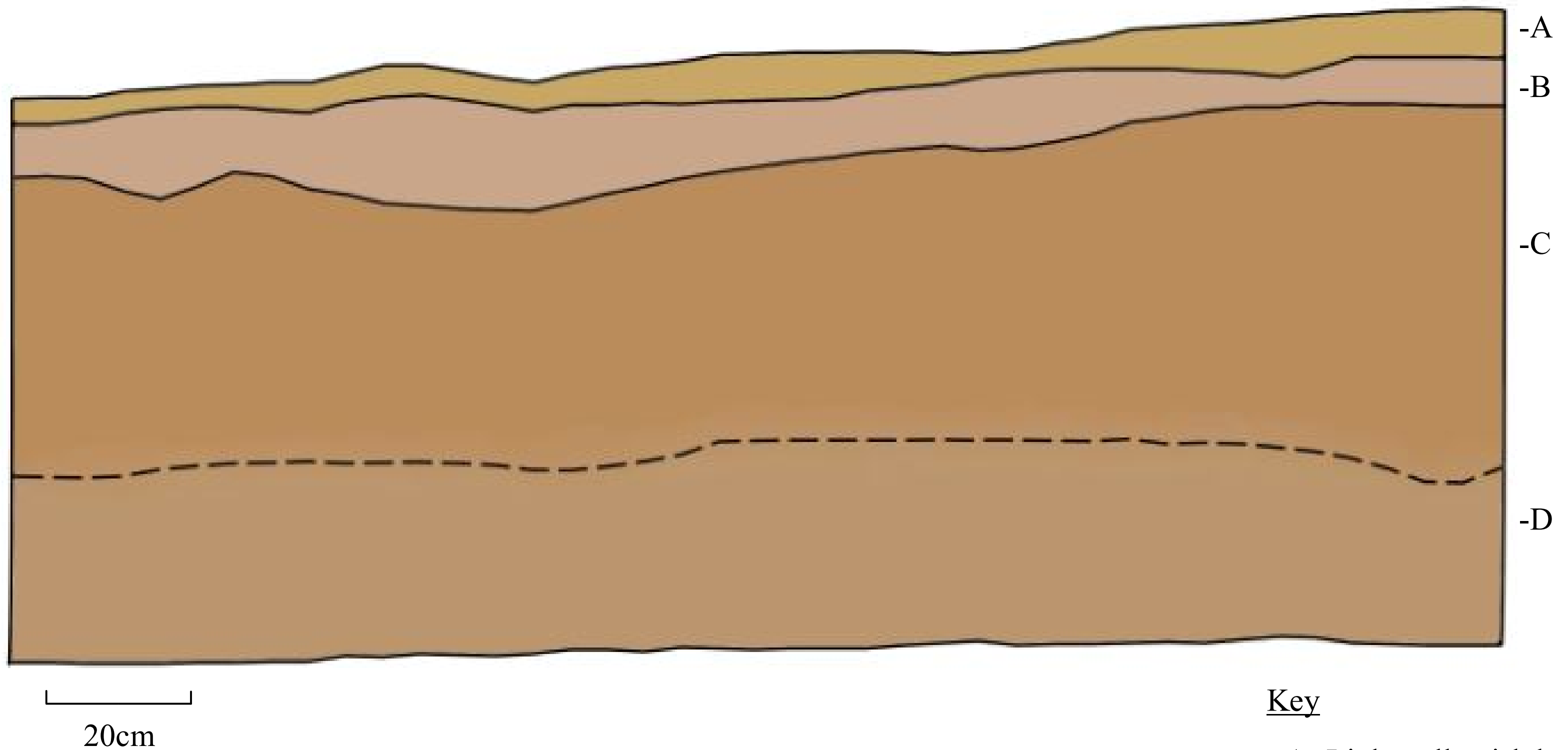
Miscellaneous material from the 1988 and 1980 surveys and C.B. Moore's excavations

Counts in parentheses

	Bone	Burned Earth	Charcoal	Copper Ear Spool	Shell
1988 Survey	-	-	-	-	2.9g (2)
1980 Survey	-	-	-	-	6.4g (1)
1899, C.B. Moore	-	-	-	(1)	

Appendix C: Profile Drawings from the 2007 and 2009 Fieldwork at the Armory Site

Unit 2A12, Northern Profile



Key

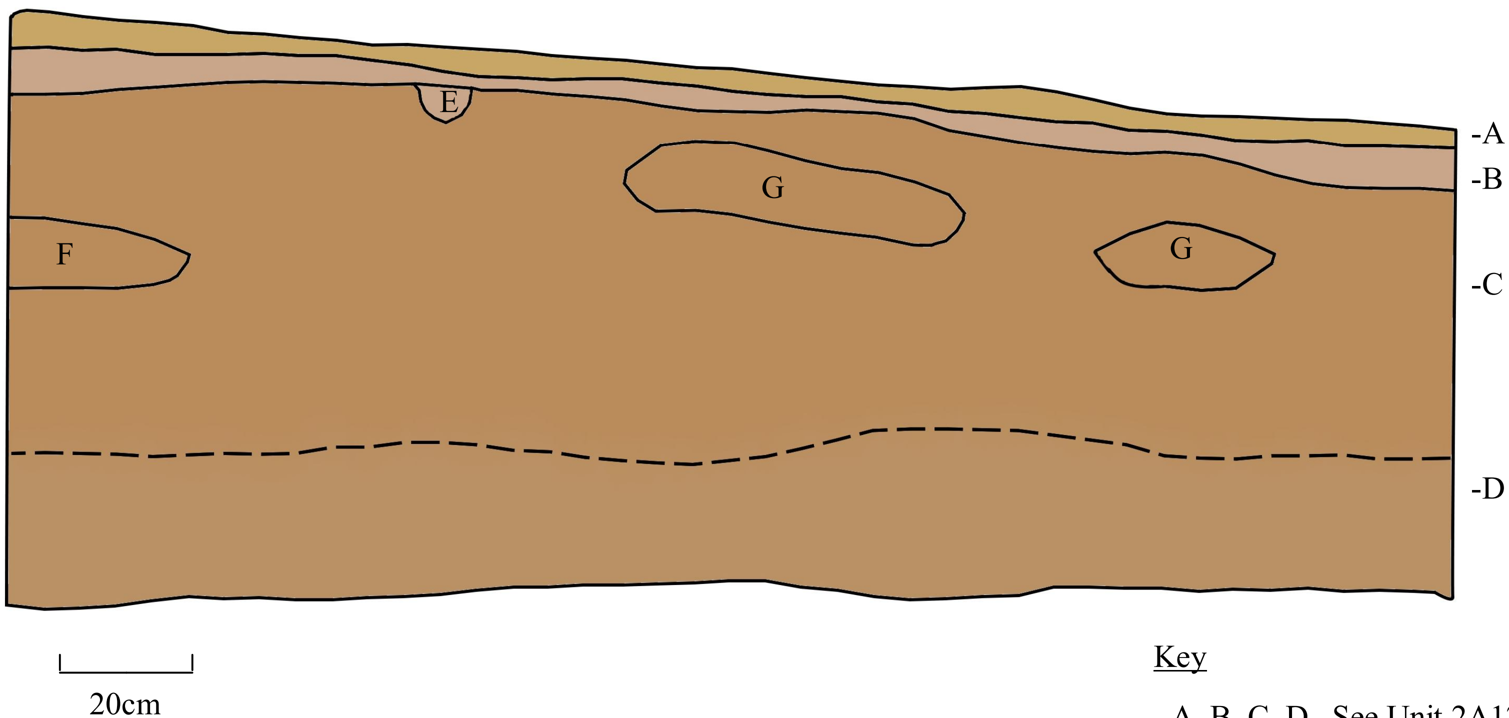
A- Light yellowish brown humic layer

B- Yellowish brown sandy loam

C– Midden layer, dark brown sandy loam lightly mottled with burned earth and charcoal

D- Medium brown sandy loam, gradual shift to subsoil

Unit 2A12, Southern Profile



Key

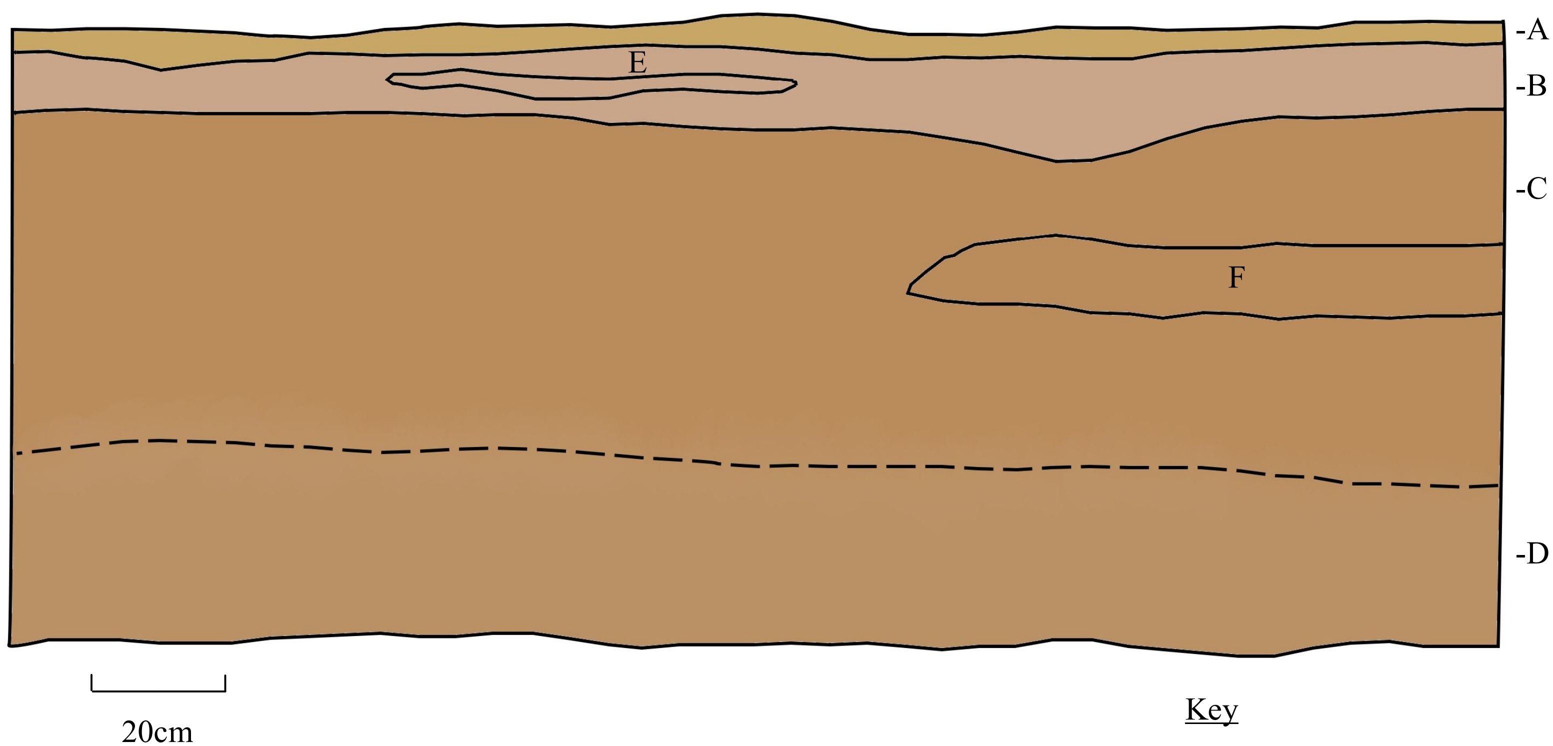
A, B ,C ,D– See Unit 2A12, Northern Profile

E– Clay concentration

F– Burned earth

G– Feature 2, lithic concentration

Unit 2A12, Eastern Profile



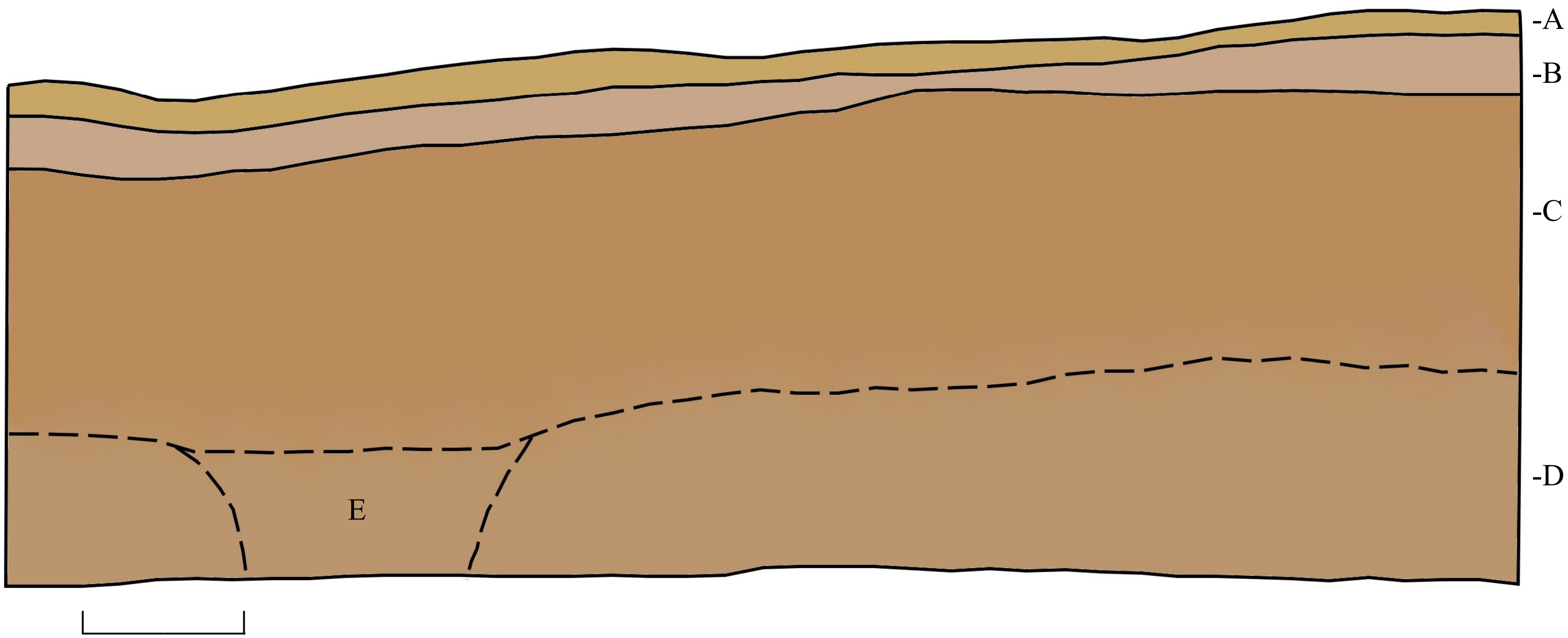
Key

A, B, C, D– See Unit 2A12, Northern Profile

E– Feature 1, clay mound surface

F– Burned earth

Unit 2A12, Western Profile

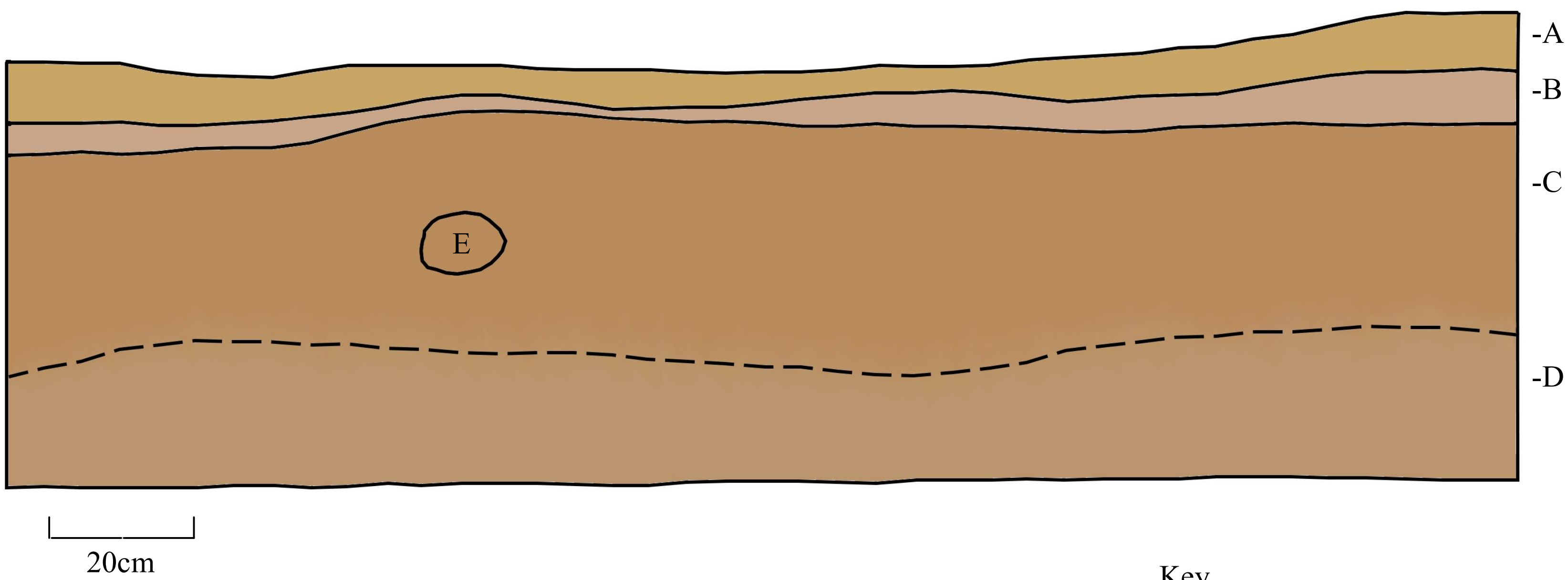


Key

A, B, C, D– See Unit 2A12, Northern Profile

E– Root disturbance

Unit 2A15, Northern Profile

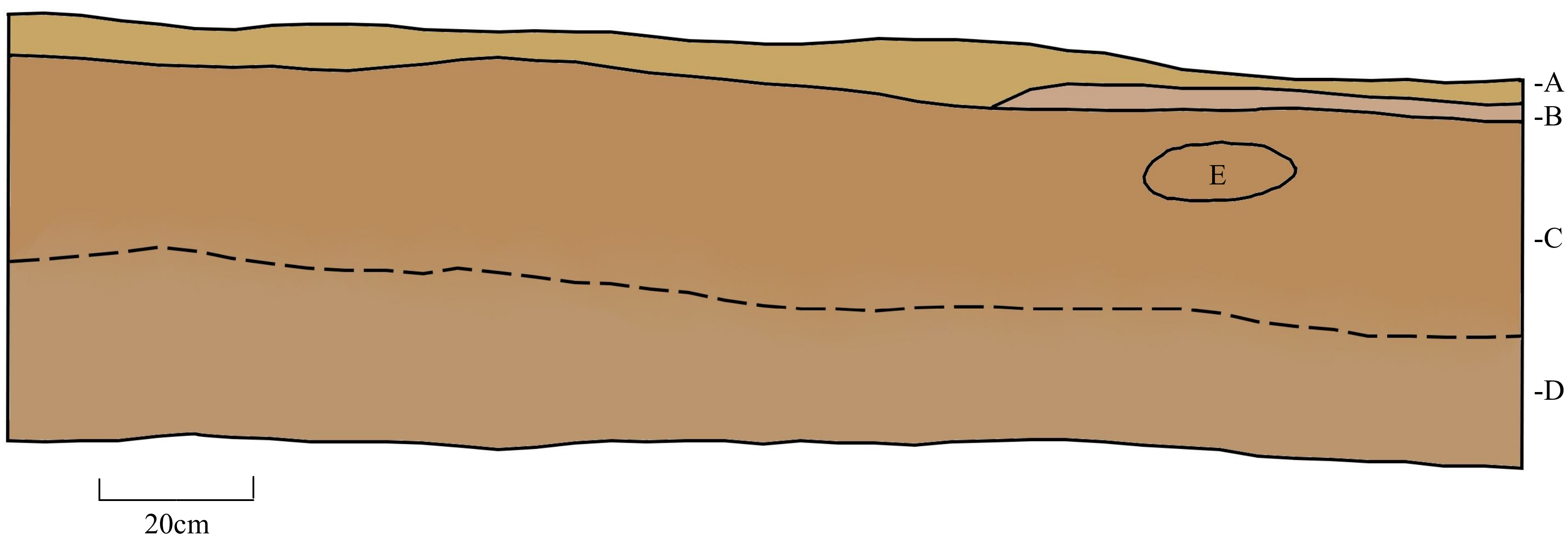


Key

A, B, C, D– See Unit 2A12, Northern Profile

E– Clay concentration

Unit 2A15, Southern Profile

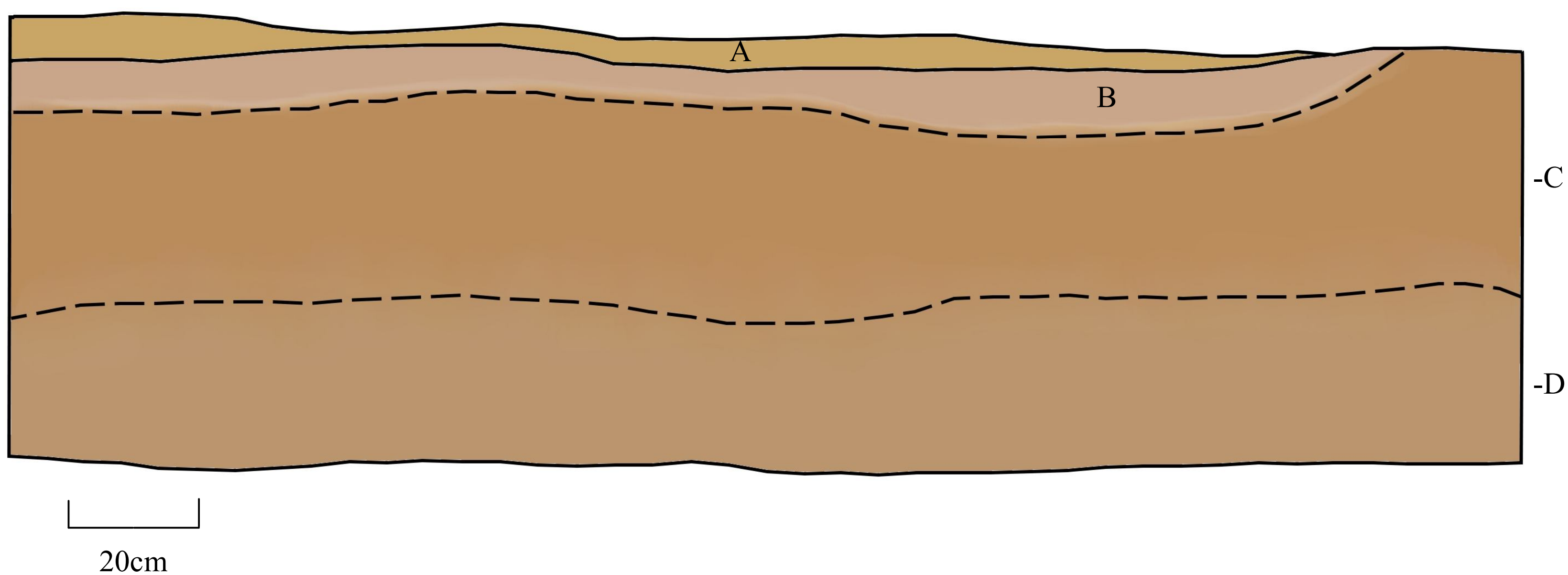


<u>Key</u>

A, B, C, D– See Unit 2A12, Northern Profile

E– Shell concentration

Unit 2A15, Eastern Profile

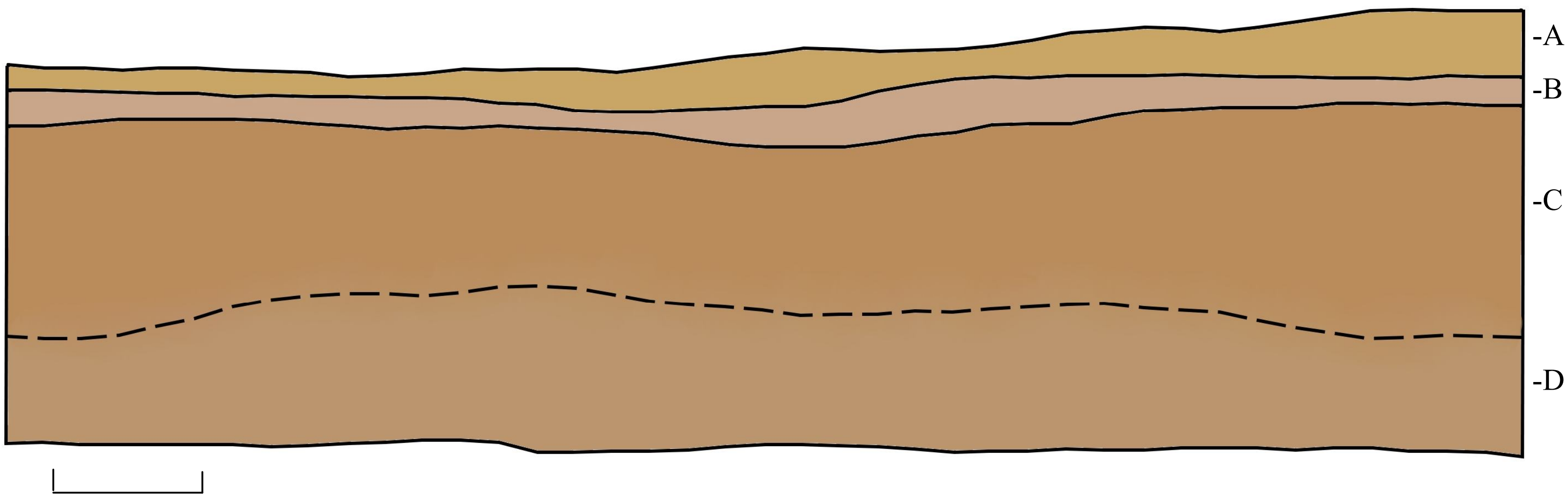


Key

A, C, D– See Unit 2A12, Northern Profile

B– Yellowish brown sandy loam, gradual shift to layer C

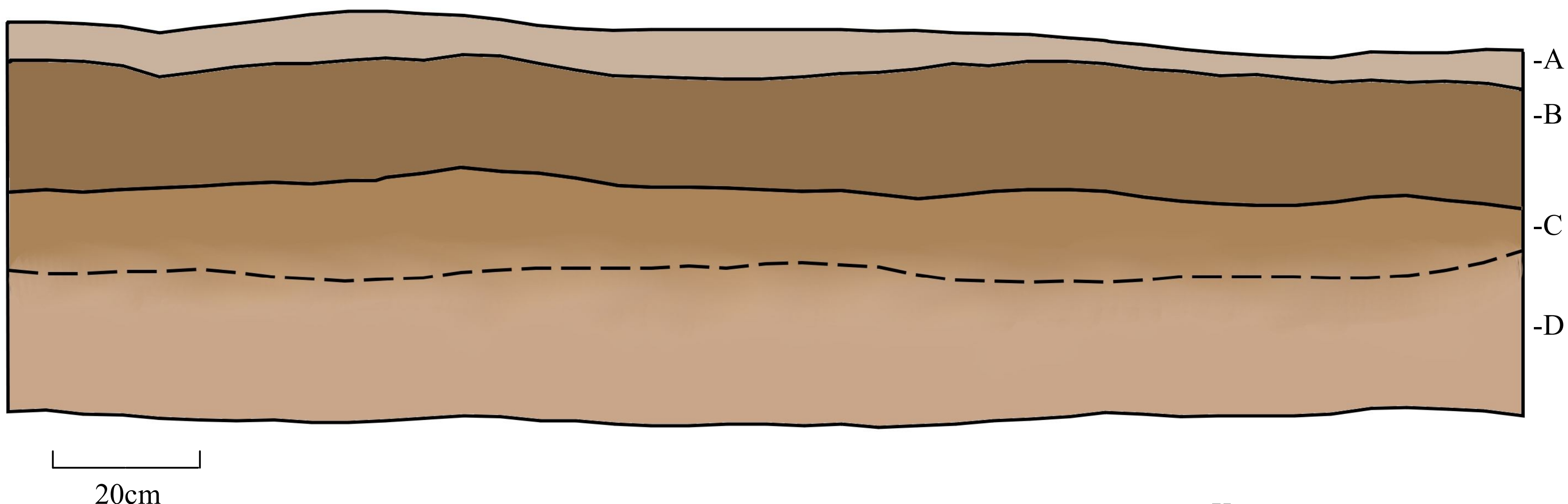
Unit 2A15, Western Profile



Key

A, B, C, D– See Unit 2A12, Northern Profile

Unit 34A145, Northern Profile



Key

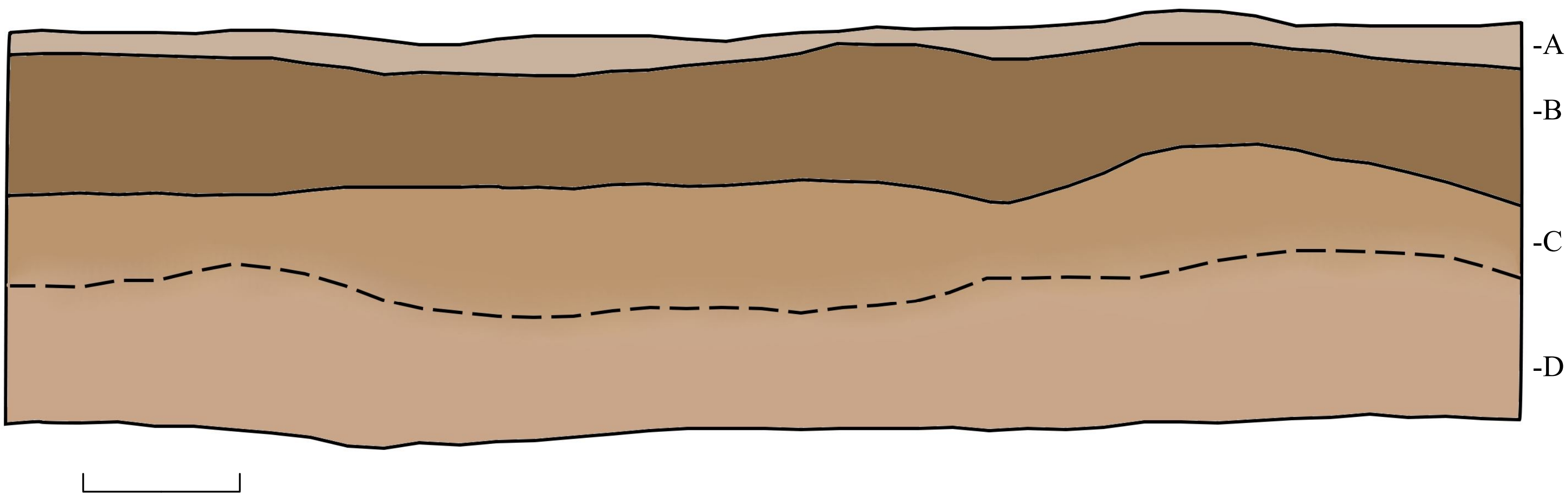
A– Grayish brown humic layer

B– Dark yellowish brown sandy loam

C– Brown Sand

D– Light yellowish brown silty sand, gradual shift to subsoil

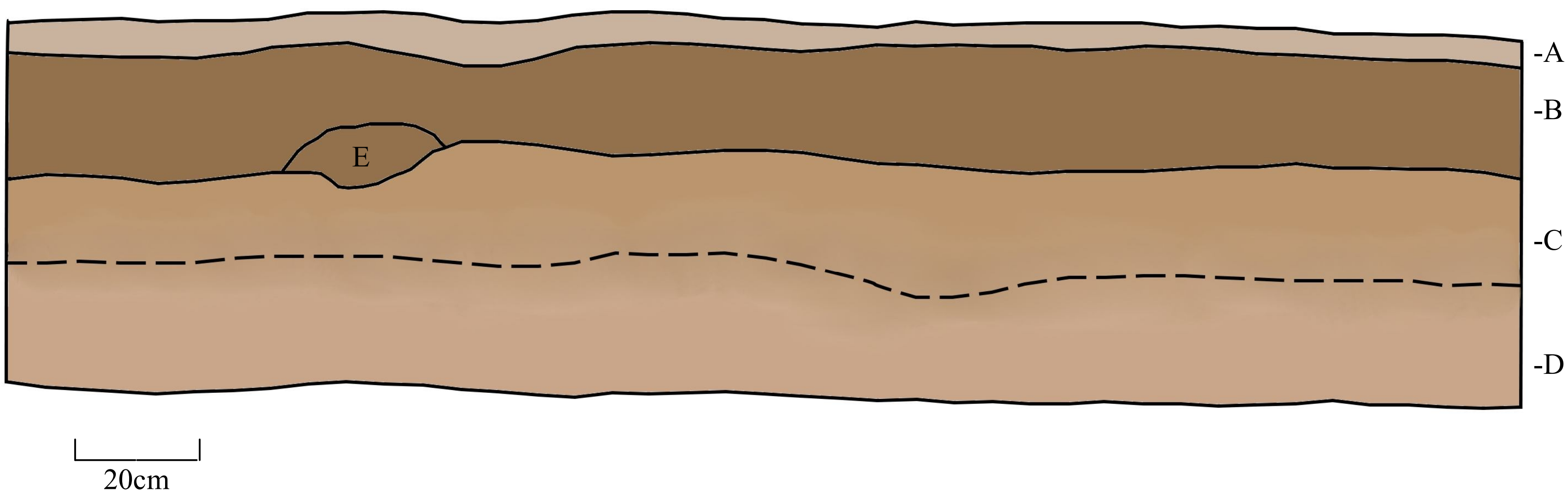
Unit 34A145, Eastern Profile



Key

A, B, C, D– See Unit 34A145, Northern Profile

Unit 34A145, Western Profile

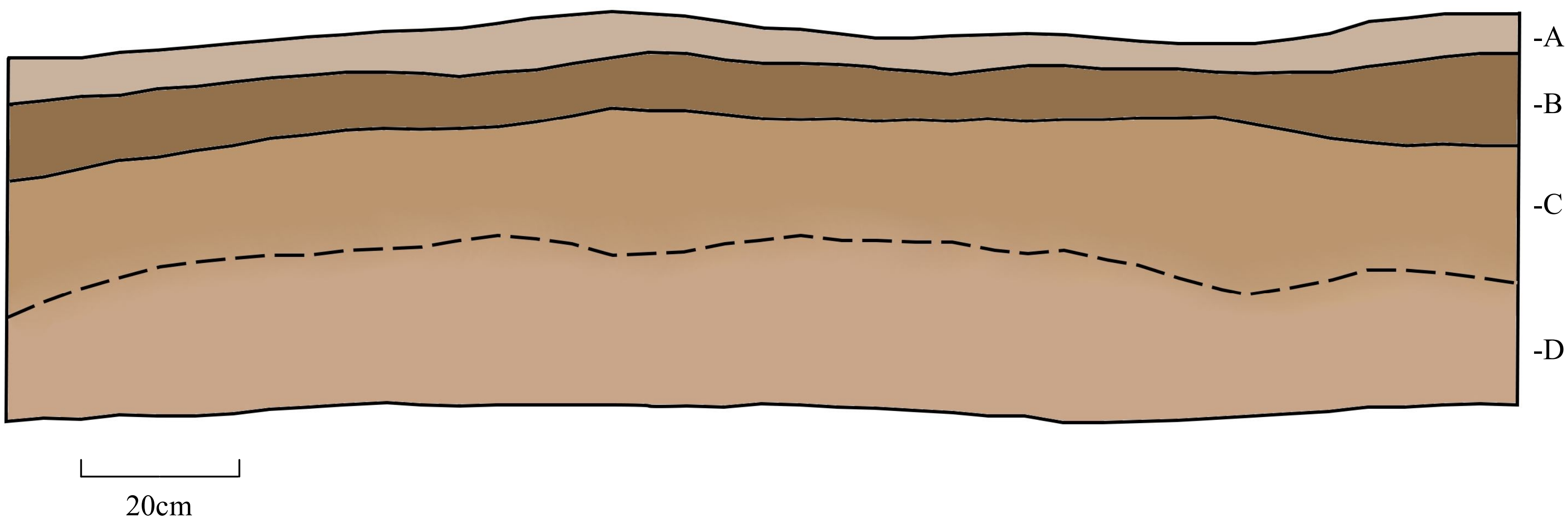


Key

A, B, C, D– See Unit 34A145, Northern Profile

E– Yellowish brown sandy loam mottled with silt wash

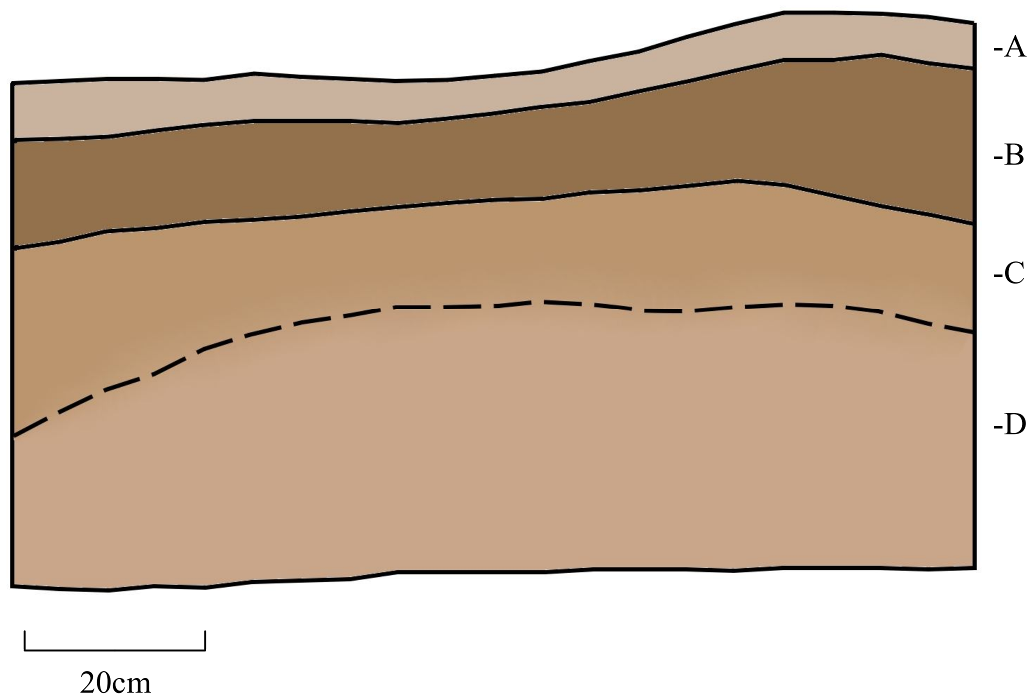
Unit 35A145, Southern Profile



Key

A, B, C, D– See Unit 34A145, Northern Profile

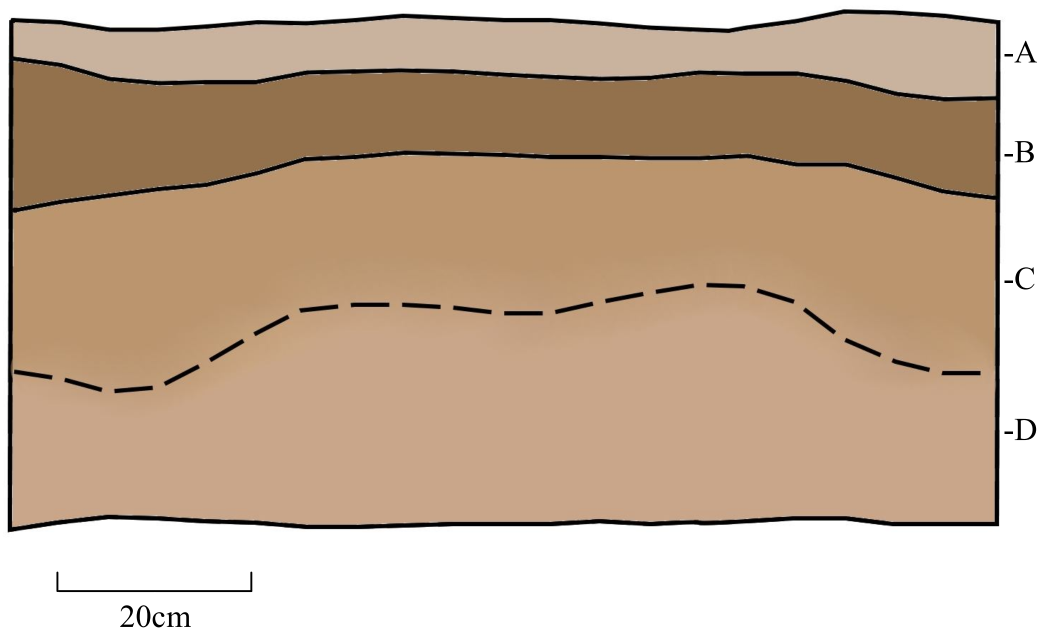
Unit 35A145, Eastern Profile



Key

A, B, C, D– See Unit 34A145, Northern Profile

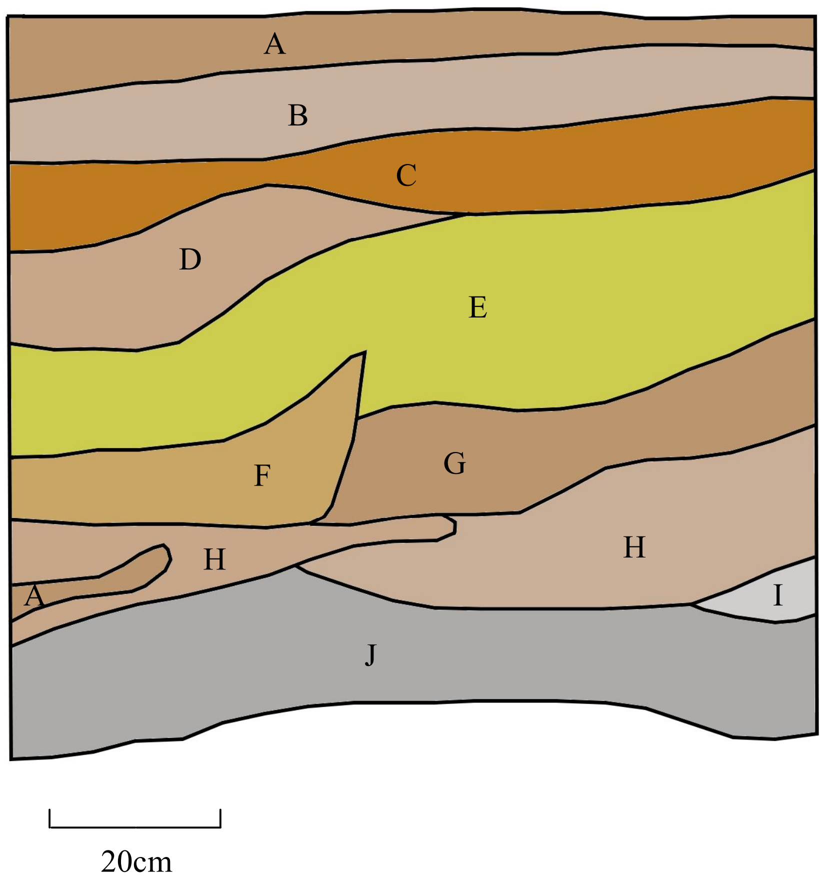
Unit 35A145, Western Profile



Key

A, B, C, D– See Unit 34A145, Northern Profile

Unit 29A235, Northern Profile



Key

A– Brown sand

B– Grayish brown humic layer

C– Strong brown clay

D– Yellowish brown sand

E– Yellow sand

F– Light yellowish brown sand

G– Yellowish brown silty sand

H– Grayish brown silty sand

I– Gray sand

J– Light gray sand

Appendix D: Site Size, Midden, and Mound data for Analyses of Sedentism

Site	Period	Size in m^2	Midden	Mound(s)
au151	Middle Woodland	1200	absent	absent
au201	Middle Woodland	5000	absent	absent
au218	Middle Woodland	3750	absent	absent
au229	Middle Woodland	2500	absent	absent
au230	Middle Woodland	2500	absent	absent
bb125	Middle Woodland	2500	absent	absent
cs199	Middle Woodland	20000	absent	absent
ds111	Middle Woodland	8281	absent	absent
ds77	Middle Woodland	18496	absent	absent
ds78	Middle Woodland	99190	absent	absent
ee171	Middle Woodland	35000	absent	absent
gr140	Middle Woodland	750	absent	absent
mt211	Middle Woodland	6000	absent	absent
mt214	Middle Woodland	20000	absent	absent
mt33	Middle Woodland	14700	absent	absent
pe263	Middle Woodland	25	absent	absent
su19	Middle Woodland	3599	absent	absent
wx156/157	Middle Woodland	No data	absent	present
au118	Late Woodland	18288	absent	absent
au123	Late Woodland	910	present	absent
au124	Late Woodland	18496	absent	absent
au125	Late Woodland	8281	absent	absent
au130	Late Woodland	8281	absent	absent
au132	Late Woodland	24752	absent	absent
au139	Late Woodland	12150	absent	absent
au143	Late Woodland	1350	absent	absent
au144	Late Woodland	1000	absent	absent
au145	Late Woodland	1200	absent	absent
au147	Late Woodland	1000	absent	absent
au148	Late Woodland	4050	absent	absent
au149	Late Woodland	4050	absent	absent
au378	Late Woodland	6000	absent	absent
au389	Late Woodland	6000	absent	absent
au390	Late Woodland	9600	absent	absent
ds116	Late Woodland	3721	absent	absent
ds117	Late Woodland	36576	absent	absent
ds121	Late Woodland	529	present	absent
ds123	Late Woodland	18288	absent	absent
ds152	Late Woodland	1403	absent	absent
ds153	Late Woodland	2356	absent	absent
ds155	Late Woodland	8281	absent	absent
ds157	Late Woodland	8296	present	absent

Site	Period	Size in m^2	Midden	Mound(s)
ds158	Late Woodland	1600	present	absent
ds159	Late Woodland	4636	absent	absent
ds160	Late Woodland	1830	absent	absent
ds163	Late Woodland	2809	absent	absent
ds166	Late Woodland	82500	absent	absent
ds167	Late Woodland	874	absent	absent
ds168	Late Woodland	44530	absent	absent
ds169	Late Woodland	2740	absent	Absent
ds19	Late Woodland	1830	absent	Absent
ds582	Late Woodland	100000	absent	Absent
ds597	Late Woodland	1200	absent	Absent
ds597	Late Woodland	1200	absent	absent
ds603	Late Woodland	6000	absent	absent
ds629	Late Woodland	2100	absent	absent
ds67	Late Woodland	45000	absent	absent
ds75	Late Woodland	4572	absent	absent
ds76	Late Woodland	18496	present	absent
ds82	Late Woodland	27432	absent	absent
ds84	Late Woodland	8281	absent	absent
ds92	Late Woodland	36576	absent	absent
ee205	Late Woodland	800	absent	present
ha128	Late Woodland	30000	present	absent
lo28	Late Woodland	28875	absent	absent
mo157	Late Woodland	7500	present	absent
mt273	Late Woodland	8000	present	absent
mt451	Late Woodland	16000	absent	absent
mt463	Late Woodland	35	absent	absent
tu236	Late Woodland	5445	absent	absent
tu530	Late Woodland	5400	absent	absent
tu549	Late Woodland	10000	absent	absent
tu570	Late Woodland	45600	absent	present
tu648	Late Woodland	2480	present	absent
tu805	Late Woodland	30000	absent	absent
tu871	Late Woodland	1248	absent	absent
tu872	Late Woodland	585	absent	absent
wx149	Late Woodland	5776	present	absent
wx155	Late Woodland	1748	absent	absent
wx159	Late Woodland	34732	present	present
wx164	Late Woodland	14641	present	absent
wx69	Late Woodland	1080	absent	absent