

THE OCCUPATIONAL HISTORY OF MOUND "W" AT MOUNDVILLE,
ALABAMA

by

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ABSTRACT

Because of its comparatively large sample of grog-tempered pottery, the area known as Mound W at Moundville, Alabama, was believed to have the potential to aid in the debate about the Late Woodland – Mississippian transition in the Black Warrior Valley; however, analysis of the ceramic materials from this locus has not occurred since Steve Wimberly's overview of Moundville pottery in the early 1950s. In this thesis I discuss Mound W's occupational history and its spatial and chronological position on the Moundville terrace based on my own ceramic and spatial analyses of the material recovered during the Mound W excavations in 1939 and 1940. In particular, I examine a detailed set of vertical mound profiles as well as burial, feature, and field specimen records in order to reconstruct spatial relationships and former living surfaces. In addition, I describe Mound W's mixed ceramic assemblage and the particular usefulness of multiple linear regression in tackling this area's complex dating problem. These allow me then to present a model of occupation for Mound W and to address questions regarding theories of Mississippian development.

1. INTRODUCTION AND OBJECTIVES OF STUDY

In many areas of the Southeastern United States, the cultural transition from the Late Woodland to the Early Mississippian (A.D. 900-1100) is poorly defined, spatially and chronologically, and the nature of the change is not fully understood. Was the Late Woodland a time of transition and *in situ* development or did a new group of people arrive and influence those from before (Welch 1987; Seckinger and Jenkins 2000)? By the late 1930s, archaeologists working in the Black Warrior Valley area of Alabama basically knew that grog-tempered pottery generally preceded shell-tempered pottery and that many Mississippian components were found at sites with previous Woodland components. These circumstances made the Late Woodland to Early Mississippian transition seem rather abrupt; however, recent research in the Moundville area has refined the chronology of early Mississippian times and led many researchers to support a more gradual, evolutionary pattern of Mississippian development. As a large, multi-mound site, Moundville offers a context in which to study these cultural dynamics and this transition, as it is known to exhibit grog-tempered and shell-tempered ceramics in association in its earliest artifact-bearing levels.

The site of Moundville sits atop a high, flat terrace on the eastern side of the Black Warrior River, below Tuscaloosa, Alabama, and south of the fall line. Knight and Steponaitis (1998:3; Figure 1 here) recognize an occupied area of approximately 75 hectares and the locations of 29 earthen mounds in their schematic map of the Moundville site. When C. B. Moore visited the site in 1905 and 1906, he recognized 22

mounds and gave each mound a letter designation; this lettering has been continued as additional mounds have been recognized. The mounds at Moundville seem to have been



Figure 1. Map of Moundville (from Knight and Steponaitis 1998: Fig. 1.1).

deliberately arranged around an open plaza, are oriented roughly to the cardinal directions, and alternate between small versions containing burials and larger versions lacking them. The plaza and mound area also seem to have been surrounded by an off-mound habitation area as well as a palisade. Outside of the palisade system, two other areas of Mississippian settlement are known to exist on the same terrace. One area is the northwest riverbank where excavations in 1991-1992 revealed evidence of a small cluster

of houses (Scarry 1995). Another is the Asphalt Plant Mound, situated just northeast of Moundville, excavated in 1975 by Richard Krause and dated to early Moundville times (Steponaitis 1992). Paul Welch (1990) has further analyzed the Moundville area as compared to the central Tombigbee drainage area and the Birmingham-Bessemer area, both of which also supported large Mississippian mound centers. In particular, excavations at Bessemer have revealed its importance as a ceremonial/political center before 1250 A.D. (DeJarnette and Wimberly 1941; Welch 1990, 1994).

On the Moundville terrace, areas noted in previous studies as having possible Late Woodland or Early Mississippian components include the Asphalt Plant Mound, the Northwest Riverbank area, Mound X, and Mound W. The principal evidence for any early component at Moundville is considered to be grog-tempered pottery, most of which was recovered during excavations in the 1930s and 1940s. Most of these collections have never been fully analyzed, but previous researchers have indicated that a large quantity of grog-tempered pottery at Moundville was recovered from an area to the west of Mounds O and P, in the area of Mound W. John A. Walthall and Steve B. Wimberly (Walthall and Wimberly 1978:122-123; Wimberly 1956) were the first to note the potential of Mound W in answering questions about Moundville's earliest occupations. Christopher Peebles (1973) and Vincas Steponaitis (1983:151-152) also have discussed the grog-tempered pottery in this western area of the Moundville site. In 1998, Vernon J. Knight and Vincas Steponaitis offered a "new view of Moundville's history" and noted that it was not clear whether Moundville was occupied during the Late Woodland. Their conception of settlement at Moundville during the Early Moundville I phase is one of scattered houses and house clusters spread along the riverbank of the Black Warrior

River and Carthage Branch (Figure 2). These researchers acknowledge the grog-tempered ceramics scattered across portions of the site and the apparent concentration of them in the area west of Mounds O and P; however, they also note that no West Jefferson phase pit features have been documented at the Moundville site (Knight and Steponaitis 1998:12). Also, according to Scarry, it seems that West Jefferson pottery continued to be made and used at Moundville during the succeeding Early Moundville I phase (Scarry 1995:234). From this limited evidence, Knight and Steponaitis suspect that Moundville was probably not occupied prior to A.D. 1050.

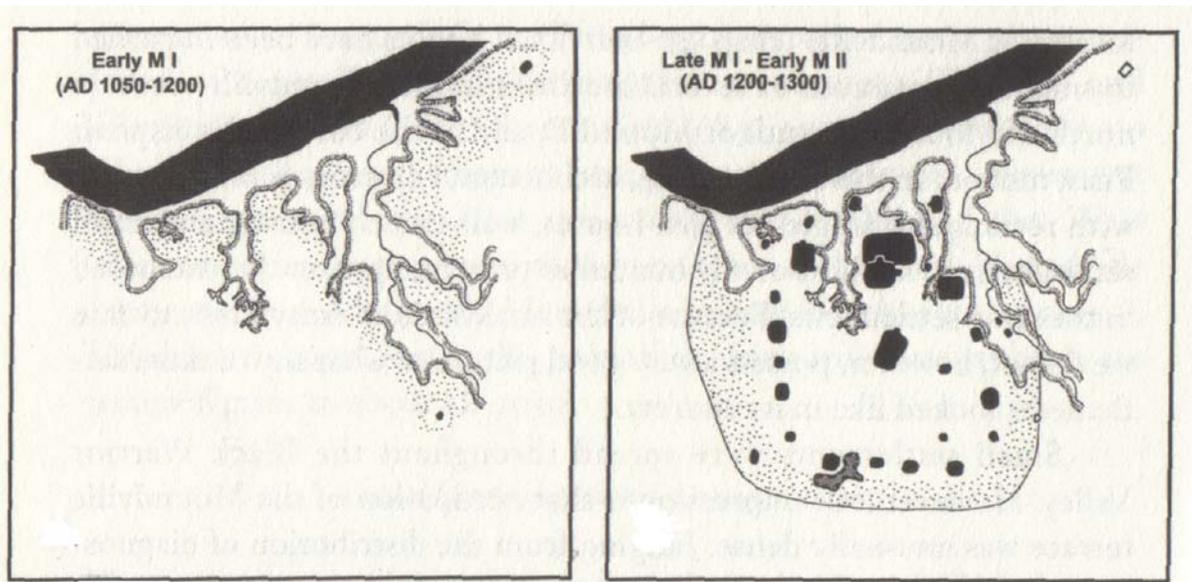


Figure 2. Knight and Steponaitis's conception (1998) of early settlement on the Moundville terrace.

Because of its comparatively large sample of grog-tempered pottery, the area known as Mound W at Moundville, Alabama, was believed to have the potential to aid in the debate about the Late Woodland – Mississippian transition in the Black Warrior Valley; however, analysis of the ceramic materials from this locus has not occurred since Steve Wimberly’s overview of Moundville pottery in the early 1950s (Wimberly 1956). The recent observations by Knight, Steponaitis, and Scarry have led me to question the validity of a pre-Mississippian, Late Woodland occupation at Moundville in general and in particular at Mound W. My primary research question in this analysis then follows: Is there evidence to support the assertions that have been made about this locality as a Terminal Woodland village, or is the grog-tempered pottery present a part of a broader expansion of settlement along the Moundville terrace at the time of the Early Moundville I phase? This thesis will discuss Mound W’s occupational history and its spatial and chronological position on the Moundville terrace. In particular, I have examined a detailed set of vertical mound profiles as well as burial, feature, and field specimen records in order to reconstruct spatial relationships and former surfaces. In addition, I describe Mound W’s mixed ceramic assemblage and the particular usefulness of multiple linear regression in tackling this area’s complex dating problem. The broader importance of this study lies in its ability to provide further evidence to help resolve the debate between competing theories of culture change by determining what can and cannot be said about the Late Woodland and Early Mississippian at the Moundville site.

2. THEORETICAL AND METHODOLOGICAL BACKGROUND

In the current literature, there are two main schools of thought about the Late Woodland - Early Mississippian transition. The Michigan school, exemplified by Paul Welch, sees the transition as one of *in situ* development, with the Moundville I phase evolving out of the previous West Jefferson phase (Steponaitis 1983; Welch 1987). According to Welch (1990), the transition from the Late Woodland to the Mississippian was rapid and rather uniform within the three areas of Moundville, the central Tombigbee, and Birmingham/Bessemer, and the transition involved change in two cultural subsystems, that of subsistence and social integration. Welch (1990:218) argues that these subsistence changes are indicated in settlement patterns (seasonal movements), features (storage facilities and residential architecture), and ceramic attributes while development in social organization, namely hierarchy, is manifest in dimensional differences in mortuary treatment, control of extralocal exchange, and control of communal labor. Ned Jenkins and Ernest Seckinger have put forth the second view, namely that the Woodland peoples came into contact with an intrusive Mississippian population, people who were responsible for the material culture designated Moundville I and who acculturated the indigenous Woodland people (Seckinger and Jenkins 2000). Jenkins has argued that Mississippian immigrants most likely derived from northeast Alabama, moved into the west-central region, and co-existed with Late Woodland groups for an extended period, perhaps 200 years or more. Materially, the first interpretation

would implicate a pattern of continuous development, and the second interpretation would indicate certain distinct cultural patterns coexisting in space.

Stephen Kowalewski (2000) has added another perspective to this debate with his discussion of coalescent societies in the prehistoric Southeast and elsewhere. Coalescent societies were formed by remnant groups coming together in new places usually after heavy population loss or in the face of external threats (Kowalewski 2000:1). According to Kowalewski (2000:21), these societies would then create new integrative institutions or reorganize their traditional institutions in response to these new pressures. From his cross-cultural study, Kowalewski concluded that coalescence has been one of several strategies that people have adopted in the face of external pressures. Kowalewski's discussion is important in this case as numerous Southeastern archaeologists have noted the uncertain and dynamic environment of the Late Woodland. Welch (1990) has speculated about the causes of Mississippian development; he considers subsistence stress and warfare, but he focuses most of his discussion on how the chiefly office came to include political, economic, and sanctified roles.

These discussions have led to a disagreement between those calling this time "Emergent Mississippian" and those calling it the "Terminal Woodland" (Welch 1987; Jenkins 2003). These two terms represent the same time period but imply very different social situations. In the area of the Central Mississippi Valley, "Emergent Mississippian" has been defined as an evolution of Mississippian cultures out of an indigenous Woodland base (Kelly 1990). In the Black Warrior Valley, "Terminal Woodland" has been defined as a time when Late Woodland cultures were interacting with an intrusive Early Mississippian population and were being acculturated into a new society (Jenkins

2003). The evidence for discrimination between these two views has come from comparative analyses of architecture, site structure, subsistence, and ceramics. For Jenkins (2003), the Alabama Late Woodland groups were not “Emergent Mississippian” as defined by Kelly (2000); they were instead “Terminal Woodland.” Jenkins believes that the grog-tempered wares and shell-tempered wares were made by two different ethnic groups, as there seems to be little overlap in decorative and vessel modes. However, the Bessemer site excavations yielded a sample of grog-tempered sherds and shell-tempered sherds, and in their excavation report, David DeJarnette and Steve Wimberly (1941:108-109) noted that some grog-tempered sherds were from vessels whose shape and surface finish were similar to the shell-tempered pottery. Paul Welch (1994) actually tested this statement by re-analyzing all of the Bessemer ceramics.

Welch’s 1994 article documenting the “occupational history of the Bessemer site” is in fact a good model for my study of the Mound W locality. Welch puts his study in the context of the discussion of the Late Woodland – Mississippian transition and reanalyzes the Bessemer excavation and collections to produce new conclusions for the stratigraphic and ceramic data. However, Welch (1994:2) does not actually arrive at a solution for the Late Woodland – Early Mississippian “problem,” and he says that “the excavations at Bessemer in the 1930s do not answer all of the questions we wish they would.” In examining the Bessemer excavations, Welch (1994:1) does attempt to refine the chronology of occupation at the Bessemer site, and he clarifies what that chronology does and does not say about the transition from Late Woodland to Mississippian culture, much as I hope to do for Mound W at Moundville by restudying its records and artifacts.

In the late 1800s the first excavations at the Bessemer site were done by associates of the Smithsonian Institution. The second round of research was begun by Carl Guthe in 1934. Guthe excavated the large oval mound by using the “vertical cutting and slicing” method then advocated by the University of Chicago field school (Peebles 1979). David DeJarnette took over the project and finished the excavation of the oval mound in 1935. DeJarnette’s crew made drawings of several long vertical profiles during their excavations of the oval mound. In 1939, DeJarnette and his field supervisor Steve Wimberly directed the excavation of the remaining two mounds, the platform mound and the burial mound, and changed the approach to include horizontal peeling to expose former surfaces. At this time, stratigraphic placement was not considered an important data class at Moundville, as Moundville was considered to be one culture, probably with little time depth, and only the vertical cutting method was used at Mound W by Maurice Goldsmith. According to Peebles and Welch (Peebles 1979; Welch 1994:6), the vertical cutting method is ill-suited to the discovery of particular features, plans, and patterns. Welch noted that the unpublished worksheets of excavated material from Bessemer include tabulations of ceramics by strata; this unfortunately is not the case for Mound W, as general ceramics were not documented stratigraphically. Obviously, the materials and records Welch had to work with from Bessemer were more forgiving than those from Mound W.

Welch studied both the stratigraphic records and the recovered ceramics at Bessemer to address questions about the Late Woodland – Early Mississippian transition. In particular regarding the pottery, Welch (1994) noted how many researchers (Mistovich 1988; DeJarnette and Wimberly 1941) had previously cited the similarities between the

grog-tempered and the shell-tempered pottery at Bessemer, leading them to interpret this evidence as an indication of chronological overlap of the two wares. Because Bessemer demonstrates roughly equal amounts of grog-tempered wares and shell-tempered wares, Welch was able to compare the vessel and rim attributes of each category, leading him to conclude instead that the wares were not so similar after all. After analyzing the Bessemer ceramics, Welch (1994:24) determined that there was a period when both grog-tempered and shell-tempered ceramics were being made and used at the site; however, he does not find any evidence for how long that period lasted, i.e., whether the transition from the Late Woodland to the Early Mississippian was abrupt or gradual. Clearly, all of these discussions represent attempts to recognize cultural transmission in the archaeological record; however, further study was necessary for researchers to be able to distinguish among these competing theories.

Recently, the study of the Late Woodland to Mississippian transition has led to refinements in the chronology of Moundville phases, leading to subphase chronological distinctions. Reporting on excavations at the Asphalt Plant Mound, Vincas Steponaitis (1992) first made the observation that components of Early Moundville I and components of Late Moundville I were different. Steponaitis suggested that ceramics from the Asphalt Plant mound were of an Early Moundville I phase time while ceramics from Bessemer, north of Mound R, and the Moundville Roadway were from Late Moundville I. During the Asphalt Plant mound excavations by Richard Krause in 1975, Krause recovered grog-tempered and sand-tempered ceramics, along with many plain, shell-tempered ceramics (both Mississippi Plain and Bell Plain), several Moundville Incised sherds, fewer Carthage Incised, and no Moundville Engraved. For Steponaitis, this

particular assemblage was recognized as representative of the Early Moundville I phase. Later ceramic markers were not found, and the representative secondary shape features, loop handles and folded and folded-flattened rims, were considered excellent diagnostics of the Early Moundville I phase. Compared to the material from Bessemer and the lower levels of the midden north of Mound R at Moundville (assemblages from which the Moundville I phase was originally defined), the Asphalt Plant Mound assemblage exhibited less Moundville Incised and a complete absence of Moundville Engraved. According to Steponaitis (1992:6), the presence of grog-tempered wares and sand-tempered wares was a holdover from West Jefferson times, rather than a result of post-depositional mixture. Steponaitis's study is important here in that it defines the Early Moundville I phase as a time of transition between the West Jefferson phase and the previously defined Late Moundville I components that previously were used as models for the entire phase.

In 1991-1992, Margaret Scarry and researchers from the University of Alabama investigated two tracts of land next to the northwest riverbank of the Black Warrior River. For Scarry (1995:234-235), initial surface finds of grog-tempered ceramics at the Picnic Area tract suggested a possible West Jefferson phase occupation near the riverbank; however, excavation revealed that grog-tempered pottery was the minority ware, and no pure Late Woodland features were noted, leading Scarry to conclude that an Early Moundville I component was represented instead. Excavations at the ECB (East of Conference Building) tract produced an assemblage characteristic of Late Moundville I occupations, as at the area north of Mound R (Knight 1995).

While John Blitz started an investigation of Mound X during the fall 2004 field season, I investigated Mound W for this thesis. Mound W, a small, oval-shaped elevation, lay on the western margin of the Moundville site, directly west of Mounds O and P, in the area that currently serves as the Museum parking area. Based on his review of Moundville excavation notes, Peebles once speculated that Mound W was an occupied natural hillock, otherwise known as a “midden mound,” rather than a deliberate construction; however, even though it was not given a letter designation by C. B. Moore, it was identified as a mound in the 1930s, designated Mound W, and was completely excavated in 1940 (Knight and Steponaitis 1998:6; Peebles 1979:4; Walthall and Wimberly 1978:121-122). In 1978, Walthall and Wimberly noted the potential of Mound W in answering questions about Moundville’s earliest occupations, as

Excavation conducted at Mound ‘W’ in front of the Museum revealed the only stratified deposits yet discovered at Moundville which exhibit a sequence from Late Woodland to West Jefferson to Mature Mississippian. Large numbers of grog-tempered sherds were found throughout the deposit, but were proportionately more numerous in the lower levels [Walthall and Wimberly 1978:122].

As Walthall and Wimberly (1978:122) attempted to bracket the Mississippian occupation at Moundville with early and late dates, they concluded that the earliest occupation at Moundville was concentrated in the western portion of the site “in the area of the present Museum Building.” Wimberly first noticed this concentration in the “vicinity of Mound W” during his analysis of Moundville collections in the 1950s. His calculation of the distribution of grog-tempered pottery across the Moundville area is presented in Table 1. This table shows that an outstanding 82% of the grog-tempered ceramics then known from Moundville had come from the excavations around the locality of Mound W. Based on this large number of grog-tempered sherds found

throughout the Mound W deposit but especially in its “lower levels,” Walthall and Wimberly (1978:123) posited that Moundville settlement began as a “one to three acre Late Woodland village situated on the western side of the later Mississippian town” and then expanded eastward through time.

Table 1. Wimberly’s Calculation of Grog-tempered Pottery as Distributed by General Vicinity at Moundville.

General Location in Relation to Mound A	Grog Count	Grog Freq
Vicinity of Mound W	414	82.00
North	15	3.00
Northwest	45	8.90
West	18	3.60
Southeast	13	2.60
East	0	0.00
Central	0	0.00
Totals	505	100.00

In 1983, Vincas Steponaitis reported on Walthall and Wimberly’s conclusion during his study of community patterns at Moundville. Steponaitis (1983: Figure 31) gave an approximate location of the Moundville West Jefferson phase component as in the western margin of the site, west of mounds O and P. In discussing Moundville I, Steponaitis (1983:152) placed the greatest concentration of this phase also in the western part of the Moundville site and noted its continuity in location with the previous West Jefferson phase. At this time, Steponaitis (1983:153-156) speculated that the core of the site was focused on a single mound, specifically Mound O, based on his study of whole vessels and burials. In particular, an early stage of Mound O was dated to Moundville I as it demonstrated the ceramic marker of the slender ovoid bottle. Scattered burials and

some evidence of residential architecture surrounded this mound, indicating that, during this phase, Moundville exhibited the community pattern of a single mound center. In this view, Moundville grew to be a major political center during the Moundville II phase, and most of the mounds reached their final configurations by the end of Moundville III. During these phases, large burial concentrations began appearing across the site, including in the area west of Mounds O and P.

This understanding of Moundville settlement has been revised greatly in recent years, and further study of Moundville mounds, middens, and burials (Knight 1994, 1995) led Knight and Steponaitis to their “new history of Moundville” where the ceramic and burial evidence were seen to follow differing trajectories (Knight and Steponaitis 1998:1-25). According to these researchers, Moundville was probably not occupied during West Jefferson phase times prior to A.D. 1050, and during Early Moundville I, Moundville lacked a formal community plan, with homesteads scattered along the Black Warrior River and Carthage Branch. The Asphalt Plant Mound and Mound X are the only two mounds known to have been erected at this time of initial centralization. Moundville emerged as a highly structured and formal settlement during Late Moundville I and Early Moundville II, when most of the mounds were constructed and fully utilized. In Moundville III times, Moundville proper was abandoned by most of its residents and was used as a necropolis and primary religious center. Therefore, understanding the occupational history of Mound W and the area “west of Mounds O and P” is important for our understanding of the trajectory of the early occupation of the Moundville site.

Maurice Goldsmith directed Civilian Conservation Corps crews in the excavations of Mound W between December 1939 and May 1940; he also directed those

for the earlier proposed Roadway (Figure 3). At the time of excavation, burials, features, and field specimens were documented in three-dimensional space, and a series of vertical profiles of the mound were drawn at intervals of five and ten feet along a set of east-west axes; an example of these profiles is presented in Figure 4. Excavation seems to have proceeded from north to south, due to the position of the sun in the sky during the winter and spring excavation season (AMNH 1938; Peebles 1979 map). For the most part, Goldsmith attempted to follow the “Uniform Instructions to Apply to Archaeological Investigations in Alabama” as outlined by the Alabama Museum of Natural History (AMNH 1938); however, he did depart from those procedures in a few notable ways. In fact, methods of excavation at Mound W seem to have been variable based on available equipment and crews. Materials and records from this Depression-era excavation are currently curated at the Office of Archaeological Research, Moundville, Alabama.

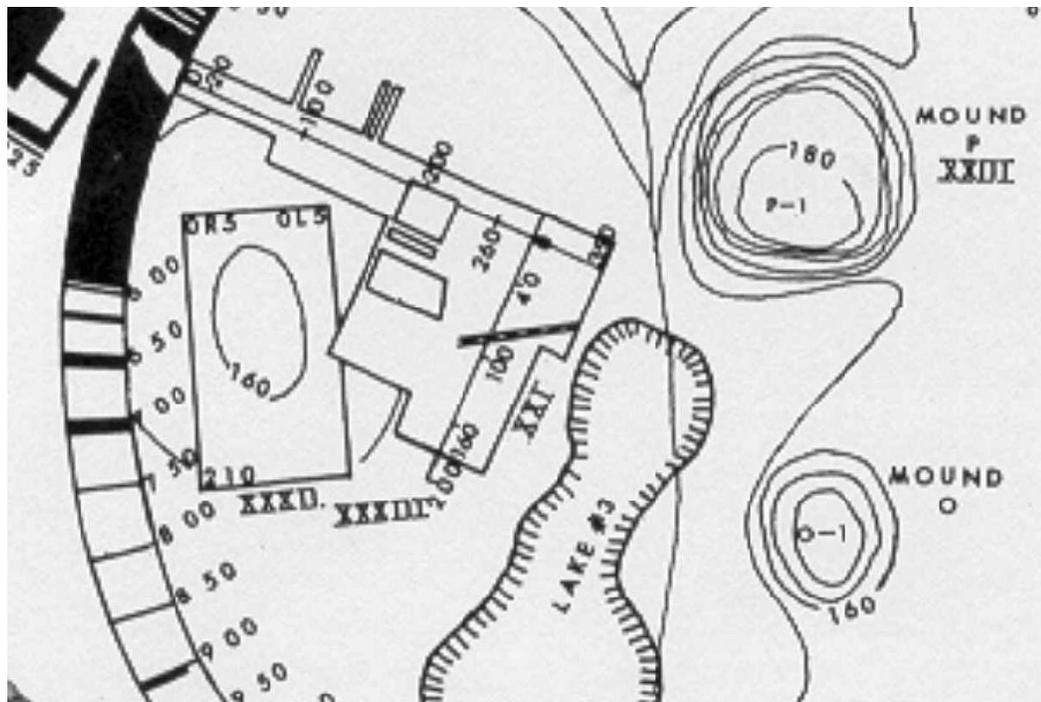


Figure 3. Portion of Peebles’s 1979 map of Moundville excavations, showing those at Mound “W” (XXXII) and “West of P” (XXI).

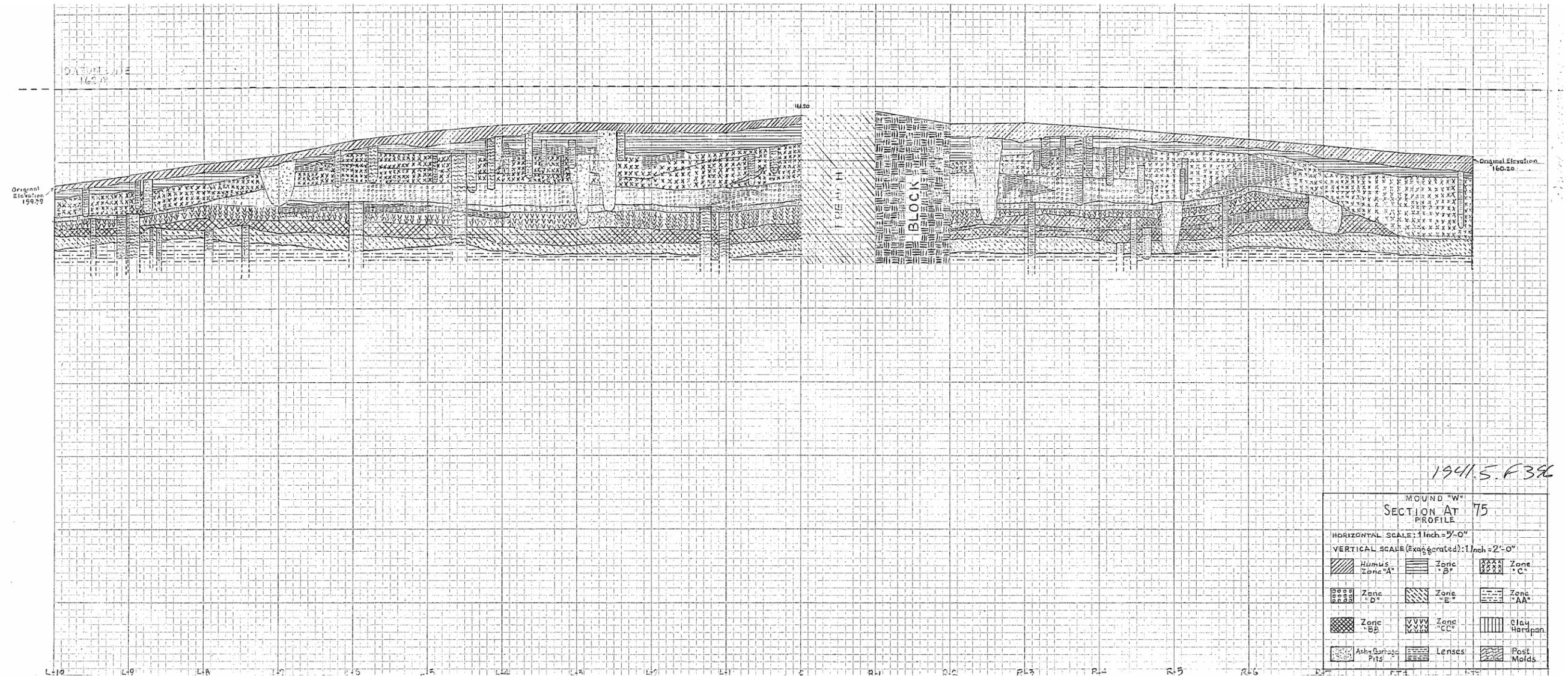


Figure 4. Example of Mound W vertical profile maps (section at 75).

According to Peebles (1979), the excavations at Mound W were unique in the history of investigation at Moundville. His discussion of the area, which he believes to have been not a mound at all but a “natural rise in the ground,” follows:

In contradistinction to most other excavations at Moundville, the excavations at Mound W were conducted on a vertical rather than on a horizontal face. In this way, with the exception of the burials and fire pits which could not be ignored, the depth of the working floor was below the bottom of the house features. The records for the Mound W excavations contain profile sheets in addition to individual sheets for burials and firepits. No horizontal plot of the excavated area was made because the excavation technique used to produce stratigraphic profiles was incompatible with that used for the horizontal plotting of house floors [Peebles 1979:4].

Goldsmith used the recommended paper forms for documenting artifacts and features, and he seems to have set up his grid in blocks defined by north-south and east-west axes (Figure 5). He began his excavation with an exploratory trench; however, his trench followed the north-south axis instead of the east-west axis; this trench is visible in the profiles. Also apparent in the profiles is a permanent block or balk left for stratigraphic control during excavation (Figure 6); this block paralleled the trench along the north/south axis. Horizontal provenience was documented in blocks (for example, 20 L8) created by the grid. Vertical elevations of field specimens, burials, and features were measured from either a datum plane set at 162.00 ft or from the ground level surface (Figure 7). Most ceramics were collected with only general horizontal provenience (a series of blocks or grid coordinates) and no vertical provenience.

During my research, I found no photos of features, burials, or field specimens taken during excavation or primary analysis, but the drawings by Maurice Goldsmith are quite detailed and precise, and a few charts and crude maps were added to the files by Moundville collections analyst E. M. Chapman at a later date. There is a key to the strata identified on the profile drawings; however, there are no corresponding soil descriptions.

Profiles were drawn with a vertical exaggeration relative to the horizontal. In his discussion of excavations at Moundville, Peebles (1979:30) makes a reference to a topographic sketch of the area made by Maurice Goldsmith; however, I was unable to find this document during my investigations. I also have been unable to find any correspondence or field notes written by Goldsmith during these excavations. Therefore, all of my conclusions are based on the records and artifacts themselves.

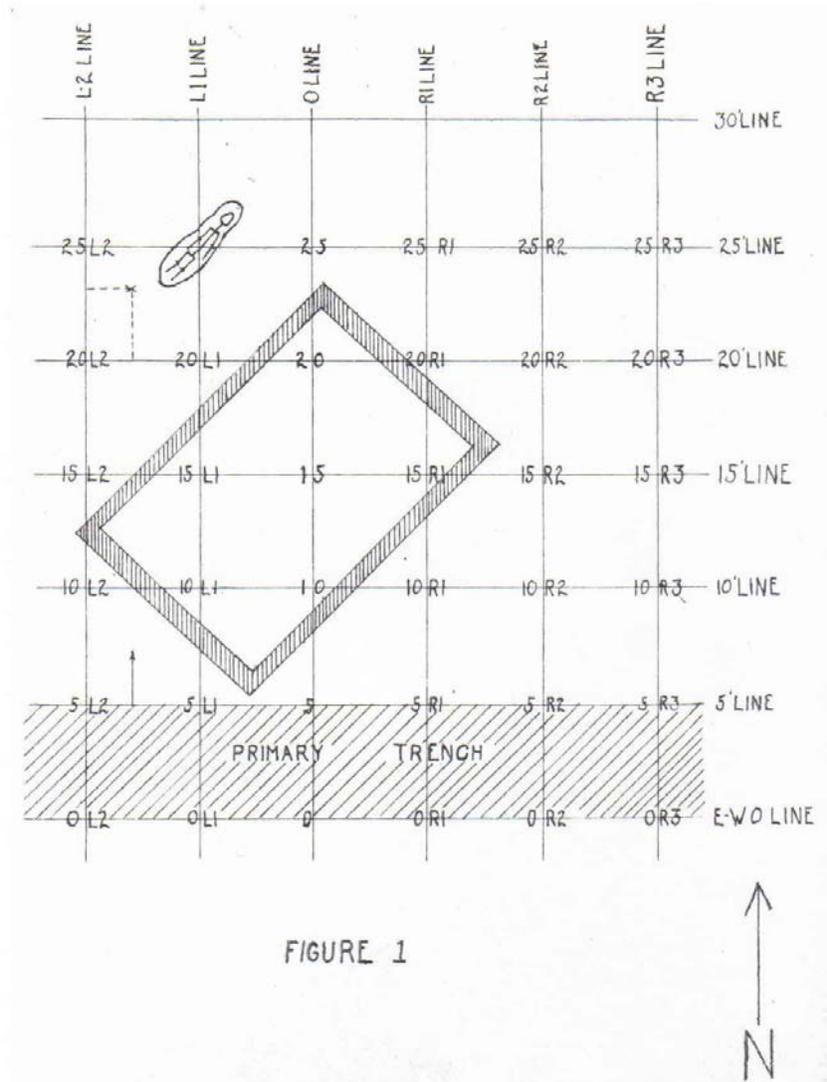


Figure 5. Alabama Museum of Natural History's instruction manual (1938:17), Figure 1, demonstrating the grid layout procedure for conducting CCC excavations.

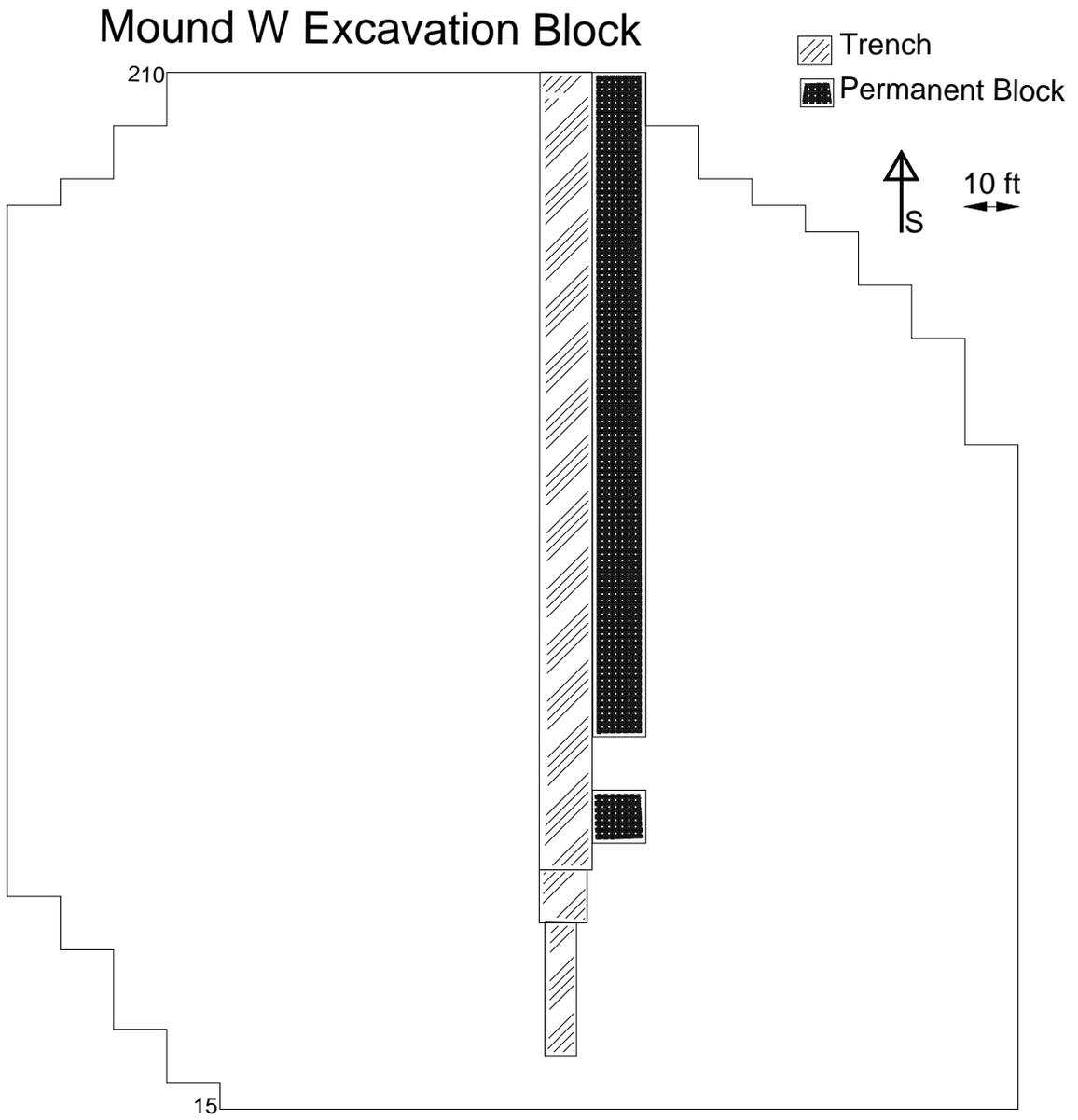


Figure 6. Mound W excavation block, plan view, beginning at line 15 and proceeding south to line 210.

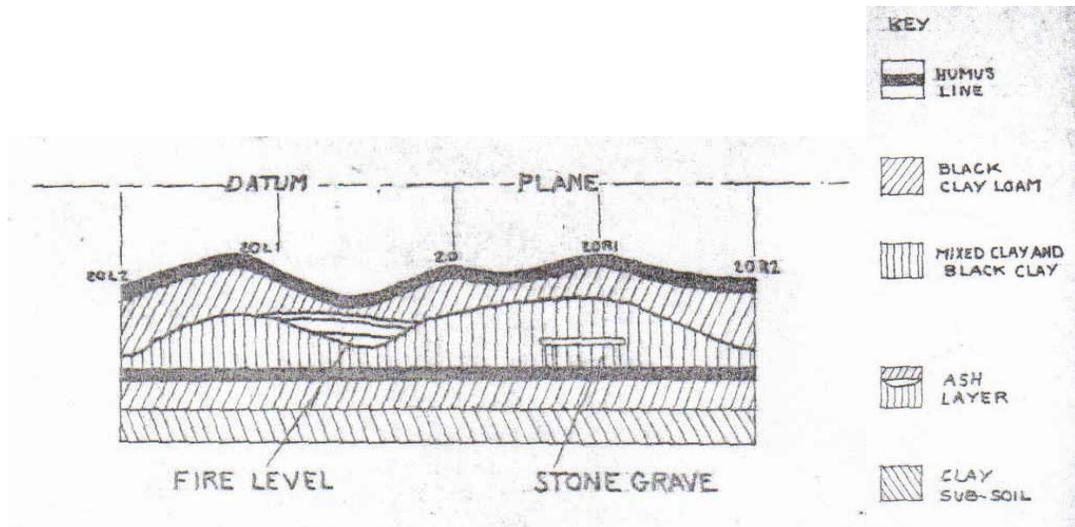


Figure 7. Alabama Museum of Natural History's instruction manual (1938:18), Figure 2, demonstrating vertical profile procedures.

3. ANALYSES OF ARTIFACTS AND FEATURES – SPATIAL ANALYSIS

The first line of evidence that I examined to reconstruct Mound W's occupational history was the spatial relationships of the features, field specimens, and burials. The second line of evidence was the assemblage of general ceramics. Each of these tells a story about the occupational history of Mound W and together they provide a clearer picture of this locality and its spatial and chronological placement on the Moundville terrace. I will begin my discussion with the spatial analysis and will cover the ceramic analysis in the following chapter.

With permission from the Alabama Museum of Natural History, I had the paper copies of the Mound W profiles scanned into a digital format (.tif file). These files then could be imported into a computer mapping, display, and analysis program and used in three dimensional analyses. I used ESRI's Arcview 3.2 with the 3D Analyst extension package as well as the Surfer 8 and Grapher 3 programs. With these applications, my goal was to accomplish a three-dimensional study of spatial relationships and to clarify the picture of mound occupation. I first created digital databases of the paper records from the Mound W excavations. This task included inputting rows and columns of data on burials, field specimens, and features as these were recorded on paper forms. As Arcview is particularly capable of matching physical locations with corresponding attribute data, I was able to plot points in 3D space and associate those points with

burials, features, and field specimens. I also was able to take points from the surface elevations on the profiles and interpolate a set of contours for the mound area.

The few features, 14 in number, documented during the excavation of Mound W are all hearths (see Appendix A). All of these features seem to lie on the outskirts of the elevated area known as Mound W (Figure 8). Five of these features were drawn directly onto the profiles; the remaining ones were located based on grid coordinates and elevations. Many postholes, ash pits, and lenses were drawn on the profiles but were not documented as features with feature forms (Figure 9). The apparent postholes as recorded on the profiles present an interesting challenge because it cannot be said definitively whether these represent actual postholes or cross-sections of narrow continuous wall trenches. Here I have recorded each one independently, and I have come to affectionately call them postholes/wall trench sections. These were located on the profiles and assigned to levels according to their grid coordinates and top elevations.

There were 311 field specimens documented during excavation; I examined all of the available field specimens located in storage and special collections at the Office of Archaeological Research (see Appendix A). Field specimens include burial goods as well as other noteworthy, unassociated ceramic, stone, bone, and copper artifacts. These were located at grid coordinates, and their elevations were recorded in inches from the ground surface. Field specimens were assigned to levels based on elevations; however, those associated with burials were not assigned to levels due to the problems outlined below. It was assumed that field specimens were not located in pits unless otherwise noted, possibly a naïve assumption given the circumstances. In the records, some field

specimens were given level assignments in an added notation; however, I am unsure whether these assignments were made by the original excavators or by later analysts.

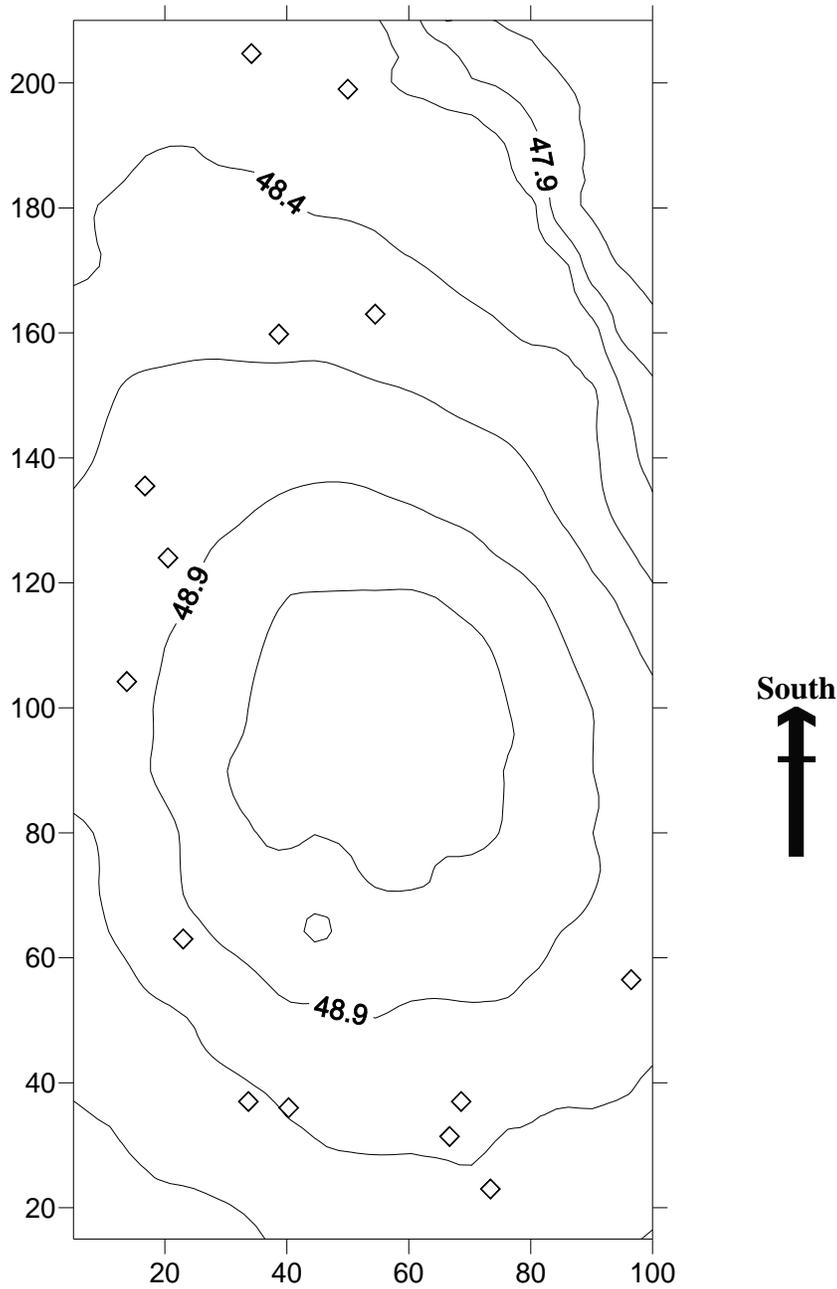


Figure 8: Distribution of hearth features at Mound W. Grid values are in feet; elevations are in meters.

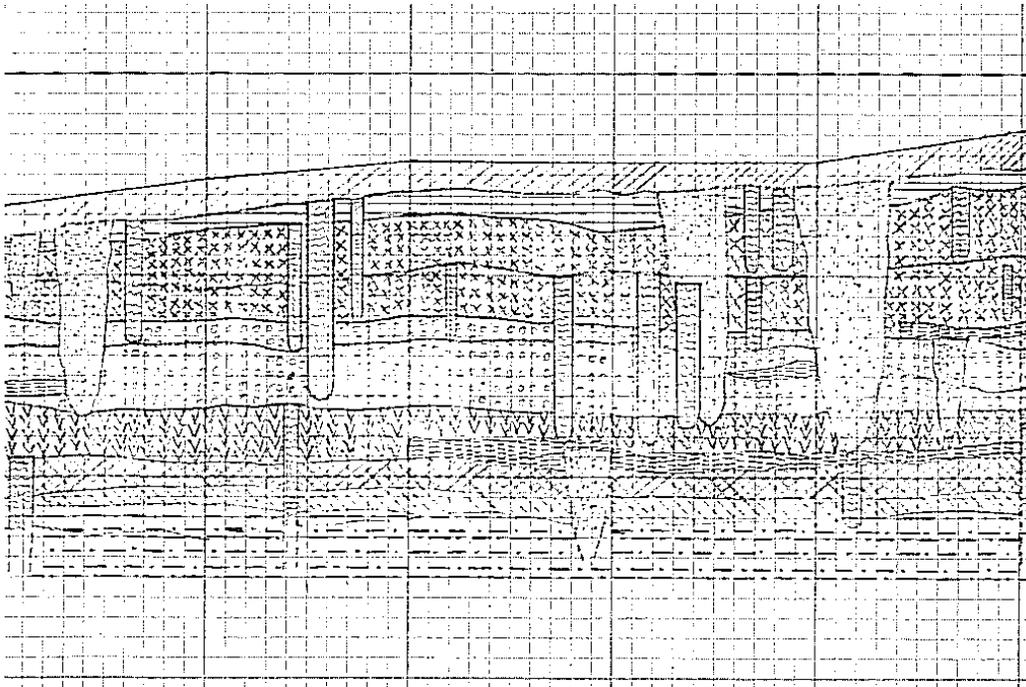


Figure 9. Mound W profile representation of postholes and pits, drawn by Maurice Goldsmith.

Seventy-one burials were documented in the Mound W area, and 22 of those 71 burials included burial goods (see Appendix A). Burials are scattered across the elevated area, but there is a substantial concentration of them in the southeast quarter of the mound area; in fact, this burial concentration could instead be more closely associated with the “West of P” area where excavations recovered a substantial cemetery area in 1936 (Figure 10). One of the Mound W burials, numbered 2906, seems to have been excavated prior to the main era of work at Mound W and its affiliation with Mound W is somewhat questionable.

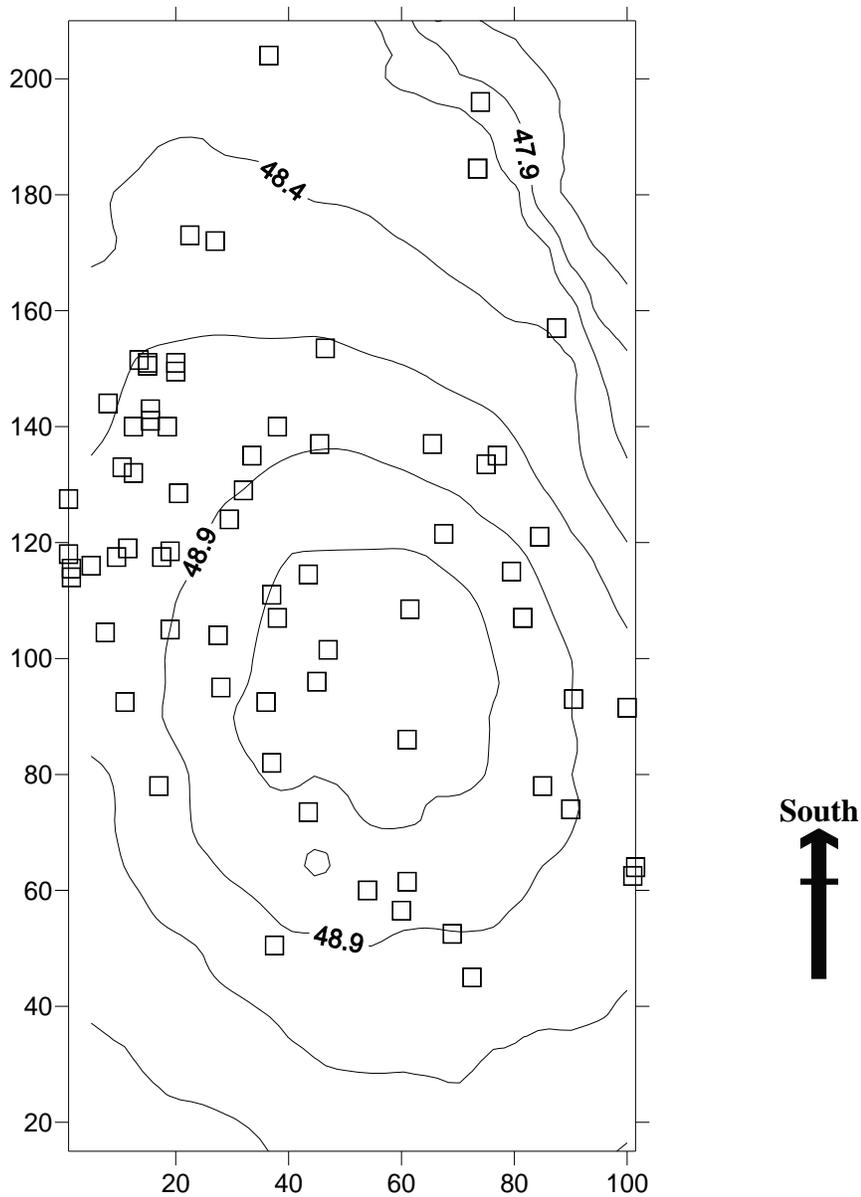


Figure 10: Distribution of burials at Mound W. Grid values are in feet; elevations are in meters.

There were many problems with trying to assign level of origin designations to burials as only the elevations of the burials were documented, as opposed to noting the elevation of the point of origin of the grave pits. The majority of the burials were labeled “intrusive” by Goldsmith. Only twelve burials were labeled as “precedent” and none were classified as “inclusive.” According to the Alabama Museum of Natural History

guidelines (1938:8), burials prior to mound construction should be labeled “precedent,” burials integral to mound levels should be labeled “inclusive,” and burials intruding across levels, i.e., from a higher level into a lower level, would be labeled “intrusive.” Whereas these terms could have aided me in deciding general vertical provenience for the burials, I believe that Goldsmith used these terms incorrectly. Only one of the burial pits was even noted, measured, or described, making it impossible to know from which level the burial originated. Burial SK2925 was listed at an elevation of 32 inches; however, at the bottom of the form under “remarks” it states that the “burial pit begins in level B and extends down to level C.” My attempt to associate burial positions with pits noted on the profiles offered very little further information as most burials did not cross a profile line and/or burial elevations did not correspond to the pit elevations noted on the profiles. Features and field specimens not associated with burials were more forgiving in that their elevations could be taken more literally, whether they were measured from the surface or the datum line. Therefore, in general, the information is inconsistent when it comes to relating levels to particular artifacts, features, or phases, but some general conclusions can be made. Previous researchers have made conclusions based on the general horizontal and vertical position of artifacts and features, and I will discuss these studies before moving on to my own analysis of artifacts and features by levels.

In 1978, Walthall and Wimberly reported on the submission of a sample from Mound W for radiocarbon analysis. According to their report, the sample was composed of charred cane selected from a large amount of burned botanical material recovered from square 105, R3-R4 at a depth of 40 inches. In a letter dated November 7, 1977,

Christopher Peebles made extensive comments about the context of this particular sample. His comments, as published by Walthall and Wimberly, follow:

Mound 'W' as you know was not a 'mound' but instead a low natural rise west of the plaza and Mound P. The core of this mound is a series of overlapping habitation areas. Like most of the 'village' areas at Moundville, this part of the site showed little sheet midden and a low concentration of artifacts and other household debris. The area called Mound 'W' (as opposed to areas 'South of W' and 'Southwest of W') was excavated in the spring of 1940 by Maurice Goldsmith and his crew of CCC laborers. Unlike his earlier 'Roadway' excavation, Goldsmith recorded his excavation at Mound W on a vertical face. He made stratigraphic profiles every 5 or 10 feet across the east-west axis of the excavation. Minute strata, post molds, and other features were mapped with care on these drawings. However, the descriptive key to the meaning of the various symbols used to define the strata has been lost. Otherwise the only information from this excavation are the 'feature sheets' for burials and firebasins (which were plotted on a horizontal surface) and the 'field specimen' logs. The reconstruction below is based on these records.

From these data it seems that there were four or five occupation levels within the Mound W area. These levels, which could be separated by as few as 20 years, did not overlap completely at any single point on the surface of the mound. It seems that the earlier occupations were at the western margins of the mound, and, as time went on, the intensity of settlement shifted toward the center of the mound. That is the stratigraphically earlier deposits are the thickest on the west side of Mound W. These deposits thin out toward the center of the mound at which point they are overlaid by two or three later occupation surfaces. These later surfaces show the origin of post molds near their surfaces and the intrusion of these post molds through the earlier layers.

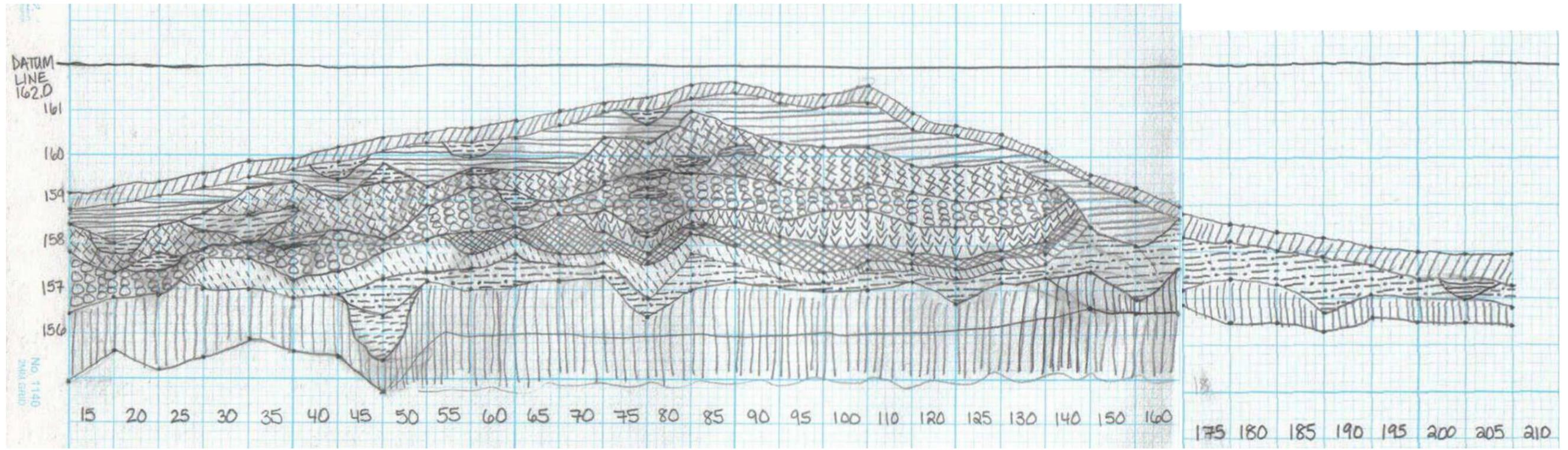
In the squares of interest here – 100-110, R3-R4 and particular 105, R3-R4 – the stratigraphic profiles for 100 and 110 show two or three overlapping living surfaces with a total depth of 3.6 to 4.0 feet. The nearest burials and firebasins are approximately 10 feet away. Two artifacts were registered in square 105, R3: A fragment of a greenstone axe was located 28 inches below the surface (M*W161) and a piece of 'charred cloth' was recorded 32 inches below the surface (M*W146). It is this latter artifact that is of interest here. Your sample comes from '40 inches below the surface' and consists of organic material that includes charred cloth, matting and other vegetable remains. My guess is that these materials came from a pit that began above 32 inches from the surface and terminated 40 inches below the surface of this square. If this is the case, then the origin of the pit is within the third of the occupation layers of Mound W. That is, it is probably the second earliest of the four or five stratum in the mound. If, however, it is not material from a pit but instead is midden debris inclusive within the deposit, then it comes from the earliest stratum of the mound [found in Walthall and Wimberly 1978:121].

Walthall and Wimberly's ^{14}C date for this charred material from Mound W was A.D. 1260 ± 85 (uncorrected). For Walthall and Wimberly, this date helped to establish the early end of the Moundville "temporal bracket" which they set at A.D. 1200 – 1500 (Walthall and Wimberly 1978:122). These researchers believed that the earliest levels at Mound W represented some of the earliest occupation at Moundville and indicated *in situ* evolution of Mississippian culture. After examining the vertical elevation of the charred material and its position on the profiles, Peebles associated Walthall and Wimberly's sample with a layer that was the earliest stratum associated with the mound, but he also warned that if the specimen was inclusive in a pit, it could date to the second earliest layer. The date that Walthall and Wimberly obtained from this sample can be bracketed by a one sigma range of 1175-1345 A.D. (uncorrected).

Christopher Peebles also extensively discussed the stratigraphic makeup of Mound W and supported the position that Mound W was an occupied "natural rise" instead of an artificially constructed mound (Walthall and Wimberly 1978:121). Looking at the Mound W profiles, Peebles recognized the elevation as a series of superimposed domestic debris and house floors with thinner occupations underlying thicker, later layers at the center of the mound. Occupation seems to have increased in intensity and shifted from the western portion of the mound to the east and towards the later center. In this discussion, Peebles does generally outline the stratigraphic relationships of Mound W's occupational history, and he is the first to relate data from the drawn profiles, but he does not offer evidence to support his statement that the area was naturally elevated before the establishment of the recognized occupied surfaces.

In 1983, during his study of ceramics, chronology, and community patterns at Moundville, Vincas Steponaitis assigned phase dates to whole vessels, including a sample from the Mound W area (Steponaitis 1983:133-161). He based his dates on a series of chronologically distinct markers that he had previously identified and used to establish a gravelot seriation. Those vessels are identified in Table 2 along with Steponaitis's phase assignments. His assignment of phase dates offers a preliminary general framework to the Mound W occupational history, as it is clear that there are markers present from phases ranging from Moundville I to potentially Late Moundville III. In particular, there are three early markers (Moundville I – Early Moundville II), two late markers (Late Moundville II – Late Moundville III), and two markers with wide phase ranges (Moundville I – Early Moundville III). I will later associate some of these vessels with Mound W levels of occupation.

I will now discuss the field specimens, features, and burials which I have associated with each of the levels defined during the field work, based on my work with the paper records and profiles. The sequence of occupation, according to the profiles, progresses from levels labeled AA, E, BB, CC, D, C, B, to A with AA as the earliest layer and A the latest layer. While the original profiles demonstrate vertical sections of Mound W along an east-west axis, Figure 11 demonstrates Mound W's profile along its north to south axis; I created this cross-sectional diagram by noting level elevations at the base line (0) on each profile. Zones are coded as they were on the original profiles. There are no corresponding soil descriptions for the Mound W levels and thus no way to discuss the physical differences between the layers; however, between the clay hardpan



	Humus Zone "A"		Zone "B"		Zone "C"
	Zone "D"		Zone "E"		Zone "AA"
	Zone "BB"		Zone "CC"		Clay Hardpan
	Ash Garbage		Lenses		Post Holes

Figure 11. Reconstructed profile of Mound W along north to south axis (base line = 0)

and the plowzone, there seems to have been seven layers identified by the excavators. I will examine each of these layers in turn.

Table 2. Steponaitis's Phase Dates for Associated and Unassociated Vessels, Mound W.

Burial #	Vessel	Phase Date
SK2942	Bell Plain, <i>var. Hale</i> , pedestaled bowl with cutout rim, lowered lip	Moundville I – Early Moundville II
SK2947	Bell Plain, <i>var. Hale</i> , simple bowl with beaded rim	Late Moundville II – Late Moundville III
SK2957	Mississippi Plain, <i>var. Warrior</i> , standard jar with two handles	Moundville I – Early Moundville III
SK2962	Moundville Engraved, <i>var. Wiggins</i> , subglobular bottle with pedestal base	Late Moundville II
SK2984	Moundville Incised, <i>var. Moundville</i> , standard jar with two handles	Moundville I – Early Moundville II
Unassoc.	Bell Plain, <i>var. Hale</i> , slender ovoid bottle with a pedestal base (M*W81)	Moundville I
Unassoc.	Mississippi Plain, <i>var. Warrior</i> , standard jar with two handles (M*W220)	Moundville I – Early Moundville III

The clay hardpan, which I have labeled as Level X, includes thirty-eight intrusive posthole/wall trench sections, eight pits and two hearth features. One burial is

associated with the clay hardpan; Burial SK2926, labeled “precedent,” includes a shell-tempered ceramic discoidal. The seven field specimens associated with this level include shell-tempered ceramic discoidals, triangular arrow points, and a greenstone gorget fragment. The spatial patterning of artifacts and features in this level is interesting, in that they only occur in the northern and southern regions of Mound W, so that there is a marked absence of artifacts and features in the center of the mound (Figure 12).

Burial SK2942, also labeled “precedent” but seemingly associated with Level AA, included four bone tools, 31 galena beads, and a whole ceramic vessel. This vessel, a Bell Plain, *variety Hale* pedastaled bowl with a cutout rim and lowered lip, resembles a vessel recovered during the Bessemer site excavations (DeJarnette and Wimberly 1941:Figure 67) and was given a classification of Moundville I – Early Moundville II by Steponaitis (Figure 13). Two hearth features, 72 posthole/wall trench sections, and 10 pits were associated with Level AA. The 20 field specimens include triangular arrow points, charred corn cobs, hammerstones, nutting stones, and a portion of a vessel with a pedestal base. Ceramic discoidals, both grog-tempered and shell-tempered, are also present. The spatial arrangement of these artifacts and features can be seen in Figure 14. Again it seems that artifacts and features are concentrated in the north and south while there are few represented in the center of the mounded area.

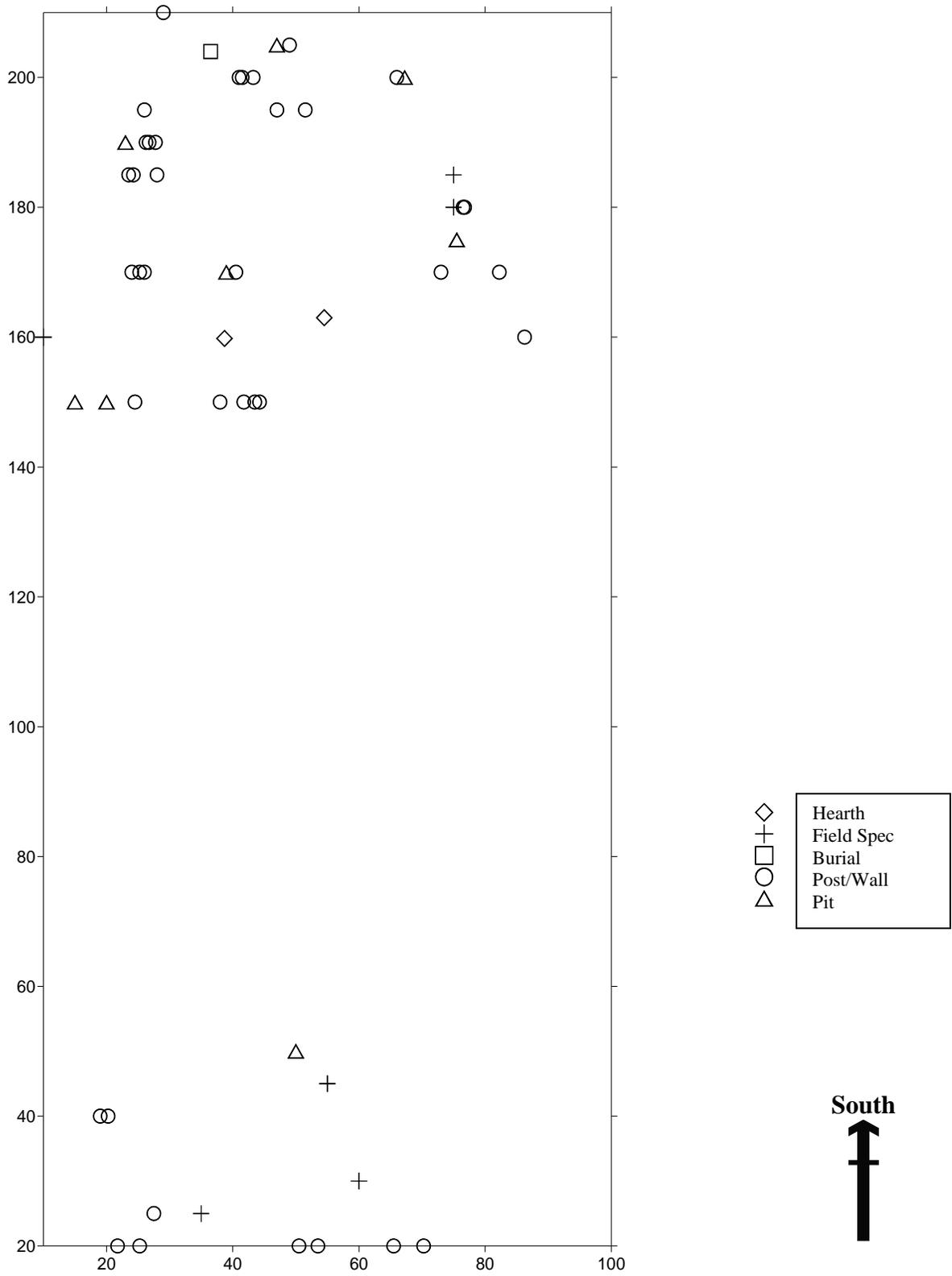


Figure 12. Spatial distribution of artifacts and features in Level X.



Figure 13. Bell Plain, *variety Hale* pedestaled bowl with cutout rim and lowered lip (M*W176), associated with Level AA (Photo courtesy Vincas Steponaitis).

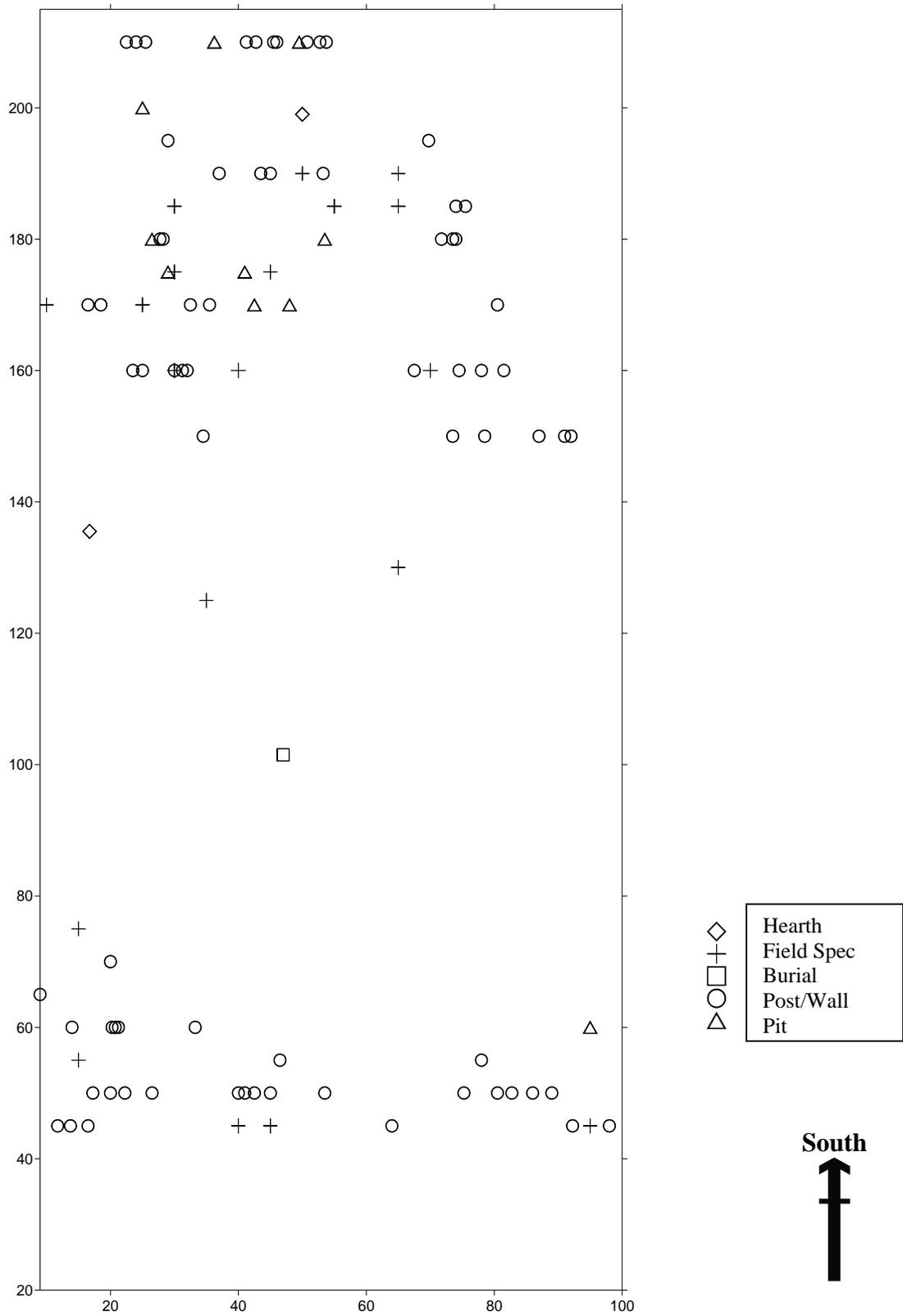


Figure 14. Spatial distribution of artifacts and features in Level AA.

Level E exhibits an increase in the number of postholes/wall trench sections (117) and has seven associated pits but no burials and only one firepit feature. The 12 field specimens associated with Level E include bone tools, pigments, a hammerstone, axe fragments, shell ornaments, ceramic discoidals, and a ceramic effigy fragment. None of these field specimens are particularly diagnostic, but it should be noted that the ceramics were tempered with shell. The spatial arrangement of these artifacts and features can be seen in Figure 15. It should be noted that artifacts and features associated with Level E seem to be concentrated in the northern margins of the Mound W locality, where Level E also is thickest (see Figure 11).

Levels BB and CC, which have their thickest expression in the west, become relatively thin deposits toward the center of the mound but exhibit most of their artifacts and features in this center area. Only four field specimens appear in Level BB and no hearth features or burials; however three pits and 76 postholes/wall trench sections are scattered throughout the level. Level CC includes fewer postholes/wall trench sections (32) and pits (6) but numerous field specimens (15). One hearth feature and two burials are also associated with this level. Burial SK2961 included shell beads and a shell ornament. The spatial arrangement of artifacts and features in levels BB and CC can be seen in Figures 16 and 17.

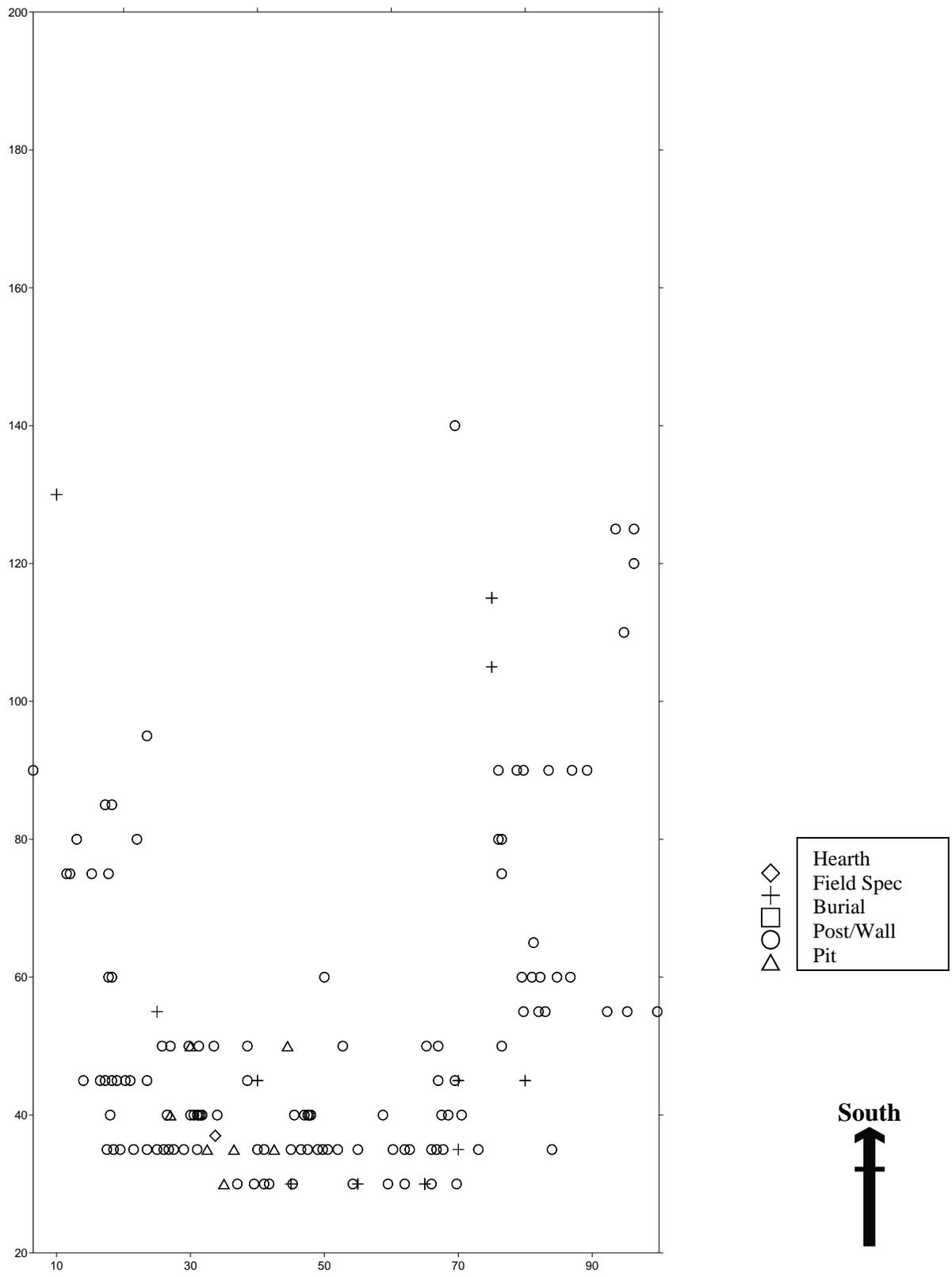


Figure 15. Spatial distribution of artifacts and features in Level E.

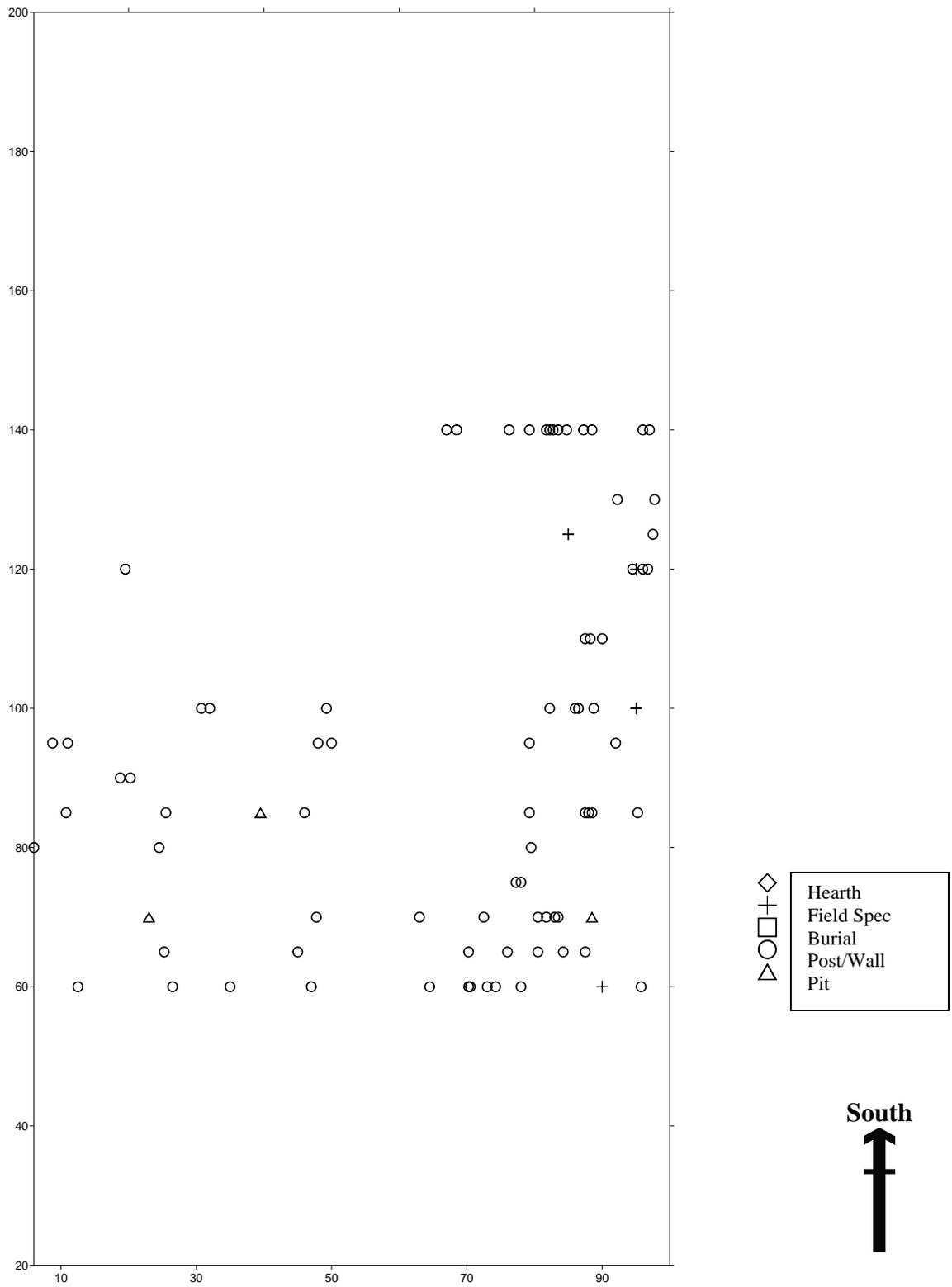


Figure 16. Spatial distribution of artifacts and features in Level BB.

Levels D, C, and B are thicker deposits overlying the thin layers at the center of the mound. These deposits represent later, heavier occupations and exhibit substantial numbers of postholes, pits, and field specimens. Level D includes only one hearth feature and no burials but includes 34 field specimen artifacts such as triangular arrow points, greenstone celt fragments, shell-tempered ceramic discoidals, one grog-tempered ceramic discoidal, ceramic effigy fragments, hammerstones, mica, and bone tools. Level D also can be associated with 171 postholes/wall trench sections and 28 pits. Level C includes the same types of field specimens as Level D but exhibits an increase in their number (53). Also in this level, there are 196 postholes/wall trench sections and forty pits as well as inclusive ash lenses. Three hearth features are present in Level C as is Burial 2955 which includes grave goods of chert projectile points. Also associated with Level C is a complete ceramic vessel, a slender ovoid bottle with a pedestal base, typed as Bell Plain, *variety Hale* (Figure 18). This vessel shape was classified by Steponaitis (1983:149) as a Moundville I phase marker.

Level B demonstrates by far the heaviest occupation of Mound W, with four hearth features, two burials, 56 field specimens, 293 postholes/wall trench sections, and 114 pits. Level B also produced a substantial amount of clay daub and included several ash lenses. The occurrence of daub is noteworthy as large daub concentrations are considered markers of residential architecture of Moundville II and III occupations (Lacquement 2004). Interesting field specimens associated with this level include copper fragments, textile fragments, a spindle whorl, stone and ceramic discoidals, triangular arrow points, shells, and several ceramic effigies, including a realistic bird effigy and a

fragmentary human head. The spatial arrangement of artifacts and features in Levels D, C, and B can be seen in Figures 19, 20, and 21.

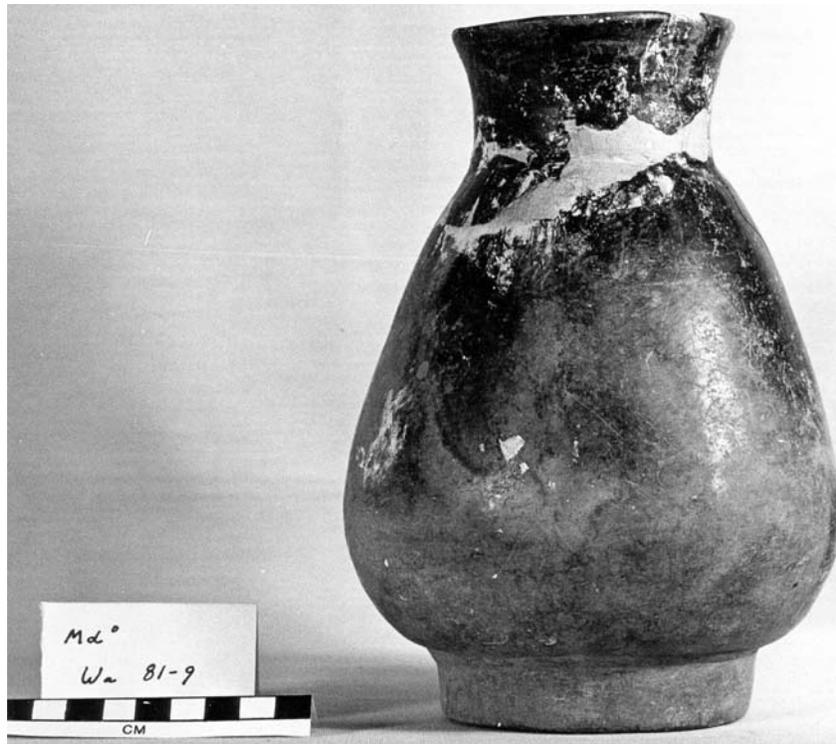


Figure 18. Slender ovoid bottle with pedestal base (M*W 81), associated with Level C and dated by seriation to the Moundville I phase (Photo courtesy Vincas Steponaitis).

Level A, the plowzone, includes no hearth features, 10 postholes/wall trench sections, and seven pits. The majority of the 34 field specimens associated with this level are triangular arrow points. Seven burials are intrusive from this topsoil level into the B level. The grave goods associated with these burials include Moundville Incised jars, shell beads, copper-clad wooden earplugs, red paint, and a unique D'Olive Incised shallow, flaring-rim bowl. The spatial arrangement of the artifacts and features in this level is shown in Figure 22.

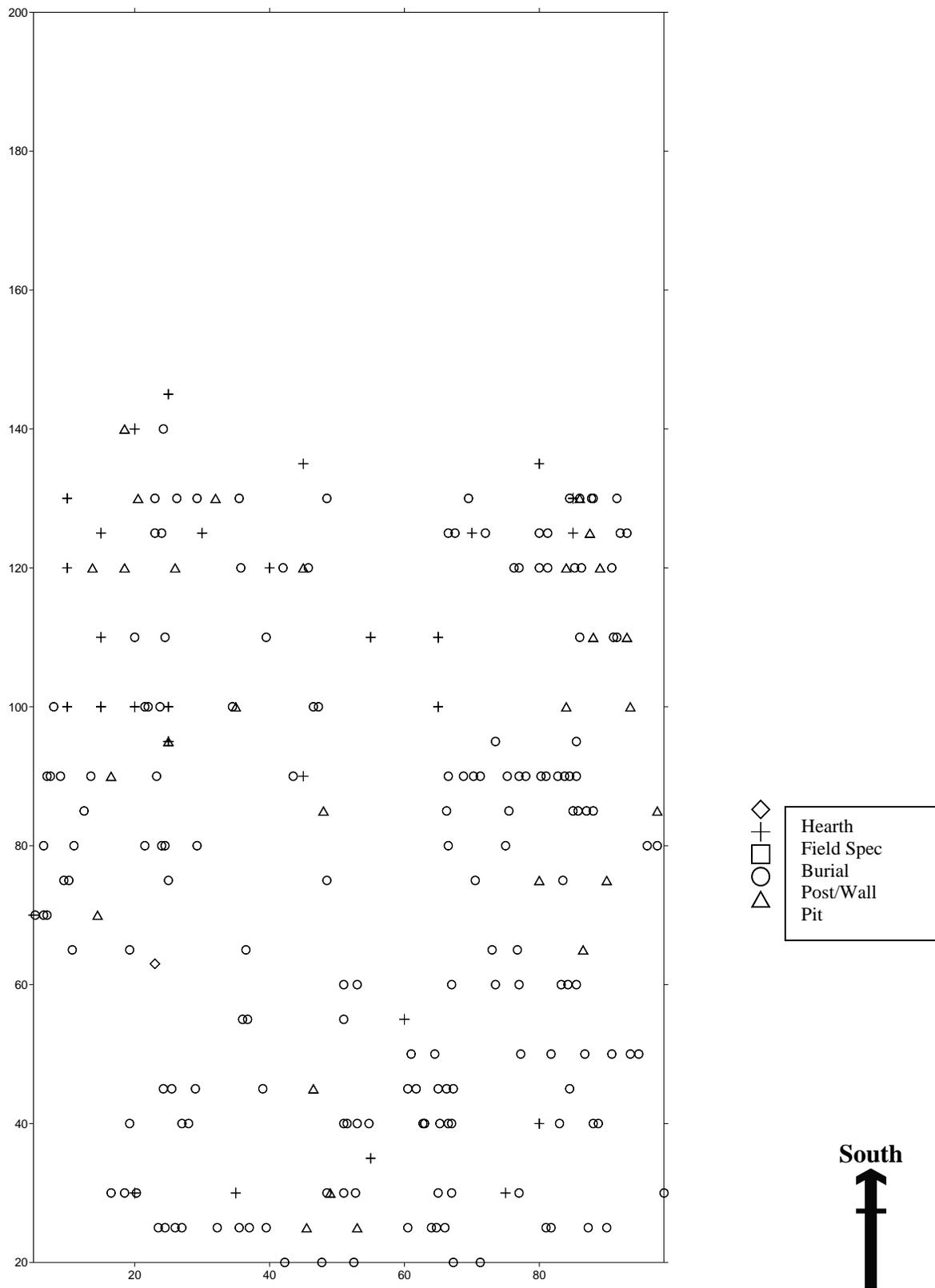


Figure 19. Spatial distribution of artifacts and features in Level D.

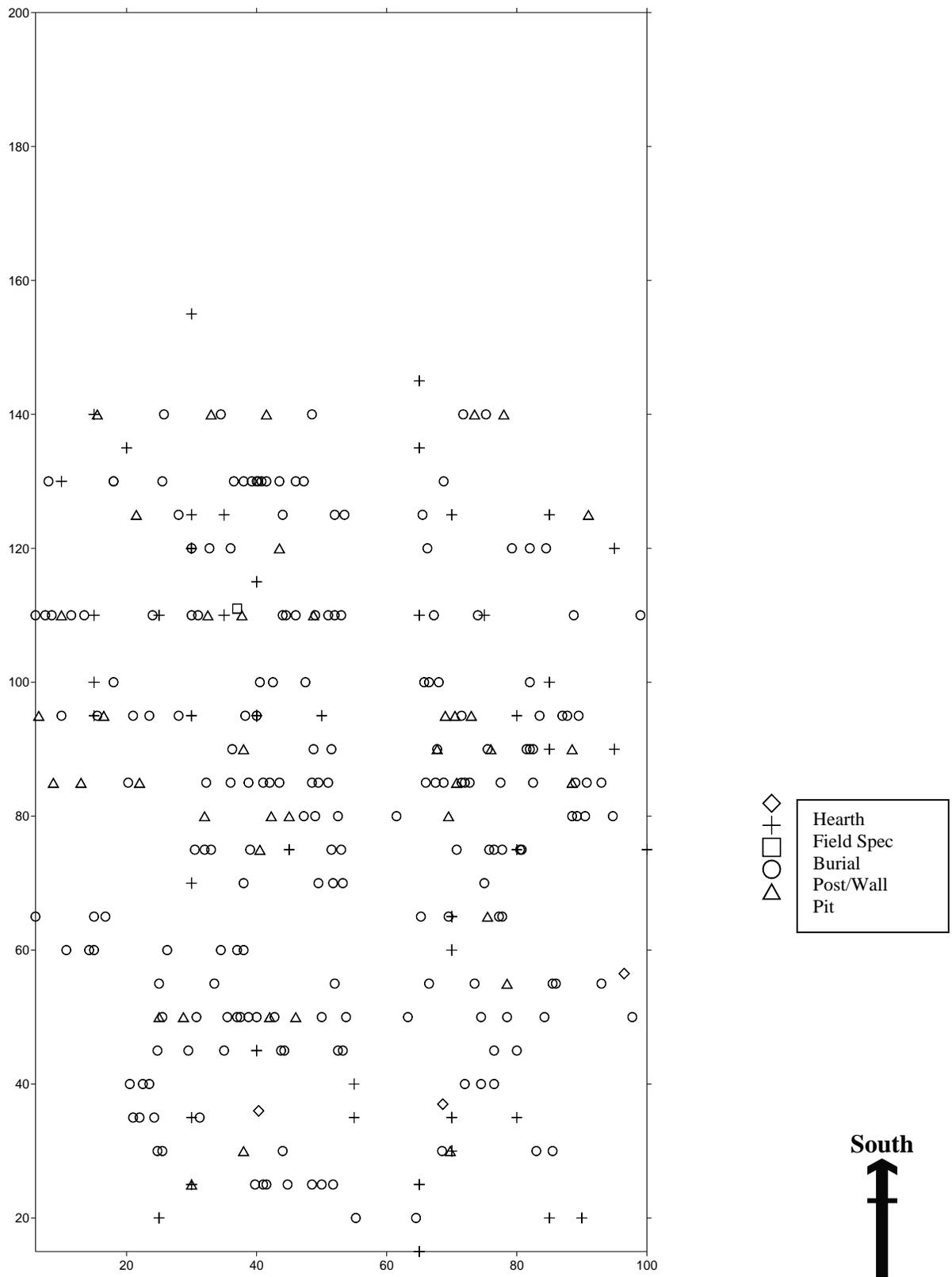


Figure 20. Spatial distribution of artifacts and features in Level C.

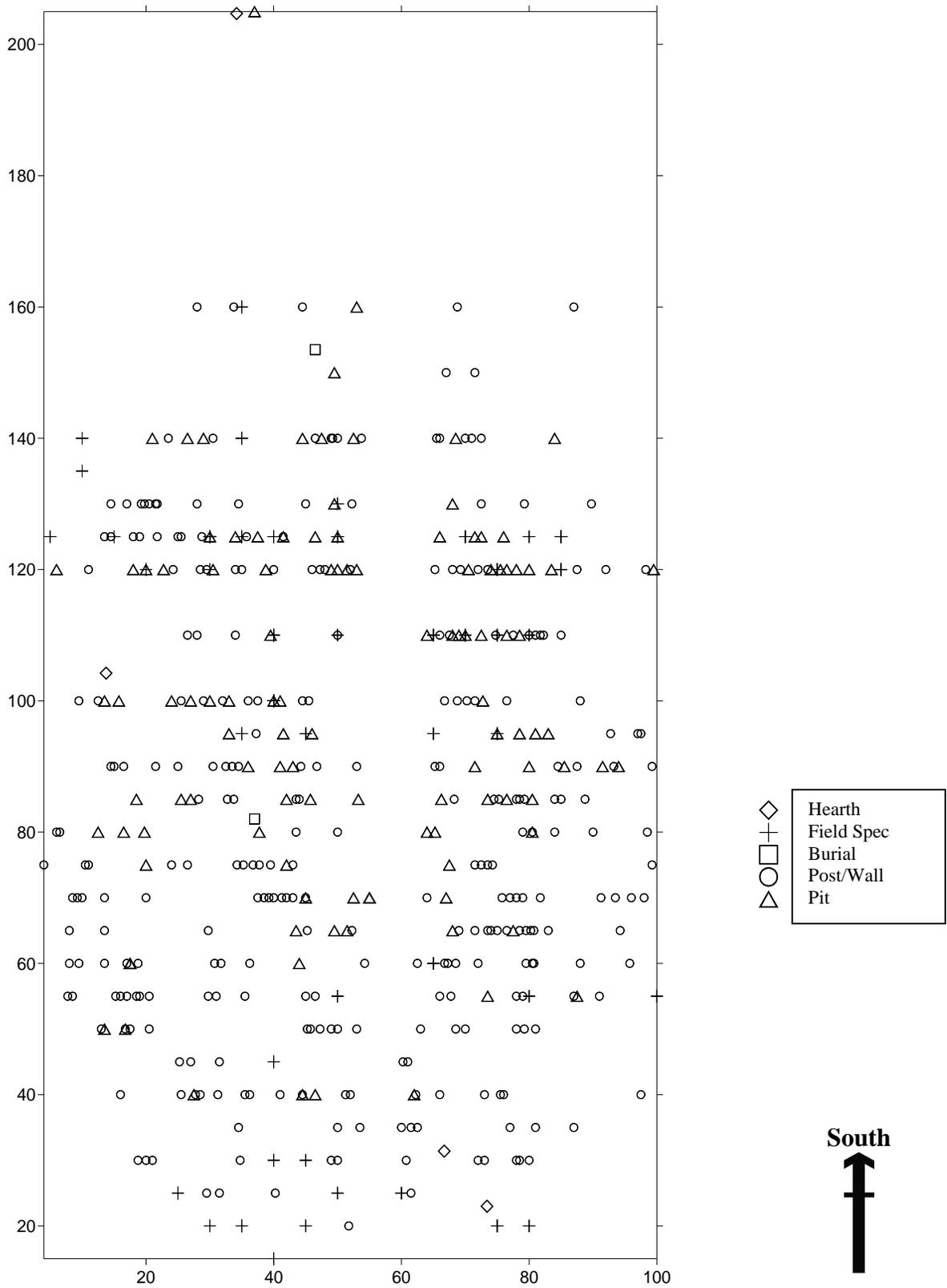


Figure 21. Spatial distribution of artifacts and features in Level B.

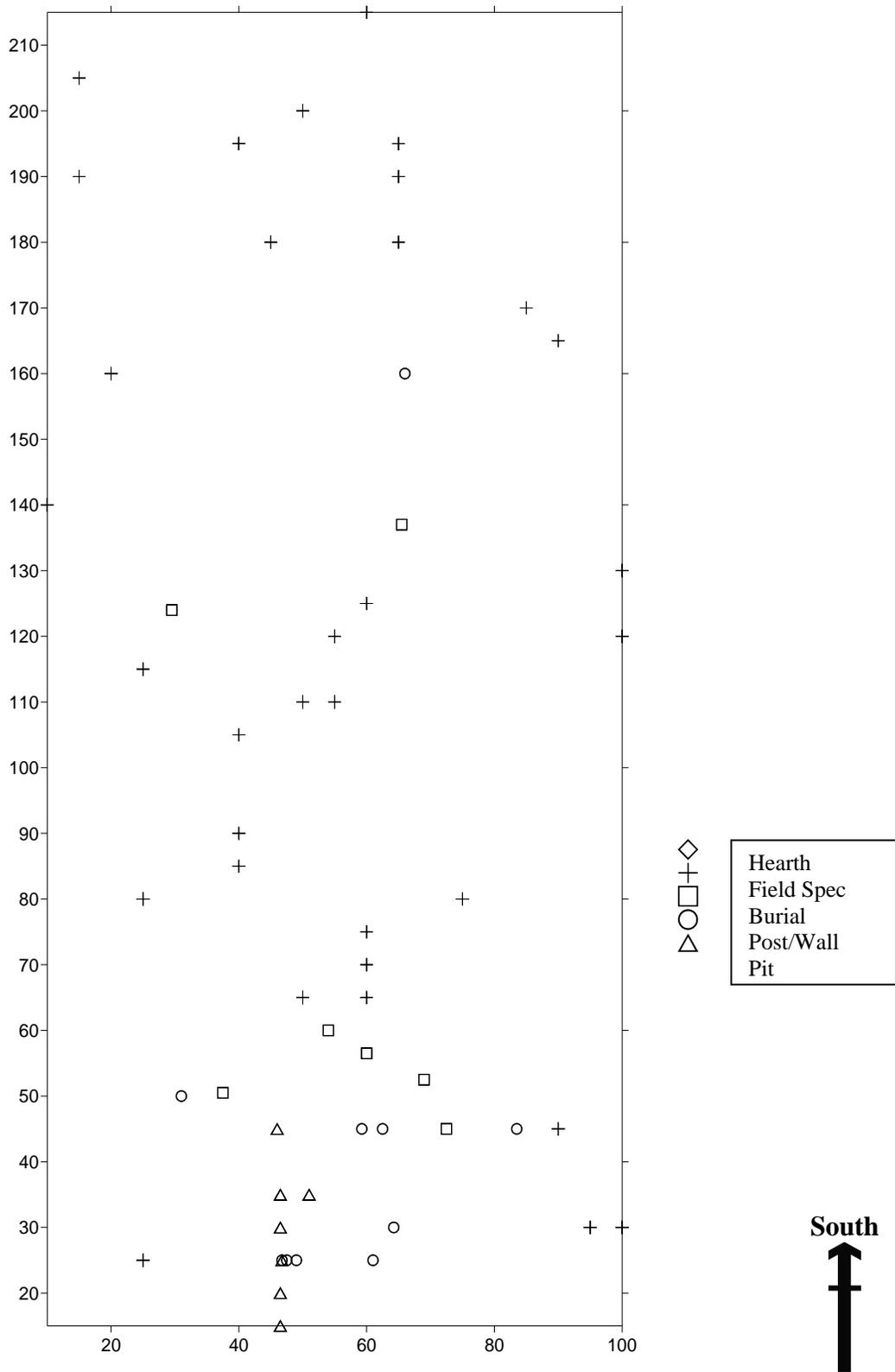


Figure 22. Spatial distribution of artifacts and features in Level A.

A summary of the distribution of artifacts and features in each level is presented in Table 3. Figure 23 shows these data in graph form, specifically demonstrating the increase in occupational intensity to its height in Level B, as evidenced by counts of post/wall trench sections and pits.

Table 3. Distribution of Artifacts and Features by Level.

Level	Hearths	Field Specimens	Burials	Post/Wall	Pits
A	0	34	7	10	7
B	4	56	2	293	114
C	3	53	1	196	40
D	1	34	0	171	28
CC	1	15	2	32	6
BB	0	4	0	76	3
E	1	12	0	117	7
AA	2	20	1	72	10
X	2	7	1	38	8

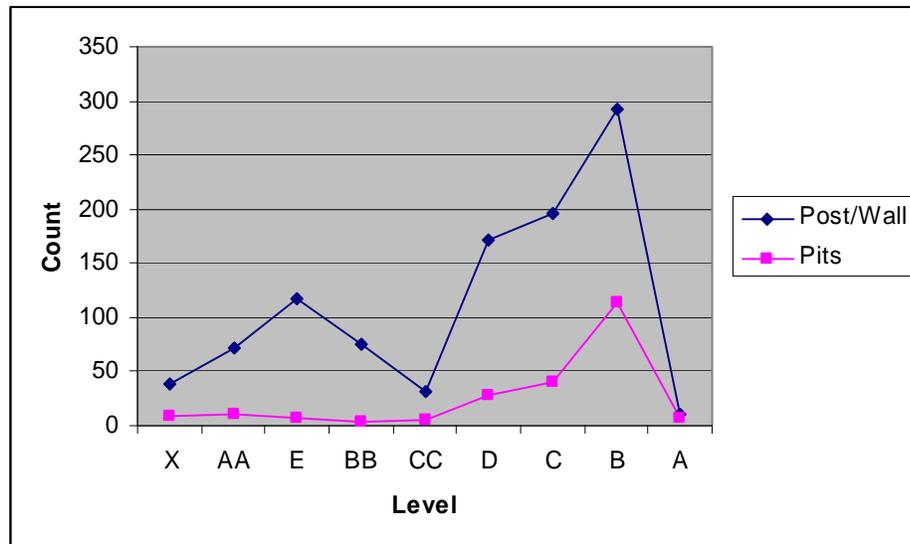


Figure 23. Line graph illustrating the increase in occupational intensity, as evidenced by postholes/wall trench sections and pits.

In his study of occupational relationships at Bessemer, Paul Welch (1994:15) noted that the records included data on the stratigraphic distribution of grog-tempered pottery and shell-tempered pottery, specifically the percentages of the different temper types in the mounds versus the “old humus layer.” Walthall and Wimberly (1978:122) stated that at Mound W the grog-tempered pottery was concentrated in its lower levels; however, I have yet to determine from whence this information came, as no such level information for ordinary sherds was recorded during the Mound W excavation. While general ceramic data will be presented in the next chapter, based on my analysis of artifacts and features from Mound W, I can support Walthall and Wimberly’s assertion by saying that the majority of the grog-tempered discoidals among the field specimens can be associated with the earliest Level AA, while most other levels with discoidals exhibited only plain or burnished shell-tempered ones. Level D did contain one grog-tempered discoidal.

By studying the pottery associated with burials, Steponaitis (1983) was able to date some burials by placing them within temporal spans consisting of one or two adjacent phases (Table 2); however, many of these vessels could not be associated with particular levels, because of the excavation and recording methods noted previously. Also it should be remembered that many of the burials do not contain grave accompaniments and thus also could not be dated by relative means. Unfortunately, most of the field specimens were not so diagnostic that they could be assigned to subphase or even phase units, but a few exceptions do occur, and I have used these field specimens, along with a few associated burial goods, to compile the reconstruction below.

Level AA seems to be the earliest occupation at Mound W, and it can be associated with some grog-tempered ceramic materials and some shell-tempered ceramic materials. The most interesting artifact in this level is certainly the whole vessel in Burial 2942. Quite similar to a vessel found during the Bessemer excavations (DeJarnette and Wimberly 1941:Figure 67), this ceramic vessel was considered a diagnostic of the Moundville I phase by Steponaitis (1983:144). Level AA is overlain in the center part of the mound by three thin layers and three thicker layers before the plowzone; in the south Level AA is overlain directly by the plowzone. Level C, the sixth level of occupation above the clay hardpan, is the next to truly offer any insight into a possible phase placement. The slender ovoid bottle field specimen found in this layer is considered a good Moundville I phase marker (Steponaitis 1983). Level B, the thickest occupation, includes markers from Moundville I through Moundville III while it also exhibits interesting ash lenses and clay daub concentrations. This data demonstrates a greater amount of midden fill and a greater number of artifacts and features in the later levels of Mound W; this higher intensity of occupation and the occurrence of distinct living surfaces perhaps indicates a substantial population concentration associated with Level B (Figure 23). I suspect that many later Moundville II and Moundville III phase markers of occupation at Mound W probably can be assigned primarily to the plowzone and surface contexts, from which many burials appear to intrude into the earlier layers.

I conclude from this artifact and feature information that Mound W is a “midden mound” of primarily Moundville I phase occupation (Levels AA – C), with some later diagnostics dating to the Early Moundville II – Late Moundville III phases (Levels B – A). This stratigraphic profile is consistent with the situation reported by Steponaitis

(1983) of the 1978-1979 test excavations north of Mound R. In the 2x2 meter units at 6N2W and 8N2E, excavators uncovered a set of levels that Steponaitis later dated based on ceramic assemblages. The lowest 130 cm of the deposit was a series of thin levels and superimposed floors which Steponaitis assigned to Moundville I while the uppermost levels contained midden fill with scattered pits and hearth-like features and were considered by Steponaitis to include mixed collections of Moundville II and III materials (Steponaitis 1983:96). This pattern of midden occupation also seems to be representative of the pattern of midden development at Moundville as a whole (Knight and Steponaitis 1998). Recently, it has become clear that the Moundville I occupation north of Mound R is more representative of Late Moundville I than the phase in general (Steponaitis 1995), whereas the substantial quantities of grog-tempered pottery found at Mound W indicate that it could have had an earlier occupation, perhaps during Early Moundville I; however, this speculation requires further evidence. While this study of the artifacts and features at Mound W has given us some idea of the phase components present in the occupation, the Mound W chronology can be refined to a subphase level when the non-stratigraphically collected ceramics in the mixed assemblage are considered in the following chapter.

4. CERAMIC ANALYSIS

Five chronological phases have been recognized in the Moundville region for the time between A.D. 1050-1650, and most of these have been divided into early and late subphases based on ceramic evidence. Based on analyses of pottery from stratigraphic excavations and gravelots, Steponaitis (1983) divided the Mississippian stage at Moundville into three chronological phases, Moundville I (1050-1250 A.D.), Moundville II (1250-1400 A.D.), and Moundville III (1400-1550 A.D.). Previously, it was recognized that the Late Woodland West Jefferson phase (900-1050 A.D.) preceded the Moundville phases in the Black Warrior Valley and that the Protohistoric Moundville IV-Alabama River phase (1550-1650 A.D.) followed the Moundville phases.

When Knight and Steponaitis (1998:10-25) re-examined Moundville's development, they presented a series of developmental stages (intensification of local production, initial centralization, regional consolidation, the paramountcy entrenched, and collapse and reorganization) and incorporated many of the refinements to the cultural chronology of the area. The current understanding of Moundville chronology also includes subphase distinctions of Early Moundville I (1050-1200 A.D.), Late Moundville I (1200-1250 A.D.), Early Moundville II (1250-1300 A.D.), Late Moundville II (1300-1400 A.D.), Early Moundville III (1400-1450 A.D.), and Late Moundville III (1450-1550 A.D.). Recently, Knight, Konigsberg, and Frankenberg (1999) used Bayesian methods to establish a revised chronology of the Black Warrior Valley, dating the West Jefferson

phase to approximately A.D. 1020-1120, the Moundville I phase to A.D. 1120-1260, the Moundville II phase to A.D. 1260-1400, and the Moundville III phase to A.D. 1400-1520 (Figure 24).

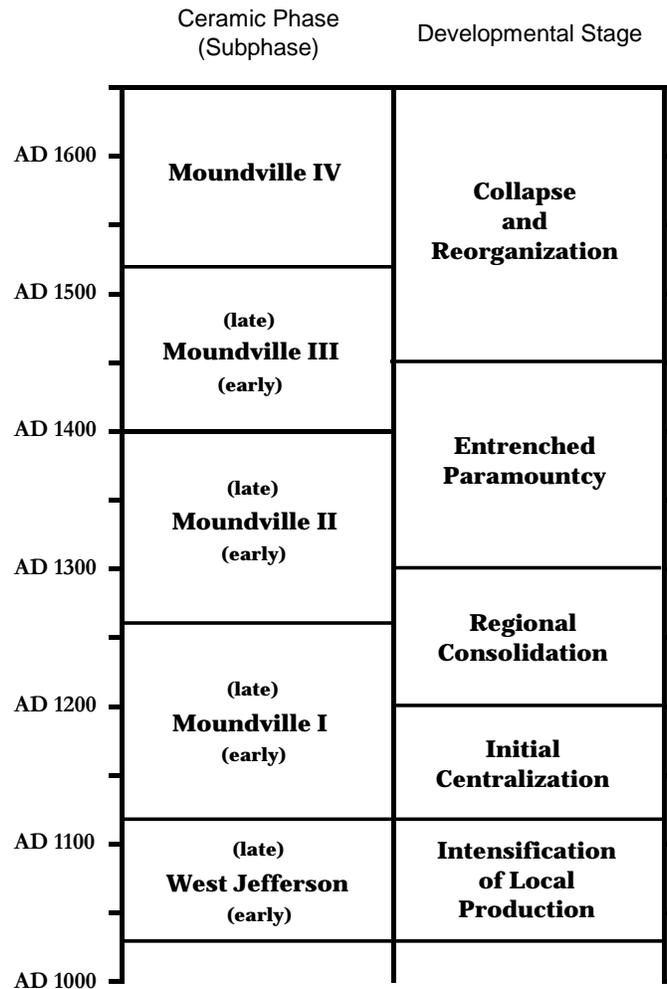


Figure 24. Moundville chronology (left) alongside Knight and Steponaitis's (1998) developmental stages (right).

Vincas Steponaitis's typology of Moundville ceramics (1983) was a revision of previous typologies (DeJarnette and Wimberly 1941; McKenzie 1964). Steponaitis (1983:51) developed a type-variety scheme with a dendritic classification system in which types are determined by (a) temper type, (b) if shell tempered, whether burnished

or unburnished, and (c) technique of surface decoration (Figure 25). Varieties were further determined by adding one more variable, generally that of decorative design. Steponaitis refined his chronological scheme by using not only types, but a combination of types, decorative modes, and modes of vessel shape to define the chronological units. Knight (2003:9) has recently argued that types diminish to nearly nothing in the Moundville scheme, each spanning several phases and encompassing negligible chronological value. He believes, as Steponaitis did in 1983, that analyses of crosscutting modes are necessary to achieve a fine-grained sequence with “chronologically sensitive attributes.”

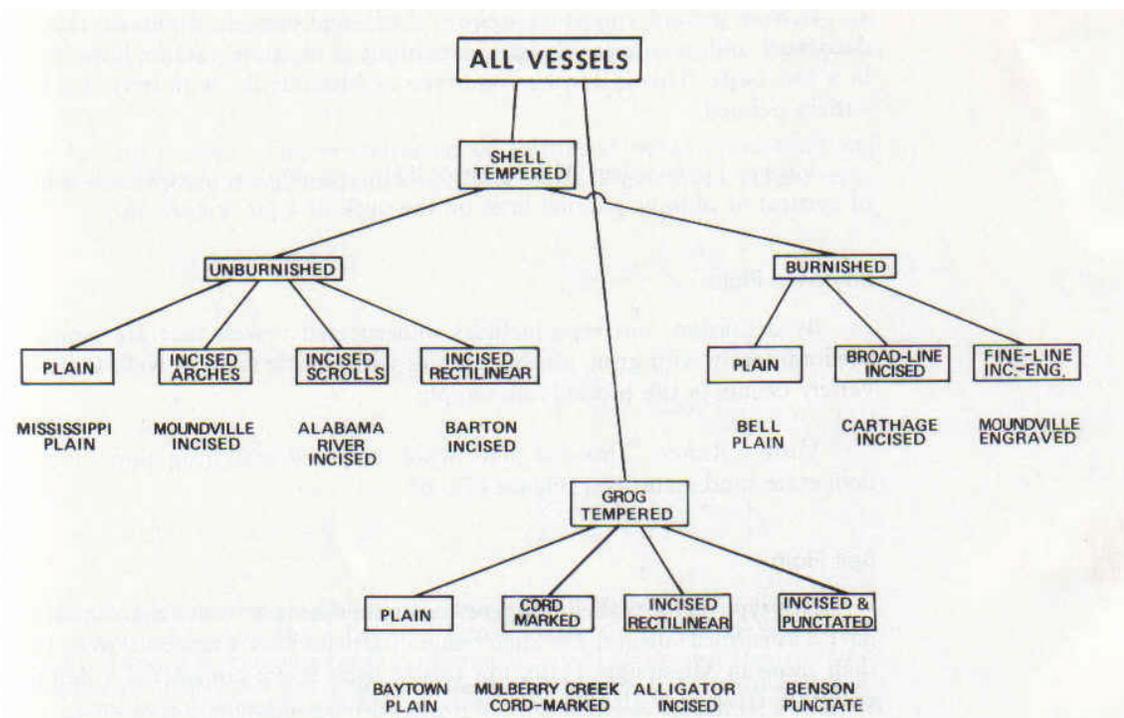


Figure 25. Steponaitis’s dendritic classification system for Moundville pottery (from Steponaitis 1983:Figure 16).

In the most recent conceptualization of Moundville ceramics, Knight (2003) makes it clear in his study that the Moundville phases are ceramic phases, rather than

more fully expressed units of culture content (Steponaitis 1983:90). Thus, to discuss the Moundville II phase is to discuss a segment of time when certain pottery diagnostics were being made within the Black Warrior Valley region (Knight 2003:3). As in Steponaitis's earlier work, the pottery traits chosen for establishing the sequence consist not just of formal ceramic types, but of a combination of types, decorative modes, and modes of vessel shape. These traits are particularly useful in the study of sherd collections as opposed to whole vessels. One should also understand that the ceramic change in the Moundville sequence involves periodic introductions and replacements of forms over a long span of time with no obvious punctuated breaks; thus, relative frequencies of forms have nothing to do with the formation or definition of phases as they are conceptualized elsewhere in adjacent regions. In fact, because phase boundaries are defined by the introduction of new forms, the assignment of any given pottery assemblage to a particular phase is in a way a matter of *terminus post quem* logic (Knight 2003:5).

Distinctions among Moundville phases are based on changes in ceramic types, varieties, decorative modes, and vessel attributes. The West Jefferson Late Woodland phase was defined after excavations at three sites in the West Jefferson Steam Plant area (Jenkins and Nielsen 1974). The West Jefferson ceramic complex was found to consist of a preponderant majority of grog-tempered ceramics, mostly classified as Baytown or McKelvey Plain, but including a small percentage of shell-tempered types and cord-marked, incised, and punctated decorated types. Vessel shapes included bowls and jars, the jars often with loop handles. According to Jenkins (2003), West Jefferson ceramics have been found in direct association with Moundville ceramics in contexts at both the

Bessemer site and the Moundville site, just as Moundville I phase ceramics have been found in direct association with Terminal Woodland West Jefferson contexts.

Based on Steponaitis's (1983) grave-lot seriation and stratigraphic studies of the excavations north of Mound R, ceramic markers of the Moundville I phase include the type Moundville Incised and folded or folded-flattened jar rims. Jars typically had two handles, and bottles usually had pedestal bases and slender, ovoid profiles while bowls existed in restricted and shallow forms, the latter with straight, flaring rims. The difference between Early and Late Moundville I was further defined by Steponaitis (1992), but in general, grog-tempered pottery and incidences of folded-flattened rims disappeared during Late Moundville I while a few varieties of Carthage Incised and Moundville Engraved appeared. Hemagraving (adding red pigment to engraved lines) and gadrooning (vertical flutes modeled on bottles at regular intervals) were frequent decorative treatments during Moundville I. In the Moundville II phase, additional varieties of Moundville Engraved were introduced while Moundville Incised continued to a lesser extent than before. Unmodified jar rims were more typical during Moundville II, jar handles began to increase in number, and indentations and slab bases were added to bottle forms. Bottle forms were mostly subglobular in shape, and bowls exhibited hemispherical, cylindrical, and rectanguloid forms. During Moundville III times, Moundville Engraved varieties persisted and further Carthage Incised varieties were introduced and then proliferated. Common Moundville III vessel shapes included subglobular bottles with simple bases, hemispherical bowls with beaded rims, and deep, flaring-rim bowls. The number of handles on jars continued to increase while frog, fish, and human head medallion effigies appeared on bowls. In Late Moundville III, the short

necked bowl form appeared. The Moundville IV phase, previously known as the Alabama River phase, or the Burial Urn culture, was in some ways very different from previous phases and introduced the new types Alabama River Incised and Alabama River Appliqué with the continuance of some varieties of the type Carthage Incised (Knight and Steponaitis 1998:7-9).

I sought to understand the occupational history of the Mound W area by studying the subphase components present in the mixed ceramic assemblage; however, because the mound was not excavated stratigraphically and the ceramics had only very general horizontal proveniences and no vertical placement, a method useful in the study of mixed assemblages was necessary. The method employed here is derived from Timothy Kohler and Eric Blinman's (1987) regression technique, which was designed to generate estimates of the proportions of diagnostic pottery from a multicomponent assemblage which date to individual phases. Using pottery frequencies from "model" sites/assemblages dating to each of the phases of interest, a least-squares regression equation can be generated that estimates the proportion of sherds that date to each phase within a mixed assemblage. In this technique, the regression equation treats each "model" phase as an independent variable, the mixed assemblage as the dependent variable, and each pottery type as an individual "case" or "observation" (Steponaitis 1998:29). Type frequencies in the "model" assemblages should be expressed as proportions and frequencies in the mixed assemblage should be expressed as counts. The criterion of least-squares is then used to find the linear combination of phase assemblages that best fits the mixed assemblage (Kohler and Blinman 1987).

Steponaitis (1991:Figure 9.2; 1998:Table 2.1, Table 2.2) used this method to examine population trends at the Moundville site, generating estimates of the proportion of sherds from the Roadway assemblage that dated to the West Jefferson phase, Moundville I phase, and Moundville II/III phases. Steponaitis combined the Moundville II and Moundville III phase counts because he found the assemblages from the two phases to be very similar in type frequencies, and he believed that they would be in fact collinear, with no way to tease out the differences in the regression. Steponaitis now has stated that variety-level specification is necessary to discern between these phases and subphases (Knight and Steponaitis 1998:31). In her 2004 dissertation, Mintcy Maxham (2004) also used the Kohler and Blinman technique to study phase-by-phase population change in the Black Warrior Valley.

In particular, I sought to refine the regression technique by finding a better set of “model” assemblages and by using not only types, but a combination of types, decorative modes, and modes of vessel shape. For the Woodland phases, I was forced to use an improvised Carthage phase assemblage as my model (Jenkins 2003:17; Maxham 2004:120); however, for the West Jefferson phase I used the West Jefferson type sites as my model. The Early Moundville I model assemblage came from the Picnic Area tract on the Northwest Riverbank (Scarry 1995) while the Late Moundville I model assemblage was taken from Steponaitis’s report (1983) of Margaret Scarry’s 1978-1979 test excavations north of Mound R. The Early Moundville II model assemblage was gathered from the Stage II midden and feature fills found during Vernon J. Knight’s excavations at Mound Q, the Late Moundville II model assemblage came from the Stage II and III flank midden at Mound G, and the Moundville III model assemblage was taken

from the midden level 4 and humus zone on the north flank of Mound Q (Knight, personal communication; see Appendix B). In SPSS, I entered all of these assemblages as variables and then entered my own counts from my re-analysis of the Mound W ceramics.

Ceramics in the Mound W collection were previously classified into types based on temper, surface finish, and decorative technique (Wimberly 1956). Type names for this collection included certain Tennessee Valley monikers, such as McKelvey Plain (4a) which were later changed to their regional equivalents, i.e., Baytown Plain, just as other type names from early publications have been converted to their modern equivalents (for example, as follows: Moundville Black Filmed is now considered Bell Plain, Warrior Plain/Plain Shell is Mississippi Plain, Moundville Filmed Incised is Carthage Incised, and Moundville Filmed Engraved is Moundville Engraved; see note by Steponaitis in Knight and Steponaitis 1998:31). In the early 1950s, Steve Wimberly analyzed many of the Depression-era collections at the Moundville storage facility and his counts for Mound W can be found in Table 4.

Table 4. Ceramic Frequencies from the Mound W Excavations, as tabulated by Steve Wimberly in the 1950s.

Temper	Type	Mound W Count	Mound W Freq	Totals by Temper
Sand	O'Neal Plain	23	95.83	
Sand	Alexander Pinched	1	4.17	
				24
Limestone	Mulberry Creek Plain	2	20.00	
Limestone	Long Branch Fabric Marked	8	80.00	
				10
Grog	McKelvey Plain	404	99.50	
Grog	Mulberry Creek Cord Marked	1	.25	
Grog	Cox Fabric Marked	1	.25	
				406
Shell	Plain Shell	12,529	83.49	
Shell	McKee Island Cord Marked	3	.02	
Shell	Langston Fabric Marked	2	.02	
Shell	Moundville Incised	1,025	6.84	
Shell	McKee Island Incised	2	.02	
Shell	McKee Island Punctated	6	.03	
Shell	McKee Island Brushed	3	.02	
Shell	Moundville Filmed	1,161	7.73	
Shell	Moundville Filmed Incised	190	1.27	
Shell	Effigy Vessels	3	.02	
Shell	Crow Creek Noded	3	.02	
Shell	Hardin Negative Painted	6	.03	
Shell	Moundville Filmed Engraved	73	.49	
				15,006
Totals				15,446

In this study, I re-analyzed all of the Mound W ceramics for type-variety level specification as well as manifestations of other selected attributes (Tables 5 and 6). In particular, my study concentrated on variables of the rim (direction and thickness) and on modes of decoration and vessel shape. The majority of the Mound W ceramics can be classified as a shell-tempered plain coarse ware, or utility ware, called Mississippi Plain in the Black Warrior Valley and elsewhere. Bell Plain, a shell-tempered, burnished plain ware, was the second most frequent ceramic. A grog-tempered plain ware, called Baytown Plain, constituted 2.2% of the sample. Of the decorated types, Moundville Incised made up the largest contribution, with Moundville Engraved and Carthage Incised trailing. Residual and non-local types made up 2.2% of the sample. Looking at the selected recorded modes, one can see that the most frequent attribute was the folded rim; however, the folded-flattened rim follows closely behind. Red filming and white filming were frequent treatments, as were hemagraving and gadrooning. Beaded rims also made a noteworthy contribution to the sample. Thus, proportions of chronologically-sensitive attributes were counted and calculated for the Mound W assemblage and were tabulated for each model assemblage.

While types are usually considered associations of “recurrent attributes” in mutually exclusive classes, modes of vessel shape and decoration are understood to cross-cut types and varieties (Duff 1996; Scarry 1995). In this study, each type-variety and recorded mode was considered a variable at the assemblage level of analysis so that the typological criterion of mutual exclusivity was ignored. In particular, modes and varieties were recorded so that subphase level analysis would be possible. In previous studies of phase-level change, it seemed that plain wares were driving the regression, so

Table 5. Mound W Ceramic Counts and Frequencies: Types and Varieties (as re-analyzed for this study).

<u>Grog Tempered</u>	<u>Mound W</u>	
	<u>n</u>	<u>%</u>
Alligator Incised	0	.00
Benson Punctated	0	.00
Mulberry Creek Cord Marked	3	0.02
Baytown Plain	370	2.20
<u>Shell Tempered</u>		
Mississippi Plain	13,207	78.70
Moundville Incised, <i>var. Carrollton</i>	165	1.00
Moundville Incised, <i>var. Moundville</i>	407	2.40
Moundville Incised, <i>var. Snows Bend</i>	7	0.04
Moundville Incised, <i>var. Oliver</i>	64	0.40
Moundville Incised, <i>var. Unspecified</i>	196	1.20
Bell Plain, <i>var. Hale</i>	1,562	9.30
Carthage Incised, <i>var. Akron</i>	36	0.20
Carthage Incised, <i>var. Carthage</i>	12	0.07
Carthage Incised, <i>var. Fosters</i>	1	0.01
Carthage Incised, <i>var. Lupton</i>	3	0.02
Carthage Incised, <i>var. Moon Lake</i>	23	0.10
Carthage Incised, <i>var. Poole</i>	1	0.01
Carthage Incised, <i>var. Summerville</i>	10	0.06
Carthage Incised, <i>var. Unspecified</i>	84	0.50
Moundville Engraved, <i>var. Cypress</i>	0	.00
Moundville Engraved, <i>var. Elliotts Creek</i>	34	0.20
Moundville Engraved, <i>var. Havana</i>	19	0.10
Moundville Engraved, <i>var. Hemphill</i>	20	0.10
Moundville Engraved, <i>var. Maxwells Crossing</i>	3	0.02
Moundville Engraved, <i>var. Middleton</i>	2	0.01
Moundville Engraved, <i>var. Prince Plantation</i>	1	0.01
Moundville Engraved, <i>var. Stewart</i>	10	0.06
Moundville Engraved, <i>var. Taylorville</i>	5	0.03
Moundville Engraved, <i>var. Tuscaloosa</i>	11	0.07
Moundville Engraved, <i>var. Wiggins</i>	5	0.03
Moundville Engraved, <i>var. Unspecified</i>	147	0.90
Other/Residual	373	2.20
Totals	16,781	100.00

Table 6. Mound W Ceramic Counts and Frequencies: Modes of Decoration and Vessel Shape.

	Mound W	
	n	%
Folded Rims	539	42.20
Folded-Flattened Rims	434	34.00
Hemagraved	20	1.60
Gadrooned	27	2.10
Pedestal Base	10	0.80
Indentations	2	0.20
Slab Base	11	0.90
Beaded Rim	27	2.10
Frog Effigy Features	6	0.50
Human Head Medallion	1	0.08
Short Necked Bowl Form	13	1.00
Red Film	143	11.20
White Film	40	3.10
Other Paint	3	0.20
Totals	1,276	100.00

to avoid collinearity among the Moundville subphase variables, I eliminated the plain wares from the exercise and focused on the chronologically-sensitive varieties and modes. Those attributes chosen for use in this analysis were chosen because of their performance in previous studies and their confirmed placement in stratigraphic excavations. Figure 26 outlines those varieties and modes of decoration and vessel shape that have been shown to be sufficiently diagnostic for tracking subphase change (Knight 2003). Tabulations of these varieties and modes of decoration and vessel shape for each of the model assemblages is shown in Table 7.

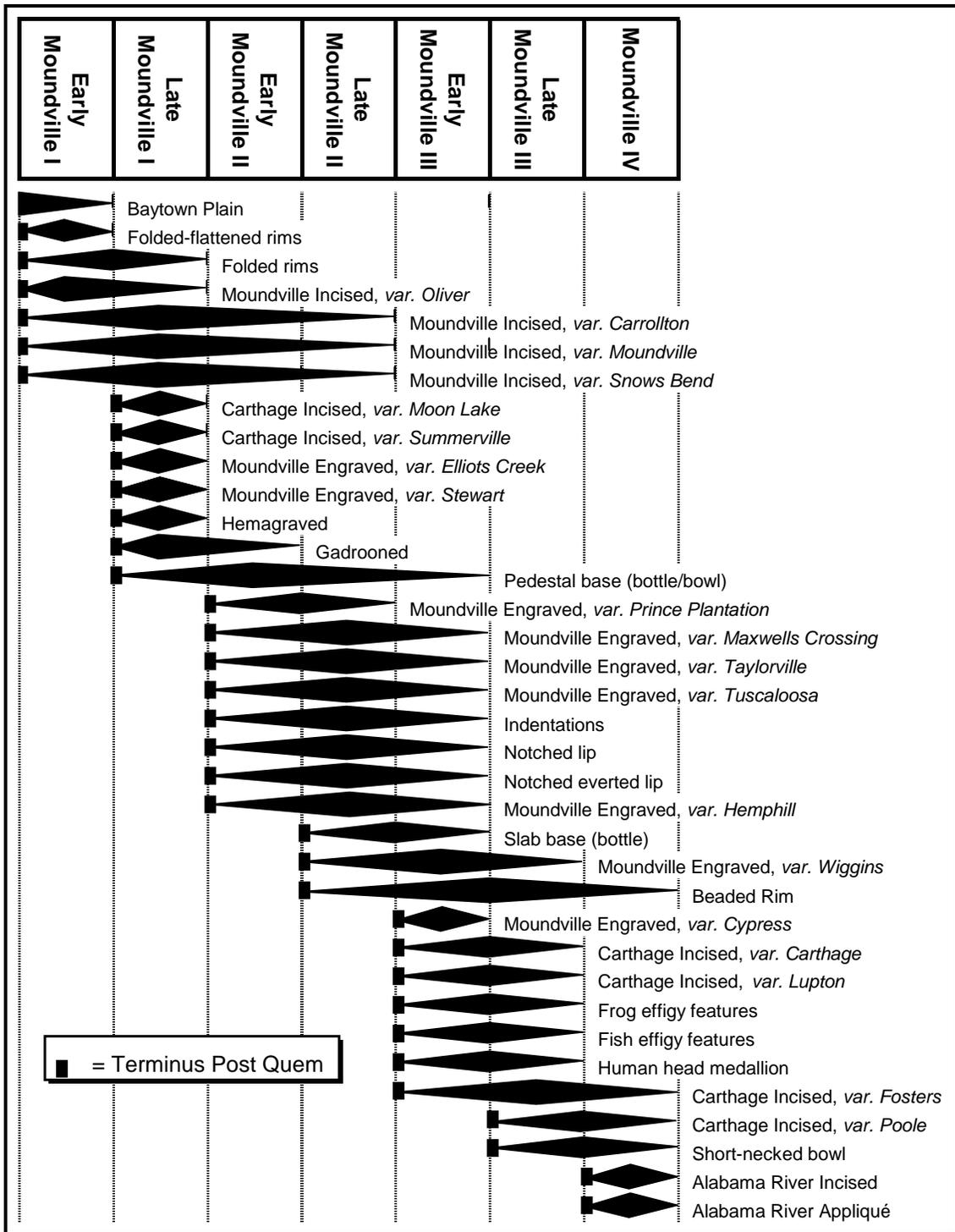


Figure 26. Diagnostic pottery markers in the Moundville sequence (“Initial Model” as presented in Knight 2003).

In setting up the cases for the multiple regression analysis, I collapsed each series of diagnostic pottery markers from the Moundville sequence so that each subphase was defined by the introduction of new forms. Collapsing the variables that appeared to behave similarly in the chronology allowed me to improve the robusticity of the model assemblages. These classes are shown in Figure 27 with their new variable names. In SPSS 13.0 this analytical exercise was specified as a multiple linear regression through the origin. In this special case, the y-intercept is set at zero, and a constant is not included in the equation, as it is not meaningful to speak of negative contributions of ceramics to a particular assemblage (Kohler and Blinman 1987).

Using these variables in the multiple regression made it possible for me to accomplish subphase-level analysis. The results indicate that Early Moundville I, Late Moundville I and, to a lesser extent, Early Moundville II phase markers made the largest contribution to the Mound W mixed assemblage (Table 8). In fact, if the resulting coefficients of these three phases are scaled to 100, then the Early Moundville I phase (67.3) can be seen to have made an overwhelming contribution of 90.5% of ceramics to the Mound W mixed assemblage; the Late Moundville I phase (6.1) made a much smaller contribution of 8.3%, while the Early Moundville II phase (.95) made a contribution of only 1.2%.

Late Moundville II and Moundville III phases each had some diagnostics but had negligible impact on the occupation as evidenced by the ceramics; however, it is probable that most of the intrusive burials date to these later phases. The earlier Late Woodland Carthage phase and the Terminal Woodland West Jefferson phase are noteworthy in their performing poorly in the regression, meaning that Carthage and West Jefferson phase occupations contributed little if any to the Mound W assemblage. This result led me to

the important conclusion that all of the grog tempered pottery at Mound W could be attributed to the Early Moundville I phase, much as it was on the Northwest Riverbank (Scarry 1995:234-235).

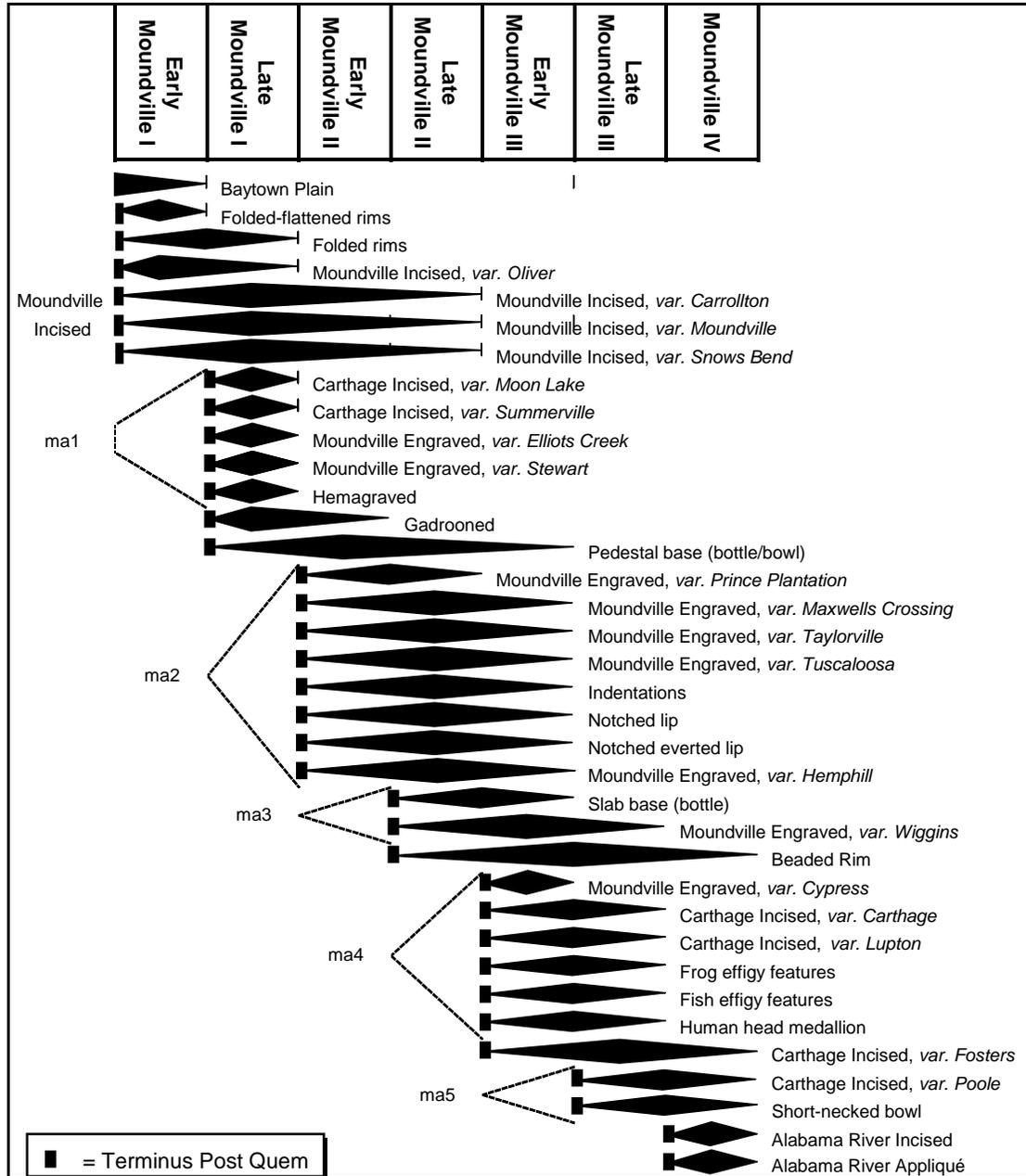


Figure 27. Collapsed data classes for multiple regression analysis.

Table 7. Model Assemblages Used in the Multiple Regression Analysis (Values are relative proportions by phase or subphase).

Class	Carthage	West Jeff	Early MI	Late MI	Early MII	Late MII	MIII
Grog Decorated	10.00	.20	.00	.00	.00	.00	.00
Baytown Plain	90.00	99.80	79.20	.00	.00	.00	.00
Moundville Incised	.00	.00	4.20	42.90	41.20	22.10	15.90
Moundville Incised, <i>var. Oliver</i>	.00	.00	2.50	.00	.00	.90	1.60
Carthage Incised, <i>var. Akron</i>	.00	.00	.40	2.60	2.00	3.50	7.10
Carthage Incised, <i>var. Fosters</i>	.00	.00	.00	.00	.00	.00	4.40
ma1 (LMI)	.00	.00	1.30	12.80	3.90	7.10	1.10
Moundville Engraved, <i>var. Havana</i>	.00	.00	.00	1.50	.00	.00	2.20
Moundville Engraved, <i>var. Middleton</i>	.00	.00	.20	.00	.00	.00	1.10
ma2 (EMII)	.00	.00	.00	.00	13.70	47.80	24.70
ma3 (LMII)	.00	.00	.00	.00	.00	1.80	2.20
ma4 (EMIII)	.00	.00	.00	.00	.00	.90	11.50
ma5 (LMIII)	.00	.00	.00	.00	.00	.00	7.70
Folded Rims	.00	.00	4.40	20.40	13.70	10.60	2.70
Folded-flattened Rims	.00	.00	6.10	1.50	13.70	1.80	2.70
Gadrooned	.00	.00	.20	.00	.00	.00	.00
Pedestal Base	.00	.00	.00	3.10	7.80	3.50	.50
Beaded Rim	.00	.00	.00	.00	.00	.00	10.40
Red Filmed	.00	.00	.60	5.60	.00	.00	.00
White Filmed	.00	.00	.40	9.70	.00	.00	.00
Red on White	.00	.00	.00	.00	3.90	.00	3.80

Table 8. Results of the Multiple Regression Analysis (from SPSS output).

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	CARTHAGE	-5.30E-02	4.974	-.005	-.011	.992	.012	85.045
	WESTJEFF	-49.670	8.004	-4.975	-6.205	.000	.004	267.515
	EARLYM1	67.321	8.370	5.386	8.043	.000	.005	186.666
	LATEM1	6.120	2.144	.311	2.854	.012	.202	4.947
	EARLYM2	.949	3.199	.046	.297	.771	.099	10.105
	LATEM2	.162	1.790	.009	.090	.929	.251	3.987
	MDV3	.835	2.516	.030	.332	.745	.295	3.388

a. Dependent Variable: MOUNDW

b. Linear Regression through the Origin

In this exercise, as in all cases of linear regression through the origin, the multiple R reported in the SPSS output is actually not interpretable as it would be in a regular case of multiple regression. The sums of squares and the F- and t-ratios are also not able to be interpreted here. The only way to get a true goodness of fit of the model is to run the regression through the origin, generate predicted values, and then run a simple correlation between the observed values of the dependent variable and the predicted values. After performing this test, I found the multiple R to be .870 with a significance level of less than .001, demonstrating that the model explains a substantial amount of the variability in the mixed assemblage (Table 9). In general, it is clear that there are some difficulties with using multiple linear regression in this particular case, especially regarding the negative coefficients and the collinearity of some variables, but I believe that the analysis still accurately demonstrates that the overwhelming majority of ceramics from the Mound W area are most representative of the Moundville I phase, and especially of the Early Moundville I subphase.

Table 9. Test of the Best Fit Model.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.870	.758	.746	92.84423

Finally, I would like to address certain points concerning the grog-tempered ceramics present in the Mound W assemblage. In his article on the occupational history of the Bessemer site, Welch (1994) closely examined the modes of vessel shape of both the grog-tempered and shell-tempered ceramics, in order to determine whether they shared the same traits and thus overlapped chronologically. Welch (1994:17) found that there was little overlap between the wares in regard to vessel shape, handle measurements, and decoration; however, there was some overlap regarding jar rim shapes, specifically in the folded-flattened form. Of the 373 grog-tempered ceramics recovered during the Mound W excavation, only 12 are rim sherds; of these rims, the majority are straight or slightly excurvate and unthickened rims. There did occur two grog-tempered rims demonstrating what could be considered Mississippian traits, namely thickening along the rim and flattening along the lip such that they would be classified as folded-flattened (Figure 28). A loop handle also appears in the sample and could as well be considered a Mississippian trait on a grog-tempered ceramic.

Based on his study of the Bessemer ceramics, Welch outlines a chronology for the Late Woodland – Mississippian transition, especially as regards folded-flattened rims. His sequence is as follows: 1) plain-surfaced, grog-tempered jars with unfolded and unflared rims were typical; 2) flattened lips were made thicker by folding, and some jars were given shell temper but mostly left plain in decoration; however, incising did exist as

a minority decoration, especially Moundville Incised, *var. Oliver* rectilinear designs (Figure 29), c) shell-tempering replaced grog-tempering, and incising increased in frequency. At Mound W there were plain-surfaced, grog-tempered ceramics with unfolded, unflared rims as well as folded-flattened rims. There were also a large number of shell-tempered plain specimens with folded and folded-flattened rims and Moundville Incised ceramics with folded-flattened rims. Of the 2,098 Mississippi Plain or Moundville Incised rims, 973 were classified as either folded or folded-flattened. Thus, the Mound W collection does include ceramics that could be considered examples of each of these stages in the sequence; however, Mound W can add no stratigraphic support to Welch's proposed seriation. Excavations at Mound W did appear to produce a substantial Early Moundville I phase assemblage, but it is unfortunate that these ceramics could not be assigned to particular stratigraphic levels for me to garner an understanding of ceramic change at this locality during this important time.



Figure 28. Grog-tempered rim sherds from the Mound W excavations (b and f are folded-flattened rims and e is a loop handle).



Figure 29. Moundville Incised, var. *Oliver* with a folded-flattened rim.

5. DISCUSSION

Finally I want to discuss some of the debates that have surrounded the study of Mound W and examine them in light of the new data generated from my spatial and ceramic studies. While each set of data tells a slightly different story, the spatial analysis and ceramic analysis combined complete the picture of the occupational history of the Mound W locality. Here I will outline the important conclusions from each of these analyses and present a model of Mound W occupation.

Much discussion about Mound W has centered on whether this elevation was in fact an intentional construction like the other 28 named mounds or whether it was an area of superimposed midden layers and house floors, in other words a “midden mound” (Peebles 1979; Steponaitis 1983; Walthall and Wimberly 1978) C. B. Moore did not recognize Mound W during his visit to Moundville, but it was excavated as a mound during the CCC investigations. Christopher Peebles has stated that he believes the area to be a repeatedly occupied natural rise; however, while I agree with his statement that Mound W is generally a “midden mound,” I have found nothing to support his assertion that this area was particularly elevated before it was occupied. There is virtually no difference in elevation between the center and periphery of the pre-mound surface, and in fact, the heavier, later occupation surfaces, notably Levels D, C, B, and A, seem to give most of the elevation to the mound. In studying the verticality, I had to significantly exaggerate the vertical factor to distinguish the sequent occupations, just as the profiles

were originally exaggerated in the vertical dimension. Therefore, even though I have no soil descriptions to attach to the levels and am limited in speculating about the matrices, I believe this mound to be the result of several superimposed episodes of domestic debris and house floors, not a deliberate platform construction of mound fill episodes. It is interesting then that this area was used, along with the adjacent “West of P” area, as a cemetery during later times. Mound W does not seem to be alone in this pattern; these concentrated middens reused as burial areas have been found elsewhere at Moundville such as north of R, at Mound U, and on the Northwest Riverbank. I think these are important places for studying Moundville’s early history, before the construction of its most prominent features.

Previous discussion of Mound W has focused on its collection of grog-tempered pottery and its implications for Late Woodland settlement on the Moundville terrace prior to the emergence of Moundville proper. Walthall and Wimberly (1978:121-122) proposed that the large number of grog-tempered sherds found at Mound W indicated a West Jefferson phase village at that locus. Steponaitis (1983:151-152) later supported this assertion and followed it with a full discussion of sequent community patterns at Moundville, with early occupation concentrated in the western margins of the site. Research at Moundville in recent years led Knight and Steponaitis (1998:12) to present a re-conceptualization of Moundville’s occupational history. Knight and Steponaitis shifted the earliest pattern of Moundville occupation to the banks of the Black Warrior River and Carthage Branch and stated that they believed that there was no occupation on the Moundville terrace prior to A.D. 1050. Knight and Steponaitis based this Early Moundville I settlement pattern on the distribution of diagnostic pottery, but analysis of

the Mound W ceramics clearly demonstrates a substantial Early Moundville I assemblage at a locus somewhat farther to the south. As Mound W fits into the currently understood community pattern presented by Knight and Steponaitis, the locality would have been a domestic area occupied initially during Early Moundville I, utilized during Late Moundville I and Early Moundville II, and reused as a cemetery during Late Moundville II and Moundville III phases. Thus, I believe that the western margins of Moundville, the area west of Mounds O and P, those areas known as Mound W and “West of P” do offer insight into early times at Moundville, but I do not believe, based on the evidence at hand, that this area should be considered a West Jefferson phase village predating A.D. 1120.

Here I hope to do much as Paul Welch has done for the Bessemer site and clarify what the Mound W area and its chronology does and does not say about the transition from Late Woodland to Mississippian culture. After analyzing the Bessemer ceramics, Welch (1994:24) concluded that there was a period when both grog-tempered and shell-tempered ceramics were being made and used at the site; however, he does not find any evidence for how long that period lasted, i.e., whether the transition from the Late Woodland to the Early Mississippian was abrupt or gradual. Like Bessemer, Mound W demonstrates a ceramic assemblage particularly characterized by grog-tempered and shell-tempered ceramics; this assemblage represents a transitional set of material culture representative of Early Moundville I. Therefore, an important re-conceptualization of the Late Woodland to Early Moundville transition is that not all grog-tempered pottery should be considered to represent a West Jefferson phase component, as it seems that grog-tempered pottery continued to be made and utilized during the Early Moundville I

phase (Knight and Steponaitis 1998; Scarry 1995; Welch 1994). However, like Welch, I cannot speculate about how long this time of transition lasted, but I can say that Mound W perhaps confirms Steponaitis's speculation that the now better understood Early Moundville I component fills the gap between the previously known West Jefferson and Late Moundville I components and that the transition which seemed abrupt at first was really more gradual (Steponaitis 1983:132; 1992). I can say that the Early Moundville I phase is believed to last 100-150 years, according to current radiocarbon evidence (Knight, et al. 1999). This newer understanding of early Moundville offers more support for a pattern of gradual, continuous indigenous development as communities transitioned from Woodland to Mississippian cultural patterns.

The two primary sources of information for Welch during his study of the Bessemer site were stratigraphic distributions and ceramic attributes, while my study has concentrated on ceramic attributes and on the little available stratigraphic data from my correlation of features, field specimens, and burials with recorded levels at Mound W. Welch finds the ceramic analysis helpful when the stratigraphic data was not, and I have found the same to be true, as I struggled with the few diagnostic artifacts and features associated with levels. Spatial analysis demonstrates an occupation spanning from refuse of the Moundville I phase to intrusive burials probably dating to the Moundville II and III phases. Information from artifacts and features allows the reconstruction of a "midden mound" of primarily Moundville I phase occupation in Levels AA – C, with some later diagnostics dating to the Early Moundville II – Late Moundville III phases found in Levels B and A. Based on the ceramic analysis, I was able to achieve subphase level study and further conclude that Mound W was occupied heavily during the Early

Moundville I phase (1050-1200 A.D.), less so during Late Moundville I (1200-1250 A.D.) and much less so during the Late Moundville II (1300-1400 A.D.) and Moundville III phases (1400-1550 A.D.). It is interesting to note then that Mound W's occupational history seems to parallel that of the site of Moundville in general. Knight and Steponaitis (1998:26-43) offered the current view of Moundville's history when they recognized that the densest population and most of the ceramics dated to Moundville I while most of the burials dated to Moundville II and III when Moundville was largely a necropolis. Mound W exhibits much the same pattern, in that the majority of ceramics are representative of Moundville I while several burials are intrusive and most likely date to the Moundville II and Moundville III phases. However, this statement should be qualified by the observation that there were some later diagnostics among the field specimens, and the note that some burials contained Moundville I diagnostics, while many others could not be dated to phases or subphases. Mound W also is unique on the Moundville terrace for its apparent concentration of materials dated to the Early Moundville I phase.

This study of Mound W offers new information about this extraordinary locality on the Moundville terrace and examines its artifacts and features in the context of the current understanding of Moundville occupation. The spatial analysis and ceramic analysis allow a reconstruction of Mound W's occupation, even though stratigraphic data were not recorded in the strictest sense. Mound W is then, as Walthall and Wimberly and others once speculated, important in studying early Moundville and in understanding the Late Woodland – Early Moundville transition.

This thesis is certainly not the end of the story for Mound W; in fact, it is hopefully just the beginning. Several further research directions could and should

develop from this initial study, now that Mound W's placement in Moundville's chronology is better understood. This study of the materials from the Mound W area demonstrates the potential of older collections and the importance of detailed recording during excavation. Working with the Mound W records entails the frustration of limited and somewhat biased data, which could possibly be supplemented by future finds in the archives or by further work with the excavated artifacts. For example, in particular, the exceptional number of shell-tempered, plain sherds from extremely large jars known as "oversized" pots is interesting, and this characteristic should be the subject of further study in this assemblage (Figure 30; Knight 1994:6; Scarry 1995:52). Further analyses could also focus on examining ceramic vessel functions, field specimens, gravelots and goods, and the spatial distributions of features on particular levels. I also believe that the area known as Mound W is intimately related to the area excavated during the "West of P" investigations in 1936, and thus when the "West of P" collection is analyzed, it should be examined with the occupational history of Mound W in mind. Finally, in general, Mound W obviously has potential for studies of Early Moundville I phase features and artifacts and for questions pertaining to the origins and early development of the Moundville chiefdom.



Figure 30. Oversized jar rim sherds from the Mound W excavations.

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APPENDIX A: SPATIAL TABLES

Table 10. Features Documented During the Mound W Excavations

Feature	Description	Type	Vertical Placement	Zone	Preservation
1	Baked red clay fire basin, roughly constructed and roughly circular	Precedent	3.61' from datum	B	Fair, North Side Damaged
2	Baked red clay fire basin, roughly constructed, perfectly circular	Precedent	3.02' from datum	B	Fair
3	Baked red clay fire basin and Hearth; Fireplace	Precedent	4.30' from datum	C	Poor, Intruded by Postholes (5)
4	Baked red clay fire basin	Precedent	6.63' from datum	E	Fair
5	Baked red clay fire basin	Precedent	3.40' from datum	C	Fair
6	Baked clay fire basin with small surrounding Hearth	Precedent	1.40' from surface	D	Good
7	Clay fire basin, very crude	Precedent	2.5' from datum	C	Poor
8	Clay fire basin	Precedent	1.25' from surface	B	Poor
9	Clay fire basin, very crude	Precedent	0.6' from surface	AA	Poor, Partially destroyed
10	Clay fire basin, circular	Precedent	0.45' from surface	B	Fair, Partially destroyed
11	Clay fire basin, circular	Precedent	2.70' from surface	X	Fair
12	Clay fire basin, circular	Precedent	2.40' from surface	X	Fair
13	Clay fire basin and Hearth	Precedent	1.70' from surface	CC	Fair
14	Clay fire basin, circular, almost funnel-shaped inside	Precedent	2.80' from surface	AA	Fair

Table 11. Field Specimens Documented During the Mound W Excavations

FS #	Depth (in.)	Zone	Assoc. Burial	Artifact Description 1
1	16			PP/K
2	11			PP/K
3	18			greenstone celt/axe frag
4	20			PP/K
5	48			ceramic discoidal
6	6			PP/K
7	18			PP/K
8	20	c		PP/K
9	8	b		PP/K
10	24	c		ceramic discoidal
11	24	c		PP/K
12	15	b		stone discoidal
13	10	b		stone discoidal
14	15	b		ground silt stone axe frag
15	4	b		PP/K
16	10	b		PP/K
17	24	c		PP/K
18	20	c		bone hairpin
19	17	c		hammerstone
20	9	b		bone hairpin
21	0	a		PP/K
22	0	a		shell beads
23	0	a		PP/K
24	0	a		PP/K
25	0	a		PP/K
26	10	c		PP/K
27	8	b		stone discoidal
28	4	a		mica
29	26	x		PP/K
30	10	b		ceramic discoidal
31	9	a		PP/K
32	20	d		PP/K
33	36	x		ceramic discoidal
34	30	e		ceramic effigy fragment
35	8	b		PP/K
36	15	d		core
37	22	d		
38	32	c*		worked sandstone
39	30	e		hammerstone
40	29	e		ceramic discoidal
41	8	b		sandstone grinding slab
42	27	c*		PP/K
43	28	e		red pigment
44	15	c		hammerstone
45	21	d		worked pebble

46	11	c		bone ornament frags
47	17	c		bear tooth pendant
48	24	d		ceramic discoidal
49	15	c		red pigment
50	19		SK2906	ceramic vessel fragments
51	19		SK2906	copper earplugs
52	19		SK2906	copper earplugs
53	19		SK2906	
54	8	aa		PP/K
55	40	e		green pigment
56	40	x		
57	22	c		ceramic effigy fragment
58	36	e		ground silt stone axe frag
59	7	aa		PP/K
60	6	aa		PP/K
61	36	e		hammerstone
62	0	a		
63	0	a		PP/K
64	0	a		stone scraper
65	17	trench		ceramic effigy fragment
66	0	a		PP/K
67	8	b		PP/K
68	0	a		PP/K
69	0	a		PP/K
70	12		SK2920	complete ceramic vessel
71	12		SK2920	
72	13		SK2920	red pigment
73	8	b		stone abrader
74	24	d		ceramic effigy fragment
75	10	b		PP/K
76	30	e		bone scraper tool
77	24	aa		ceramic discoidal
78	6		SK2924	ceramic discoidal
79	14		SK2926	ceramic discoidal
80	22		SK2927	shell beads
81	15	c		complete ceramic vessel
82	30	cc		ceramic discoidal
83	14	c		greenstone celt/axe frag
84	12	c		greenstone celt/axe frag
85	20	x		ceramic discoidal
86	12	aa		ceramic discoidal
87	18	aa		PP/K
88	18	x		PP/K
89	11	aa		burned corn cob frags
90	11	aa		burned corn cob frags
91	0	a		PP/K
92	0	a		PP/K
93	0	a		PP/K

94	6	b		ceramic discoidal
95	13	c		ceramic discoidal
96	20	bb		stone discoidal
97	0	a		PP/K
98	14	c		chalk discoidal
99	18	c		ceramic discoidal
100	11	c		ceramic discoidal
101	26	aa		green pigment
102	25	cc		ceramic pestle
103	30	cc		red pigment
104	14	c		ceramic discoidal
105	0	a		PP/K
106	8	c		PP/K
107	16	cc		ceramic effigy fragment
108	27	cc		greenstone celt/axe frag
109	18	b*		stone discoidal
110	17	b*		ceramic discoidal
111	6	c		stone abrader
112	30	d		greenstone celt/axe frag
113	30	d		ceramic effigy fragment
114	0	a		PP/K
115	0	a		PP/K
116	21	b*		stone discoidal
117	7	b*		stone discoidal
118	6	b*		stone discoidal
119	20	e		ceramic discoidal
120	14	d		PP/K
121	14	trench		PP/K
122	0	a		PP/K
123	0	a		PP/K
124	18			ceramic discoidal
125	16	aa		
126	14	trench		ceramic discoidal
127	6	aa		ceramic discoidal
128	16	aa		PP/K
129	18	trench		green pigment
130	11	aa		nutting stone
131	13	b*		nutting stone
132	10	c		sandstone grinding slab
133	8	b*		hammerstone
134	15	c		hammerstone
135	9	c		stone discoidal
136	4	c		shell ornament
137	0	a		PP/K
138	0	a		PP/K
139	0	a		PP/K
140	0	a		PP/K
141	0	a		PP/K

142	0	a		PP/K
143	0	a		PP/K
144	0	a		PP/K
145	17		SK2937	complete ceramic vessel
146	32			
147	33		SK2935	ceramic discoidal
148	16	c		greenstone celt
149	18	d*		nutting stone
150	15	c		sandstone grinding slab
151	17	d		hammerstone
152	18	d		burned fabric frags
153	25	d		bone awl
154	12	d		ceramic discoidal
155	14	b*		hammerstone
156	12	b*		stone abrader
157	11	d		PP/K
158	40	bb		core
159	11			sandstone grinding slab
160	8			hammerstone
161	28			greenstone celt/axe frag
162	0	a		PP/K
163	17	aa		hammerstone
164	12	aa		hammerstone
165	18	aa		PP/K
166	15	b^		clay daub
167	16	x		PP/K
168	18	x		greenstone celt/axe frag
169	12			copper fragments
170	12	aa		PP/K
171	50		SK2942	bone scraper tool
172	50		SK2942	bone hairpin
173	50		SK2942	
174	50		SK2942	bone hairpin
175	50		SK2942	31 galenite beads
176	50		SK2942	
177	15	b*		PP/K
178	30			bone awl
179	15	b*		hammerstone
180	8	b*		burned fabric frags
181	20			nutting stone
182	18			coal discoidal
183	6			hammerstone
184	12			clay daub
185	5		SK2945	shell beads
186	12		SK2947	complete ceramic vessel
187	14		SK2947	shell beads
188	19		SK2948	
189	44		SK2955	PP/K

190	44		SK2955	PP/K
191	44		SK2955	PP/K
192	21		SK2957	complete ceramic vessel
193	8	b		
194	30	cc		ceramic discoidal
195	20	c		ceramic discoidal
196	30	d		
197	18	b*		burned basket frags
198	30	b*		bone awl
199	18	b*		greenstone celt/axe frag
200	20	d		bone awl
201	13	C		iron fragment
202	24			greenstone celt/axe frag
203	20	bb		deer antler fragments
204	20	D		PP/K
205	14	C		PP/K
206	6	B		mica
207	18	cc		ceramic discoidal
208	6			
209	6	C		PP/K
210	13			stone abrader
211	12	c		mussel shells
212	20	c		burned corn cob frags
213	12		SK2960	
214	21		SK2961	shell beads
215	19		SK2962	
216	23		SK2962	shell beads
217	21		SK2962	copper earplugs
218	21		SK2962	copper earplugs
219	19		SK2962	
220	19		SK2962	
221	17		SK2962	conch shell
222	22		SK2961	shell ornament
223	20	b*		burned fabric frags
224	3	b*		PP/K
225	30	c*		sandstone grinding slab
226	12	c*		wood fragments
227	14	d		ceramic discoidal
228	24	cc		burned fabric frags
229	12	b*		copper ornament frag
230	15	d		ceramic discoidal
231	6	c		greenstone celt/axe frag
232	22	bb		bone awl
233	18	d		bone awl
234	12	c		ceramic discoidal
235	20	b*		bone awl
236	19	b*		PP/K
237	18	D		insect nest

238	18	D		PP/K
239	4		SK2968	complete ceramic vessel
240	24	CC		bone awl
241	24			bone awl
242	12	C		hammerstone
243	6	B		PP/K
244	18	cc		
245	8	B		shells
246	15	d		stone discoidal
247	18	cc		mica
248	15	c*		mica
249	16	D		hammerstone
250	12	c*		
251	17	cc		
252	12	b*		
253	19			shell ornament
254	30		SK2974	complete ceramic vessel
255	32		SK2974	complete ceramic vessel
256	5	B		ceramic effigy fragment
257	13	C		ceramic discoidal
258	36	aa		ceramic discoidal
259	8	B		ceramic effigy fragment
260	12	b*		hammerstone
261	17	b*		stone scraper
262	9	d		PP/K
263	0	A		PP/K
264	24	cc		sandstone grinding slab
265	18	d		PP/K
266	29			bear tooth pendant
267	27			shells
268	25			ceramic effigy fragment
269	25			ceramic effigy fragment
270	28			bear tooth
271	19			ceramic pestle
272	27			deer antler fragments
273	10		SK2978	copper earplugs
274	10		SK2978	copper fragments
275	3	B		stone bowl fragments
276	30	cc		bone awl
277	31	cc		ceramic discoidal
278	16		SK2979	shell beads
279	6		SK2981	shell beads
280	14	b		bone awl
281	12	b		bone awl
282	15			PP/K
283	26	d		greenstone celt/axe frag
284	14	C		ceramic effigy fragment
285	11	B		ceramic effigy fragment

286	8	c		hammerstone
287	35	E		bone awl
288	35	E		shell ornament
289	36	aa		chalk tool
289	36	aa		deer antler fragments
290	16	C		hammerstone
291	17	C		mica
292	3	A		PP/K
293	2	A		nutting stone
294	40	E		hammerstone
295	12			deer antler fragments
296	9	d		greenstone celt/axe frag
297	0			PP/K
298	6	b		nutting stone
299	7			bone awl
300	9			hammerstone
301	8			bone awl
302	0			PP/K
303	0			PP/K
304	12			bone awl
305	14	d*		PP/K
306	4			PP/K
307	0			PP/K
308	0			PP/K
309	10		SK2984	
310	10		SK2984	complete ceramic vessel
311	6			ceramic effigy fragment
C14	40			1260+/-85

Table 12. Burials Documented During the Mound W Excavations

Date	Depth (in.)	Zone	Location	Burial .	Artifact Class
1/17/1939	19	A	R3-R4, 45-50	SK2906	Pottery Bowl Fragments, Copper Earplugs
3/6/1940	9	A	L4-L3, 50-55	SK2920	Pottery Bowl, Large Shell Beads, Red Paint
3/7/1940	5	A	R2-R3, 50-55	SK2921	
3/7/1940	6	A	R1-R2, 55-60	SK2922	
3/7/1940	12	A	L1-0, 60-65	SK2923	
3/12/1940	5		L8-L7, 75-80	SK2924	Pottery Discoidal
3/12/1940	32	B	L4-L3, 80-85	SK2925	
3/18/1940	14	X	L4-L3, 200-205	SK2926	Pottery Discoidal
3/19/1940	22		L3-L2, 70-75	SK2927	Shell Beads
3/20/1940	6		Across R7, 70-75	SK2928	
3/22/1940	11.5		R3-R4, 195-200	SK2929	
3/27/1940	39		Across R6, 75-80	SK2930	
3/29/1940	14		R3-R4, 180-185*	SK2931	
3/29/1940	14		R3-R4, 180-185*	SK2932	
3/29/1940	7.5		L6-L5, Across 95	SK2933	
3/29/1940	20		L7-L6, 170-175	SK2934	
3/29/1940	33		L2-L1, 95-100	SK2935	Pottery Discoidal
4/1/1940	32		L6-L5, 170-175	SK2936	
4/3/1940	17		R5-R6, 105-110*	SK2937	Pottery Cup
4/3/1940	14		R5-R6, 105-110*	SK2938	
4/6/1940	6		L10-L9, 100-105	SK2939	
4/6/1940	12		Across L7, 105	SK2940	
4/6/1940	3.5		L6-L5, 100-105	SK2941	
4/6/1940	47	AA	L2-L1, 100-105	SK2942	Bone Tools, Galena Beads, Pottery Bowl
4/8/1940	21.5		R6-R7, 155-160	SK2943	
4/8/1940	32.5		L4-L3, 105-110	SK2944	
4/9/1940	4		R4-R5, Across 115	SK2945	Shell Beads
4/12/1940	20.5	B	L2-L1, 150-155	SK2946	
4/12/1940	12		Across R6, 120-125	SK2947	Pottery Bowl, Shell Beads
4/12/1940	19		Across L7, 150	SK2948	Pot
4/12/1940	14.5	X?	L8-L9, 149-155*	SK2949	
4/12/1940	14.5	X?	L9, 150-155*	SK2950	
4/12/1940	21.5	X?	Across L8, 148-155	SK2951	
4/12/1940	12		L3-L2, Across 115	SK2952	
4/12/1940	16		L9-L8, 115-120	SK2953	
4/12/1940	7.5		Across L9, 115-120	SK2954	
4/15/1940	42	C	L4-L3, 110-115	SK2955	Flint Projectile Points
4/15/1940	26.5	X?	Across L7, 150-155	SK2956	
4/15/1940	32.5		L8-L7, 115-120	SK2957	Pottery Bowl
4/15/1940	21.5		L8-L7, 115-120	SK2958	
4/15/1940	10		L10-L9, 115-120	SK2959	

4/16/1940	12		L10-L9, 140-145	SK2960	Green Paint
4/16/1940	20.5	CC	L4-L3, 138-142	SK2961	Shell Beads, Shell Ornament
4/16/1940	21		R2-R3, 120-125	SK2962	Pottery Cup/Bowl, Shell Beads, Copper Earplug, Water Bottle, Large Pot, Large Conch Shell
4/18/1940	11		L8-L7, 138-145	SK2963	
4/18/1940	6		L8-L7, 139-145	SK2964	
4/18/1940	20	B?	L8-L7, 140-145	SK2965	
4/18/1940	18	CC	L9-L8, 139-145	SK2966	
4/18/1940	4.5	A	L6-L5, 120-125	SK2967	
4/22/1940	3.5	A	R2-R3, 135-140	SK2968	Large Pottery Fragments
4/22/1940	7		L5-L4, 132-135	SK2969	
4/22/1940	11.5		L9-L8, 130-135	SK2970	
4/24/1940	22		L7-L6, 125-130	SK2971	
4/24/1940	12		L5-L4, 125-130	SK2972	
4/24/1940	8.5		L9-L8, 130-135	SK2973	
4/24/1940	32.5		L2-L1, 135-140	SK2974	Water Bottle, Pottery Bowl
4/24/1940	8.5		Across R4, 130-135	SK2975	
4/24/1940	11		R4-R5, Across 135	SK2976	
4/26/1940	18		R1-R2, 85-90	SK2977	
4/26/1940	10		R1-R2, 60-65	SK2978	Copper Earplugs
4/29/1940	15		L4-L3, 90-95	SK2979	Small Shell Beads
5/1/1940	6		Across R9, 90-95	SK2980	
5/1/1940	6		Across R7, 90-95	SK2981	Large Shell Beads
5/1/1940	14		L9-L8, 90-95	SK2982	
5/2/1940	13		R1-R2, 105-110	SK2983	
5/3/1940	10		R9-R10, 62-68	SK2984	Water Bottle, Pottery Bowl
5/3/1940	8		R9-R10, 60-65	SK2985	
5/3/1940	4		L11-L10, 110-115	SK2986	
5/3/1940	8		L11-L10, 115-120	SK2987	
5/4/1940	12		L11-L10, 125-130	SK2988	
5/4/1940	2		L11-L10, 115-120	SK2989	

APPENDIX B: MODEL ASSEMBLAGES FOR LEAST-SQUARES REGRESSION

Table 13. Model Assemblage Counts and Frequencies

<u>Grog Tempered</u>	<u>Carthage</u>		<u>West Jefferson Steam Plant Sites</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Alligator Incised	0	0.0	4	0.05
Benson Punctated	0	0.0	5	0.06
Mulberry Creek Cord Marked	1	10.0	5	0.06
Baytown Plain	9	90.0	8266	98.70
<hr/>				
<u>Shell Tempered</u>				
Mississippi Plain			94	1.12
Moundville Incised, <i>var. Carrollton</i>				
Moundville Incised, <i>var. Moundville</i>				
Moundville Incised, <i>var. Snows Bend</i>				
Moundville Incised, <i>var. Oliver</i>				
Moundville Incised, <i>var. Unspecified</i>			1	0.01
Bell Plain, <i>var. Hale</i>				
Carthage Incised, <i>var. Akron</i>				
Carthage Incised, <i>var. Carthage</i>				
Carthage Incised, <i>var. Fosters</i>				
Carthage Incised, <i>var. Lupton</i>				
Carthage Incised, <i>var. Moon Lake</i>				
Carthage Incised, <i>var. Poole</i>				
Carthage Incised, <i>var. Summerville</i>				
Carthage Incised, <i>var. Unspecified</i>				
Moundville Engraved, <i>var. Cypress</i>				
Moundville Engraved, <i>var. Elliotts Creek</i>				
Moundville Engraved, <i>var. Havana</i>				
Moundville Engraved, <i>var. Hemphill</i>				
Moundville Engraved, <i>var. Maxwells Crossing</i>				
Moundville Engraved, <i>var. Middleton</i>				
Moundville Engraved, <i>var. Prince Plantation</i>				
Moundville Engraved, <i>var. Stewart</i>				
Moundville Engraved, <i>var. Taylorville</i>				
Moundville Engraved, <i>var. Tuscaloosa</i>				
Moundville Engraved, <i>var. Wiggins</i>				
Moundville Engraved, <i>var. Unspecified</i>				
<hr/>				
Totals	10	100.00	8375	100.00

<u>Grog Tempered</u>	Early Moundville I		Late Moundville I	
	<u>PA Tract</u>		<u>T.U. North of R</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Alligator Incised				
Benson Punctated				
Mulberry Creek Cord Marked	1	0.05		
Baytown Plain	374	16.85		
<hr/>				
<u>Shell Tempered</u>				
Mississippi Plain	1481	66.70	1625	58.30
Moundville Incised, <i>var. Carrollton</i>	1	0.05	6	0.20
Moundville Incised, <i>var. Moundville</i>	19	0.85	76	2.70
Moundville Incised, <i>var. Snows Bend</i>			2	0.07
Moundville Incised, <i>var. Oliver</i>	12	0.50		
Moundville Incised, <i>var. Unspecified</i>	29	1.30	22	0.80
Bell Plain, <i>var. Hale</i>	279	12.60	973	34.90
Carthage Incised, <i>var. Akron</i>	2	0.09	5	0.20
Carthage Incised, <i>var. Carthage</i>				
Carthage Incised, <i>var. Fosters</i>				
Carthage Incised, <i>var. Lupton</i>				
Carthage Incised, <i>var. Moon Lake</i>			3	0.10
Carthage Incised, <i>var. Poole</i>				
Carthage Incised, <i>var. Summerville</i>	1	0.05		
Carthage Incised, <i>var. Unspecified</i>	9	0.40	7	0.30
Moundville Engraved, <i>var. Cypress</i>				
Moundville Engraved, <i>var. Elliotts Creek</i>	3	0.10	8	0.30
Moundville Engraved, <i>var. Havana</i>			3	0.10
Moundville Engraved, <i>var. Hemphill</i>				
Moundville Engraved, <i>var. Maxwells Crossing</i>				
Moundville Engraved, <i>var. Middleton</i>	1	0.05		
Moundville Engraved, <i>var. Prince Plantation</i>				
Moundville Engraved, <i>var. Stewart</i>	2	0.09	1	0.04
Moundville Engraved, <i>var. Taylorville</i>				
Moundville Engraved, <i>var. Tuscaloosa</i>				
Moundville Engraved, <i>var. Wiggins</i>				
Moundville Engraved, <i>var. Unspecified</i>	5	0.20	55	2.00
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Totals	2219	100.00	2786	100.00

<u>Modes of Decoration and Vessel Shape</u>	Early Moundville I		Late Moundville I	
	<u>PA Tract</u>		<u>T.U. North of R</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Folded Rims	21	37.50	40	43.50
Folded-Flattened Rims	29	51.80	3	3.30
Hemagraved			13	14.10
Gadrooned	1	1.80		
Pedestal Base			6	6.50
Indentations				
Slab Base				
Beaded Rim				
Frog Effigy Features				
Fish Effigy Features				
Human Head Medallion				
Short Necked Bowl Form				
Red Film	3	5.40	11	12.00
White Film	2	3.80	19	20.70
Red on White				
Totals	56	100.00	92	100.00

<u>Grog Tempered</u>	Stage II Features At Mound Q		Stage II and III midden at Mound G	
	<u>Early Moundville II</u>		<u>Late Moundville II</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Alligator Incised				
Benson Punctated				
Mulberry Creek Cord Marked				
Baytown Plain				
<hr/>				
<u>Shell Tempered</u>				
Mississippi Plain	1428	70.60	1640	72.20
Moundville Incised, <i>var. Carrollton</i>	1	0.05	8	0.40
Moundville Incised, <i>var. Moundville</i>	20	1.00	16	0.70
Moundville Incised, <i>var. Snows Bend</i>			1	0.04
Moundville Incised, <i>var. Oliver</i>			1	0.04
Moundville Incised, <i>var. Unspecified</i>	13	0.60	15	0.70
Bell Plain, <i>var. Hale</i>	512	25.30	439	19.30
Carthage Incised, <i>var. Akron</i>	1	0.05	4	0.20
Carthage Incised, <i>var. Carthage</i>				
Carthage Incised, <i>var. Fosters</i>				
Carthage Incised, <i>var. Lupton</i>				
Carthage Incised, <i>var. Moon Lake</i>			6	0.30
Carthage Incised, <i>var. Poole</i>				
Carthage Incised, <i>var. Summerville</i>				
Carthage Incised, <i>var. Unspecified</i>	6	0.30	17	0.75
Moundville Engraved, <i>var. Cypress</i>				
Moundville Engraved, <i>var. Elliotts Creek</i>	1	0.05	1	0.04
Moundville Engraved, <i>var. Havana</i>				
Moundville Engraved, <i>var. Hemphill</i>	1	0.05	43	1.90
Moundville Engraved, <i>var. Maxwells Crossing</i>			1	0.04
Moundville Engraved, <i>var. Middleton</i>				
Moundville Engraved, <i>var. Prince Plantation</i>				
Moundville Engraved, <i>var. Stewart</i>				
Moundville Engraved, <i>var. Taylorville</i>			2	0.09
Moundville Engraved, <i>var. Tuscaloosa</i>	3	0.15	5	0.20
Moundville Engraved, <i>var. Wiggins</i>				
Moundville Engraved, <i>var. Unspecified</i>	36	1.80	71	3.10
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Totals	2022	100.00	2270	100.00

<u>Modes of Decoration and Vessel Shape</u>	<u>Stage II Features At Mound Q Early Moundville II</u>		<u>Stage II and III midden at Mound G Late Moundville II</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Folded Rims	7	29.10	12	50.00
Folded-Flattened Rims	7	29.10	2	8.30
Hemagraved	1	4.20	1	4.20
Gadrooned				
Pedestal Base	4	16.70	4	16.70
Indentations	3	12.50	2	8.30
Slab Base			2	8.30
Beaded Rim				
Frog Effigy Features				
Fish Effigy Features			1	4.20
Human Head Medallion				
Short Necked Bowl Form				
Red Film				
White Film				
Red on White	2	8.30		
Totals	24	100.00	24	100.00

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	Midden Level 4 at Mound Q	
<u>Grog Tempered</u>	<u>Moundville III</u>	
	<u>n</u>	<u>%</u>
Alligator Incised		
Benson Punctated		
Mulberry Creek Cord Marked		
Baytown Plain	6	0.05
<hr/>		
<u>Shell Tempered</u>		
Mississippi Plain	8231	75.10
Moundville Incised, <i>var. Carrollton</i>	1	0.01
Moundville Incised, <i>var. Moundville</i>	26	0.20
Moundville Incised, <i>var. Snows Bend</i>	2	0.02
Moundville Incised, <i>var. Oliver</i>	3	0.03
Moundville Incised, <i>var. Unspecified</i>	14	0.10
Bell Plain, <i>var. Hale</i>	2305	21.00
Carthage Incised, <i>var. Akron</i>	13	0.10
Carthage Incised, <i>var. Carthage</i>	15	0.10
Carthage Incised, <i>var. Fosters</i>	8	0.07
Carthage Incised, <i>var. Lupton</i>	1	0.01
Carthage Incised, <i>var. Moon Lake</i>		
Carthage Incised, <i>var. Poole</i>	1	0.01
Carthage Incised, <i>var. Summerville</i>		
Carthage Incised, <i>var. Unspecified</i>	76	0.70
Moundville Engraved, <i>var. Cypress</i>	2	0.02
Moundville Engraved, <i>var. Elliotts Creek</i>	1	0.01
Moundville Engraved, <i>var. Havana</i>	4	0.04
Moundville Engraved, <i>var. Hemphill</i>	37	0.30
Moundville Engraved, <i>var. Maxwells Crossing</i>		
Moundville Engraved, <i>var. Middleton</i>	2	0.02
Moundville Engraved, <i>var. Prince Plantation</i>		
Moundville Engraved, <i>var. Stewart</i>	1	0.01
Moundville Engraved, <i>var. Taylorville</i>	1	0.01
Moundville Engraved, <i>var. Tuscaloosa</i>	4	0.04
Moundville Engraved, <i>var. Wiggins</i>	3	0.03
Moundville Engraved, <i>var. Unspecified</i>	200	1.80
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Totals	10957	100.00

	Midden Level 4 at Mound Q <u>Moundville III</u>	
<u>Modes of Decoration and Vessel Shape</u>	<u>n</u>	<u>%</u>
Folded Rims	5	8.80
Folded-Flattened Rims	5	8.80
Hemagraved		
Gadrooned		
Pedestal Base	1	1.80
Indentations	3	5.30
Slab Base	1	1.80
Beaded Rim	19	33.30
Frog Effigy Features	2	3.50
Fish Effigy Features		
Human Head Medallion	1	1.80
Short Necked Bowl Form	13	22.80
Red Film		
White Film		
Red on White	7	12.30

Totals	57	100.00
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