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MOUNDVILLE PHASE COMMUNITIES IN THE BLACK WARRIOR RIVER VALLEY, ALABAMA

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Moundville Phase Communities in the Black Warrior River Valley, Alabama

A Dissertation submitted in partial satisfaction of the requirements for the degree of

Doctor of Philosophy

in

Anthropology

by

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PUBLICATIONS

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ABSTRACT

Moundville Phase Communities in the
Black Warrior River Valley, Alabama.

by

Tandy Key Bozeman

Moundville phase settlements in the vicinity of the Mississippian Period ceremonial center at Moundville, Alabama are described and analyzed. It is argued that the sites of the Moundville phase are the remains of a hierarchical settlement system characteristic of societies traditionally classified as chiefdoms (Kirchoff 1955; Service 1962; Fried 1967; Sahlins 1972; Earl 1977).

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CHAPTER 1

INTRODUCTION

In the summer of 1978 the University of Michigan Museum of Anthropology (UMMA), funded by a grant from the National Science Foundation, began a series of archaeological research projects in the Black Warrior River Valley, Alabama. The Moundville project was planned and directed by Dr. Christopher S. Peebles and was designed to link together the efforts of several investigators in an integrated research program whose goal is to significantly advance our understanding of the social and adaptive dimensions of the Mississippian societies which occupied the Warrior Valley during the five hundred years from approximately A.D. 1050 to A.D. 1550.

The Moundville research proposed to pursue its objectives though four interrelated projects (Peebles 1978), each project designed to utilize and build upon the massive corpus of data accumulated over three-quarters of a century of research and excavation at Mound State Monument and surrounding sites. Two of the projects focused on determining the subsistence base of the Moundville phase population. A third project centered on an analysis of the production and distribution of Moundville phase ceramics. An immediate goal of this research was the constuction of a fine-scale ceramic chronology for the Moundville site. Once completed, this chronology provided the temporal controls essential to the investigation of variability and change in the Moundville subsistence system. The chronology also has proven to be extendable to the other Moundville phase sites in the valley. The fourth project sought to measure the distribution, variety, and chronological position of the Mississippian communities in the Warrior Valley. This latter research is the subject matter of this report.

This paper presents results of two seasons of site survey and test excavations at the Moundville phase sites which lie along the Warrior River some 25 kilometers to the north and south of the great ceremonial center at Moundville. Prior to the UMMA survey, our knowledge of Moundville phase sites in the Warrior drainage was highly limited. The only sites, other than Moundville itself, for which there was detailed information were Bessemer (DeJarnette and Wimberly 1941) and Snows Bend (DeJarnette and Peebles 1970). Other Mississippian sites in the valley were mostly known from brief survey reports compiled by Dr. Walter B. Jones in the 1930s. Subsequent surveys by Nielsen *et al.* (1973) in Hale and Geeen counties and by Walthall (n.d.) at the mouth of Big Sandy Creek were restricted in area or limited in scope.

The UMMA research in the Warrior valley together with current research by the University of Alabama has begun to dramatically change this picture. During the 1978-79 field seasons, the Michigan survey team relocated and conducted controlled collections at most of the recorded Moundville phase sites in the Warrior Valley from Tuscaloosa in the north to Akron, Alabama, in the south. Except where permission to dig was withheld by the land owner or the mound itself was destroyed, test excavations were placed in each of the previously reported outlying platform mounds to determine its chronological position within the Moundville phase and its construction history. In addition, several new sites, including at least one minor civic-ceremonial center, were discovered and investigated.

In all, the two-year survey collected 402 twenty by twenty meter surface units on 13 different sites and placed from one to three test excavations into each of 10

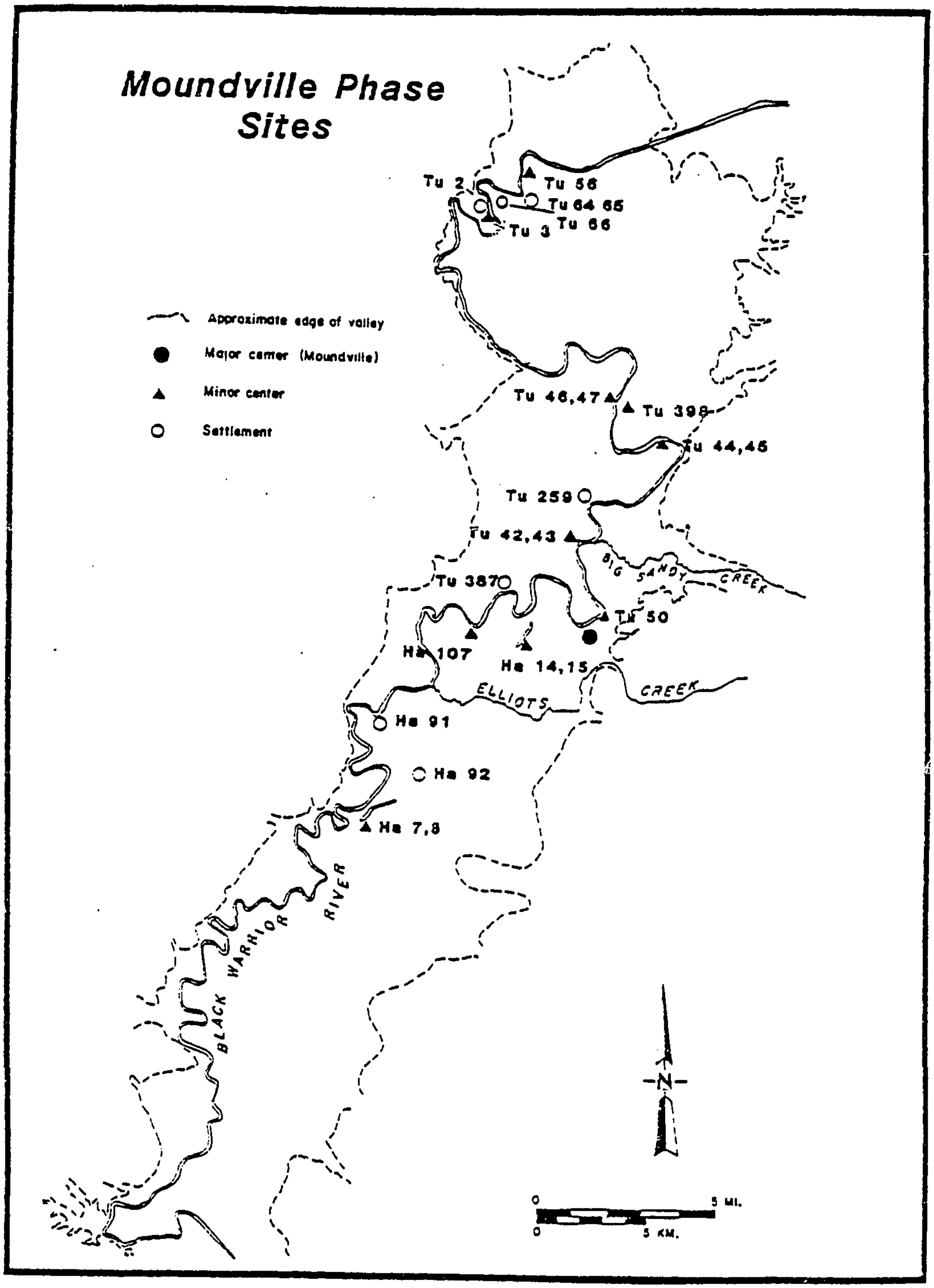


Figure 1. Location of Moundville phase sites included in the UMMA survey.

platform mounds. In addition, the UMMA survey team visited and recovered surface material from an additional 24 Late Woodland and Moundville phase villages and hamlets. In almost all cases access to the sites was freely given by land owners, and as most of the sites were planted in row crops, collecting conditions were generally excellent.

The major goal of the UMMA research in the Warrior Valley has been the transformaton of a model of the Moundville phase from a static atemporal cultural block to a settlement system model with temporal depth and a finer spatial pattern (Peebles 1978b). For the first time we are adequately equipped to examine the Moundville phase as a dynamic cultural system responding over time and space to its natural and social environment.

The present study will not provide answers to all the questons related to the processes of development and change in the Moundville phase settlement system. It seeks instead to place the sites of the Moundville phase into a spatial and temporal framework which will allow us to better understand how the elements and configuration of the Moundville phase settlement system changed through time.

To achieve this goal this study presents data describing the spatial extent, artifact content and distribution, and temporal range of the individual sites of the Moundville phase included in the UMMA survey. Thus, the greater part of this volume is devoted to site documentation. These data are necessary background for understanding the way in which the sites were articulated to one another within the Moundville system and how that system grew and changed over the five-hundred years of the Moundville phase.

The remainder of the present chapter presents a brief description of the geographical range and natural setting of the sites of the Moundville phase. This section is followed by a summary of archaeological investigations in the Warrior River valley. The chapter concludes with a review of the procedures employed in the UMMA survey. Chapter Two describes the Moundville phase sites included in the UMMA survey located north of Moundville. Chapter Three describes the Moundville phase sites included in the UMMA survey located to the south of Moundville. Chapter Four presents an analysis of the spatial relationships among the sites of the Moundville phase and of the relationships between the individual sites and their surrounding habitat. Chapter Four concludes with a summary of the major changes in settlement system organization over the five-hundred years of the Moundville phase.

The Natural Setting

The majority of the sites of the Moundville phase, including Moundville itself, lie in the Black Warrior River valley between the fall line at Tuscaloosa, Alabama, and Akron, Alabama, 62 miles downstream. It was in this area that the UMMA survey conducted surface collections and test excavations at Moundville phase sites.

The Bessemer site (DeJarnettee and Wimberly 1941), an important early Moundville phase ceremonial center, is located north of the survey area on a tributary of the Black Warrior near Birmingham, Alabama. In addition, there is at least one other possible Moundville phase site (Gr 14) on the Warrior River to the south of the survey area. There are several sites on the Tennessee River which might be included in the Moundville phase (Peebles 1971) and a large site on the Tombigbee River near Aliceville, Alabama (Peebles 1981).

Similarities have been noted between the Moundville phase and the Lyons Bluff phase in northeast Mississippi (Marshall 1977:56), the Walls and Nodens phases near

Memphis, Tennessee (McKenzie 1966:52), and the Bottle Creek site (Holmes 1963), near Mobile Alabama. For the present however, it seems reasonable to restrict the Moundville phase to sites in the Warrior River Valley.

The Moundville phase sites investigated in the UMMA survey lie in an area of marked ecological complexity. As Peebles describes:

> The forests that were above the floodplain of the Black Warrior River were a mixture of oak-hickory and pines facies that mirrored the phsiographic complexity of the area. As Figure [2] illustrates, four major physiographic provinces lie within 20 miles of Moundville. To the north of the fall line, in the Ridge and Valley Province and the Cumberland Plateau, the oak-hickory forest in the climax biome. South of the Black Belt, the pine barrens on the Coastal Plain was the dominate forest type. Between these two forests, in the Fall Line Hills, the interfingering of these two forests plus the flood-plain vegetation produced a broad ecotone forest. Both the oak-hickory forest and the forest edges of the ecotone supported high densities of deer and turkey, the faunal mainstays of the Southeastern Indians (Peebles in press:43).

The Warrior River, on which Moundville and its outlying sites are located, begins north of Birmingham, Alabama, and flows southwestward in a narrow valley to Tuscaloosa. Here the river reaches the fall line and its gradient abruptly decreases. Below Tuscaloosa the river meanders through a floodplain ranging from two to six

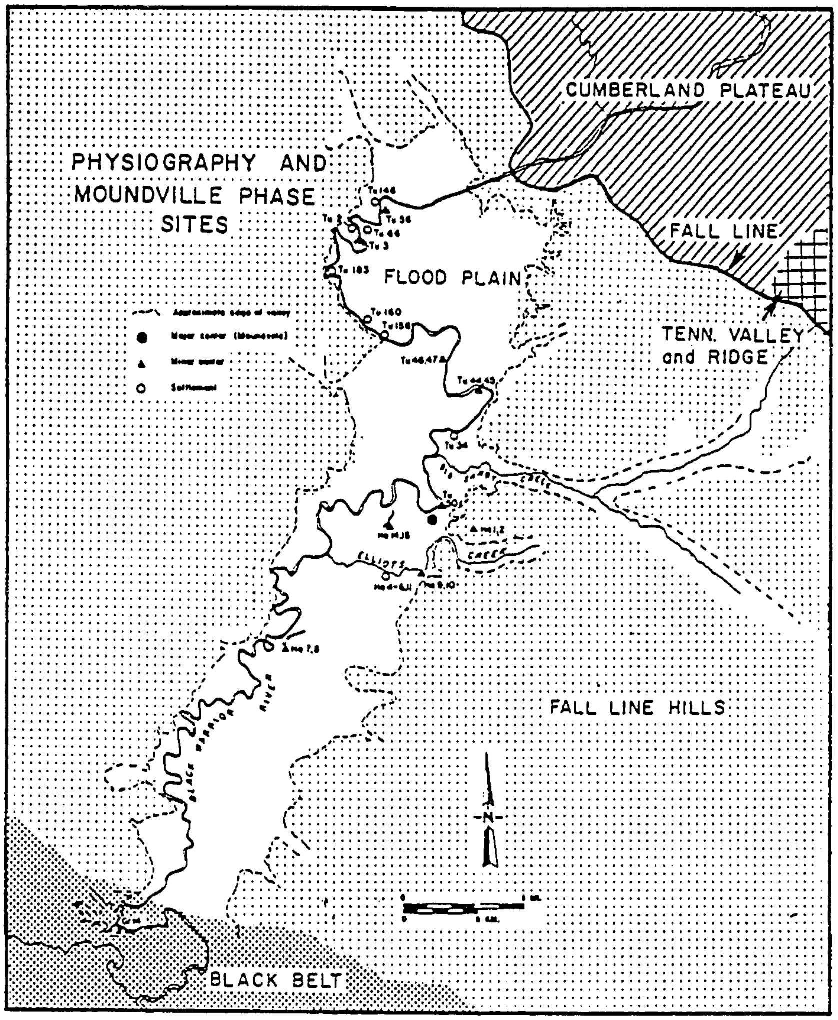


Figure 2. Physiography of the Black Warrior River Valley (after Peebles 1978:Fig. 13.10).

miles in width. The soils of this floodplain were a naturally renewed resource that was vital to the agricultural base of the Moundville phase settlement system.

In sum, the sites of the Moundville phase in the Warrior River Valley are located in what Smith (1978:482) has described as an environmentally circumscribed meander-belt habitat zone. This habitat supported a wide variety of plants and animals and contained linear bands of friable soils eminently suited to the growing of maize.

Archaeological Investigations at Moundville and related Mississippian Sites in the Black Warrior Valley from 1840 to 1978.

The Mississippian Period spans half a millennium from approximately A.D. 1000 to A.D. 1500 and encompasses the archaeological remains of the most wide-spread, populous, and complex of any of the aboriginal cultures of eastern North America. The geographical range of the sites of the Mississippian societies is enormous: impressive mound groups are found from Cahokia, near St. Louis, to Aztalan in Wisconsin, to the Angel site on the Ohio River near Evansville in Indiana, Hiwassee Island in eastern Tennessee, Etowah in northern Georgia, Moundville in central Alabama, and the Emerald Mound in the lower Mississippi Valley. Beyond the vast Mississippian heartland, almost no area of eastern North American was untouched by the cultural florescence in the Mississippian area.

Attributes usually considered diagnostic of Mississippian culture include distinctive shell-tempered pottery, small triangular projectile points, riverine agriculture, large scale ceremonial centers having a plaza arrangement of pyramidal temple mounds, elaborate mortuary ritual, and artifacts and motifs of the "Southern Cult" (Cole and Deuel 1937; Caldwell 1957; Griffin 1952, 1967; Spaulding 1955; Willey 1966).

For more than a hundred years the impressive group of prehistoric earthworks at Moundville, Alabama, has been the object of keen archaeological interest and speculation. Located some 25 km south of Tuscaloosa on a high bluff overlooking the east bank of the Black Warrior River, this famous Mississippian civic-ceremonial center, with its 20 platform mounds and great plaza, is second in size and complexity only to Cahokia, near modern St. Louis. Unlike Cahokia, Moundville has escaped major destruction at the hands of looters and commercial

Figure 3. Aerial view of Mound State Monument.

interests, and as a result of the continuing efforts of a few dedicated individuals, the site is now preserved for future generations as an Alabama state monument.

Moundville and our knowledge of the site has also benefited from the good fortune that most of the early excavators working at the site were recognized scholars who left behind some record of their investigations. The first of these was Thomas R. Maxwell, a local plantation owner with an active interest in Alabama history. In a paper read before the Alabama Historical Society, Maxwell (1876) described his 1840 visit to the mounds near Carthage (later changed to Moundville), Alabama. Maxwell placed a trench into Mound G, carefully noted several layers of daub and charcoal, and was rewarded in his efforts by the discovery of several pottery vessels and an impressive stone pipe in the shape of a kneeling human; these are probably the objects later illustrated in Moore (1905).

Maxwell was followed a few years later by Nathaniel T. Lupton, a faculty member at Southern University at Greensboro, Alabama. In May of 1869 Lupton received a letter from Joseph Henry, secretary of the recently formed Smithsonian Institution, requesting that Lupton journey to Carthage and report on the earthworks nearby.

At Henry's behest, Lupton organized the first federally-funded archaeological project at Moundville. He spent several days at the site taking notes, preparing a rough but accurate site map, and directing an excavation into Mound O. Lupton's map, which still exists, recorded the location of Maxwell's old pit and the outline of what appeared to be the "remains of an irregular breastwork", which suggests that the Moundville palisade was still visible in 1869. Lupton forwarded a report to the Smithsonian describing his excavations at Moundville. Included was a research bill for $29.85 (Lupton 1869).

The Smithsonian again visited Moundville in 1883, when James D. Middleton made a brief reconnaisance of the site as part of Cyrus B. Thomas's great mound survey. Middleton came away with a hastily prepared map and a small surface collection. His brief report of the Moundville visit failed to be included in Thomas's major mound summary (Thomas 1894).

Twenty-two years later Clarence B. Moore steamed up the Warrior River aboard his archaeological flagship, Gopher, to begin the first large-scale excavations at Moundville. Moore's objective at Moundville, as it was at numerous other sites in the Southeast, was to collect museum specimens of Native American artistry (Peebles in press:10). Moundville was to prove so productive in this respect that Moore visited the site twice, in 1905 and again in 1907, staying about a month each time. Before he quit the site, Moore and his crew had dug into nearly every mound and in several off-mound areas. Two seasons of effort uncovered more than 800 burials and recovered thousands of artifacts, many of great beauty.

Moore's excavation methods were crude by modern standards. Nevertheless, he consistently maintained good field records, noting the general locality of finds and carefully recording burials together with associated gravegoods. Moore published edited versions of his field records in two beautifully illustrated reports (Moore 1905; 1907). These works remain our primary source of information concerning the contents of the Moundville earthworks (Steponaitis 1980:10).

The next series of large-scale excavations at Moundville began in 1929, when the Moundville Historical Society arranged for Dr. Walter B. Jones of the Alabama Museum of Natural History to head an excavation program at the site. Jones was assisted in this effort by David L. DeJarnette, a young man whose formal training was as an electrical engineer. DeJarnette would later become the first curator of Mound State Monument and a major figure in Alabama archaeology.

Shortly after Jones and DeJarnette began work at Moundville, Jones began to purchase portions of the site for preservation as a future park. Although funds for this purpose were donated by several prominent citizens, Dr. Jones mortgaged his home on more than one occasion to cash out a landowner (Walthall 1977:4).

In the beginning, Jones and DeJarnette modeled their excavations after those of C. B. Moore. However, in the summer of 1932 David DeJarnette attended a University of Chicago field school directed by Fay-Cooper Cole. DeJarnette's return from this training marked the beginning of dramatic improvements in the excavation methods used at Moundville. From this time on, excavation units were gridded and the provenience of all artifacts noted; soil stains, post molds, hearths, and other subtle archaeological features were recognized and recorded.

As the Depression deepened, the archaeological work at Moundville continued under the sponsorship of a series of federal relief projects. The Civilian Conservation Corps provided the labor and funds for excavation while the Work Progress Administraton (WPA) maintained the laboratory which catalogued the excavated material. During this period DeJarnette was on the payroll of the Tennessee Valley Authority and commuted to Moundville on weekends (Peebles in press:12).

Work continued at Moundville until late in 1941, when the approach of World War II closed the excavations. The sheer volume of data produced by the preceding dozen years of steady digging was staggering. More than 500,000 square feet of excavation area yielded more than 2,000 burials, hundreds of whole vessels, more than a million sherds, and evidence of 74 structures (Peebles in press: 10-13).

As early as 1932 Jones and DeJarnette first attempted to define the Moundville material as a cultural unit and to determine that unit's proper place in the space-time systematics then being worked out for the Southeast. Before a conference on southern prehistory held in Birmingham, Alabama, Jones (1932:34) described the "Moundville Culture" in terms of mound construction, burial types, and the occurrence of a number of distinctive artifacts. This initial trait list was enlarged and refined a few years later by DeJarnette and Wimberly in a report of their excavations at the Bessemer Site (1941:102-107). Unfortunately, the onset of the

World War II quickly scattered the principal investigators and prevented further work on a major synthesis of the Moundville material. Artifacts and the excavation records were placed into storage at Moundville to await future study.

In the early sixties Douglas McKenzie of Harvard University began a study of the Moundville material. He reviewed the artifacts and records stored at Moundville and at the Museum of the American Indian in New York and formulated the first formal definition of the "Moundville Phase" (McKenzie 1964,1966). Principal markers for the phase cited by McKenzie included pyramidal platform mounds, corn agriculture, a series of distinctive shell-tempered pottery types, extended burials with grave goods, and square or rectangular wall trench dwellings (Steponaitis 1980:12). He identified sites assignable to the Moundville phase as far north as the Tennessee Valley, and citing close ceramic ties with the Walls and Nodena phases of the Memphis area, he argued that the rise of Moundville phase in the Warrior drainage resulted from the intrusion of Mississippian peoples from the north and west. He proposed a beginning date for the Moundville phase of no earlier than A.D. 1250 and a terminal date of A.D. 1500, after which Moundville experienced a period of rapid cultural decline (McKenzie 1966:48).

McKenzie, like other Moundville researchers before him, focused his efforts on two fundamental goals: (1) defining the Moundville phase as a cultural unit in terms of diagnostic attributes and (2) tying the unit into the established chronology for the Southeast. Although McKenzie did address the dual problems of the origin and the demise of the Moundville phase, he largely ignored questions concerning the social organization of the Moundville Indians.

The first researcher to approach an intensive study of the Moundville material with the idea that the internal complexity of the site could be a key to understanding the social organization of the Moundville population was Christopher S. Peebles.

Peebles came to Moundville in the late sixties and sorted through the mass of excavation records in the Moundville files, collecting mounting evidence that prehistoric Moundville had been a carefully planned community whose underlying structure was based on a symmetry of spaces and activities. In Peebles's words:

> This symmetry is reflected in the sequency of mounds, buildings, artifact distribution, and burials at the site . . . . The pattern of mound

> size and use shows an alteration of small and large mounds along the eastern and western sides of the plaza. The small mounds contain high status burials and "sacrificial" interments of skulls, decapitated skeletons, and infants; the large mounds served only as substructures for buildings. There are "public buildings located near the northwest and northeast corners of the plaza, and caches of skulls and paints were located in pits near these buildings.... Just inside the southern margin of the plaza a charnel house and a sweat house were found. Residential areas, made up of house clusters were located away from the plaza, and an "elite" residential area was found northeast of Mound E. Finally, the colors associated with burials underscore the division of the site into halves. All black pigments are restricted to the eastern one-half; all of the white pigments are restricted to the western one-half; most yellow pigments likewise come from the east one-half (Peebles 1979:11-13).

Peebles constructed maps of artifact density per unit of excavated area and identified special activity areas including portions of the site which appeared to be dedicated to craft production. As he explains:

> The distribution of artifacts on the site show that various industrial and ritual activities paralleled the distribution of structures. The residential areas yielded food processing tools and other items associated with household maintenance; the elite residential area produced discarded remains from working copper and grinding pigments. Beadworking, hide processing, and pottery production likewise seem to have been restricted to limited areas within the site (Peebles 1979).

Peebles also sought answers to the long ignored questions of social differentiation among the Moundville population. In what was to become his most fruitful research effort, Peebles accomplished a numerical analysis of more than 2000 burials for their "latent images" of social organization. Through a series of bivariate and multivariate analyses Peebles (1974:181-191) demonstrated the existence at Moundville of two independent dimensions of mortuary ritual.

In the first and superordinate dimension, variability in the complexity of mortuary ritual appears to be a function of ascriptive ranking within a chiefly lineage, and as such, it is independent of age. That is, burials of infants are frequently more complex than burials of adults. Mortuary ritual in this dimension involves a range from small to large expenditures of energy; at the latter extreme are burials with "Southern Cult" grave goods and interment in or near mounds. Mortuary elaboration of this kind was reserved for the relatively small high-status segment of the population.

The second and subordinate dimension can be partitioned on the basis of age and sex. Within this dimension burial complexity appears to be determined by individual life history and achievement rather than rank ascribed at birth.

In sum, Peebles offered convincing evidence that both the spatial organization of the prehistoric community at Moundville and the complex nature of the mortuary ritual practiced by its inhabitants are consistent with the proposition that the Moundville society was organized as a complex chiefdom with access to ritual and political office determined by the ascriptive, hierarchical ranking of individuals within the society.

Recently, Peebles (1978:396-416) has argued that Moundville was the paramount site in a hierarchy of Moundville phase sites in the Warrior Valley. Moundville, with its elaborate mound and plaza complex, was by far the largest and most complex site in the Valley and in all probability served as a major civic-ceremonial center from which religious, economic, and social activities in the Warrior Valley were coordinated. As archaeological evidence to support this view, he notes that within 25 km north and south of the primary center at Moundville are at least nine minor civic-ceremonial centers, each with a single mound. These minor centers are thought to be subordinate to Moundville and served as intermediate focal points for one or more nearby villages. Steponaitis (1980:447-448) has suggested that these minor centers were positioned to optimize the flow of goods, services, and information between the primary center at Moundville and the outlying districts. In addition, Steponaitis cites the tendency for mound size at the minor civic-ceremonial centers to grow larger as the distance from Moundville is increased as evidence that minor centers closer to the primary center were more rigidly controlled and subject to a greater tribute-labor burden than centers further away.

The propositions offered by Peebles and Steponaitis concerning the social organization of the Moundville population are consistent with data from Mississippian communities in other areas. For example, Etowah (Larson 1971) is a similiar Mississippian center with clear evidence of social organization based on hereditary ranking. Also, early European accounts of such groups as the Natchez and the Taensa indicate that these remnant Mississippian-like societies were characterized by a political hierarchy that extended beyond the local community.

Even though Peebles's work at Moundville is recognized as landmark research in North American archaeology, he has acknowledged two important shortcomings in the data used to construct the Moundville phase settlement model proposed by him and Steponaitis. First, chronological controls for the Moundville phase were almost totally lacking. Radiocarbon dates for the preceding West Jefferson phase established the beginning of the Moundville phase at about A.D. 1050 (Jenkins and Neilsen 1974). On the basis of dates from Alabama River phase sites, Sheldon suggested a terminal date for the Moundville phase of no later than A.D. 1550. This isolated the Moundville phase as a 500-year temporal block within which all artifacts, burials, and sites had to be treated as if they were contemporary. This synchronic perspective obscured changes in settlement patterns over time and made it difficult, if not impossible, to trace the growth and development of the Moundville phase social organization.

A second shortfall in the model of the Moundville phase settlement system proposed by Peebles and Steponaitis was the fragmentary nature of data from the outlying Moundville-phase sites in the Warrior Valley. Over the years, the sheer size and impressive artifact content of the great site at Moundville has commanded the attention of most archaeological workers in the Warrior Valley. The outlying sites were poorly known, recorded for the most part by early surveys.

Before and after his first season at Moundville, C. B. Moore dug several mound sites in the vicinity of Moundville. In the early thirties W. B. Jones began the only archaeological survey which attempted anything close to complete coverage of the Warrior Valley south of the fall line at Tuscaloosa. In the main, this survey consisted of a brief reconnaissance of sites reported by landowners or discovered during the course of the survey. At most sites, a casual surface collection was picked up and a site survey form was completed. During this period, excavations were conducted in the village area associated with two mound sites--Snows Bend and the White Mound. However, only the Snows Bend excavation ever reached print (DeJarnette and Peebles 1970).

As was customary procedure in the archaeology of the early thirties, the survey forms contained only a line or two describing in the most general terms the artifacts recovered. At a number of sites the nature of the material is simply listed as "of the Moundville culture" (field notes, M.S.M.).

In the years since the Jones survey of the Warrior Valley, there have been only two limited survey efforts worth noting. The first was an archaeological survey of

Hale and Green counties conducted by the University of Alabama (Nielsen et al. 1973). Because of time and money constraints, this survey elected not to revisit many of the Hale and Greene county sites previously reported by W. B. Jones. Instead, the material collected by Jones and stored at Moundville was reviewed (when it could be found) and the relevant site features recorded on the 1933 site forms were restated.

The second survey of interest was an intensive reconnaissance of a small area at the mouth of the Big Sandy Creek, 4.2 km north of Moundville (Walthall and Coblenz n.d.). This survey was significant because Walthall, in a four square mile area, discovered numerous early Mississippian-Late Woodland hamlets and two hamlets and a one-acre village assignable to the Moundville phase. These results clearly hinted at the possibility that the lack of hamlet-size sites reported for the Warrior Valley was due to sampling bias in the 1933 survey towards larger and potentially more productive (in terms of artifact yield) sites.

In framing a model of Moundville phase settlement patterns, Peebles and Steponaitis were left with no other choice than to draw upon the rather sketchy data from the outlying Moundville phase sites. Nevertheless, Peebles

(1978b) clearly identified the limitations of the available data, pointed out the need for improved documentation of the outlying sites, and called for the development of a workable chronology for the Moundville phase.

Thus, when the University of Michigan Museum of Anthropology began its investigations in the Warrior valley in the summer of 1978, two of its foremost research objectives were to (1) establish a chronology for the Moundville phase that would allow for a productive study of changes in Moundville social organization and settlement patterns over time and (2) conduct a program of archaeological survey and testing at the outlying Moundville phase sites to recover much-needed additional information about Moundville phase settlement patterns. Research aimed at improving our knowledge of the Moundville phase sites which, together with the primary center at Moundville, formed the Moundville phase settlement system is the subject of this volume. The task of establishing a workable chronology for the Moundville phase fell to Vincas Steponaitis.

During the summer of 1978 Steponaitis catalogued and photographed more than 1000 whole vessels at Mound State Monument and at the Museum of the American Indian in New

York. Most of these vessels came from secure gravelot contexts. Early in his work with the collections, Steponaitis began to recognize a number of attributes of style and shape which exhibited consistent patterns of change. He suspected these ceramic attributes to be "chronologically sensitive" and the observed patterns of attribute change to be the result from changes in ceramic manufacture and decoration along a time dimension. Steponaitis tested this proposition by means of a numerical seriation of a sample of 87 gravelots of vessels in terms of 24 attributes of shape, design, painted decoration, paste, surface finish, and so forth.

The numerical seriation method selected by Steponaitis was one devised by Cowgill (1972) and involves a three-step procedure. First, a matrix of distance coefficients between attributes is computed based on the degree of attribute co-occurence in gravelots. Second, these coefficients are used to scale the attributes (nonmetrically) in 2-dimensional space, the dimension corresponding to the passage of time is isolated, and the positions of the attributes along the temporal dimension are measured. Third, the relative temporal position of the attributes are used to compute the most probable position for each gravelot, based on the attributes present within it. The sample size of 87 gravelots and 24 ceramic attributes was selected by (1) including only those "sensitive" attributes present in no fewer than five gravelots and (2) including only those gravelots which possessed at least two of the selected "sensitive" attributes.

In this procedure the multidimensional scaling in two (or more) dimensions amounts to a test of the "one-axis" hypothesis (Cowgill 1972:384). As Steponaitis explains:

> "If a one-dimensional configuration fails to appear, then the investigator is forced to reconsider the appropriateness of the analysis in terms of at least two possibilities. Either the gravelots do not vary significantly with respect to time and the entire analysis is misconceived, or the attributes being measured are poor chronological indicators and should be replaced with better ones" (Steponaitis 1980:15).

The multidimensional scaling of the Moundville ceramic attributes produced a configuration of points along an essentially one-dimensional arc. Next, Steponaitis sequenced the gravelots by "calculating a probable or 'best fit' position for each gravelot, taking into account the stylistic attributes it contains" (Steponaitis 1980: 158-159). Finally, he divided the gravelot sequence into five segments, selecting horizontal boundaries that tended to maximize the differences between adjacent segments. Each of these five segments corresponds to a phase or sub-phase in Steponaitis's three-phase ceramic chronology for the Moundville phase (Table 1). The chronology was further refined and validated with stratigraphic data from Margaret Scarry's 1978 and 1979 intensive test evcavations north of Mound R at Moundville.

A breakdown of the Steponaitis chronology by Types and Varieties, Representational Motifs, Basic Vessel Shapes, and Secondary Shape Features, is presented in Tables 2-5, located at the end of this chapter. For the most part, it is on the basis of the chronological distribution of ceramic types and vessel features presented in these tables that the outlying Moundville phase sites described in the next two chapters are assigned to chronological positions within the Moundville phase.

Steponaitis was able to tie the lower end of his ceramic sequence to a series of good radiocarbon dates for West Jefferson and Moundville I related material from Moundville, the Lubbub Creek site on the Tombigbee, and several other sites in Alabama and Mississippi (ibid:183-185). On the upper end, Moundville III was tied to radiocarbon dates from a Moundville III structure at Lubbub, and to mid 16th and 17th century dates for Alabama River phase material in the Warrior Valley (ibid:218). Unfortunately, there are no radiocarbon dates available from an unmixed Moundville I context, and Steponaitis dates these segments by interpolation from the dates for earlier and later periods.

Table 1
Chronology for the Black Warrior Valley
(after Steponaitis 1980:142)

PERIOD	PHASE	
Mississippian	Alabama River	A.D. 1550
	Moundville III	A.D. 1400
	Moundville II	A.D. 1250
	Moundville I	A.D. 1050
Late Woodland	West Jefferson	A.D. 900

Finally, Steponaitis (ibid:218-221) has identified what he considers to be the important ceramic characteristics of each of the major phase divisions in his chronology. As this chronological outline of the ceramics traditions of late Alabama prehistory is essential background for the site descriptions in following chapters, each of the major divisions described by Steponaitis is briefly summarized below:

The West Jefferson phase (A.D. 900-1050) -- The ceramics of this phase are almost exclusively grog tempered, with the vast majority of vessels belonging to the undecorated type Baytown Plain, Var. Roper. Mulberry Creek Cord-Marked, Var. Aliceville, is the most common of a number of minority types. Predominant vessel forms are simple bowls and jars, the latter often having two parallel-sided handles. The shell-tempered types Mississippi Plain, Var. Warrior and Moundville Incised Var. Carrollton, are present, but only in small numbers.

Moundville I (A.D. 1050-1250) -- The phase is marked by a rapid and virtually total shift to crushed and burned shell as a vessel tempering material. In addition, a number of new vessel forms appear; the restricted bowl, the flaring rim bowl, the slender ovoid bottle, and (late in the phase) the subglobular bottle with pedestal base. Undecorated types, now Mississippi Plain, Var. Warrrior, and Bell Plain, Var. Hale, still predominate. Decorated vessels include bowls and bottles of Carthage Incised, Vars Akron, Moon Lake, and Summerville; Moundville Engraved, Var. Elliots Creek, Havana, Stewart. In addition, Moundville Incised, Var. Moundville, becomes more common.

Moundville II (A.D. 1250-1400) -- This phase is marked by gradual changes in bottle forms. Changes in secondary features include additional handles on jars and, late in the phase, the introduction of beaded rims. Important decorated types are Moundville Engraved, Vars. Havana, Northport, Taylorville, Hemphill (late), and Tuscaloosa (late); and Carthage Incised, Var. Akron. The type Moundville Incised begins a sharp decline early in the phase. Thus, Moundville Incised is an excellent Moundville I marker.

Moundville III (A.D. 1400-1550) -- Vessel form changes in this phase include the disappearance of the pedestaled bottle with the subglobular bottle with a simple base now the dominate form. Late in the phase flaring rim bowl shapes tend to get deeper and the short neck bowl appears. The number of handles on unburnished jars continues to increase through time from four to eight or more. In addition, these handles are more strap-like and tapered than earlier forms. Bowls decorated with a beaded rim attain their greatest frequency. The most common varieties of the decorated type Moundville Engraved are Vars. Wiggins and Hemphill. Less frequent but still present early in the phase are Vars. Taylorville, Tuscaloosa, and Havana. Varieties of Carthage Incised include Akron, Carthage, Moon Lake, and Poole.

Alabama River phase (A.D. 1550-1700) -- The ceramics of this post-Moundville phase appear to be a direct outgrowth of late Moundville III ceramics. Most vessel forms continue, with the handles on unburnished jars often replaced by applique neck fillets or vertical pinched-up ridges of clay. Mississippi Plain, Var. Warrior, and Bell Plain, Var. Hale, remain the predominant undecorated pottery types. Decorated types include Alabama River Incised, Barton Incised, and Carthage Incised, Vars. Carthage and Fosters. Moundville Engraved also continues, but only in certain unnamed varieties. However, as Sheldon aptly points out, the majority of the black-filmed "ceremonial" wares and "Southern cult" artifacts fall victim to the "series of unknown events and processes <that> brought an end to the cultural florescence at Moundville, leaving in their wake a number of impoverished cultural groups" (Sheldon 1974:9).

Steponaitis views the ceramic sequence presented above as one in which a continuity of vessel form and decoration is clearly evident from Late Woodland times well into the protohistoric period. For example, he points out that the sequence of bottle types (slender ovoid; subglobular with pedestal base; subglobular with slab base; subglobular with simple base) are simply convenient points on a ceramic continuum in which Moundville bottles gradually increase in body width while decreasing in the prominence of the basal pedestal (Steponaitis 1980:222-225).

Steponaitis presents a straightforward and well documented case for local ceramic development from Moundville I times well into the Alabama River phase. However, he is in a less secure position when he argues for ceramic continuity across the West Jefferson/Moundville I interface. The ceramics of the Moundville I phase are markedly different from those of the preceding West Jefferson phase. With few exceptions, vessel temper changes from grog to crushed shell, bottle forms first appear, and a number of new decorative techniques of engraving and blackfilming arise. Nevertheless, Steponaitis contends that these changes, while rapid, do not represent a total break in the ceramic tradition. He points out that the West Jefferson bowl and two-handle jar shapes continue to be made in the Moundville I times. In addition, he cites the use of shell temper in the West Jefferson phase and the continued use of grog as a minority temper throughout the Moundville phase. He also suggests that the appearance of a ceramic discontinuity could well be an artifact caused by the comparison of material earlier than terminal West Jefferson with material later than early Moundville I. He predicts that when an early Moundville I component is isolated it will be stylistically closer to West Jefferson than is now indicated.

Peebles (1978) and Welch (1980) also have expressed a preference for the proposition that the rise of the Moundville phase was the result of the transformation of the culture of the Late Woodland West Jefferson population by Middle Mississippian ideas without any visible movement of pre-existing Middle Mississippian peoples into the area. In this view West Jefferson would be one of a number of local populations that developed a distinct Middle Mississippian culture through mutual interaction, perhaps both giving and receiving.

In what has become a brisk controversy in Southeastern archaeology, Jenkins (1976, personal communication) has vigorously proposed that the distinctive West Jefferson culture was the result of the direct interaction between a resident Late Woodland population and Mississippian peoples migrating into the Warrior Valley.

Jenkins's proposition is based on data recovered from several Late Woodland sites on the upper reaches of the Black Warrior River. At these sites he recovered a ceramic collection which contained both grog-tempered ceramics and small amounts (less than two percent) of shell-tempered pottery. Using an interesting statistical procedure, O'Hear (1975) calculated the weighted average of radiocarbon determinations for six features containing both shell-tempered and grog-tempered ceramics, and for three features containing only grog-tempered ceramics. The weighted average for the features with shell-tempered ceramics was A.D. 1014 ±30, while the weighted average for grog-tempered only features was A.D. 928 ±43, indicating a shift to shell tempering late in the West Jefferson phase. The same evidence indicated that the early West Jefferson loop handle was replaced by a later and more-strap like form. Jenkins views the appearance of shell-tempered ceramics and strap handles in the West Jefferson material culture at about A.D. 1000 as adequate evidence for the interaction of the resident West Jefferson population with Mississippian peoples newly arrived at the Bessemer site, 20 miles to the east. Jenkins has also suggested that the resident West Jefferson peoples lived side by side with the Mississippian invaders at the small civic-ceremonial center at Bessemer:

> The clay tempered pottery at the Bessemer Site indicates there was a resident West Jefferson community living there with the Mississippians, who made shell tempered pottery. Thus it seems that the Bessemer Site is essentially a Mississippian ceremonial center with an accompanying community of West Jefferson people (Jenkins 1976:19).

Given the general lack of data relevant to this issue, the position taken by Peebles (1978, 1979), Welch (1980), and Steponaitis (1980) that the West Jefferson to Moundville I transition was the product of long distance acculturation of Mississippian ideas seems as plausible an explanation as the in-migration of Mississippian peoples proposed by Jenkins. It is, however, fruitless to argue, as Steponaitis does, that the view of the transition as an essentially indigenous process is "considerably simpler, and therefore preferable" (1980:223). It also remains to be demonstrated that the discovery of an early Moundville I component will reduce the appearance of discontinuity between West Jefferson and Moundville I, as Steponaitis predicts it will. Fortunately, Paul Welch is currently planning research at the Bessemer Site designed to shed new light on this intriguing and important problem (personal communication).

In fact, when new data become available it may turn out that both propositions will prove to be partially correct. As Clay has pointed out:

> It is generally recognized that the appearance of Mississippian cultures involved an important shift in human ecology undoubtedly due to the widespread adoption of intensive agriculture with improved corn varieties. However, it is no longer possible to explain this shift as a product of the spread of a Mississippian culture from a Mississippi Valley heartland (cf. Caldwell, 1958: pp. 64-65). Although movements of peoples were in part involved, some of them stemming from centers in the Mississippi Valley, these may have been less important than changes occurring in widely dispersed Woodland groups who, in opting for corn agriculture, chose economic orientations quite different from their traditional pursuits. A combination of migrations and local changes ultimately produced archaeological manifestations with a distinctive character (1979:138).

UMMA Survey Procedures

The following artifact collection procedures were employed at each of the archaeological sites in the Warrior Valley investigated by the UMMA survey. If initial reconnaissance indicated that both the total site area and the density of artifacts on the surface were sufficient to warrant a controlled surface collection, the site was gridded into twenty by twenty meter collection units and all of the archaeological material on the surface was collected and tagged by individual unit.

The twenty by twenty meter grid was selected in an effort to work with a collection unit small enough to yield meaningful artifact distribution information and yet not involve such large numbers of collection units that the surface collecton of any site would become a cataloging nightmare. Obviously some information was lost as all the artifacts picked up within the boundaries of a particular unit are considered to have been recovered from the center of the unit.

In the laboratory, artifacts from each collection unit at a particular site were classified and the count, weight, and collection unit identification, for each artifact class was recorded.

Ceramics were classified according to types and varieties established for the Woodland Period in the region by Jenkins (1979) and for the Mississippian Period in the Warrior Valley by Steponaitis (1980). Lithic material was classified into classes and types defined for the region by Ensor (1979). The reader is referred to these authors for detailed descriptions of the ceramic types and varieties, and the lithic classes and types used in the artifact summary tables presented in Chapters Two and Three.

At regular intervals artifact identification information was transmitted for storage in the University of Michigan's Amdahl 470V/7 computer. For this purpose an inexpensive Apple II computer in California was used as a terminal and linked to the Michigan computer through GTE's Telenet telecommunications facility and Merit, the Michigan universities network. After some experimentation it was possible to transfer data stored in the Apple Disk Operating System directly into a line file in the Michigan computer. This procedure resulted and a considerable savings of on-line charges and eliminated the inevitable mistakes that creep into data typed at a dumb terminal.

Once the data on more than 700 different artifact types recovered from more than 400 collection units at the 37 sites investigated in the Warrior Valley survey were input and stored in the Michigan computer, the Michigan Terminal System (MTS) File Editor was used to reformat the data for introduction to TAXIR (Brill 1978), an information management system run under the control of MTS. Peebles who employed Taxir as an essential part of information management in the Lubbub Creek Archaeological Project, explains the logical nature of the Taxir system:

> "Data banks managed by Taxir are organized around a set of conceptually related things. Each thing, the sherds in a collection, for example, can be described in terms of a number of attributes, in the case of ceramics, type, variety, temper, vessel shape, etc. These attributes in a Taxir data-bank are called descriptors and a set of descriptor-states for a single item defines a record" (1981:9).

The Taxir data bank can be conceived as a two-dimensional array with rows representing items and columns representing descriptors with each cell in the array containing one and only one descriptor-state. Data organization of this type is generally referred to as a "flat-file" structure (Brill 1978:9) The primary advantage of this form of data structure is the ability to make a rapid and efficient search of even very large data banks.

The user accesses the Taxir data bank by querying the system "in the language of Boolean algebra, adapted so that terms of the user's own choosing may serve as operands in Boolean expressions" (Brill 1978:1). First, a Boolean expression is constructed which will select the desired subset of items in the data bank. Second, for the items selected by the Boolean expression, the user chooses those descriptors (attributes) he desires to be printed. The Taxir system also offers a flexible report-generation capability. This feature was employed to produce a 3200 page "master" listing of all the artifacts recovered in the UMMA Warrior survey, indexed by site and collection unit.

The Taxir data bank was next queried for information on those classes of artifacts present on most sites in sufficient quantities to justify computer mapping of their spatial distribution. The artifact classes selected were Shell-Tempered Ceramics, Grog-Tempered

Ceramics, Lithic Debris, and Daub.

Most of the Moundville phase settlements in the Warrior Valley are located on the sites of earlier West Jefferson villages. One of the primary ceramic markers for the beginning of the Moundville phase is a change in the tempering material used in the production of ceramics, from grog temper in the West Jefferson to crushed and burned shell temper in the Moundville phase. Thus, contour mapping the distribution of ceramics by temper type seemed a good means of determining the size and spatial relationship of Moundville phase and West Jefferson components at each of the sites at which a controlled collection was conducted. Specifically, it would provide a measure of the size and location of the Moundville phase component on many of the large sites reported by Jones as belonging to "the Moundville culture" (field notes, M.S.M.) but also containing a large West Jefferson component.

Another class of artifacts that appeared to have potential for contour mapping was Lithic Debris. The majority of the Warrior Valley survey sites produced large quantities of flint chips and other such lithic material produced as a by-product of stone tool manufacture. Most of this material is thermally altered

red chert and all of this debitage of artifact manufacture was lumped into a general class titled "Lithic Debris". It was hoped that contour maps of the distribution of lithic debris would not only identify the location of lithic activity areas but also indicate if such activity was primarily associated with the Moundville or West Jefferson component.

When present in sufficient quantities, the distribution of daub was also mapped in hopes that, when viewed in its relationship to other artifacts, daub would assist in the identification of individual structures or groups of structures.

The computer program employed to generate the contour maps was Surface II (Sampson 1978). Surface II is a computer software system for the creation of displays of spatially distributed data. The basic form of display produced by Surface II is a contour map--a plot of two coordinates (X and Y) on which the values of the third variable (Z) are defined by lines of equal value. The procedure is traditionally employed to display lines of equal ground elevation, but can more generally be used for any display in which the values of one variable can be "located" at coordinates defined by the other two variables. The only requirements that must be met are (1) the coordinate variables be orthogonal and (2) the mapped variable be single-valued (Sampson 1978:1).

Contour maps have been used to display graphically a wide range of spatial data. Examples of data suitable for contour mapping runs from such straightforward applications as the average annual rainfall in Illinois to more esoteric matters such as the contouring of potential energy surface of a hydrogen molecule reacting with a hydrogen atom.

The use of contour maps as an aid in the analysis of the spatial relationships of archaeological data has obvious potential. It is generally agreed that different types of artifacts found within different areas of an archaeological site provide a clue to centers of activity when the site was inhabited (Sampson 1978:18). To the extent that a site is intensively and systematically collected, contour maps of the artifacts recovered can be a powerful tool for determining the internal structure of the site.

Contour maps of artifact distributions on the UMMA survey sites were constructed by first retrieving the required artifact distribution data from the Taxir databank. For example, in order to retrieve the data required by Surface II to generate artifact distribution maps for site 1 Ha 15, Taxir was queried for a value for each of the following descriptors: Collection Unit ID, Shell-Tempered Ceramics by weight (in grams), Grog-Tempered Ceramics by weight, Lithic Debris by weight, and Daub by weight.

Information for each of the 36 twenty by twenty meter collection units on Ha 15 was downloaded over the telephone into the Apple II computer and stored on disk. Next, the data was introduced into Visicalc, an Apple II based program which allows rapid manipulation of numerical data. In Visicalc the Collection Unit ID was converted into X and Y coordinates for the center of each collection unit. This coordinate table was replicated for each artifact class and, with the data formated into a separate table for each artifact class, the information was transmitted via Telenet back into the Michigan host computer and introduced into the Surface II program.

Surface II contour maps generated from the artifact distribution data from Ha 15 and the 12 other sites at which a controlled surface collection was feasible were previewed on a graphics terminal. Each map required some trial and error to settle on a contour interval for each artifact class that would produce a map with a maximum of about 20 contour intervals. Above this number the contour lines tended to run together.

Once a suitable map had been generated by the Surface II program it was queued for output on Michigan's Calcomp plotter. The electronic link was broken only in the final step when the completed maps were returned to California by mail. The Surface II maps in this report were reduced to their present size on a Xerox 8200 copier.

Figure 4 shows the Surface II command file used to generate the contour map of the distribution of grog-tempered ceramics by weight on Ha 15. Figure 5 is the Surface II contour map generated by the command file. It should be emphasized that what is being contoured is not the density by weight of grog-tempered ceramics across the surface of the site, but rather the total weight in grams of grog-tempered ceramics per collection unit. As was previously mentioned, all artifacts collected within the unit were assigned X and Y coordinates corresponding to the center of the collection unit. The X and Y values of the data points used in map generation also corresponded to the center of the collection unit, and the Z value was the total weight in grams of all the artifact collected anywhere within the unit.

Finally, Figure 6 is a comparison of a typical Surface II contour maps output to a line printer (Dec LA36) and to the Michigan plotter.

Summary

This chapter briefly reviewed the geographical range and natural setting of the sites of the Moundville phase. The history of archaeological investigations at Moundville and related Mississippian sites in the Black Warrior Valley was outlined. Evidence was presented in this section to support the proposition that the Moundville community was organized as a complex chiefdom and that the outlying mound sites were arranged in the valley in a hiererchical order designed to facilitate the flow of goods and services to and from the major center at Moundville.

This chapter also discussed past problems of chronology and inadequate data from the outlying sites. The chronological framework recently devised by Steponaitis for the late prehistory of western Alabama was presented in some detail. Also discussed were the uncertainties concerning the origins of the Moundville phase. The chapter concluded with a discussion of the procedures employed during the UMMA archaeological survey. The upcoming two chapters present descriptions of the individual sites of the Moundville phase investigated by the UMMA survey.

```
SURFACE II ON MTS - NOV. 1976 ** 20K VERSION **

***** SURFACE II COMMANDS AND ERROR REPORT *****    DATE 11-20-80   TIME 21:32:3
--------------------------------------------------------------------------------

                              ****** COMMANDS ******

         (    1) 'TITLE 1 HA 15  GROG TEMPERED CERAMICS  CONTOUR INTERVAL: 50 G
         (    2) 'DEVICE 6,'BOZEMAN'
         (    3) 'IDXY 88,11,3,1,2,3,0,0,0,0,'(F9.0,F9.0,9X,F9.1)'
         (    4) 'QUAD 1,4,,60
         (    5) 'QUAD 2,4,,60
         (    6) 'EXTREMES -100,80,-120,0
         (    7) 'GRID 0,60,40,1,0,1,1
         (    8) 'RANGE -9.0,710,0
         (    9) 'CONTOUR
         (   10) 'CINTERVAL 0,0,50,0,2,0.1,0,,5
         (   11) 'SIZC 1,12
         (   12) 'BOX 20,1,20,1,0,0,0,1,0.2
         (   13) 'PERFORM

         ******************************************************************
         START OF PLOTTING DEVICE     6
         ******************************************************************

1 HA 15  GROG TEMPERED CERAMICS  CONTOUR INTERVAL: 50 GMS      DATE 11-20-80

         ********** INPUT X-Y-Z DATA POINTS **********

         THE NUMBER OF INPUT VARIABLES IS      3

         X IS VARIABLE  1
         Y IS VARIABLE  2
         Z IS VARIABLE  3
         IDENT. WILL BE SET TO SAMPLE NUMBER
         NO VARIABLE SPECIFIED FOR MAP SYMBOL

         NO CHECK WILL BE MADE FOR MISSING DATA

         FORMAT OF DATA IS (F9.0,F9.0,9X,F9.1)

         THE NUMBER OF DATA POINTS TO BE READ IS     88

         THE X-Y-Z DATA POINTS WILL BE READ FROM FILE  11

         NO SUBSET SPECIFIED

         ****************************************************

         THE X-MINIMUM OF X-Y-Z DATA IS        -110.00000000
         THE X-MAXIMUM OF X-Y-Z DATA IS         500.00000000

         THE Y-MINIMUM OF X-Y-Z DATA IS        -500.00000000
         THE Y-MAXIMUM OF X-Y-Z DATA IS          10.00000000

         THE Z-MINIMUM OF X-Y-Z DATA IS           0.0
         THE Z-MAXIMUM OF X-Y-Z DATA IS         702.80004883

            88 X-Y-Z DATA POINTS SAVED
```

Figure 4. Example of Surface II Command File.

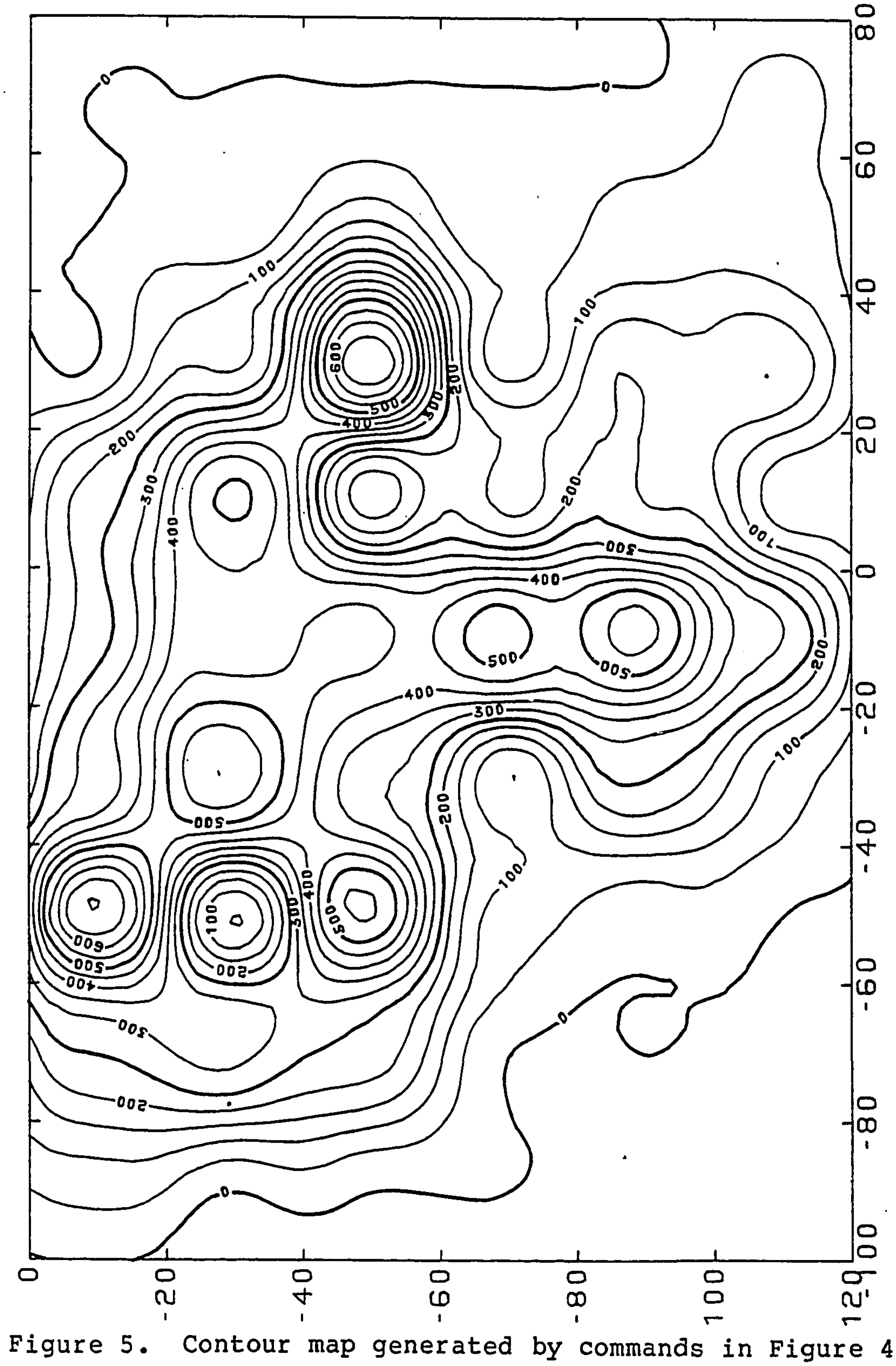


FIGURE 61. Site: 1 Ha 15 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 50 grams. Distance between tick marks = 20 meters.

Figure 5. Contour map generated by commands in Figure 4.

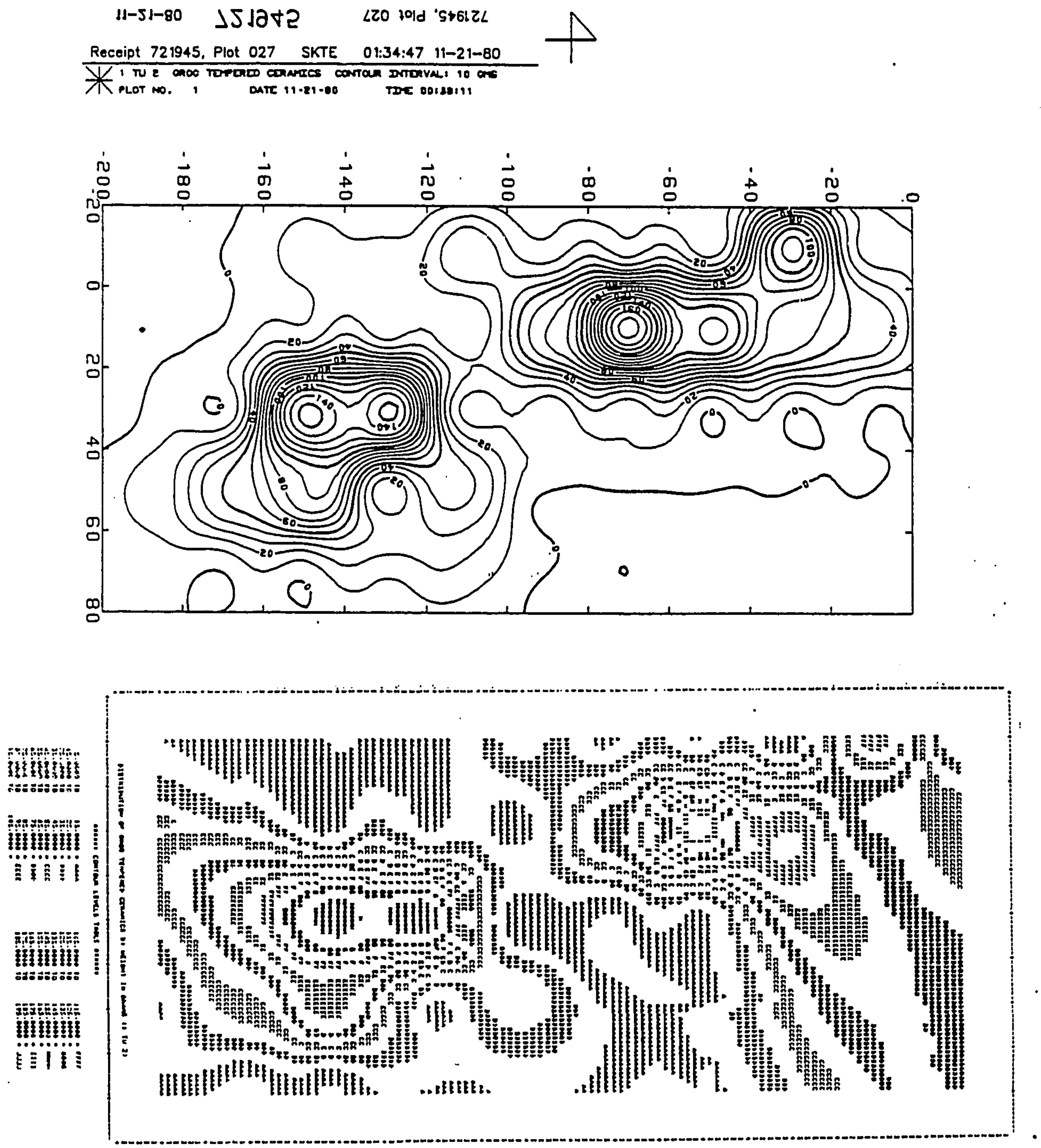


Figure 6. Surface II contour map output to plotter and line printer.

Table 2
Summary Chronology of Types and Varieties
(after Steponaitis 1980:226)

TYPE/VARIETY	Mv.I	Mv.II		Mv.III	
		early	late	early	late
Bell Plain, Hale	x	x	x	x	x
Mississippi pl., Hull Lake	x	x	x	x	x
Warrior	x	x	x	x	x
Carthage Inc., Akron	x	x	x	x	
Carthage				x	x
Fosters				x	x
Moon Lake	x	?	?	x	x
Poole					x
Summerville	x	?			x
Moundville Eng., Cypress				x	
Elloits Cr.	x				
Englewood				x	x
Havana	x	x	x	x	x
Hemphill		-	x	x	x
Maxwells Cr.		(x)	x	x	
Northport	x	x	x		
Prince Pl.		(x)	(x)		
Stewart	x	?			
Taylorville		x	x	x	
Tuscaloosa			x	x	x
Wiggins			x	x	x
Moundville Inc., Carrollton	x	x	-		
Moundville	x	x	-		
Snows Bend	x	x	-		
Barton Inc., Unspecified	x	?	?	?	?

Key: x = present; (x) = very likely present; - = present, but in greatly reduced frequency; (-) = very likely present, but in greatly reduced frequency; ? = possibly present.

Table 3
Summary Chronology of Representational Motifs
(after Steponaitis 1980:227)

MOTIF	Mv.I	Mv.II early	Mv.II late	Mv.III early	Mv.III late
Bilobed Arrow		(x)	x		
Bird with Serpent Head			?	?	?
Crested Bird			?	x	
Feather			(x)	(x)	
Feathered Arrow		(x)	(x)	?	
Forearm Bones				x	x
Forked Eye Surround		x	(x)		
Greek Cross		(x)	(x)	?	
Hand and Eye		(-)	x	x	x
Human Head		?	?	?	?
Insect			(x)	(x)	(x)
Ogee		(x)	x		
Paired Tails			x	x	x
Paired Wings				x	
Radial Fingers		?	x	x	x
Raptor		(-)	(-)	x	
Rayed Circle		(x)	(x)	?	
Scalp			(-)	x	x
Skull				x	
Turtle					x
Windmill		?	x	x	
Winged Serpent				x	x

Key: x = present; (x) = very likely present; - = present, but in greatly reduced frequency; (-) = very likely present, but in greatly reduced frequency; ? = possibly present.

Table 4
Summary Chronology of Basic Vessel Shapes
(after Steponaitis 1980:229)

VESSEL SHAPE	Mv.I	Mv.II early	Mv.II late	Mv.III early	Mv.III late
cylindrical bottle		x	(x)	x	
narrow neck bottle				?	x
slender ovoid bottle	x				
subglob. bottle, ped. base	x	x	x		
subglob. bottle, slab base			x	x	-
subglob. bottle, simple base	-	?	x	x	x
cylindrical bowl		x	x	x	-
flaring rim bowl (deep)				(x)	x
flaring rim bowl (shallow)	x	x	x	x	x
outslanting bowl	?	(x)	(x)	?	
pedestalled bowl	x	(x)	x	x	
restricted bowl	x	(x)	x	x	x
short neck bowl					x
simple bowl	x	x	x	x	x
terraced rectanguloid bowl	?	x	?		
burnished jar	x	(x)	x	x	-
neckless jar (unburnished)	x	-			
stand. jar (unb., 2 hand.)	x	(x)	x	x	-
stand. jar (unb., 4 hand.)	?	(x)	x	x	x
stand. jar (unb., 8 hand.)				x	x
stand.jar (unb., 10+ hand.)					x
composite bowl			x	(x)	
composite bowl/jar			x	(x)	
double bowl	?	?	(x)	x	?

Key: x = present; (x) = very likely present; - = present, but in greatly reduced frequency; (-) = very likely present, but in greatly reduced frequency; ? = possibly present.

Table 5
Summary Chronology of Secondary Shape Features
(after Steponaitis 1980:230)

SECONDARY FEATURE	Mv.I	Mv.II early	Mv.II late	Mv.III early	Mv.III late
band of nodes	(x)	(x)	x	(x)	
beaded rim			x	x	x
beaded shoulder	x	(x)	x	x	
cutout rim	x	?			
downturned lugs				x	x
folded rim	x				
folded-flattened rim	x				
gadrooning	x	(x)	(x)		
grouped nodes	x	(x)	x		
indentations		x	x	x	
lowered lip	x	x	?		
notched everted lip		(x)	x	x	
notched lip		(x)	(x)	x	
opposing lugs		?	?	?	?
scalloped rim	x	?	?	(x)	(x)
single lug		x	x	x	-
spouts			x		
vertical lugs				(x)	(x)
widely spaced nodes:					
(bowl or burn. jar)			x	x	
(unburnished jar)	(x)	(x)	(x)		

Key: x = present; (x) = very likely present; - = present, but in greatly reduced frequency; (-) = very likely present, but in greatly reduced frequency; ? = possibly present.

Chapter 2

UMMA Survey Sites North of Moundville

1 TU 56

This site is the northernmost platform mound investigated by the UMMA survey. It is located 21 km north of Moundville on a terrace above the east bank of the Warrior River near the center of Section 26, Township 21 South, Range 11 West. When W. B. Jones visited the site in 1933, he reported the mound to measure 58 X 14 meters at its base and vary in height from 5.5 meters on the west to 3.65 meters on the south to 2.75 meters on the north to 2.13 meters on the east. Jones also noted a 61 X 61 meter surface scatter near the mound (Peebles 1980:388). In the summer of 1978 when the UMMA survey team began its investigations the site consisted of two mounds (Tu 56 and Tu 62) and an area of surface scatter nearby. The larger of the two mounds (Tu 56) measured 2.5 meters high, 55 X 37 meters at its base, and 25 X 17 meters at its summit, with the long axis orientated NE - SW. A second smaller mound (Tu 62) located 60 meters east of Tu 56 is a low rounded mound less than a meter in height and approximately 12 meters in diameter. A general view of the site is shown in Figure 8.

The survey team placed three test excavations into the larger mound and a single test unit into the smaller mound. The latter excavation clearly determined Tu 62 to be of recent origin; it has no recognizable stratigraphy and historic metal artifacts were discovered in the lower levels of the mound.

The larger mound (Tu 56) was more productive. Test excavations clearly demonstrated this mound to date to the Mississippian period. A summary of the artifacts recovered from the Tu 56 mound is presented in Table X. Vertical sections from Test Unit 2 (the master unit) are shown in Figure 10.

A total of 16 different mound strata were identified. However, the thinness of many of the strata together with the irregular nature of the boundaries bewteen strata indicate that most of the different strata result from "basket loading" during construction. Significant breaks in deposition suggest the following construction history:

1. The initial and major mound-building effort seen in stratum 15 (base of the mound) up through stratum 10.

2. The construction of some type of structure,

evidenced by the postmold seen in the west wall (stratum 8).

3. The subsequent deposition of stratum 7-3, a set of essentially horizontal clay and sand bands representing at least one house floor (stratum 3) and possibly a second (stratum 5).

4. The abandonment of the mound summit and the desposition of wash from upslope (stratum 2-1).

This evidence suggests that the greater part of the Tu 56 mound was constructed as a single event. Subsequently a series of structures were constructed on the mound summit. At some unknown interval each of these structures was burned, a new floor of sand and clay laid down, and a new structure constructed.

The ceramics recovered from the mound excavation indicate that the mound was constructed and occupied during the Moundville I/ II period. Present in the ceramic collection are several sherds of Moundville Incised, Vars. Moundville, Snows Bend, and Carrolton. Steponaitis (1980:175) cites the type Moundville Incised as an excellent marker for the Moundville I phase. Negative evidence for the terminal dating is the lack of other ceramics types known to be present in later Moundville phases.

Two radiocarbon dates were obtained from the mound excavations:

DIC - 1244 AD 1440 + 105

DIC - 1245 AD 1340 + 95

Though these dates fall well within the time span established for the Moundville phase, I consider them highly suspect. Both were taken from small and possibly contaminated samples. Also, the date from near the base of the mound (DIC 1244) is 100 years later than the date from the house floor near the mound summit (DIC 1245). On the evidence of the ceramic collection recovered from the mound excavations and in light of the chronology established by Steponaitis for the Moundville phase, I regard these radiocarbon dates as 100 - 200 years (1-3 standard deviations) too late.

The .6 hectare village area adjacent to the mounds was gridded into 15 twenty by twenty meter squares and a controlled surface collection conducted. A summary of the artifacts recovered from the village area is presented in Table 6. The majority of ceramics recovered were grog tempered with Baytown Plain, Var. West Jefferson the predominant type. Surface II contour maps of the distribution of Grog-Tempered ceramics, Shell-Tempered ceramics, and Lithic Debris are presented in Figures 11 - 13.

The broad distribution of grog-tempered ceramics and lithic debris shown in the contour maps clearly indicate that the greater part of the village area dates to the West Jefferson period. The Mississippian occupation, as evidenced by the amount and distribution of shell-tempered ceramics, is considerably smaller (41 shell-tempered sherds vs 1028 grog-tempered sherds) and is restricted to the southwestern portion of the village area. This suggests that there was no sizable Mississippian settlement associated with the Tu 56 mound.

In summary, Tu 56 appears to be a minor ceremonial center constructed somtime during the Moundville I phase. Most of the earthwork was constructed as a single project, and during the period of its occupation the structure(s) on the mound summit were burned and replaced several times. Although the mound was constructed on the site of a sizable former West Jefferson village, there is no evidence to indicate a large Mississippian settlement in the immediate vicinity of the mound. Some time early in the Moundville II phase the site was abandoned as a ceremonial center with its political and religious role presumably shifting to another site, most likely downstream and across the river to Snows Bend (Tu 3).

Figure 7. Aerial view of 1 Tu 56.

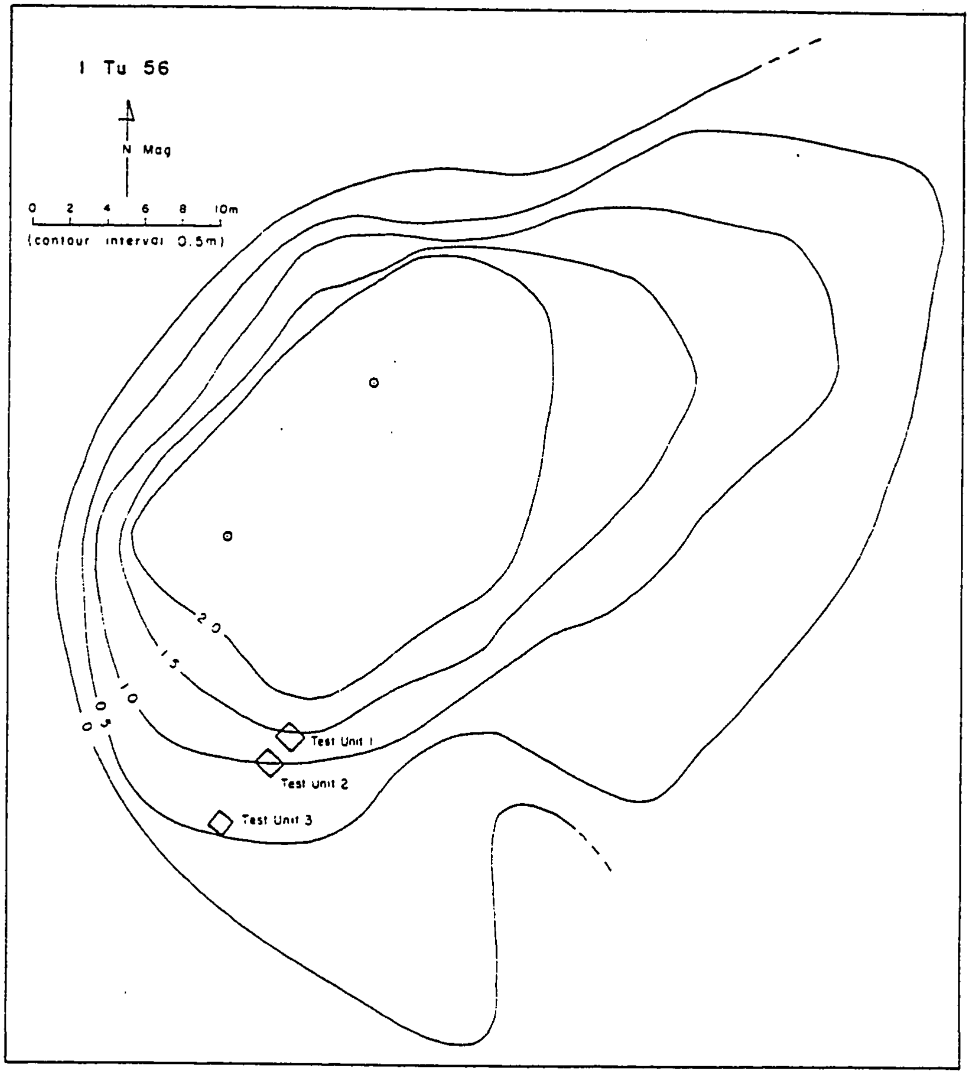


Figure 8. Contour map of 1 Tu 56 mound.

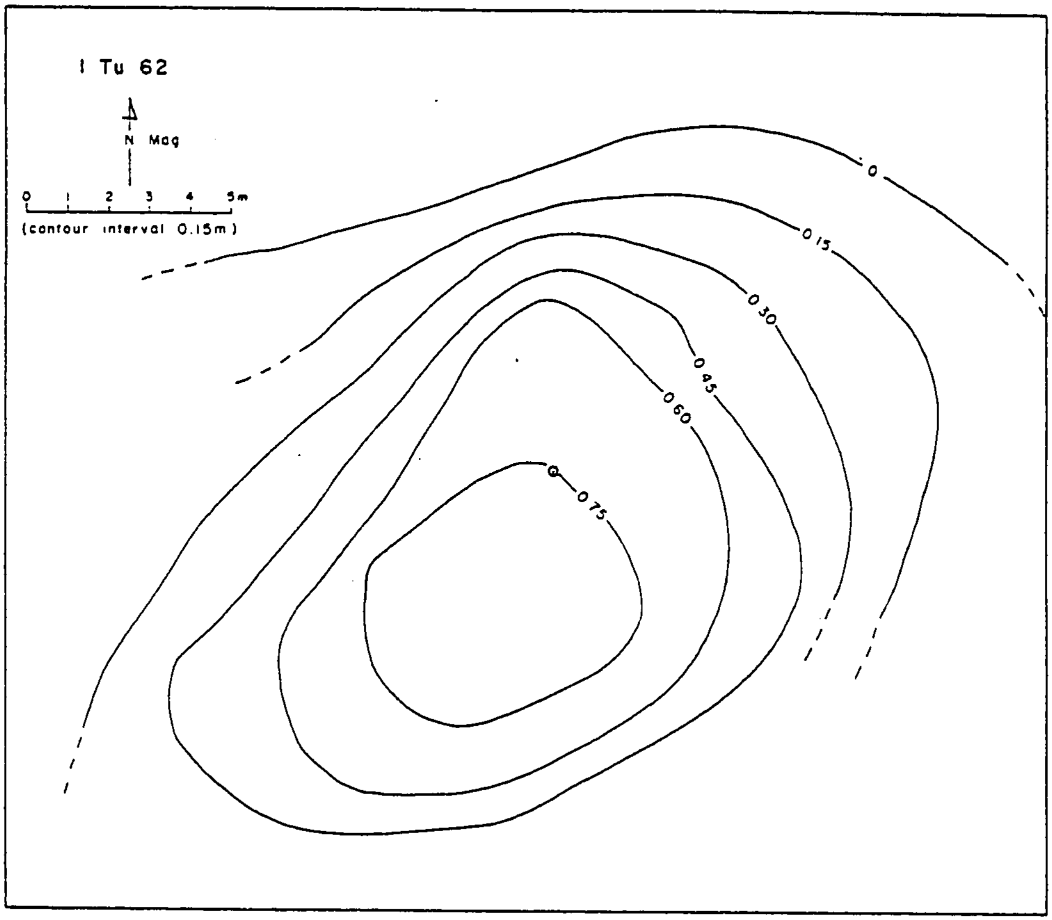


Figure 9. Contour map of 1 Tu 62 mound.

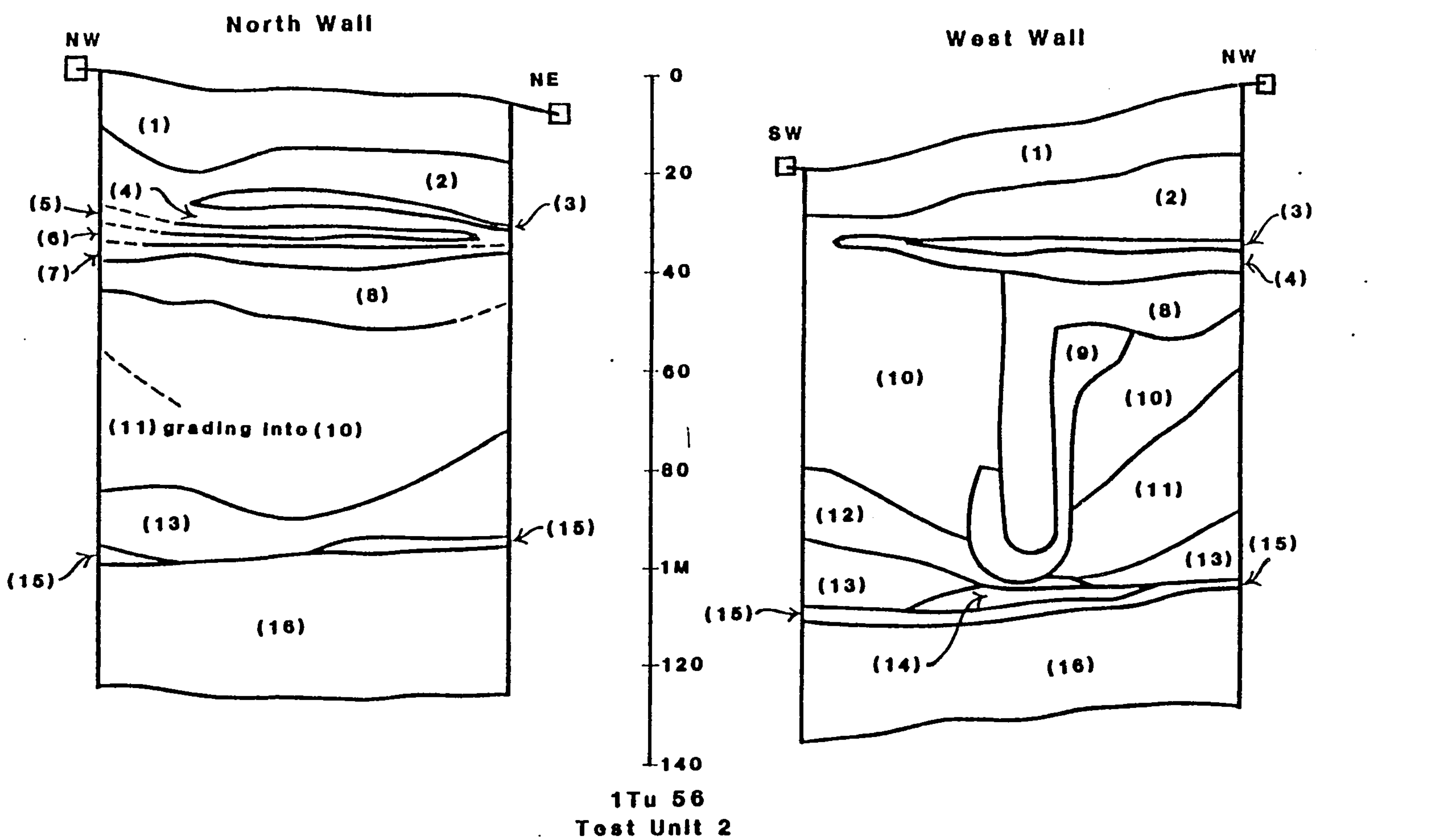


Figure. 10. Site: 1 Tu 56 - North and West Walls of Unit 2.

TABLE 6
Site: 1 Tu 56 FSM: 1-19 (mound)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
ALLIGATOR INCISED			
Geiger	1		9.2
BAYTOWN PLAIN			
West Jefferson	7	120	448.5
GROG TEMPERED UNCLASSIFIED			
Incised	—	1	0.8
Subtotal	8	121	458.5
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	14	346	642.8
MOUNDVILLE ENGRAVED			
Unspecified	—	1	0.7
Havana	1	—	3.8
BELL PLAIN			
Hale	10	7	31.9
MOUNDVILLE INCISED			
Unspecified	—	1	2.0
Moundville	1	—	37.0
Snows Bend	—	1	4.1
Carrollton	1	—	28.0
SHELL TEMPERED UNCLASSIFIED			
Unspecified	1	—	8.0
Subtotal	28	356	758.3
SAND TEMPERED			
ALEXANDER INCISED			
Unspecified	—	1	4.5
Pleasant Valley	—	2	18.4
Subtotal	—	3	22.9
Total Ceramics	35	480	1239.7

TABLE 6 Continued

MODIFIED LITHICS		
COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	1
Hamilton	—	2
Mid Section Undetermined Type	—	1
Base Undetermined Type	1	—
UNIFACIAL TOOLS		
Other Uniface	1	—
Total	2	4

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Celt	1	1.9
Worked Sandstone		

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	74	77.3
Unmodified Rock	48	522.6

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	36	7.3
Bone	37	28.4
Daub	61	6354.0

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Metal	1	20.9

SELECTED SECONDARY VESSEL FEATURES	N
FOLDED RIM	
Shell-Tempered	1

TABLE 7
Site: 1 Tu 56 FSM: 20-34 (village)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	41	985	5886.2
SALOMON BRUSHED			
Fairfield	1	—	12.0
GROG TEMPERED UNCLASSIFIED			
Unspecified	—	1	11.2
Subtotal	42	986	5909.4
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	—	37	128.2
BELL PLAIN			
Hale	1	1	6.2
SHELL TEMPERED UNCLASSIFIED			
Unspecified	—	2	37.0
Subtotal	1	40	171.4
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	9	100.0
Total Ceramics	43	1035	6180.8

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	3
Hamilton	—	2
New Market	—	1
Swan Lake	1	1
Elora	1	—
P-11	—	2
Distal End Undetermined Type	1	2
Mid Section Undetermined Type	1	—
Base Undetermined Type	1	3

TABLE 7 Continued

BIFACIAL TOOLS		
Drill	—	1
Chisel	—	1
Scraper	—	1
Other Biface	1	1
Total	8	17

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	2	613.0
Celt	1	9.2

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	479	1271.8
(Treated)	431	926.6
(Untreated)	48	345.2
Unmodified Rock	43	2879.8

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	1	5.1

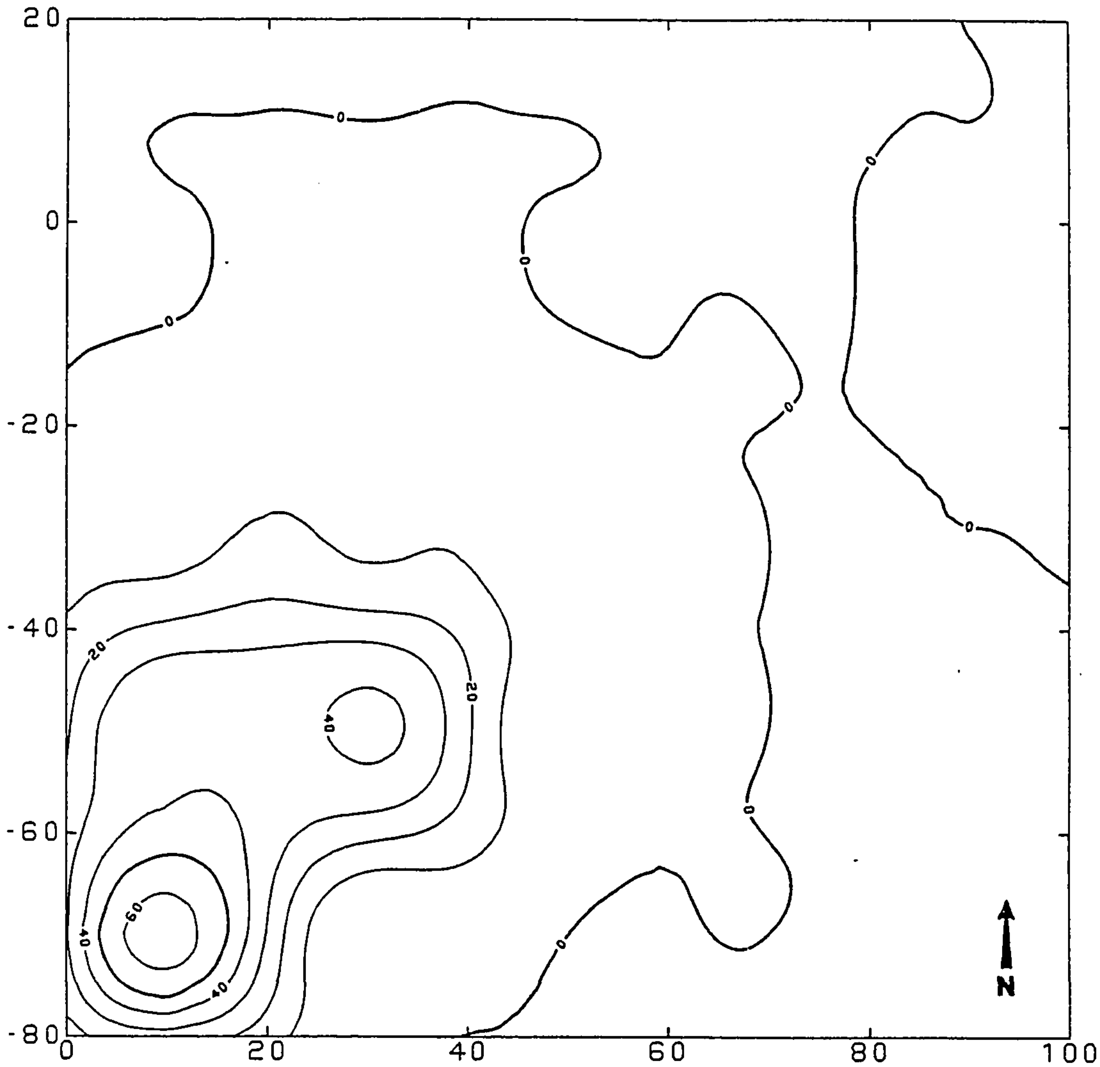


FIGURE 11. Site: 1 Tu 56 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

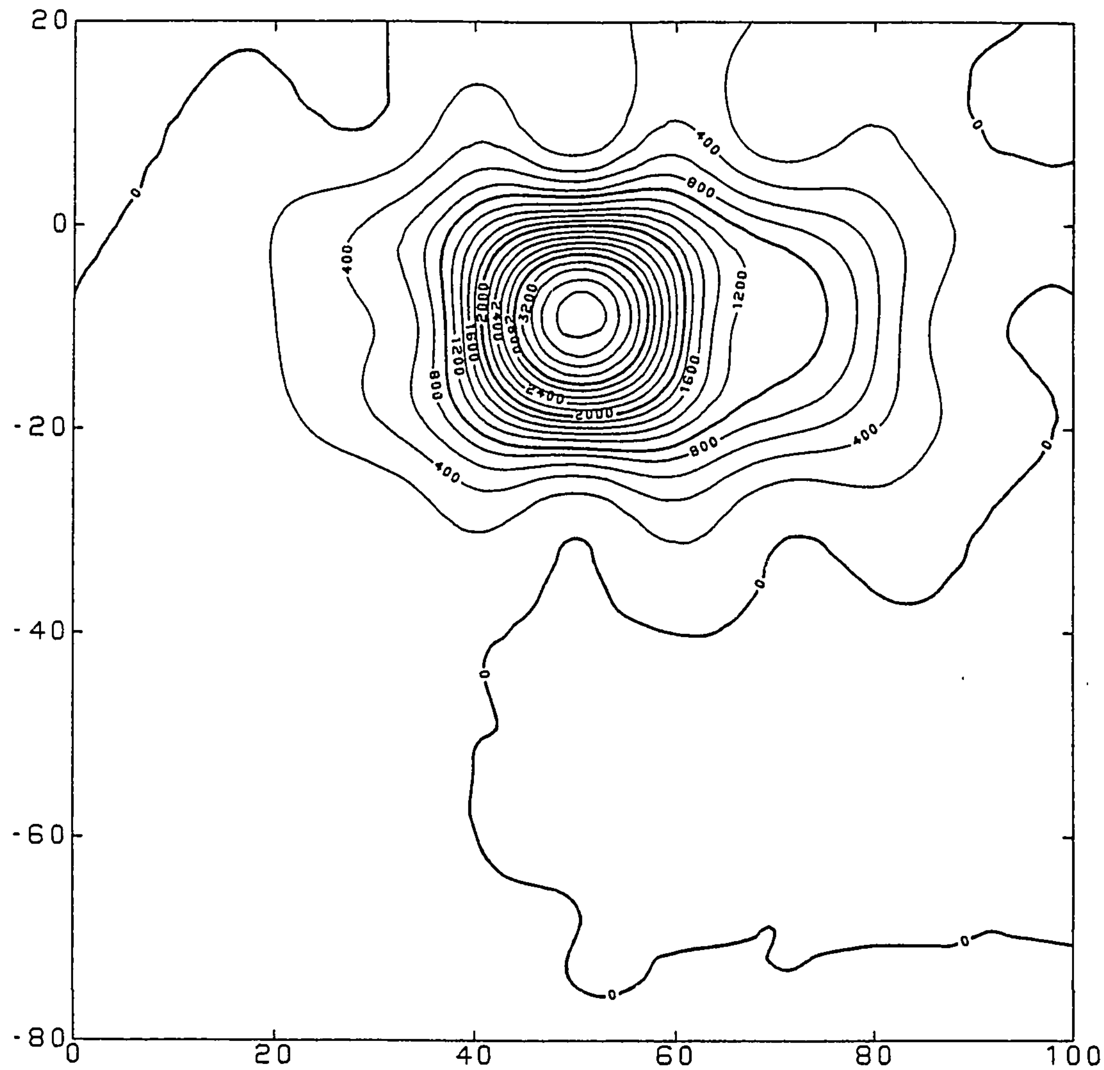


FIGURE 12. Site: 1 Tu 56 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 200 grams. Distance between tick marks = 20 meters.

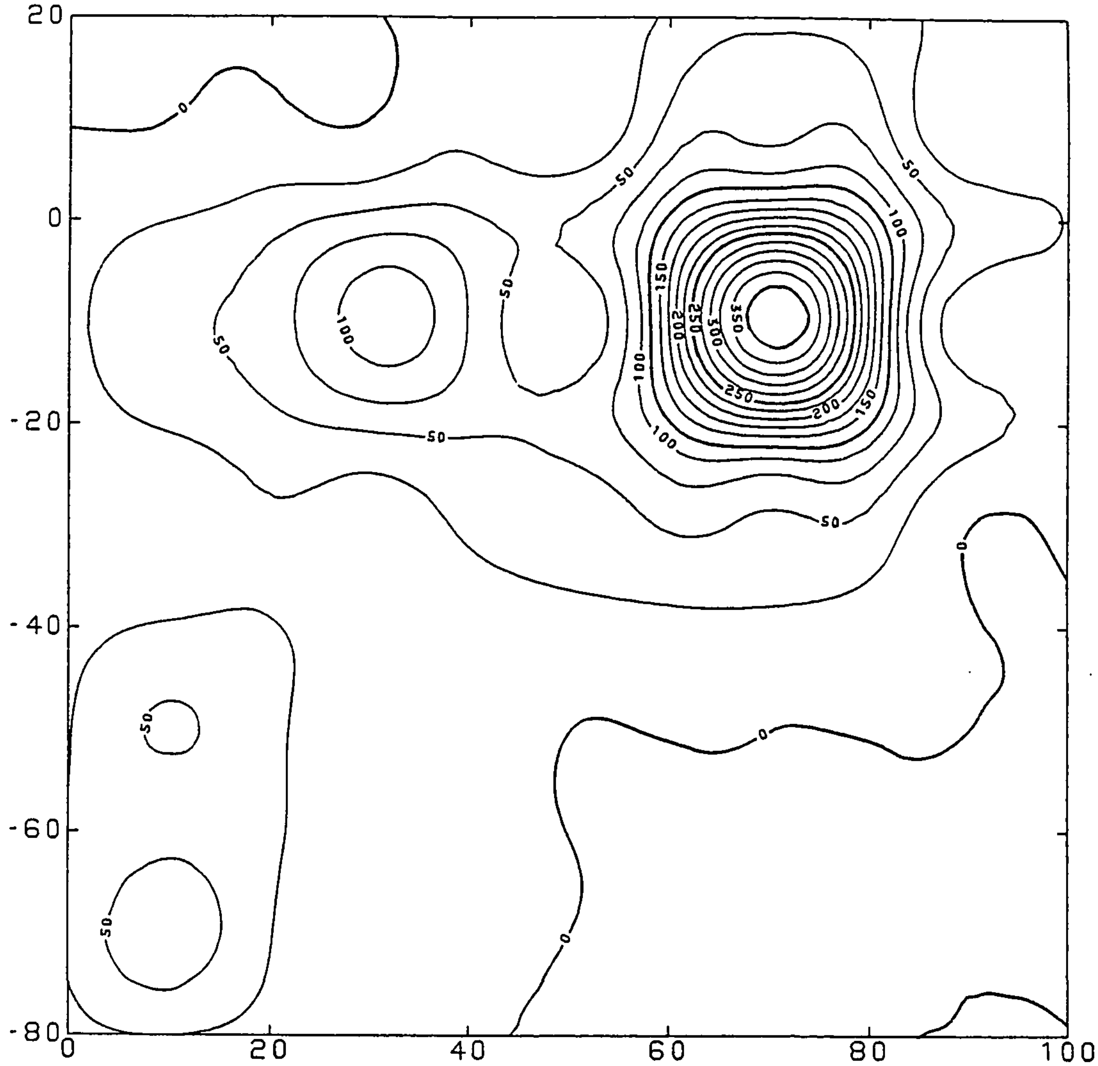


FIGURE 13. Site: 1 Tu 56 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 25 grams. Distance between tick marks = 20 meters.

1 Tu 64-65

These are adjoining sites which lie along a high river terrace on the South bank of the Warrior River opposite Clement Bend in the northwest corner of Section 35, Township 21 South, Range 11 West.

The two sites were gridded into a total of 20 twenty by twenty meter collection units (.8 hectares). A summary of the artifacts recovered from each site is presented in Tables 8 and 9. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, and Lithic Debris on both sites is presented in Figures 14-16. The zero point on the X axis marks the dividing point between the two sites, with Tu 64 running from 0 to -120, and Tu 65 running from 0 to 180.

A few shell-tempered sherds were recovered from four collection units on Tu 64 (.16 hectares) and from five units on Tu 65 (.2 hectares). This material is probably the remains of Moundville phase farmsteads. The ceramics material recovered was inadequate to determine a temporal position for the site within the Moundville phase. A considerable West Jefferson component was also present on Tu 64.

TABLE 8
Site: 1 Tu 64 FSM: 1-13
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
ALLIGATOR INCISED			
Geiger	1	—	1.7
BAYTOWN PLAIN			
West Jefferson	9	424	1482.5
MULBERRY CREEK CORD MARKED			
Aliceville	—	1	5.2
Subtotal	10	425	1489.4
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	—	16	27.8
MOUNDVILLE ENGRAVED			
Unspecified	—	1	1.5
Subtotal	—	17	29.3
Total Ceramics	10	442	1518.7

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	—
Hamilton	—	1
Mud Creek	1	1
Little Bear Creek	1	—
Swan Lake	1	1
P-1	—	2
Distal End Undetermined Type	—	2
Mid Section Undetermined Type	1	—
Base Undetermined Type	2	5
BIFACIAL TOOLS		
Drill	—	1
Chisel	—	2
Other Biface	1	—
Total	8	15

TABLE 8 Continued

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Celt	2	17.9
UNMODIFIED LITHICS AND INTRODUCED ROCK	**N**	**WEIGHT<GMS>**
Lithic Debris	254	619.6
(Treated)	180	383.1
(Untreated)	64	237.5
Petrified Wood	1	2.3
Unmodified Rock	199	5205.8
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Daub	5	13.2
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	5	15.9
Metal	1	1.8

TABLE 9
Site: 1 Tu 65 FSM: 1-11
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
ALLIGATOR INCISED			
Oxbow	—	1	4.2
Gainesville	1	—	25.5
BAYTOWN PLAIN			
West Jefferson	73	2180	11005.5
MULBERRY CREEK CORD MARKED			
Tishomingo	1	—	12.7
SALOMON BRUSHED			
Fairfield	1	—	151.8
GROG TEMPERED UNCLASSIFIED			
Unspecified	—	1	3.5
Subtotal	76	2182	11203.2
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	5	23	119.7
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	1	1.3
ALEXANDER INCISED			
Pleasant Valley	1	—	14.5
Subtotal	1	1	15.8
Total Ceramics	82	2206	11338.7

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	2
Hamilton	1	7
Little Bear Creek	—	1
Swan Lake	1	—
Elora	—	1
P-1	1	1
P-11	1	2

TABLE 9 Continued

Distal End Undetermined Type	1	12
Base Undetermined Type	3	11
BIFACIAL TOOLS		
Perforator	—	1
Drill	—	1
Chisel	1	8
Other Biface	2	5
UNIFACIAL TOOLS		
Drill	—	1
Other Uniface	1	2
Total	12	55

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Celt	4	42.4

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	1239	1548.8
(Treated)	1205	1211.8
(Untreated)	34	337.0
Unmodified Rock	146	4731

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Daub	6	10.6

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	2	9.8

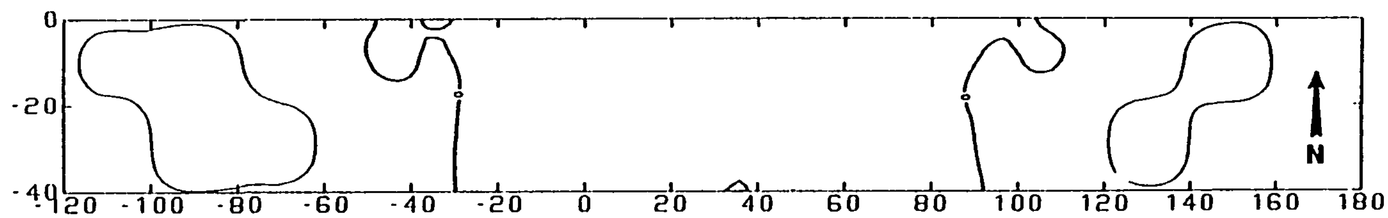


FIGURE 14. Site: 1 Tu 64/65 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 5 grams. Distance between tick marks = 20 meters.

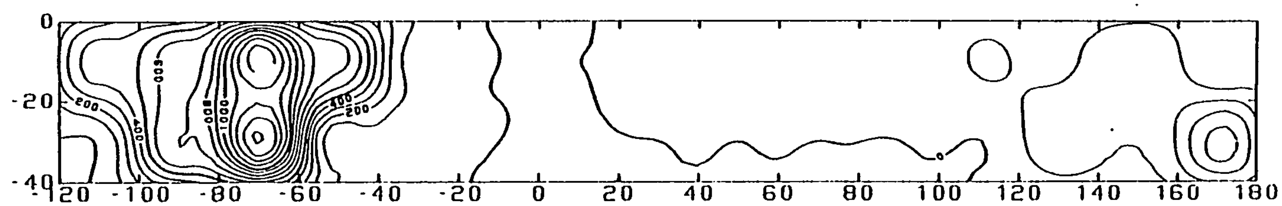


FIGURE 15. Site: 1 Tu 64/65 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 100 grams. Distance between tick marks = 20 meters.

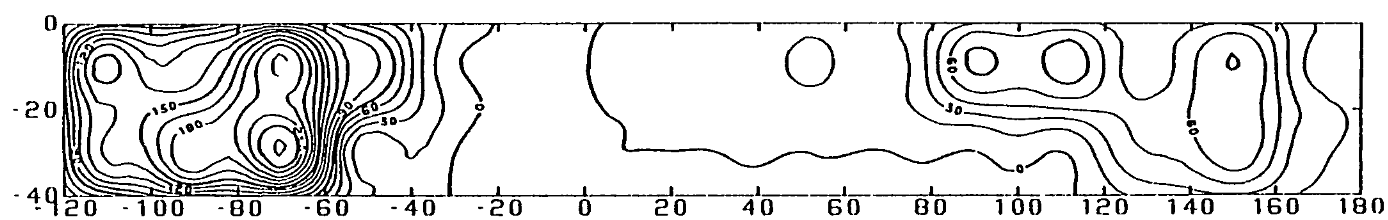


FIGURE 16. Site: 1 Tu 64/65 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 15 grams. Distance between tick marks = 20 meters.

1 Tu 66

This site lies along the rim of an old river terrace 1.6 km south of Tu 56 in the northeast quarter of Section 34, Township 21 South, Range 11 West. Jones recorded the site dimensions in 1933 as 250' by 800' and described the area as "literally covered with camp site debris" (field notes, M.S.M.).

The UMMA Survey relocated the site and conducted a controlled surface collection, recovering approximately 200kg of material from a 2.72 hectare area stretching along 550 meters of the upper and lower portions of the old river terrace.

The artifacts recovered from the site indicated the presence of three components on the site: Middle Woodland, West Jefferson, and Mississippian. A summary of the artifacts recovered is presented in Table 10. Most of the Moundville phase occupation was located along the margins of the upper terrace. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, and Lithic Debris from this area of the site are presented in Figures 17-19.

The Surface II contour map of the distribution of shell-tempered ceramics shows that although Mississippian ceramics were recovered from a sizable area (1.16 hectare), the greater part of the material was concentrated in three locales. This indicates that the Moundville phase settlement was considerably smaller than the earlier West Jefferson village. Shell-tempered ceramics accounted for less that two percent of the total number of sherds recovered. This suggests that the Moundville phase settlement on Tu 66 was not a large Mississippian village as was previously assumed based on the large surface scatter of West Jefferson and Mississippian material. Indeed, the Moundville phase settlement was possibly no larger that several farmsteads or small hamlets.

Among the Mississippian ceramics recovered were late varieties of Carthage Incised and three sherds of Alabama River Incised. This evidence, together with the presence of several beaded rims, suggests that the Moundville phase occupation of the sites dates to the Moundville III/Alabama River phase time period.

The largest of the three components on the site is West Jefferson. In excess of 20,000 grog-tempered sherds were recovered, with the majority coming from two large areas along the margins of the river terrace. The volume and distribution of this material suggest a large West Jefferson village. However, caution must be exercised here as our knowledge of the internal chronology of the West Jefferson phase is not secure. It is possible that distribution of grog-tempered ceramics evident in Figure 18 may reflect a series of West Jefferson settlements. Viewed diachronically the surface remains of several sites would give the appearance of a single large village.

Also present on the site was a small Middle Woodland component. The majority of the sand-tempered sherds were of the type Baldwin Plain. However, several varieties of Alexander Incised were also recovered.

The UMMA survey team excavated a one by one meter test unit on the upper terrace. This excavation encountered no cultural material below the 15-20 cm plow zone.

TABLE 10
Site: 1 Tu 66 FSM: 1-72
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
ALLIGATOR INCISED			
Oxbow	—	3	24.5
Gainesville	2	3	15.7
Geiger	—	3	11.4
BAYTOWN PLAIN			
West Jefferson	379	17008	68501.1
MULBERRY CREEK CORD MARKED			
Aliceville	6	64	406.2
WITHERS FABRIC MARKED			
Craig's Landing	—	1	11.0
River Bend	—	2	25.7
AVOYELLES PUNCTATED			
Tubbs Creek	—	1	1.1
EVANSVILLE PUNCTATED			
Tishabee	—	2	11.2
GAINESVILLE COMPLICATED STAMPED			
Gainesville	1	2	11.4
GAINESVILLE SIMPLE STAMPED			
Hickory	1	—	9.2
SALOMON BRUSHED			
Fairfield	1	3	57.6
WHEELER CHECK STAMPED			
Barnes Bend	—	2	13.4
YATES NET IMPRESSED			
Yates	—	1	6.9
MARKSVILLE INCISED			
Unspecified	3	1	22.2
GROG TEMPERED UNCLASSIFIED			
Incised	—	1	1.7
Other	1	2	20.1
Subtotal	394	17099	69150.4
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	20	244	704.0
CARTHAGE INCISED			
Unspecified	—	2	7.2
Akron	—	2	3.2
Carthage	—	1	4.0

TABLE 10 Continued

Moon Lake	1	—	19.0
BELL PLAIN			
Hale	8	3	43.6
ALABAMA RIVER INCISED			
Unspecified	1	2	19.9
BARTON INCISED			
Unspecified	—	1	4.4
SHELL TEMPERED UNCLASSIFIED			
Painted	—	1	9.4
Other	1	—	17.2
Subtotal	31	256	831.9
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	13	99	501.3
O'Neil	1	—	21.0
ALEXANDER INCISED			
Unspecified	—	2	8.0
Bodka Creek	—	2	31.0
Pleasant Valley	5	8	99.0
ALEXANDER PINCHED			
Prairie Farms	2	5	68.0
SALTILLO FABRIC MARKED			
China Bluff	—	1	12.3
SAND TEMPERED UNCLASSIFIED			
Unspecified	—	1	3.3
Subtotal	21	118	743.9
LIMESTONE/FIBER TEMPERED			
MULBERRY CREEK PLAIN			
Dead River	—	3	29.9
Total Ceramics	446	17476	70756.1

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	7	46
Hamilton	3	15
New Market	2	2
Little Bear Creek	—	1

TABLE 10 Continued

Swan Lake	—	1
Gary	—	1
Elora	1	12
Kirk	—	1
Tombigbee Stemmed	1	—
P-11	—	2
Distal End Undetermined Type	2	36
Base Undetermined Type	1	18
BIFACIAL TOOLS		
Scraper	—	2
Drill	3	27
Drill Bit	—	1
Chisel	—	31
Other Biface	1	11
UNIFACIAL TOOLS		
Scraper	—	1
Total	21	208
PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	5	1350.8
Pitted Stone	2	948.6
Stone Hoe	5	1826.0
Celt	4	110.0
Worked Sandstone	4	24.2
UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	5094	13401.9
Petrified Wood	4	181.9
Unmodified Rock	1955	65178.9
SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	8	17.7
Bone	8	78.4
Daub	30	132.0
HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	135	1235.0
Metal	14	784.6

TABLE 10 Continued

SELECTED ARTIFACTS AND VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	2
PODAL SUPPORT	
Limestone-Tempered	1
CERAMIC DISCOIDALS	
Shell-Tempered	2
SHELL TEMPERED HANDLES	
Late	1

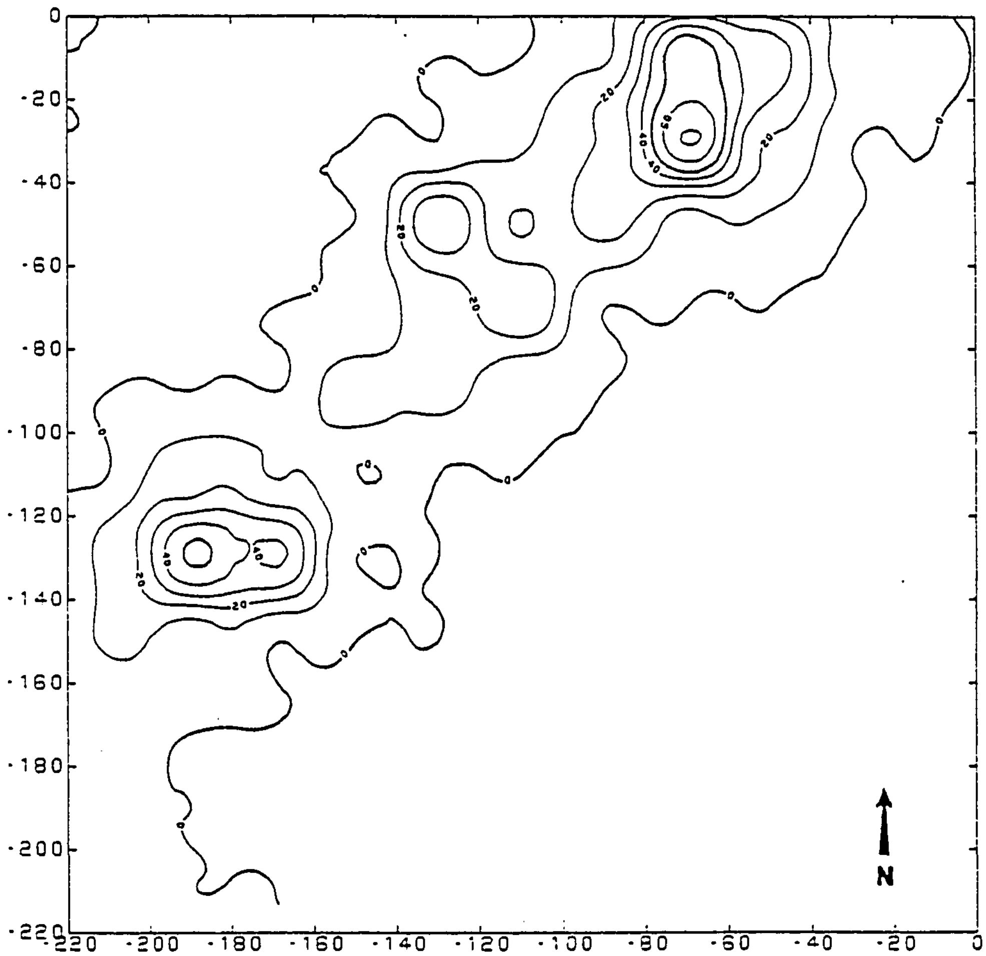


FIGURE 17. Site: 1 Tu 66 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

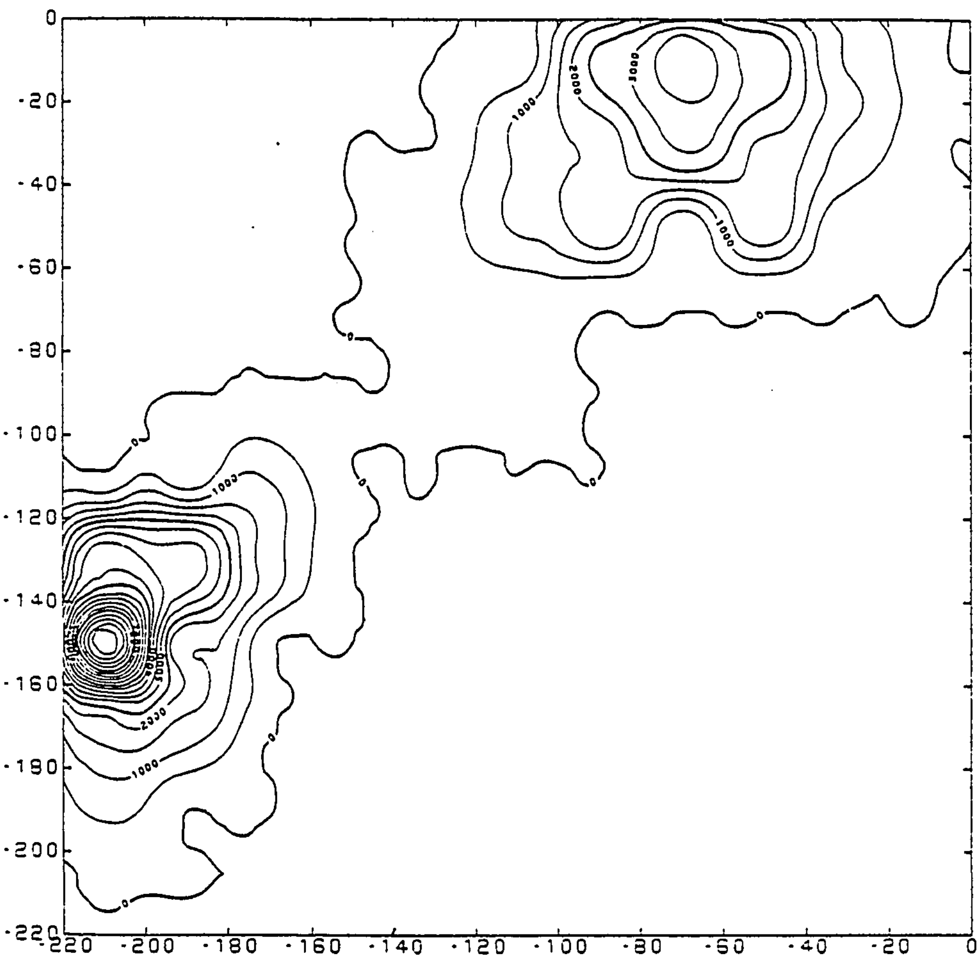


FIGURE 18. Site: 1 Tu 66 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 500 grams. Distance between tick marks = 20 meters.

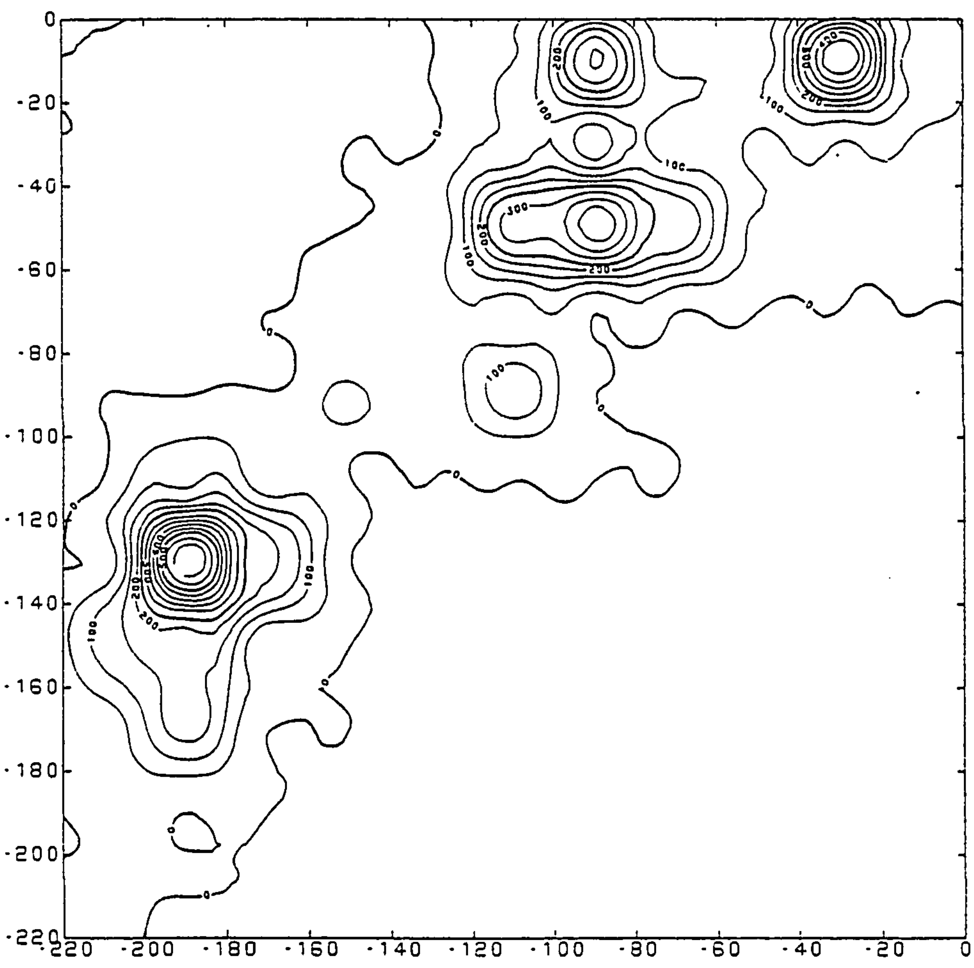


FIGURE 19. Site: 1 Tu 66 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 50 grams. Distance between tick marks = 20 meters.

1 Tu 2/3

This is the well-known Snows Bend Site, a platform mound and associated village in the northwest quarter of Section 34, Township 21 South, Range 11 West. The site is three miles downstream from Tu 56, the nearest site having a platform mound.

It is remarkable that Moore missed the Snows Bend mound, one of the largest Mississippian earthwork in the Warrior Valley outside of Moundville. The site's first official notice was not until 1932 when a party from the Alabama Museum of Natural History surveyed the site. Dr. Jones recorded the mound as a "splendid type of pryamidal mound" and supervised the excavation of two test pits. No artifacts were found, and Jones concluded that the mound was a "domiciling type"(Field notes, M.S.M.). Unfortunately, none of the mound dimensions were recorded.

Except for minor damage some years ago when a shallow roadcut was bulldozed up the northern slope of the mound to allow access to a barn constructed on the summit, the mound is in an excellent state of preservation. At the time of the UMMA survey the mound measured 42 by 42 meters at the base; 26 by 27 meters at the summit; and was 3.5 meters high. Access to the mound summit appears to have been gained by means of a ramp running down the northern slope, but this feature is now obscured by the modern roadcut.

Two test units were excavated into the mound (Figure 21). A summary of the artifacts recovered is presented in Table 11. Unit 1 was placed on the western slope near the base of the mound . This location was selected to recover an artifact sample from the earliest stages of the mound and test for evidence of a pre-mound occupation in the strata below the base of mound. It was anticipated that this test unit would also be positioned to recover later material that had washed down from upslope. A second test unit was placed on the mound summit in an attempt to locate a dateable feature near the final mound summit. Unfortunately, a recognizable feature was not encountered in this unit and unassociated charcoal from the upper mound fill produced a questionable radiocarbon date of A.D. 1050. This date is approximately 300 years too early for the time period believed to be represented by the Moundville III ceramics recovered from the same fill.

Vertical sections of the east and west walls of Test

Unit 1 are shown in Figure 22 and Figure 23. The mound stratigraphy is quite complicated, and it is not possible to relate confidently most of the multiple sediment bands to mound building episodes. Nevertheless, the band of burned daub, sand, and charcoal visible at the 60 cm (stratum 3) point in both the south and east walls is probably the remains of a structure(s) associated with an earlier mound summit. Lower in the south wall two postmolds are visible indicating the presence of another and even earlier structure(s). Both the complexity and the overall dip away from the mound of the deposits visible at 85 to 110 cm below datum in the south wall indicate that this structure once stood on the summit of a low mound.

There was no evidence of a pre-mound occupation in the strata below the base of the mound, nor was there any evidence of a Moundville phase settlement in the plowed fields around the north side of the mound.

The closest Moundville phase site is Tu 2, 600 meters northeast of the mound. This site was gridded into thirty-one 20 by 20 collection units, and a controlled collection of 12400 square meters of surface area was accomplished. A summary of the artifacts recovered is presented in Table 12. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, and Daub are presented in Figures 24-26.

Both West Jefferson and Moundville components are present on the site. Shell-tempered ceramics were recovered from 24 collection units (.96 hectares) and included the type Carthage Incised, Vars. Carthage and Moon Lake. The presence of Carthage Incised, Var. Carthage, suggests a Moundville III date for the Mississippian settlement at Tu 2. A Moundville III date is also indicated in the ceramic collection from excavations at the site by the Alabama Museum of Natural History.

A portion of the cemetery associated with Tu 2 was dug by Jones and Dejarnette in 1930 and again in 1932 (DeJarnette and Peebles 1970). A number of whole vessels were recovered, including several vessels of Moundville Engraved bearing representational motifs diagnostic of the late Moundville III period. These include the Paired Tails motif (Snow No. 7), the highly distinctive Winged Serpent motif (Snow No. 11), and the Hand and Eye motif (Snow No. 67). Also present in the Snows Bend collection are several other Moundville III diagnostics such as simple-base subglobular bottles, effigy forms, and beaded rims.

In sum, both the Moundville-phase occupation of Tu 2 and at least the latter stages of construction of the mound at Tu 3 appear to date to the Moundvile III period. There is ample evidence that the mound attained its considerable present size through a process of periodic destruction of summit structures and subsequent enlargement of the mound. Three examples of shell-tempered sherds with beaded rims were recovered from the band of burned daub and charcoal at the 50 - 60 cm point in Unit 1. This evidence, while slim, certainly suggests that at least some if not all of the early mound stages were constructed not earlier than late Moundville II or early Moundville III. The obvious implication is that some time during the Moundville II period the focus of political and religious activities began to shift from the ceremonial center at Tu 56 to the new local center at Tu 3.

Figure 20. Aerial view of 1 Tu 2, 1 Tu 3, and 1 Tu 66.

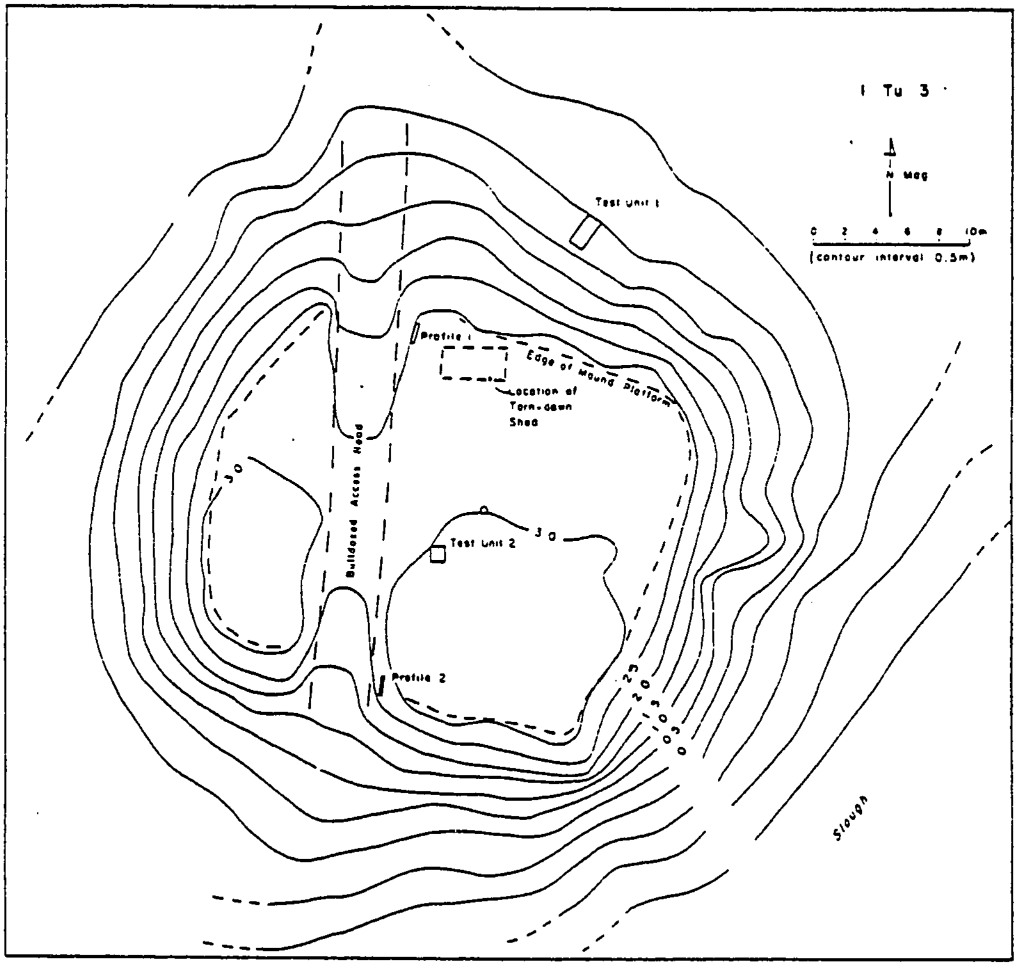
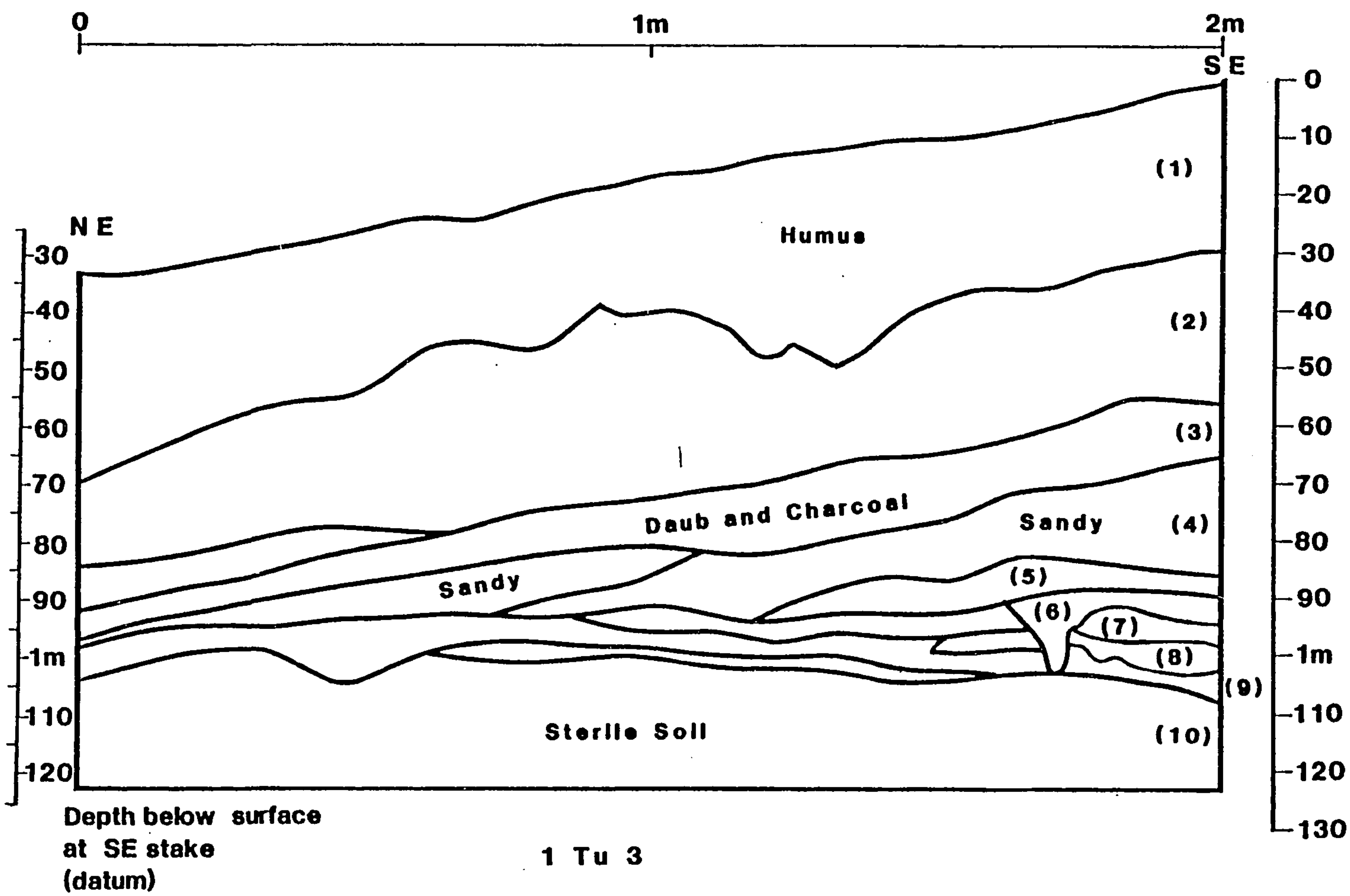


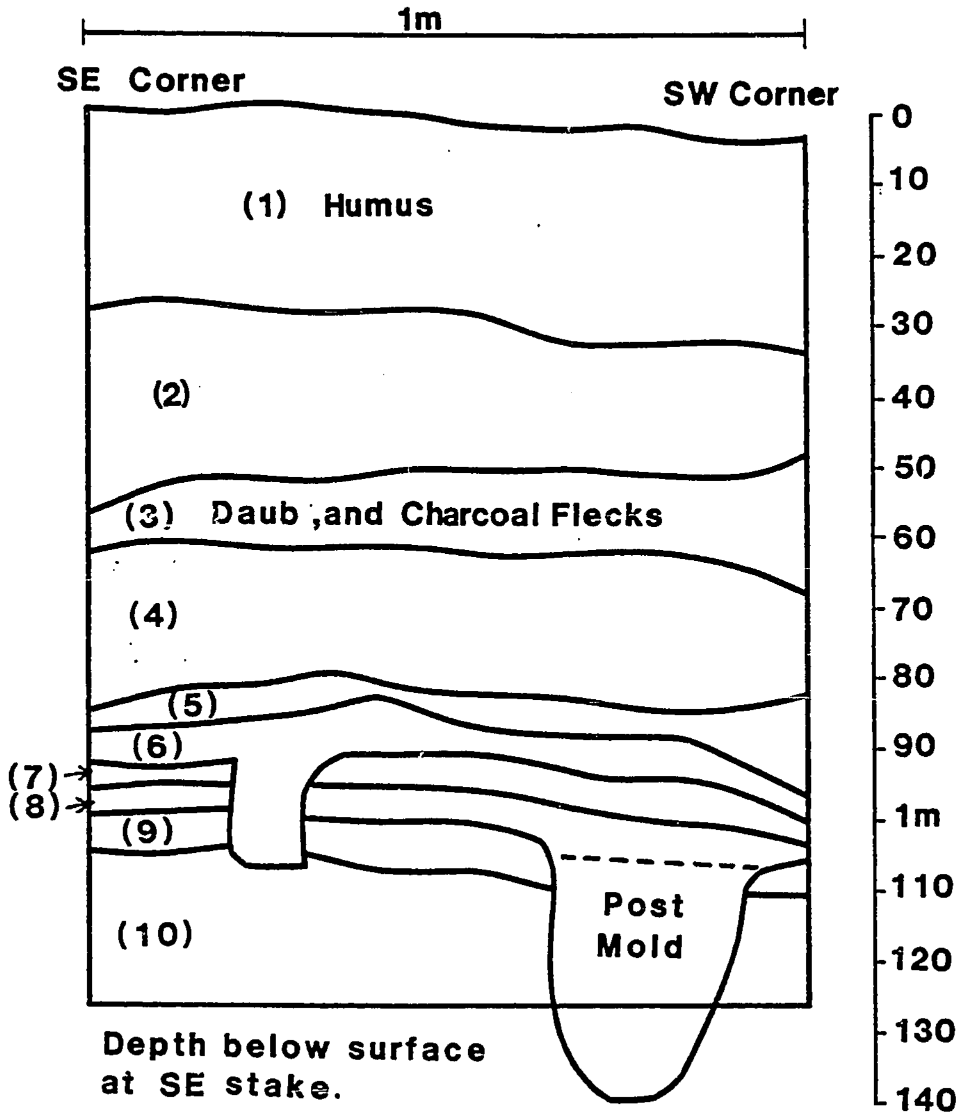
Figure. 21. Site: 1 Tu 3 - Contour map of the mound.



1 Tu 3

Test Unit 1 East Wall

Figure 22.



1 Tu 3

Test Unit 1 South Wall

Figure 23.

TABLE 11
Site: 1 Tu 3 FSM: 1-19 (mound)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	2	32	161.8
GROG TEMPERED UNCLASSIFIED			
Incised		1	3.8
Subtotal	2	33	165.6
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	20	570	1258.9
CARTHAGE INCISED			
Unspecified	—	1	7.5
Carthage	—	1	9.5
MOUNDVILLE ENGRAVED			
Unspecified	—	10	19.9
BELL PLAIN			
Hale	7	32	135.0
SHELL TEMPERED UNCLASSIFIED			
Incised	—	2	14.2
White Slip	—	1	3.2
Subtotal	27	617	1448.2
Total Ceramics	29	650	1613.8

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris (Treated)	14	53.5
Unmodified Rock	79	1476.2

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Daub	876	3843.3

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Metal	3	83.8

SELECTED ARTIFACTS AND VESSEL FEATURES	N
BEADED RIM (shell-tempered)	3
CERAMIC DISCOIDAL (shell-tempered)	2

TABLE 12
Site: 1 Tu 2 FSM: 1-31
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	10	435	1723.2
MULBERRY CREEK CORD MARKED			
Aliceville	—	1	3.5
Subtotal	10	436	1726.7
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	1	308	703.8
CARTHAGE INCISED			
Unspecified	—	1	5.0
Carthage	—	1	2.5
Moon Lake	—	1	3.8
BELL PLAIN			
Hale	6	2	28.8
SHELL TEMPERED UNCLASSIFIED			
Incised	—	1	2.1
Subtotal	7	314	746.0
Total Ceramics	17	750	2472.7

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	5
Little Bear Creek	1	—
P-11	1	—
Distal End Undetermined Type	—	4
Mid Section Undetermined Type	—	3
Base Undetermined Type	—	2
BIFACIAL TOOLS		
Drill	—	2
Chisel	—	3
Other Biface	—	1
Total	3	20

TABLE 12 Continued

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	355.5
Pitted Stone	1	228.9
Stone Hoe	2	211.0
UNMODIFIED LITHICS AND INTRODUCED ROCK	**N**	**WEIGHT<GMS>**
Lithic Debris	544	1354.5
(Treated)	521	1171.8
(Untreated)	23	182.7
Petrified Wood	1	5.0
Unmodified Rock	136	3833.3
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Daub	142	218
SELECTED ARTIFACTS AND VESSEL FEATURES	**N**	
CERAMIC DISCOIDALS		
Shell-Tempered	3	

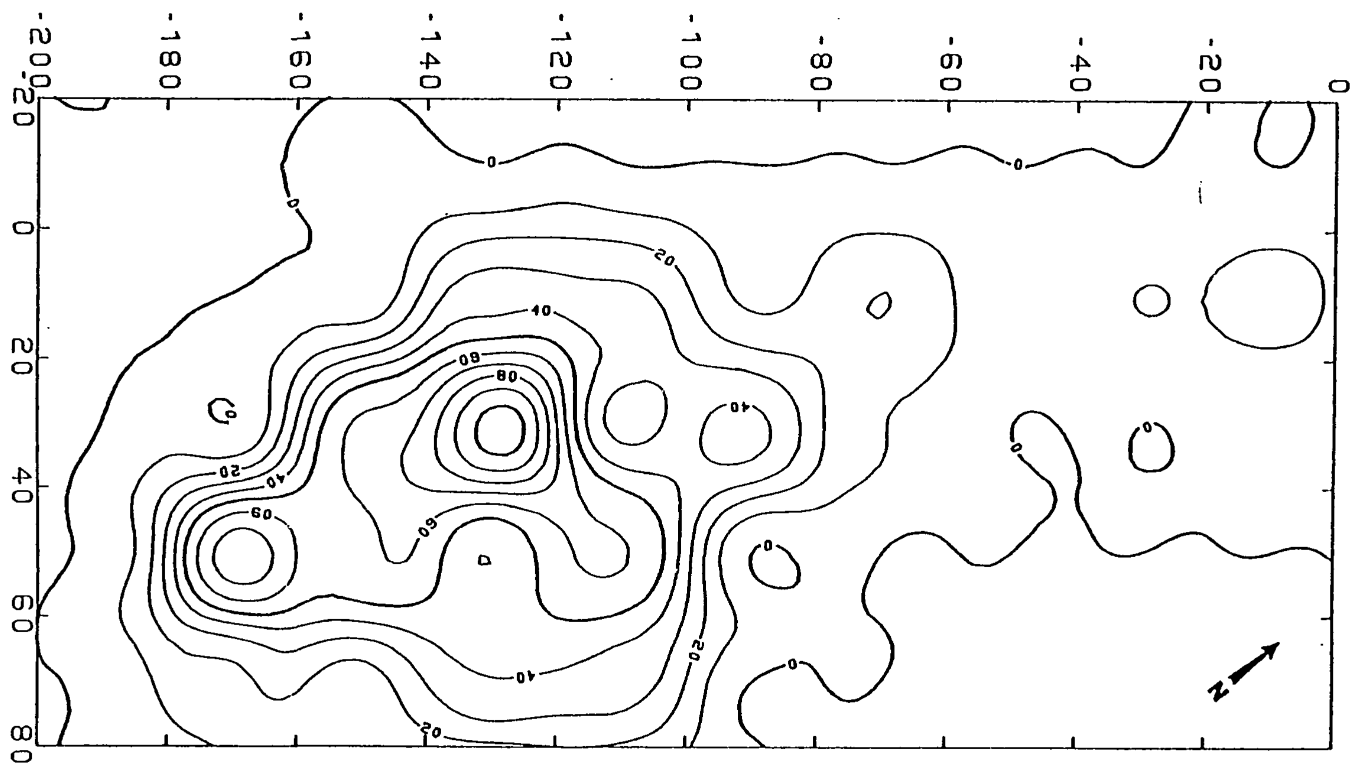


FIGURE **24.** Site: 1 Tu 2 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

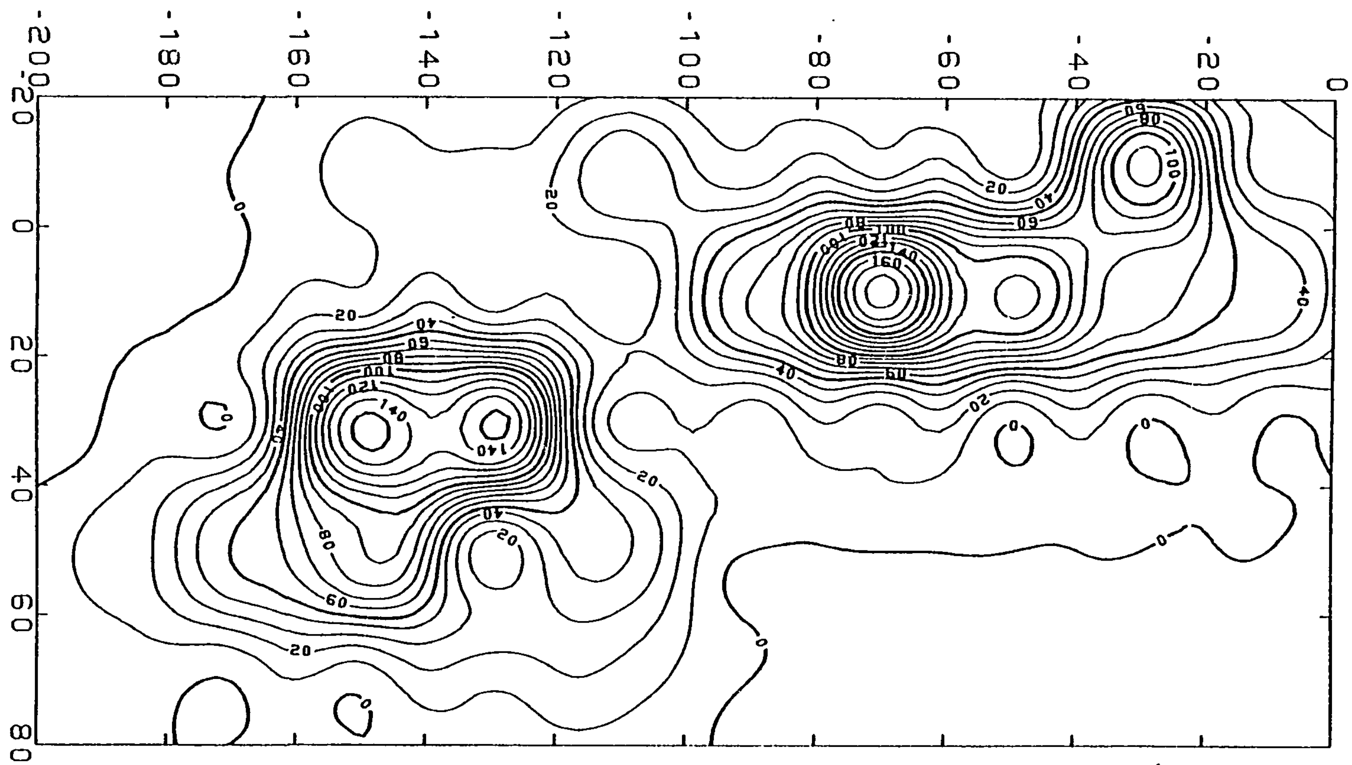


FIGURE 25. Site: 1 Tu 2 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

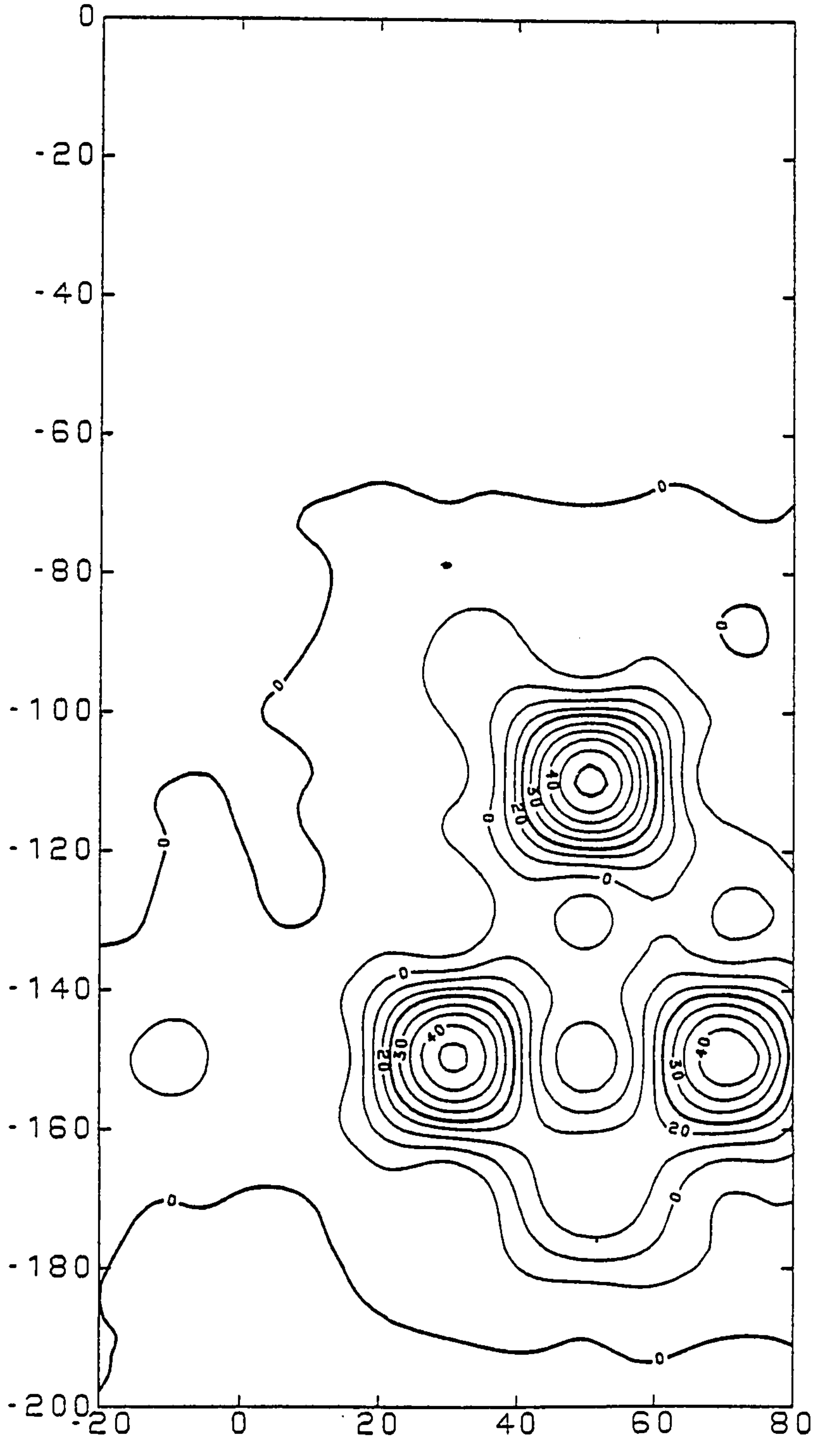


FIGURE 26. Site: 1 Tu 2 - Distribution of DAUB by weight in grams. Contour Interval = 5 grams. Distance between tick marks = 20 meters.

Figure 27. Aerial view of 1 Tu 46/47 and 1 Tu 398.

1 Tu 46/47

This mound and village pair is located on the west bank of the Warrior River 11.3 kilometers north of Moundville in the southeastern quarter of Section 30, Township 22 South, Range 10 West.

C. B. Moore recorded the site as follows:

> This mound, in a northerly direction from the landing, near the river, on the property of Dr. T. M. Leatherwood of Tuscaloosa, is 6 feet 8 inches high. Its length east and west is 133 feet; its breadth north and south is 100 feet. Its summit plateau is 91 feet by 69 feet in corresponding directions. Thirteen trialholes yielded neither human bone nor artifact (1905:243).

The Alabama Museum of Natural History briefly visited the site in 1933. However, Jones and his party did not dig into the mound and recorded the mound dimensions using the figures published by Moore.

The UMMA survey recorded the mound dimensions in 1978 as 50 by 45 meters at the base, 25 by 25 meters at the summit, 2 meters high, with the long axis oriented NE-SW (Figure 28). Two test units placed into the mound revealed good evidence of several building stages and uncovered the remains of a burned structure beneath the final mantle. A summary of the artifacts recovered from the mound excavations is presented in Table 13.

The construction history of the mound is best viewed in the vertical sections of the west and east walls of Unit One (Figure 29). Although complex, the stratigraphy suggests the following major construction events:

1. Stratum 36 - This layer lies below the base of the mound and contained a few sherds of Baytown Plain, Var. Roper, and Mississippi Plain, Var. Warrior.

2. Stratum 35 - Flood deposited silts containing several sherds of Mississippi Plain, Var. Warrior.

3. Mound A (stratum 29) - This layer, which is visible at the 130 cm point in the west wall, is the first evidence of mound construction visible in the vertical section and appears to be part of an erosion layer washed down from the side of the primary mound.

4. Mound B (strata 26 - 19) - The next construction stage appears to be an enlargement of the primary mound up through stratum 19, a

distinct white clay cap partly visible at about the 90 cm point. Although the stratigraphy at this point is difficult to interpret, the original slope of the second stage appears to run along a line extended from the upper surface of stratum 19 to the upper surface of stratum 21.

5. Mound C (strata 18 - 10) - The mound was again enlarged and finished with another white clay cap (stratum 10).

6. Mound D (stratum 7) The mound has now grown to such a size that the upper surface appears as the horizontal break in deposition at the upper surface of stratum 7.

7. Mound E ? (stratum 6) The upper surface of stratum 6 is quite distinct, but it is not clear if this layer, visible in both the east and west walls of Unit 1, is a major addition to the mound or merely a modification of the Mound D summit.

8. Mound F (stratum 5) The upper surface of this stratum contained the first evidence of a summit

structure, a wall-trench building and associated hearth. The wall trench is visible in the east wall of Unit 1 and the hearth is visible in stratum 4 in the vertical section of the west wall of Unit 1.

9. Mound G (stratum 3) The final stage(s) of mound construction are difficult to trace due to damage to the mound during the construction of a modern barn on the mound summit. Nevertheless, it appears likely that at least one additional stage (stratum 3) was added to Mound F.

A portion of the construction history evident in Unit 1 can be traced in the vertical section of the west wall of Unit 2 (Figure 30). Strata 16 and 14 in Unit 2 appear to correspond to the pre-mound sediments of strata 36 and 35 in Unit 1. The first mound surface that can be clearly identified in Unit 2 is stratum 9, the remains of a white clay mantle capping the mound. The strata directly above the clay cap (4,8, and lower portions of 3) contained burned debris apparently pushed off of the mound summit during a rebuilding episode. Another mound surface is evident at the top of stratum 3. The fill above this surface (stratum 2) contained historic material associated with the use of the mound as a base for a modern barn and hayshed.

A diagram of the probable construction history of the mound is presented in Figure 30. If the relationships between the strata in Unit 1 and Unit 2 are as presented in the reconstruction in Figure 30, it is likely that the burned debris above stratum 9 in Unit 2 was removed from a mound summit no earlier than Mound F in Unit 1.

Charcoal from this debris produced radiocarbon dates of A.D. 1690±50, A.D. 1705±65, and A.D. 1570±65. These dates suggest that mound construction continued well into the Alabama River phase. However, neither the ceramic collection from the mound excavation nor the surface collection from the village area north of the mound produced Alabama River phase ceramics. The presence of Carthage Incised, Var. Carthage, recovered from the upper mound fill, and a shell-tempered sherd decorated with a beaded rim, recovered from the fill well below the surface of Mound C, indicate that the majority of the mound was constructed during late Moundville II/III times. The absence of Alabama River phase ceramics (radiocarbon dates not withstanding) indicates that mound construction ended sometime prior to the end of the Moundville phase.

The village area north of the mound was gridded into 26 twenty by twenty meter collection units (1.04 ha.) and a controlled surface collection accomplished. A summary of the artifacts recovered is presented in Figure 14. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, and Lithic Debris are presented in Figures 32-34.

Shell-tempered ceramics were present in only seven of the collection units (.28 ha.) and indicates that the Moundville phase settlement was small. A beaded rim present among the total of 30 shell-tempered sherds recovered suggests a late Moundville II/III date for the settlement.

TABLE 13
Site: 1 Tu 46 FSM: 30-61 (Mound)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	—	17	55.2
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	7	356	766.1
CARTHAGE INCISED			
Carthage	1	—	2.1
BELL PLAIN			
Hale	1	9	22.5
SHELL TEMPERED UNCLASSIFIED			
Incised	—	1	7.8
Subtotal	9	366	798.5
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	1	8.4
LIMESTONE/FIBER TEMPERED			
WHEELER PLAIN			
Wheeler	—	4	6.6
Total Ceramics	9	388	868.7

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	1
Distal End Undetermined Type	—	1
Base Undetermined Type	—	1
Total	—	3

TABLE 13 Continued

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	7	10.8
Unmodified Rock	99	845.8

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	2	0.4
Bone	1	0.9
Daub	35	1099.7

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	1	0.1
Metal	10	20.0

SELECTED ARTIFACTS AND VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	1

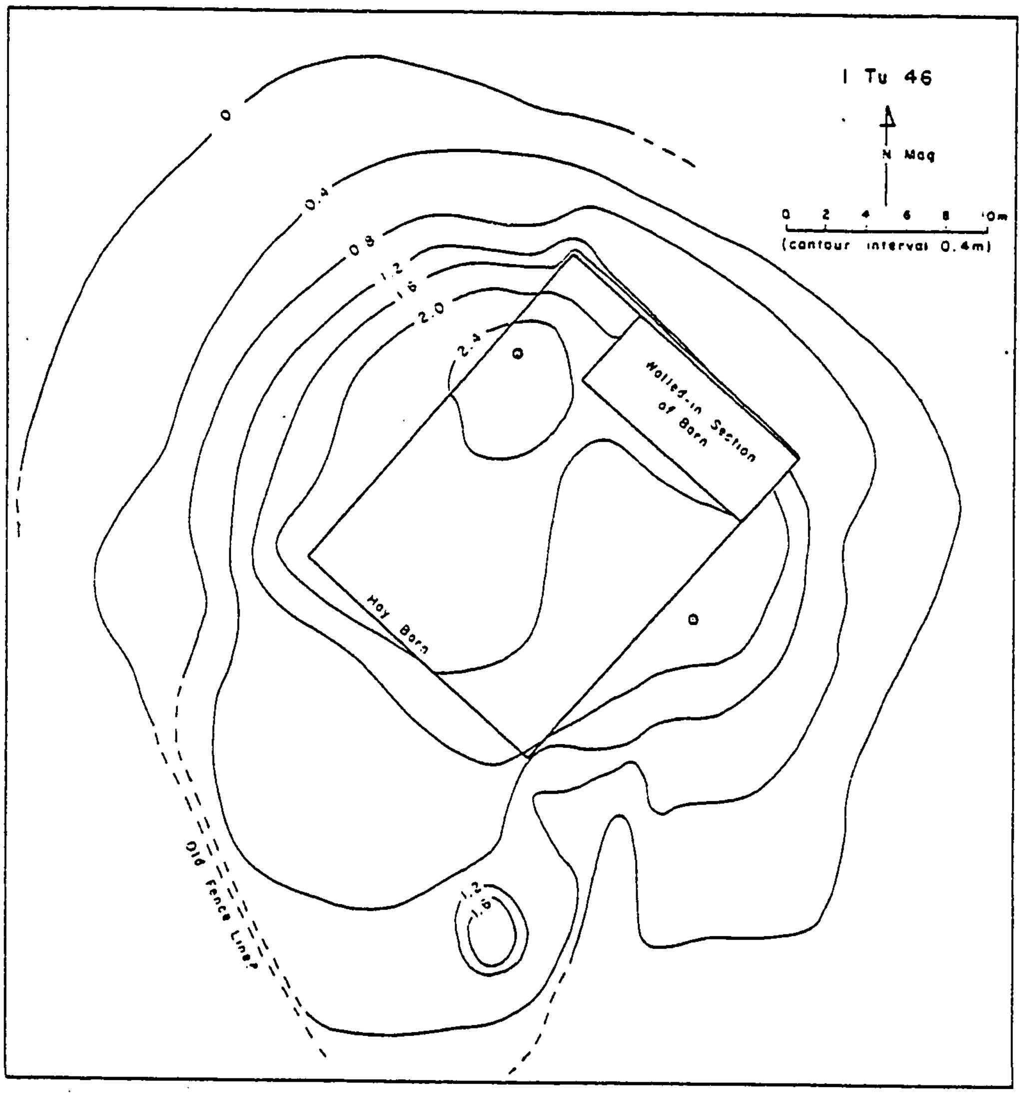


Figure 28. Site: 1 Tu 46 - Contour map of the mound.

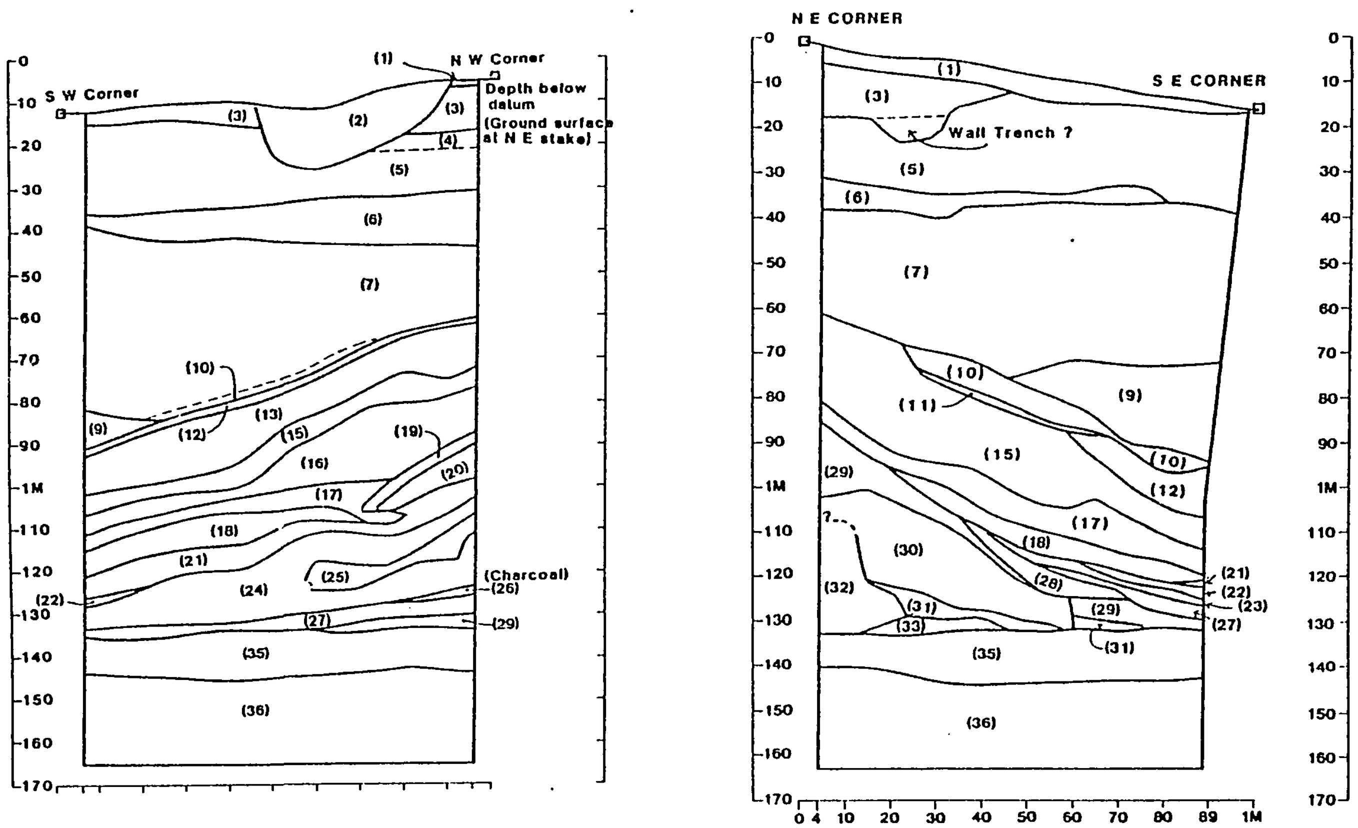


Figure 29. Site: 1 Tu 46 - West and East Walls of Unit 1.

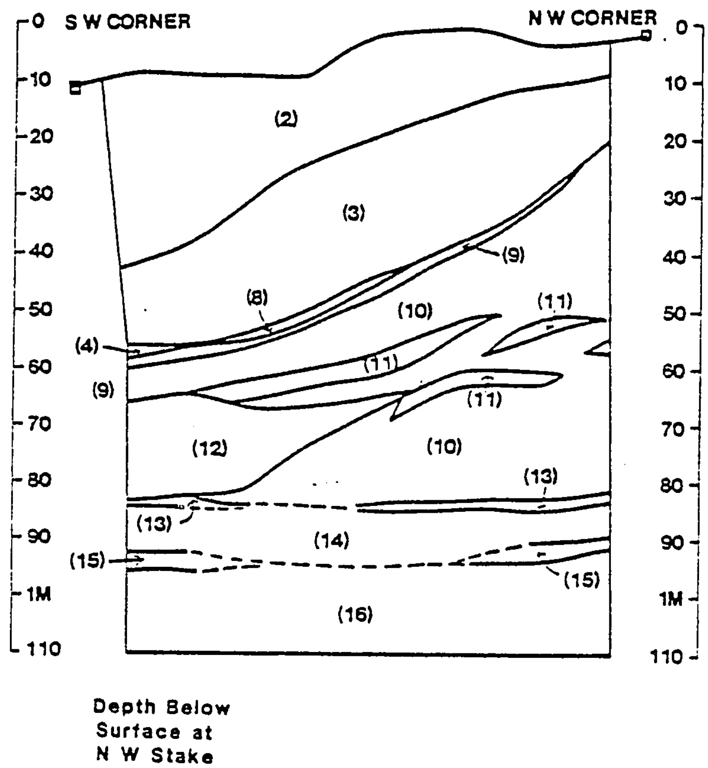


Figure 30. Site: 1 Tu 46 - West Wall of Unit 1.

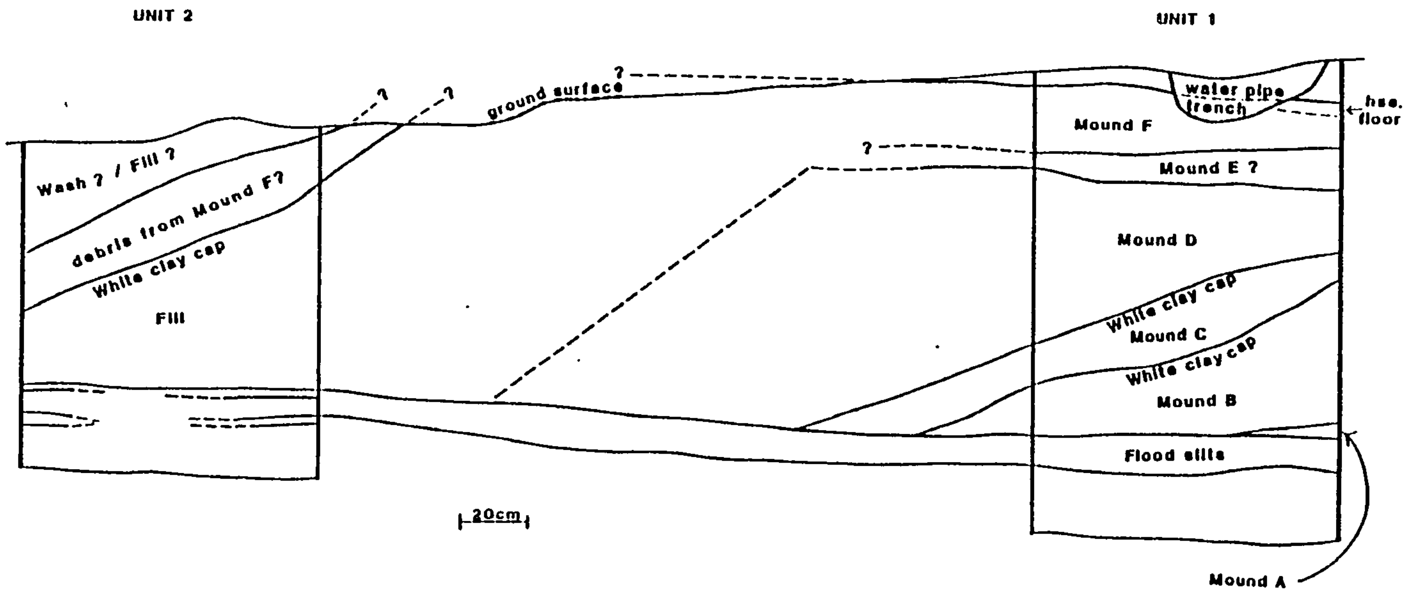


Figure 31. Site: 1 Tu 46 - Comparison of mound construction episodes in Units 1 and 2.

TABLE 14
Site: 1 Tu 47 FSM: 1-27 (village)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	—	140	451
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	1	29	197.9
MOUNDVILLE ENGRAVED			
Unspecified	—	1	5.8
Subtotal	1	30	203.7
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	2	7.8
Total Ceramics	1	172	662.5

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	3
Hamilton	1	—
Flint Creek	1	—
Gary	1	—
Elora	1	—
P-11	1	1
Distal End Undetermined Type	—	2
Base Undetermined Type	1	2
BIFACIAL TOOLS		
Other Biface	3	—
Scraper Preform	—	1
UNIFACIAL TOOLS		
Perforator	—	1
Total	9	10

TABLE 14 Continued

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	374.5
Pitted Stone	1	272.5
Celt	2	1057.5
UNMODIFIED LITHICS AND INTRODUCED ROCK	**N**	**WEIGHT<GMS>**
Lithic Debris	276	308.0
Unmodified Rock	210	6072.6
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Bone	6	8.3
Daub	68	403.0
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	316	1860.5
Metal	2	24.1
SELECTED SECONDARY VESSEL FEATURES	**N**	
BEADED RIM		
Shell Tempered	1	

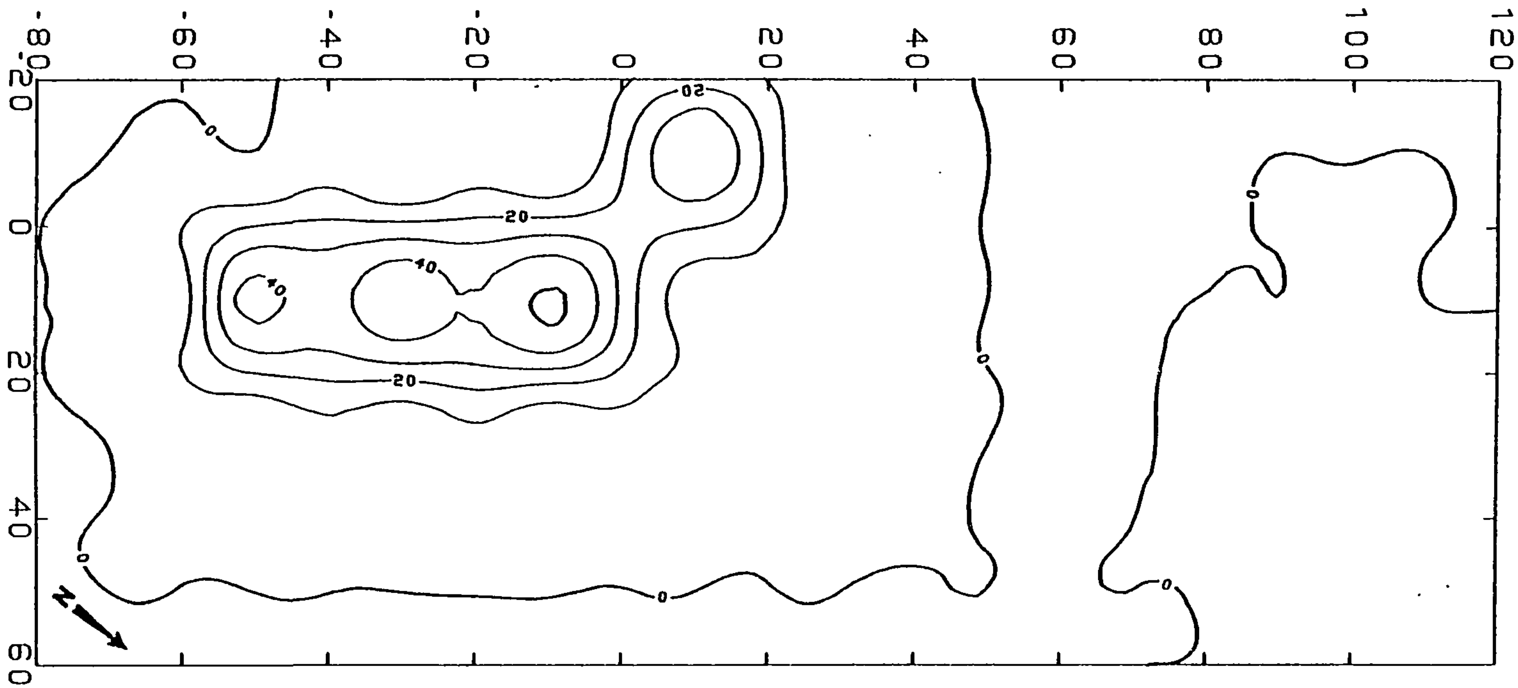


FIGURE **32**. Site: 1 Tu 46 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

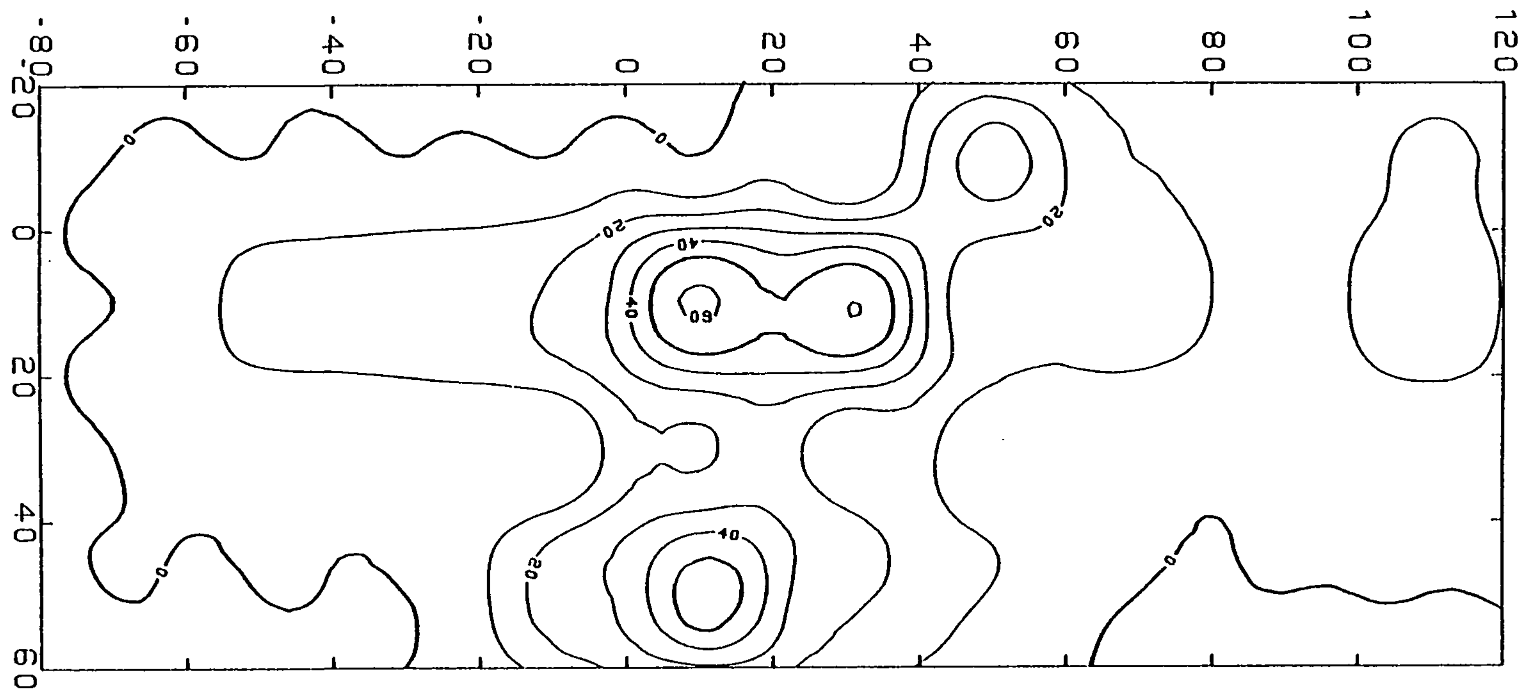


FIGURE 33. Site: 1 Tu 42 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

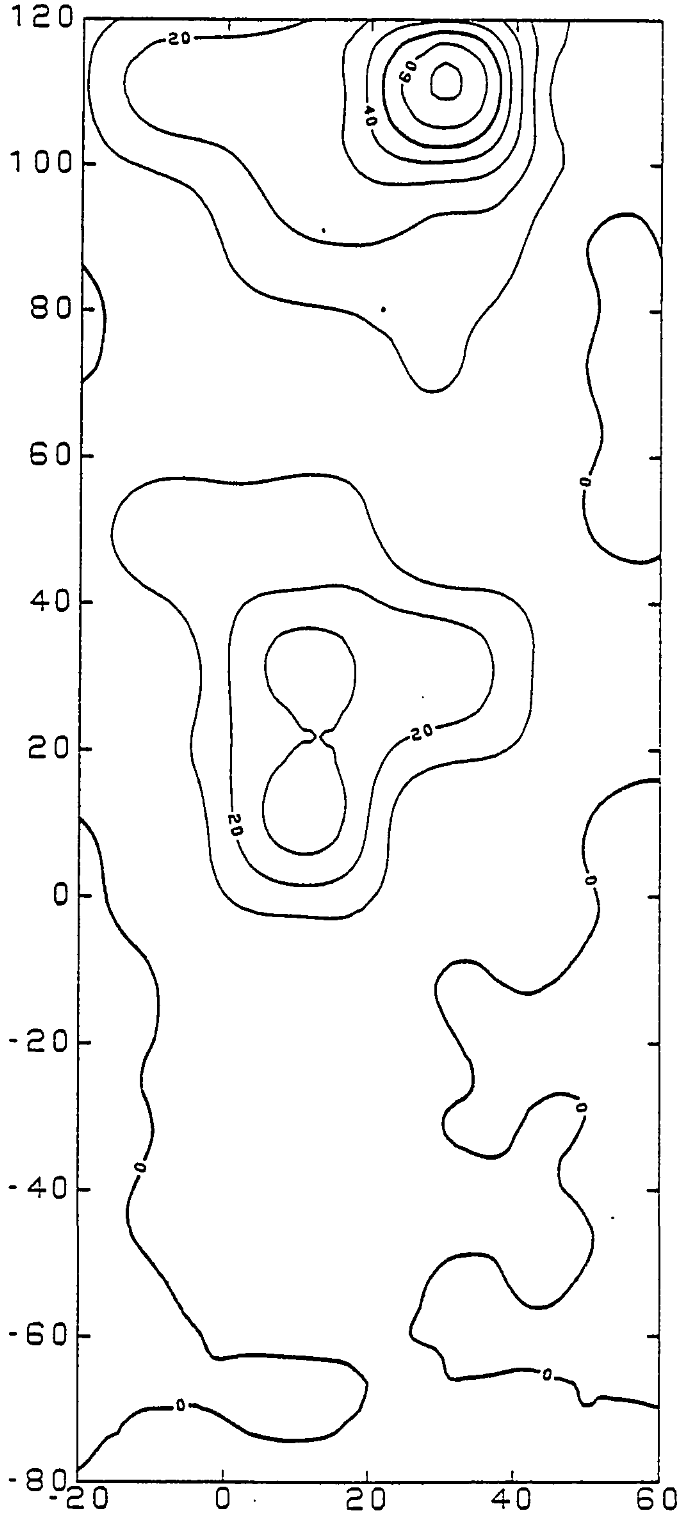


FIGURE 34. Site: 1 Tu 46 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

1 Tu 398

This previously unreported mound site is across the river from Tu 46 in the northeast quarter of the northeast quarter of Section 31, Township 22 South, Range 10 West.

The earthwork (Figure 35) is a well-preserved Mississippian platform mound measuring 40 by 25 meters at its base, 25 by 10 meters at its summit, and 2.2 meters high, with its long axis running North-South. A test unit was dug into the northeast shoulder of the mound and an area of artifact scatter to the north and east of the mound was collected.

The construction history of the mound is best viewed in the vertical section of the west wall of Unit One (Figure 36). The following six strata were distinguished:

Stratum 6 - Pre-mound deposits which contained a few plain shell-tempered sherds.

Stratum 5 - A band of finely laminated silts which appear to be erosion from an early stage of the mound which lay to the west or southwest of the test excavation.

Stratum 4 - This stratum is clearly a layer of mound fill deposited during an enlargement of an earlier mound. The boundary between stratum 4 and 3 is well defined and indicates a period of mound usage.

Strata 3-1 The fill above the upper surface of stratum 4 has been extensively disturbed by the construction of a barn on the mound summit. Nevertheless, it is possible that another mound building episode may be represented by the boundary between stratum 2 and 1.

Table 16 presents a summary of the artifacts recovered from the mound excavation. Sherds of Moundvlle Incised, Var. Carrollton, were recovered from the lower levels of stratum 3 and the upper levels of stratum 4. Moundville Incised, Var. Carrollton, is thought to have reached its greatest popularity in the Moundville I/II period. However, the mound fill below the upper surface of stratum 4 also yielded two sherds of Moundville Engraved, Vars. Taylorville and Tuscaloosa. These varieties of Moundville Engraved are thought to date to no earlier that the Moundville II period. Although this ceramic evidence is not conclusive, it suggests that stratum 4 was added to enlarge an earlier mound surface some time during the Moundville II period. If the ceramic evidence is correct, the major part of the Tu 398 mound dates to the Moundville II period.

The surface scatter to the north and west of the mound was gridded into 17 collection units (.68 hectares) and a controlled collection was accomplished. A summary of artifacts recovered is presented in Table 16. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, Lithic Debris, and Daub are presented in Figures 37-30. Both West Jefferson and Moundville phase components are present on the site. Shell-tempered sherds were recovered from 16 of the 17 collection units (.64 hectares). The ceramics recovered indicate that the site was a hamlet or small village.

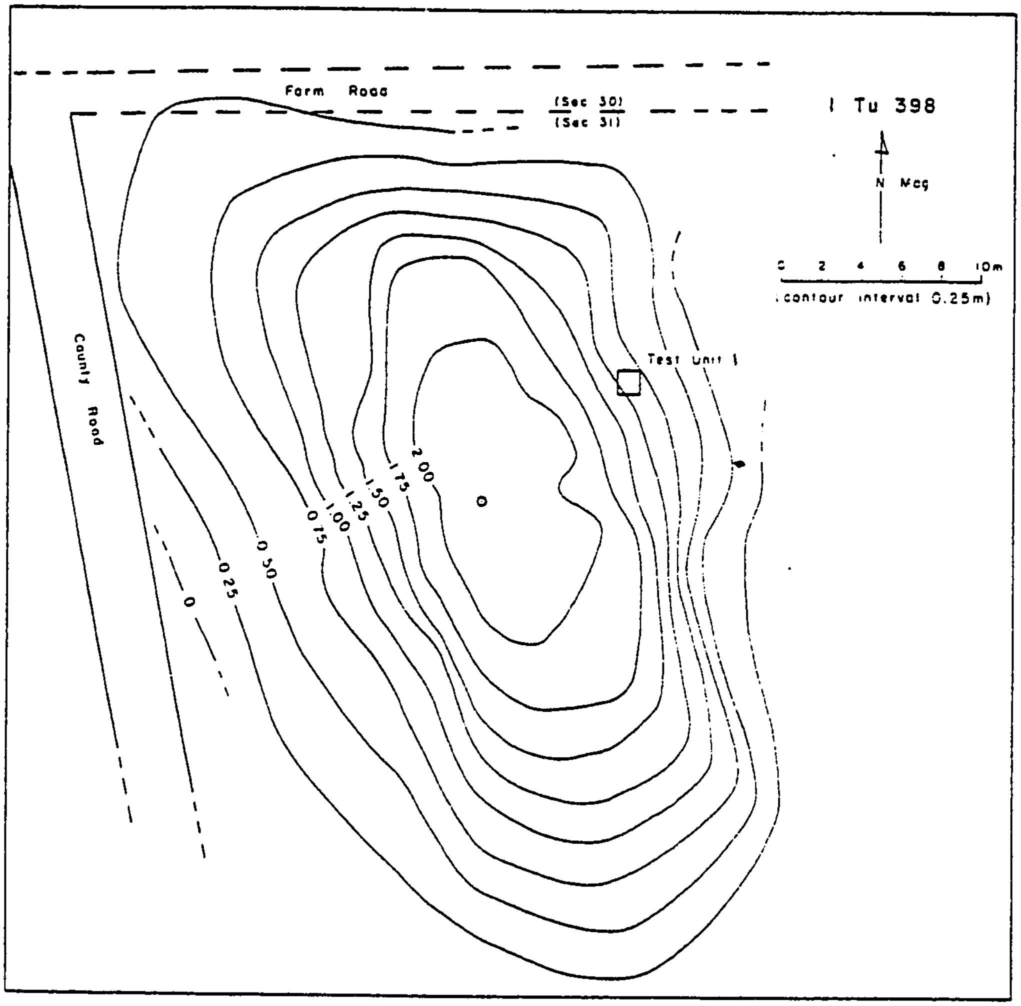
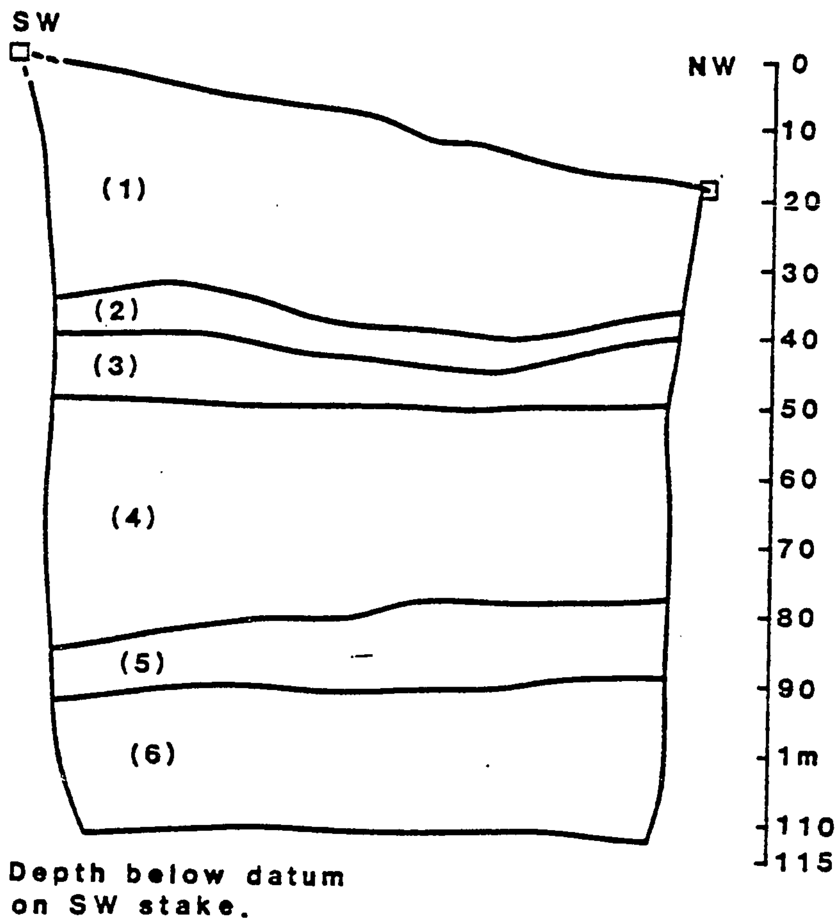


Figure 35. Site: 1 Tu 398 - Contour map of the mound.



1 Tu 398
Test Unit 1 West Wall

Figure 36.

TABLE 15
Site: 1 Tu 398 FSM: 2-9 (mound)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	7	208	940.3
Subtotal	7	208	940.3
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	26	991	1672.8
MOUNDVILLE ENGRAVED			
Unspecified	—	2	3.3
Taylorville	—	1	1.5
Tuscaloosa	—	1	13.0
BELL PLAIN			
Hale	6	20	61.1
MOUNDVILLE INCISED			
Carrollton	—	3	20.5
SHELL TEMPERED UNCLASSIFIED			
Unspecified	—	1	0.7
Subtotal	32	1019	1763.8
Total Ceramics	39	1227	2704.1

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
P-11	—	2
Mid Section Undetermined Type	1	—
BIFACIAL TOOLS		
Drill	—	1
Other Biface	1	1
Total	2	4

TABLE 15 Continued

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Celt	1	2.6
UNMODIFIED LITHICS AND INTRODUCED ROCK	**N**	**WEIGHT<GMS>**
Lithic Debris	131	224.7
(Treated)	122	183.4
(Untreated)	9	41.3
Unmodified Rock	117	1883.2
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Bone	37	58.5
Daub	53	69.6
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	1	2.0
Metal	5	12.0
SELECTED SECONDARY VESSEL FEATURES	**N**	
BEADED RIM		
Shell Tempered	1	

TABLE 16
Site: 1 Tu 398 FSM: 1-18 (village)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	8	450	1515.5
MULBERRY CREEK CORD MARKED			
Aliceville	—	1	1.7
Subtotal	8	451	1516.7
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	16	422	828.2
CARTHAGE INCISED			
Unspecified	—	1	3.5
MOUNDVILLE ENGRAVED			
Havana	—	1	3.5
Unspecified	—	1	0.7
BELL PLAIN			
Hale	8	—	30.5
Subtotal	24	425	866.4
Total Ceramics	32	876	2383.1

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	1
Hamilton	—	2
Distal End Undetermined Type	—	3
BIFACIAL TOOLS		
Knife	—	1
Chisel	—	1
Other Biface	—	1
Total	—	9

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	244.6
Stone Discoidal	1	7.5

TABLE 16 Continued

Celt	4	60.6
Worked Sandstone	229	602.1
UNMODIFIED LITHICS AND INTRODUCED ROCK	**N**	**WEIGHT<GMS>**
Lithic Debris	229	602.1
(Treated)	214	507.4
(Untreated)	15	94.7
Unmodified Rock	90	2566.4
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Shell	1	1.1
Daub	70	167.0
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	2	2.6
SELECTED SECONDARY VESSEL FEATURES	**N**	
FOLDED RIM		
Shell Tempered	1	
BEADED RIM		
Shell Tempered	3	

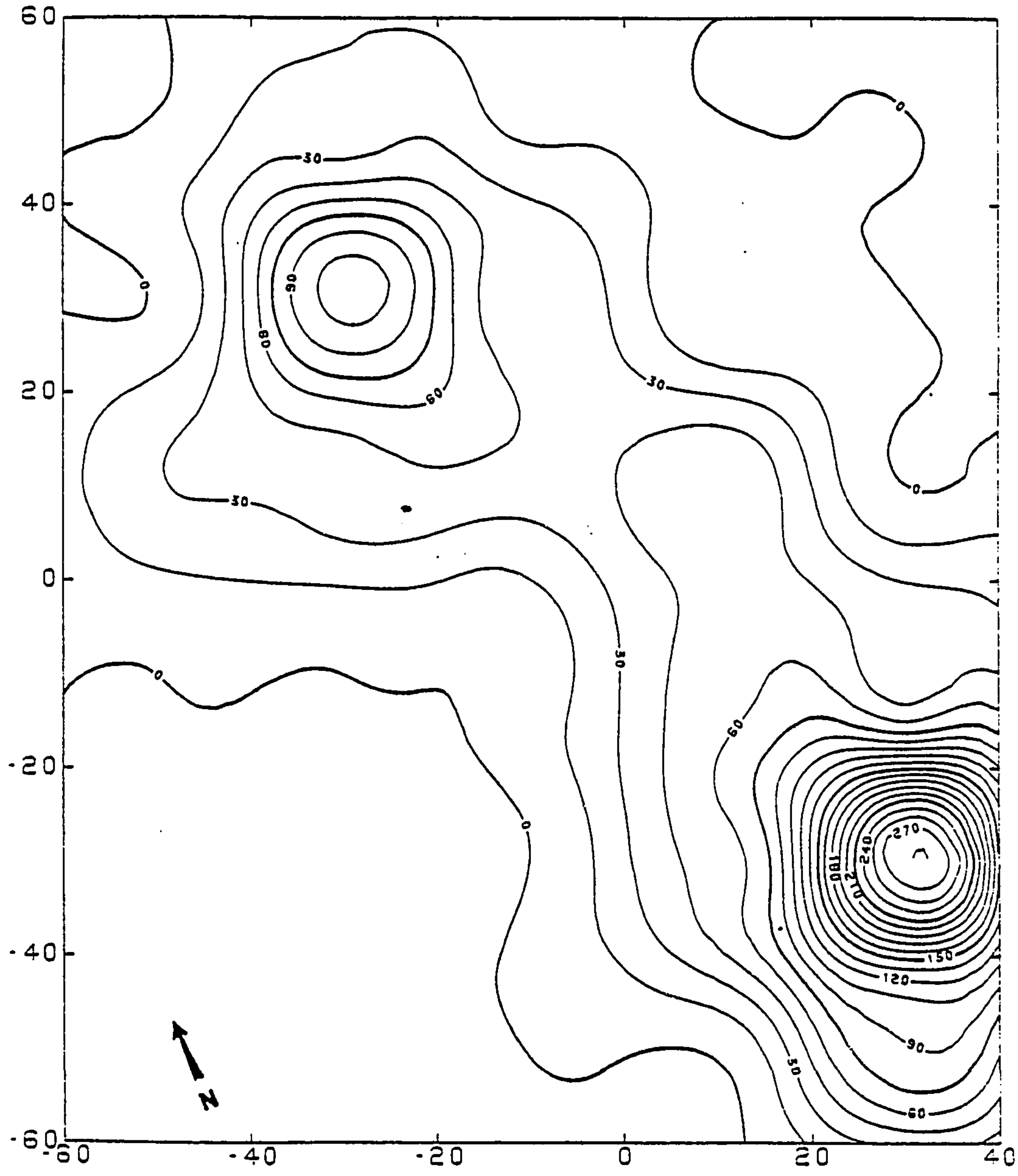


FIGURE 37. Site: 1 Tu 398 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 15 grams. Distance between tick marks = 20 meters.

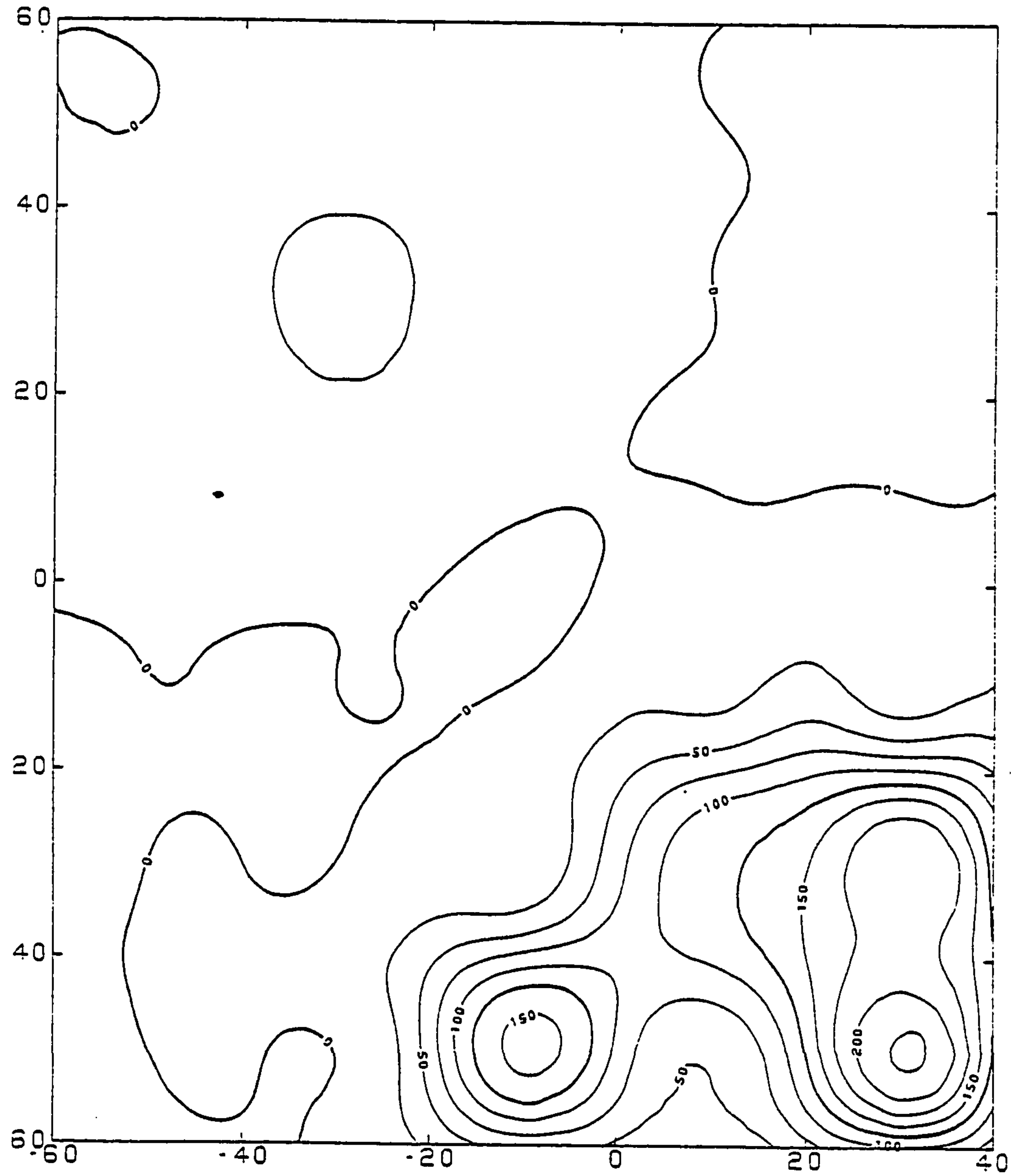


FIGURE 38. Site: 1 Tu 398 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 25 grams. Distance between tick marks = 20 meters.

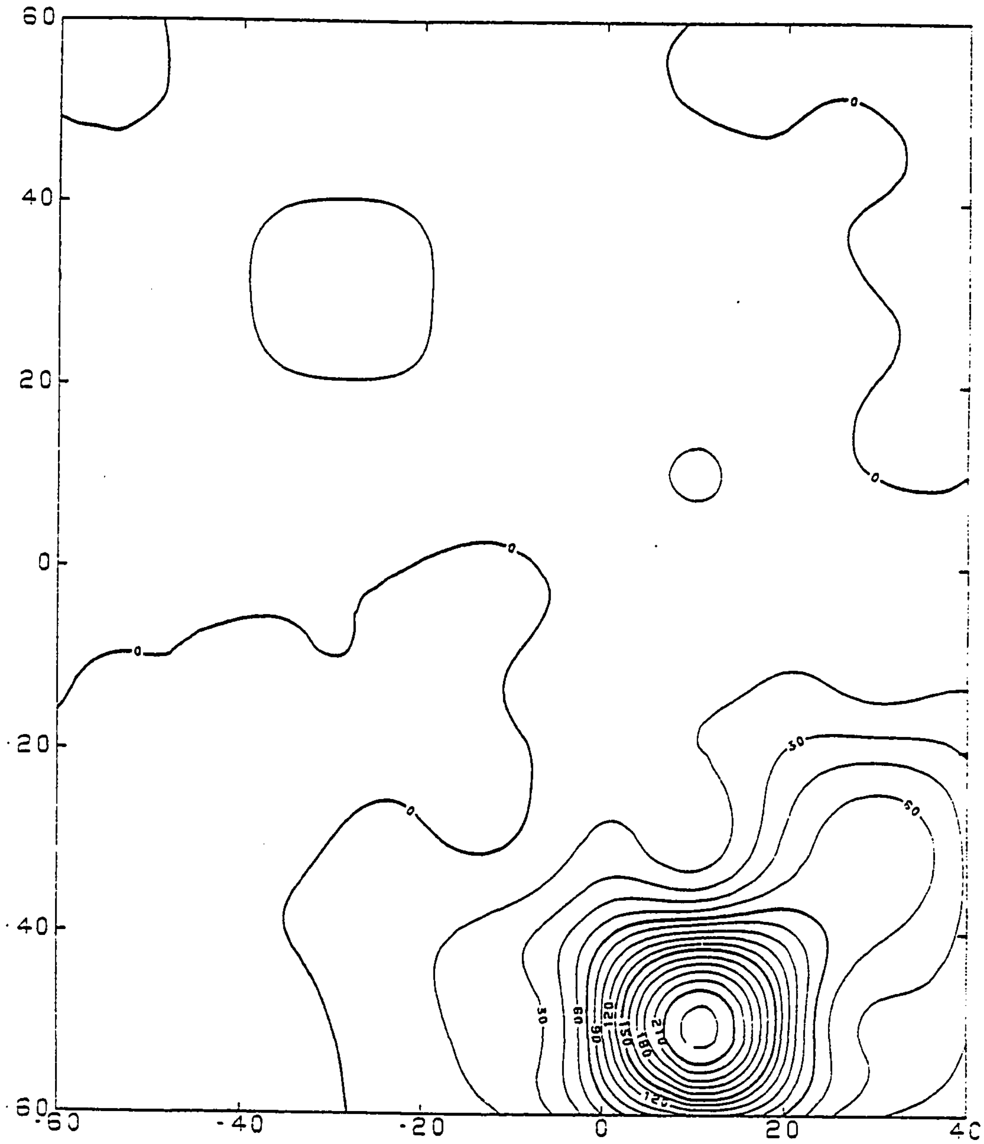


FIGURE 39. Site: 1 Ha 398 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 15 grams. Distance between tick marks = 20 meters.

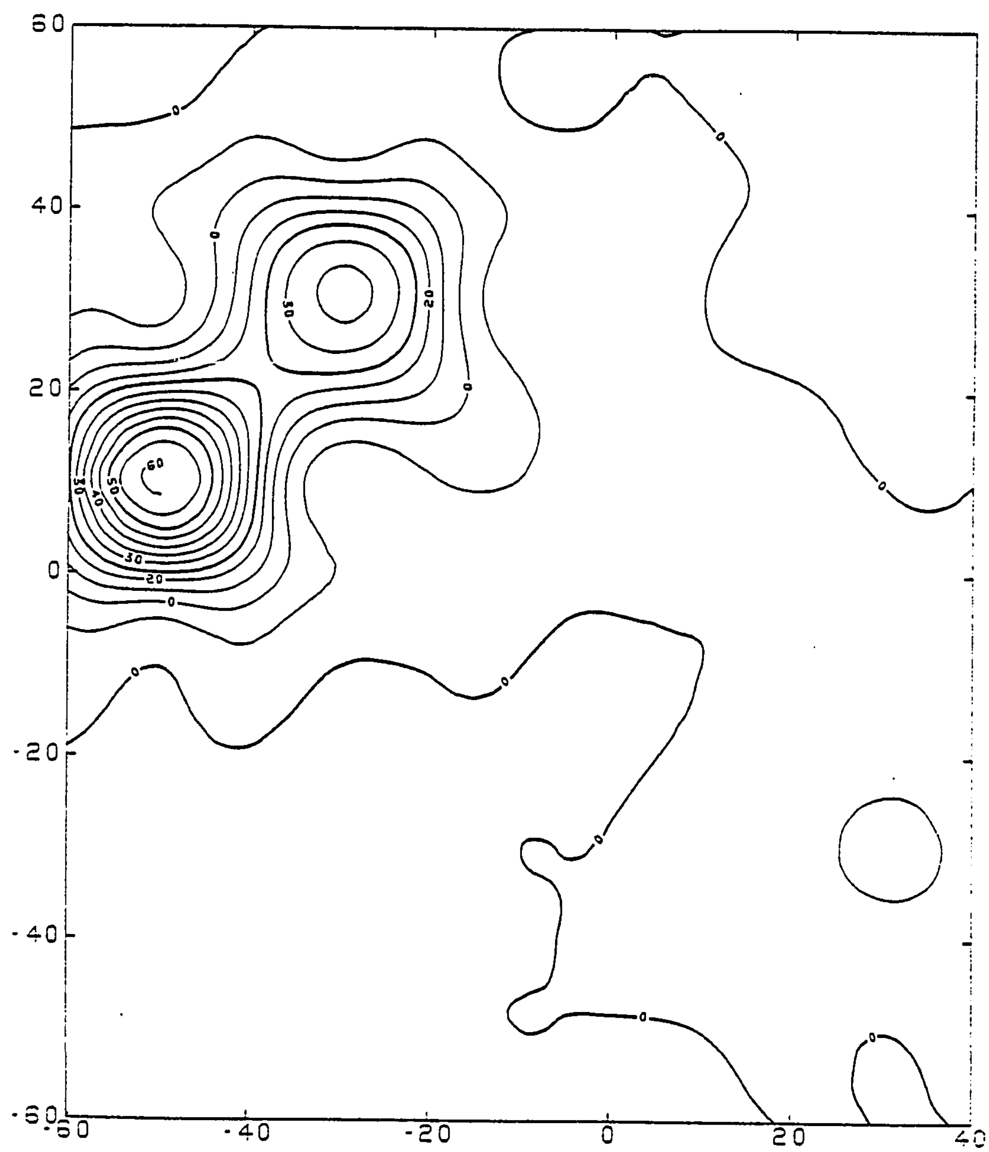


FIGURE 40. Site: 1 Tu 398 - Distribution of DAUB by weight in grams. Contour Interval = 15 grams. Distance between tick marks = 20 meters.

1 Tu 44/45

This mound and village pair is located on a bluff overlooking the south bank of the Warrior River near the center of Section 5, Township 24 North, Range 5 East. Due to an error in the Alabama site files this site was renumbered as Tu 346. The original site numbers assigned by Dr. Jones are used here.

C. B. Moore was denied permission to dig this mound and moved on to more promising sites, noting only that the mound was largely plowed away (1905:243). Dr. Jones surveyed the site in July 1933 and recorded the mound as pyramidal in shape, measuring 98 by 59 feet at the base, 91 by 51 feet at the summit, and 3.5 to 4 feet high.

When the UMMA survey first visited the site in the summer of 1978, all but a few feet of the south margin of the mound had fallen into the Warrior River. The river bank below the mound remnant was cleaned and a shell-filled pit and human burial exposed.

An excavation (Unit 1) was begun above the burial, and the partial remains of young female without associated grave goods were recovered. A second excavation (Unit 2) was begun above the shell-filled pit and this excavation cut through the outermost edge of the mound. The vertical section of the east wall of Unit 2 is shown in Figure 42. Welch (personal communication) thinks that the finely laminated silts visible below the mound fill may be wash from an earlier mound surface. The pit feature is not visible in the vertical section, but both the burial and the pit containing West Jefferson ceramics appeared to be earlier than the mound.

Among the shell-tempered ceramics recovered from the mound fill and from the upper portions of the silts and midden below the mound, were several sherds of Moundville Incised, Vars. Moundville and Snows Bend, two folded rim sherds, and a single sherd of Moundville Engraved, Var. Havana. This latter sherd had red pigment still visible in the design. In the Moundville collection, Steponaitis (personal communication) found the use of red pigment as a decorative element in Moundville Engraved, Var. Havana, to be an excellent Moundville I marker.

Dense vegetation made it impractical to attempt a controlled collection of the .5 to .8 hectare surface scatter to the south and west of the mound. A casual sherd collection from this area indicated the presence of a West Jefferson component and possibly a small Moundville I component.

Unfortunately, too little of the Tu 44 mound remained to gain any idea of its construction history. Nevertheless, it appears that this site was similar to Tu 56, a Moundville I ceremonial center with a small platform mound. It also appears that the Moundville settlement in the immediate vicinity was small.

Further investigations of the mound are no longer possible. Within a year of the UMMA survey of the site the remainder of the mound was lost to the river.

Figure 41. Aerial view of 1 Tu 44/45.


TU44/45

TABLE 17
Site: 1 Tu 44 (346) FSM: 2-30
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	16	589	2238.7
MULBERRY CREEK CORD MARKED			
Aliceville	—	18	180.4
SALOMON BRUSHED			
Fairfield	—	1	11.0
Subtotal	16	608	2430.1
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	10	735	1475.0
CARTHAGE INCISED			
Unspecified	—	1	11.3
MOUNDVILLE ENGRAVED			
Havana	—	1	11.8
BELL PLAIN			
Hale	5	23	64.5
MOUNDVILLE INCISED			
Unspecified	—	7	22.0
Moundville	—	15	129.4
Snows Bend	—	1	7.6
SHELL TEMPERED UNCLASSIFIED			
Unspecified	—	1	4.7
Subtotal	15	784	1726.3
SAND TEMPERED			
ALEXANDER PINCHED			
Prairie Farms	—	1	6.8
SALTILLO FABRIC MARKED			
China Bluff	—	1	3.5
Subtotal	—	2	10.3
Total Ceramics	31	1394	4166.7

TABLE 17 Continued

MODIFIED LITHICS		
COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	2
Hamilton	—	1
P-1	1	—
P-11	2	3
Distal End Undetermined Type	1	3
Base Undetermined Type	—	1
BIFACIAL TOOLS		
Scraper	—	1
Perforator	—	1
Total	4	11

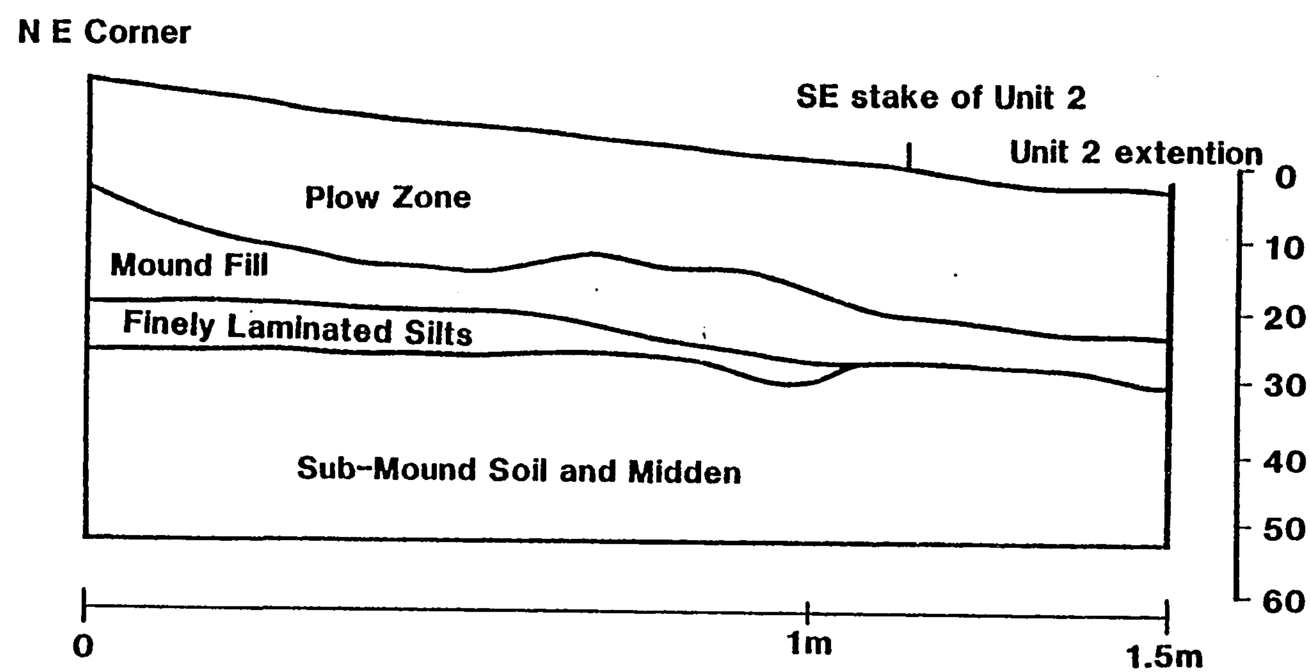
PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Celt	2	4.1
Worked Sandstone	1	78.0

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	520	477.8
(Treated)	443	376.2
(Untreated)	77	101.6
Petrified Wood	3	14.1
Unmodified Rock	223	2870.9

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	123	133.0
Bone	56	95.6
Daub	123	246.0

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	5	23.1
Metal	15	10.9

SELECTED ARTIFACTS AND VESSEL FEATURES	N
FOLDED RIM	
Shell-Tempered	2



1 Tu 44

Test Unit 2 East Wall

Figure 42.

1 Tu 259

This multicomponent site is located on a sand ridge near Cypress Pond in the northern quarter of the southeastern quarter of Section 12, Township 24 North, Range 4 East. The site lies across the Warrior River and 6.9 km north and west of Moundville.

The surface of the site was gridded into 23 twenty by twenty meter collection units (.92 hectares), and a controlled collection was accomplished. A summary of the artifacts recovered is presented in Table 18. Surface II contour maps of the distribution of Grog-Tempered Ceramics, Sand-Tempered Ceramics, and Lithic Debris are presented in Figures 43-45.

Sizable Middle Woodland and West Jefferson components were present on the site. Less than 100 shell-tempered sherds were recovered from several small areas. This distribution indicates that the Moundville phase settlement here was probably not larger than a few structures. Although few diagnostic artifacts were recovered in the surface collection, a sherd of Carthage Incised, Var. Fosters, suggests a Moundville III date for the Mississippian occupation.

TABLE 18
Site: 1 Tu 259 FSM: 1-24
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	149	8335	24019.7
MULBERRY CREEK CORD MARKED			
Aliceville	3	67	352.6
WITHERS FABRIC MARKED			
Craigs Landing	1	8	110.2
Gainesville	2	23	132.7
Montgomery	—	1	3.2
River Bend	—	3	20.5
SALOMON BRUSHED			
Fairfield	—	1	1.5
WHEELER CHECK STAMPED			
Unspecified	—	1	2.7
MARKSVILLE INCISED			
Unspecified	—	8	34.0
GROG TEMPERED UNCLASSIFIED			
Unspecified	—	1	2.5
Subtotal	155	8448	24679.6
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	5	79	120.4
CARTHAGE INCISED			
Unspecified	—	2	8.8
Fosters	—	1	20.5
BELL PLAIN			
Hale	—	1	2.0
Subtotal	5	83	151.7
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	5	362	1054.6
O'Neal	1	—	9.9
ALEXANDER INCISED			
Bodka Creek	—	1	8.8
BASIN BAYOU INCISED			
Unspecified	—	1	2.7
Subtotal	6	364	1076.0

TABLE 18 Continued

LIMESTONE/FIBER TEMPERED			
WHEELER PLAIN			
Wheeler	—	20	98.8
Subtotal	—	20	98.8
Total Ceramics	166	8915	26006.2

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	8
Hamilton	—	8
Mud Creek	—	2
Flint Creek	3	1
Gary	2	—
Limestone	1	—
Cotaco Creek	—	1
Elora	1	3
Mississippian Triangular		
Unspecified Type	1	—
P-1	4	—
P-11	2	19
Distal End Undetermined Type	7	20
Mid Section Undetermined Type	2	2
Base Undetermined Type	6	13
BIFACIAL TOOLS		
Scraper	—	2
Perforator	—	1
Drill	3	6
Chisel	2	6
Other Biface	4	4
Total	38	96

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	5	953.1
Pitted Stone	5	1414.8
Stone Hoe	6	580.4
Celt	5	15.3

TABLE 18 Continued

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	6404	12361.8
(Treated)	5277	9670.9
(Untreated)	1127	2690.9
Petrified Wood	20	458.6
Unmodified Rock	1821	37634.9
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Bone	2	81.7
Daub	18	32.7
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	14	206.1
Metal	5	470.6
SELECTED SECONDARY VESSEL FEATURES	**N**	
FOLDED RIM		
Shell-Tempered	1	

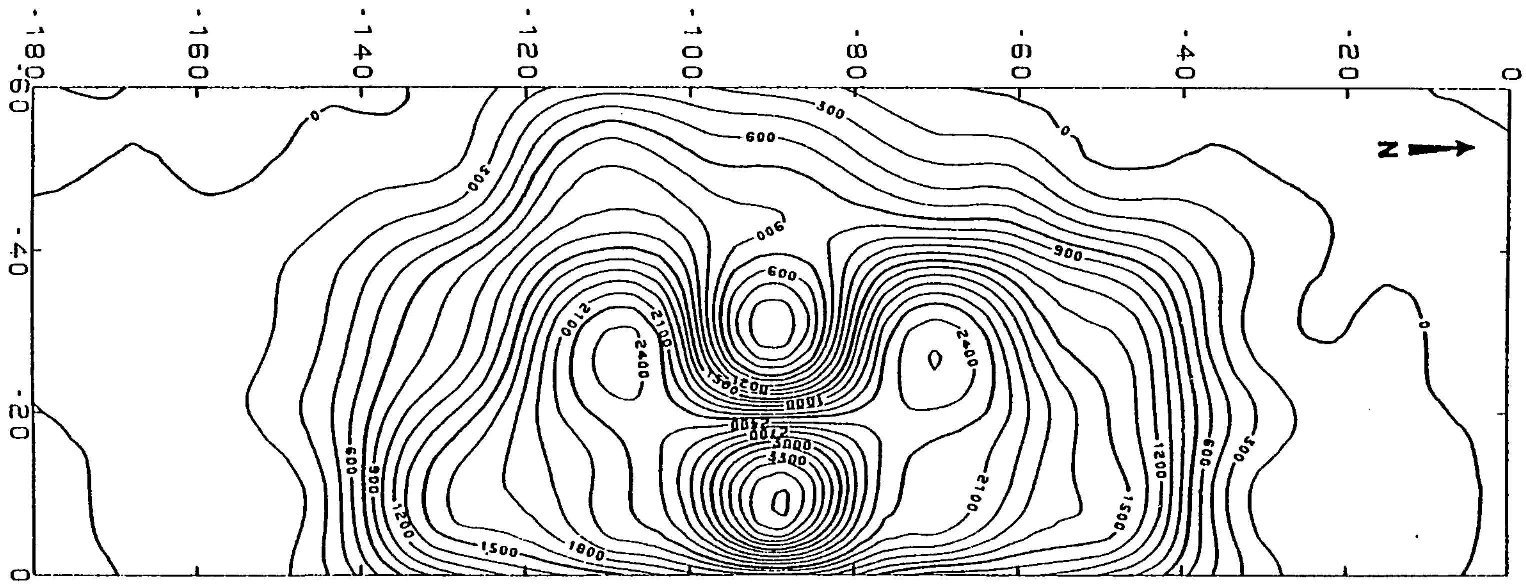


FIGURE 43. Site: 1 Tu 259 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 150 grams. Distance between tick marks = 20 meters.

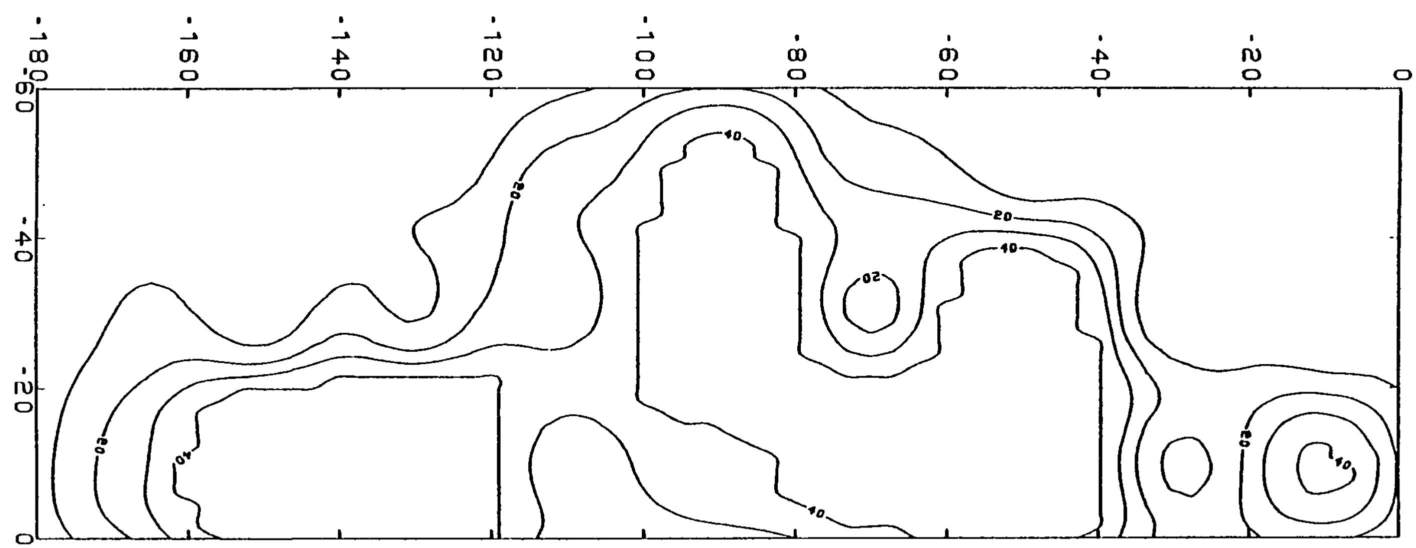


FIGURE 44. Site: 1 Tu 259 - Distribution of SAND-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

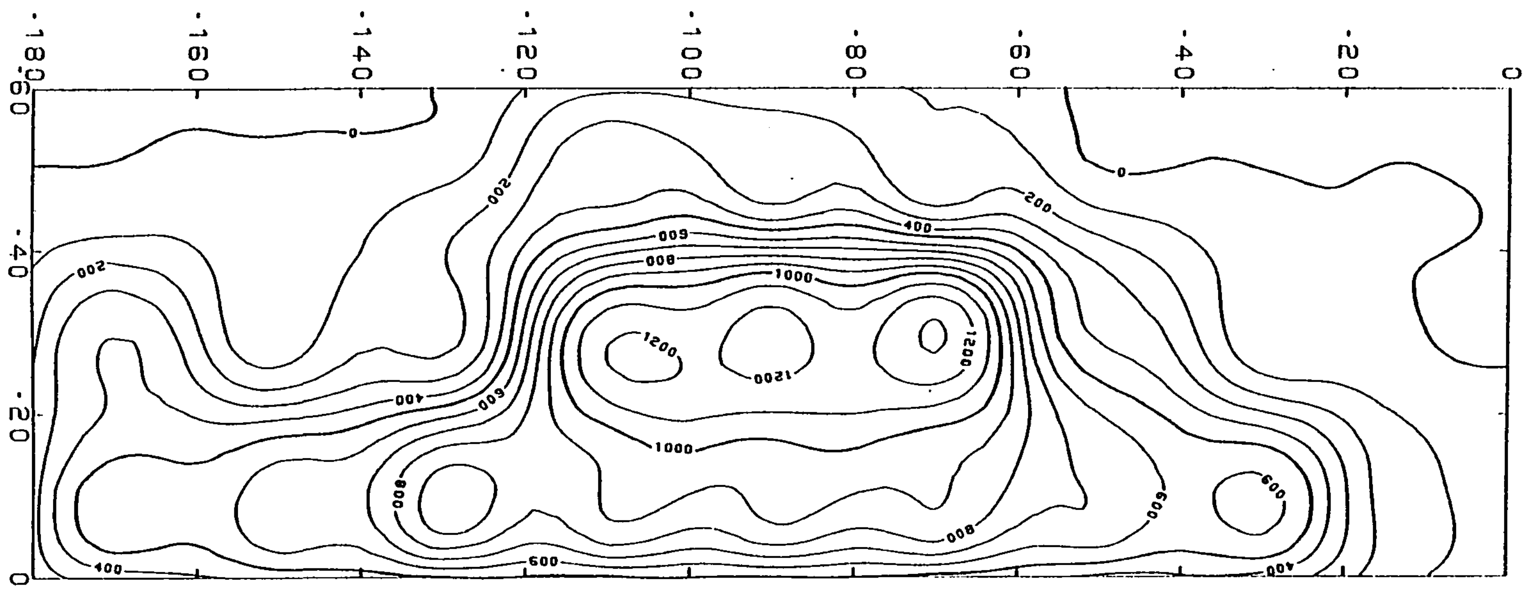


FIGURE 45. Site: 1 Tu 259 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 100 grams. Distance between tick marks = 20 meters.

Big Sandy Delta Survey

In the only intensive surface survey ever attempted in the Warrior Valley, John Walthall (n.d.) investigated the flood plain area at the confluence of Big Sandy Creek and the Warrior River. Here 3.4 km north of Moundville and in an area less than six square kilometers, Walthall discovered or relocated a total of 41 archaeological sites. He made surface collection at all but one of these sites. The exception was Tu 34, a site previously reported by Jones, which Walthall relocated but was unable to find artifacts. Nevertheless, Walthall dated the site to the Late Woodland/Mississippian period based on Jones's description of the material recovered in 1933 as "another unmistakable tie between Moundville and Snow's Bend" (field notes, M.S.M.). Unfortunately, the artifacts Jones collected from Tu 34 could not be found in storage at Moundville.

Both Walthall's field notes and the surface material collected during the Big Sandy Survey were made available to the UMMA survey. Table 19 presents a summary of site size, ceramics recovered (by temper), and the cultural provenience assigned by Walthall to the site. Of the total of 41 sites investigated by Walthall, nine sites were pre-ceramic, nine sites produced grog-tempered pottery and no shell-tempered ceramics, and twenty-one sites produced both grog-tempered ceramics and shell-tempered ceramics. At seven of these latter sites the shell-tempered type Mississippi Plain, Var. Warrior, was the predominant pottery type. Two of these seven sites were close to half a hectare in size.

Walthall's survey is significant in that in a small area of the Warrior flood plain he discovered evidence of 20 small Moundville phase settlements, the majority of which were the size of a farmstead or hamlet. Unfortunately, the ceramic collections from these sites contained few diagnostic sherds. Thus, it is not possible to assign any of these settlements to a temporal position within the Moundville phase. Nevertheless, the impressive number of small Mississippian discovered by Walthall in the Big Sandy Delta, together with the numerous small Mississippian sites discovered during the course of the UMMA survey of the Warrior Valley, is graphic evidence that the lack of previously reported hamlets and farmsteads for the Moundville phase is the result of sampling bias towards large and "productive" sites. The implication of this evidence is that farmsteads and hamlets were a common settlement type throughout the Warrior floodplain during most, if not all, of the Moundville phase.

TABLE 19

BIG SANDY DELTA SURVEY

	Site	Size (ha.)	Shell T. Sherds	Grog T. Sherds	Cultural Prov.
1.	Tu 9	.09	0	2 (100%)	Woodland
2.	Tu 34	.09	(both reported)		Woodland/Miss
3.	Tu 35	.4	2 (2%)	88 (98%)	Woodland/Miss?
4.	Tu 36	.09	0	8 (100%)	Woodland
5.	Tu 87	.31	0	644 (100%)	Woodland
6.	Tu 303	.35	31 (3%)	1036 (97%)	Woodland/Miss
7.	Tu 317	.09	1 (17%)	5 (83%)	Woodland/Miss?
8.	Tu 318	.02	0	0	Archaic
9.	Tu 319	.02	0	6 (100%)	Woodland
10.	Tu 320		(mound)		Woodland
11.	Tu 321	.02	19 (83%)	4 (17%)	Miss
12.	Tu 322	.02	0	0	Archaic
13.	Tu 323	.02	0	0	Archaic
14.	Tu 324	.02	0	6 (100%)	Woodland
15.	Tu 325	.09	0	0	Archaic
16.	Tu 326	.09	0	0	Archaic
17.	Tu 327	.09	0	0	Archaic
18.	Tu 328	.09	5 (3%)	141 (97%)	Woodland/Miss
19.	Tu 329	.09	16 (31%)	35 (69%)	Woodland/Miss
20.	Tu 330	.09	45 (80%)	11 (20%)	Miss
21.	Tu 331	.09	7 (9%)	70 (91%)	Woodland/Miss
22.	Tu 332	.09	2 (15%)	11 (85%)	Woodland/Miss?
23.	Tu 333	.09	0	20 (100%)	Woodland
24.	Tu 334	.19	66 (87%)	10 (13%)	Woodland/Miss
25.	Tu 335	.19	7 (9%)	74 (91%)	Woodland/Miss
26.	Tu 336	.47	69 (12%)	512 (88%)	Woodland/Miss
27.	Tu 337	.09	15 (88%)	2 (12%)	Miss
28.	Tu 338	.02	0	1 (100%)	Archaic
29.	Tu 339	.09	7 (11%)	55 (89%)	Woodland/Miss
30.	Tu 340	.4	55 (87%)	8 (13%)	Miss
31.	Tu 341	.19	4 (40%)	6 (60%)	Woodland/Miss
32.	Tu 342	.4	77 (92%)	7 (8%)	Miss
33.	Tu 343	.19	12 (46%)	14 (54%)	Woodland/Miss
34.	Tu 344	.19	1 (20%)	4 (80%)	Woodland/Miss?
35.	Tu 345	.19	1 (55%)	18 (95)	Woodland/Miss?
36.	Tu 346	.19	0	9 (100%)	Woodland
37.	Tu 347	.09	0	0	Archaic
38.	Tu 348	.19	0	0	Archaic
39.	Tu 349	.19	0	27 (100%)	Woodland
40.	Tu 350	.02	0	2 (100%)	Woodland
41.	Tu 351	.09	4 (80%)	1 (20%)	Miss

1 Tu 42/43

This mound and village pair lie on the west bank of the Warrior River opposite the mouth of Big Sandy Creek, 4.6 kilometers northwest of Moundville along the northern edge of the northwestern quarter of Section 24, Township 24 North, Range 4 East.

Moore put ashore here and dug a number of trial holes in the Tu 42 mound, but he and his party found nothing of interest. His efforts in the village area were only slightly more rewarding; the diggers discovering two skeletons unaccompanied by grave goods.

Moore reported the mound to be "almost obliterated by cultivation" (1905:243). Nevertheless, Dr. Jones was able to relocate the mound in 1933 when he surveyed the site, but his survey record gives no dimensions for the earthwork (field notes, M.S.M.).

Several years ago the landowner made a concerted effort to level the mound to facilitate planting. When the mound and surrounding area were first plowed after this operation, abundant evidence of houses, burials, and other features were turned up by the plow (Welch, personal communication). The mound was nearly indistinguishable from the surrounding field when the UMMA survey team visited the site. This area (Figure 47) was in crops and a test excavation was not attempted.

The surrounding village area was gridded into 68 twenty by twenty meter collection units (2.72 hectares) and a controlled collection was conducted. A summary of the artifacts recovered is presented in Table 20. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, Lithic Debris, and Daub are presented in Figures 48-51.

The ceramics recovered indicate the presence of sizable Middle Woodland, West Jefferson, and Moundville phase components on the site. Shell-tempered ceramics were recovered from 55 collection units (2.2 hectares). The density and widespread distribution of Moundville phase artifacts indicates that the Missippian settlement was a sizable village.

Among the shell-tempered ceramics recovered in the surface collection were a number of sherds of Carthage Incised, Vars. Carthage, Moon Lake, and Fosters, and sherds of Moundville Engraved, Vars. Havana, Hemphill, and Maxwells Crossing. Two beaded rims and a sherd painted red on white were also recovered. This ceramic evidence strongly suggests a Moundville III date for the occupation of the site.

An Alabama River phase component of unknown size was also evident on the site. Several sherds of Alabama River Applique and an example of Alabama River Incised were present in the ceramic collection. The presence of Alabama River phase ceramics indicates that the Mississippian occupation of this site extended into the protohistoric period.

A late Moundville III/Alabama River phase date for the site is also supported by ceramics given by the Wiggins family to C. B. Curren of the Alabama Museum of Natural History. Welch (personal communication) reports that the decorated shell-tempered sherds in this collection are predominately Moundville III and protohistoric types. Several burial urns were also recovered from the vicinity.

Unfortunately, nothing could be determined about the construction history of the mound. On the evidence of the ceramics recovered from the mound vicinity, it seems a reasonable assumption that mound was a Mississippian platform structure probably constructed somtime during the Moundville III period.

Figure 46. Aerial view of 1 Tu 42.


TU42

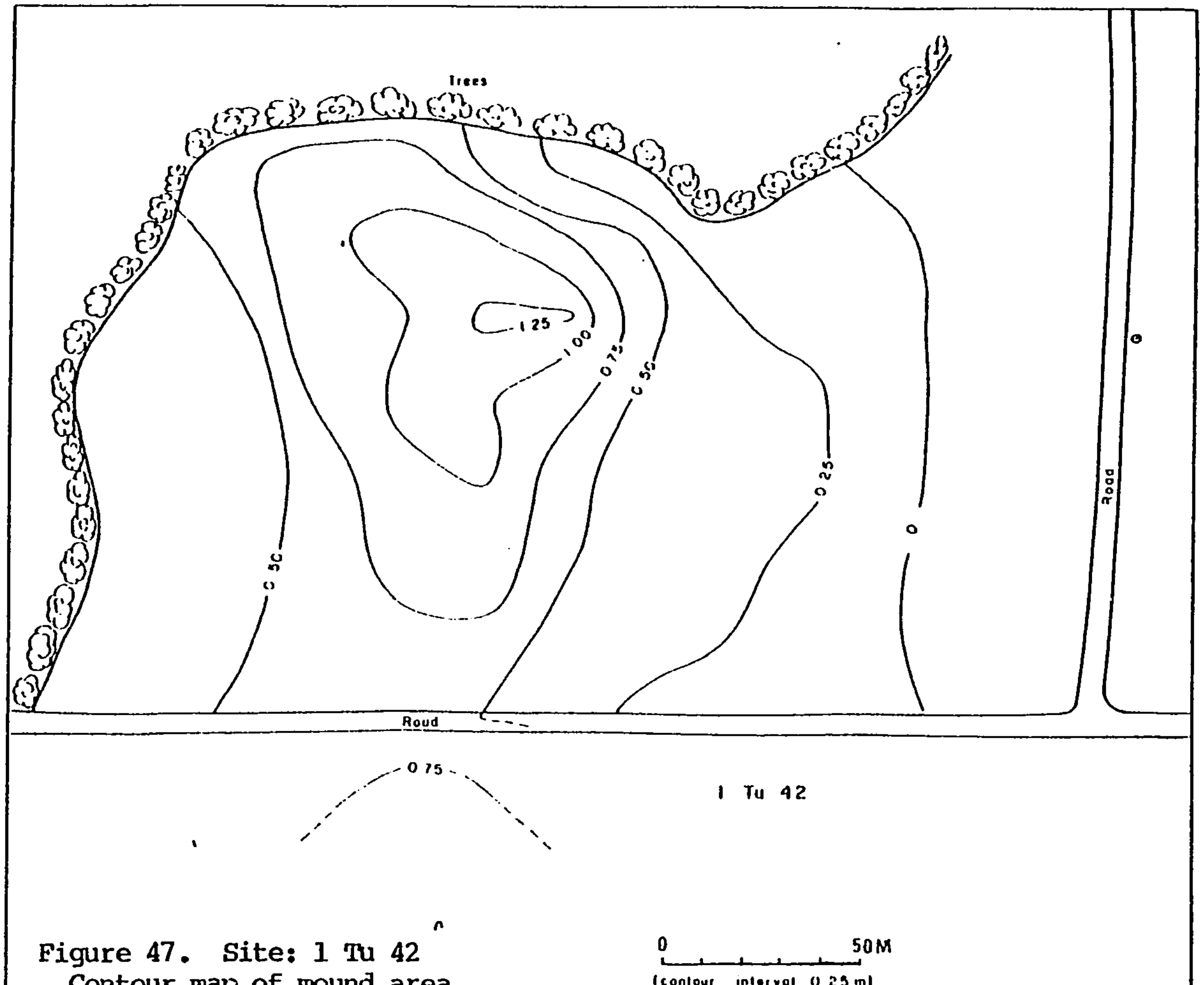


Figure 47. Site: 1 Tu 42
Contour map of mound area.

TABLE 20
Site: 1 Tu 42 FSM: 1-68
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
ALLIGATOR INCISED			
Oxbow	1	—	4.6
Geiger	—	1	6.0
Unspecified	—	1	6.1
BAYTOWN PLAIN			
West Jefferson	123	3155	13223.0
MULBERRY CREEK CORD MARKED			
Aliceville	—	1	694.6
WITHERS FABRIC MARKED			
Gainesville	—	1	5.9
EVANSVILLE PUNCTATED			
Unspecified	1	2	21.6
Tishabee	—	1	3.9
WHEELER CHECK STAMPED			
Sipsey	—	1	2.4
Catfish Bend	2	—	16.4
GROG TEMPERED UNCLASSIFIED			
Incised	1	—	3.4
Other	2	2	24.6
Subtotal	130	3165	14012.5
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	82	1464	4014.9
CARTHAGE INCISED			
Unspecified	—	6	23.9
Carthage	—	2	19.3
Fosters	1	—	12.6
Moon Lake	—	1	3.5
MOUNDVILLE ENGRAVED			
Unspecified	1	2	18.0
Havana			
Hemphill	—	1	2.0
Maxwells Crossing	—	1	1.2
BELL PLAIN			
Hale	40	20	250.6
MOUNDVILLE INCISED			
Unspecified	1	2	16.3
Moundville	1	—	1.0

TABLE 20 Continued

ALABAMA RIVER APPLIQUE			
Alabama River	13	—	65.7
ALABAMA RIVER INCISED			
Unspecified	—	1	4.2
BARTON INCISED			
Unspecified	1	—	4.7
SHELL TEMPERED UNCLASSIFIED			
Incised	3	1	18.5
Painted	—	1	2.2
White Slip	1	4	18.5
Red Slip	—	1	2.2
Other	2	2	16.9
Subtotal	146	1509	4496.2
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	2	76	402.5
O'Neal	1	—	10.0
ALEXANDER INCISED			
Unspecified	—	1	4.0
Pleasant Valley	4	—	52.0
Prairie Farms	1	2	19.8
ALEXANDER PINCHED			
Prairie Farms	2	9	81.6
ALLIGATOR BAYOU STAMPED			
Unspecified	—	1	7.0
MCLEOD CHECK STAMPED			
Bigbee	—	1	9.0
SAND TEMPERED UNCLASSIFIED			
Undetermined	1	—	4.7
Subtotal	11	90	590.6
Total Ceramics	287	4764	19099.3

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	4	7
Hamilton	1	3
Mud Creek	—	1
Swan Lake	—	1
Cotaco Creek	1	—
Elora	—	1

TABLE 20 Continued

P-1	2	—
P-11	2	5
Distal End Undetermined Type	5	5
Mid Section Undetermined Type	—	4
Base Undetermined Type	—	1
BIFACIAL TOOLS		
Knife	—	1
Drill Bit	3	—
Other Biface	3	4
Total	21	33

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	4	1064.1
Pitted Stone	1	440.0
Stone Discoidal	1	9.2
Celt	1	23.1
Worked Sandstone	2	46.6

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	1229	7884.3
Petrified Wood	19	656.2
Unmodified Rock	1329	48091.1

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	93	164.1
Bone	4	11.9
Daub	1603	6695.8

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	91	1003.5
Metal	7	190.0

SELECTED ARTIFACTS AND VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	2

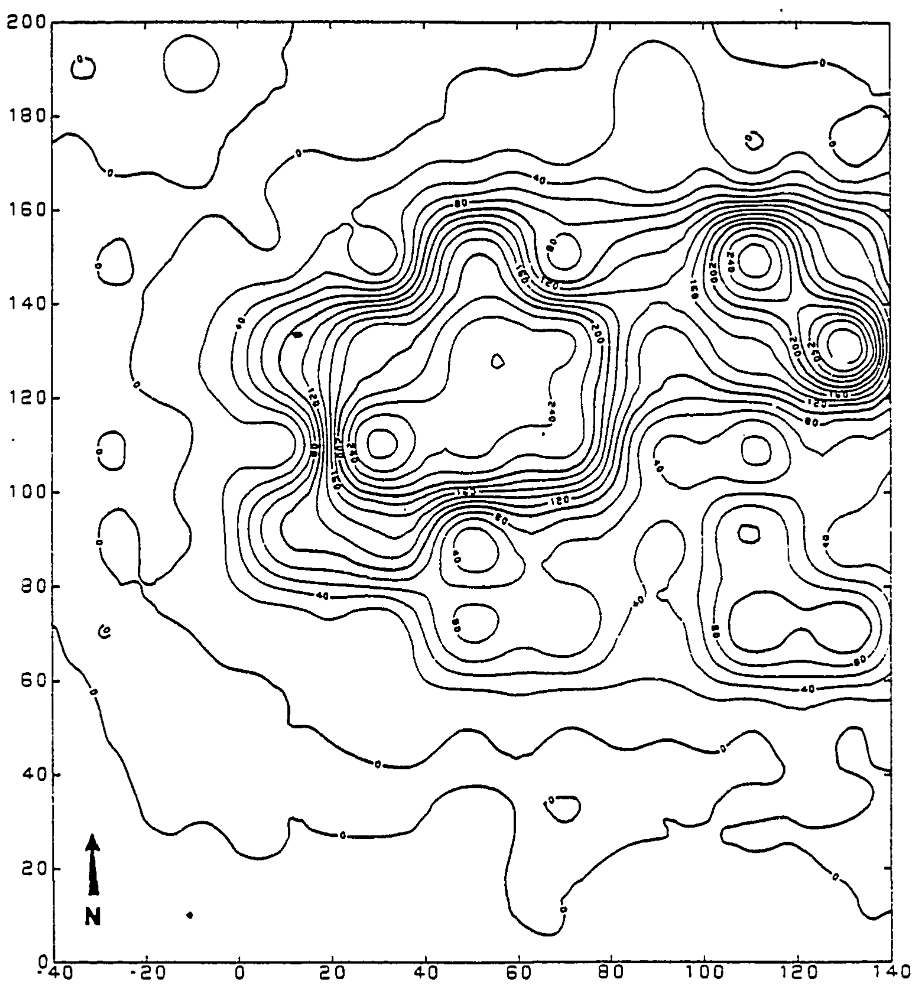


FIGURE 48. Site: 1 Tu 42 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 20 grams. Distance between tick marks = 20 meters.

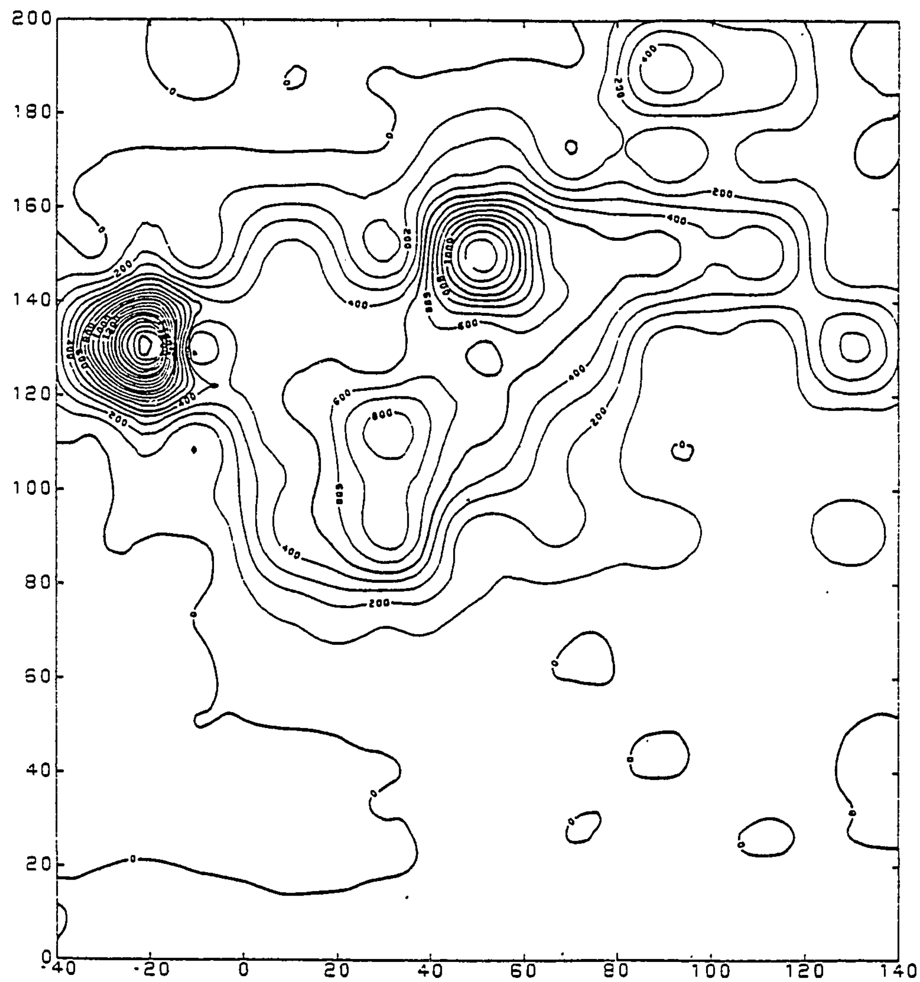


FIGURE 49. Site: 1 Tu 42 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 100 grams. Distance between tick marks = 20 meters.

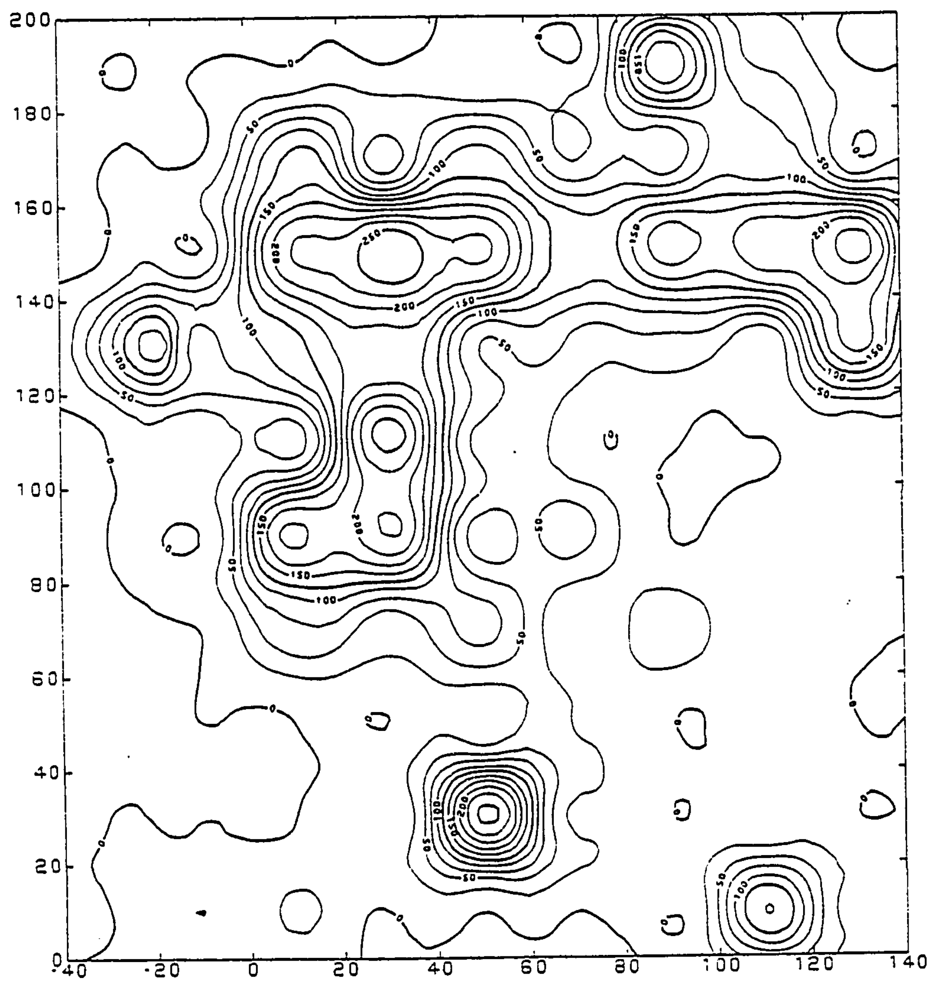


FIGURE 50. Site: 1 Tu 42 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 25 grams. Distance between tick marks = 20 meters.

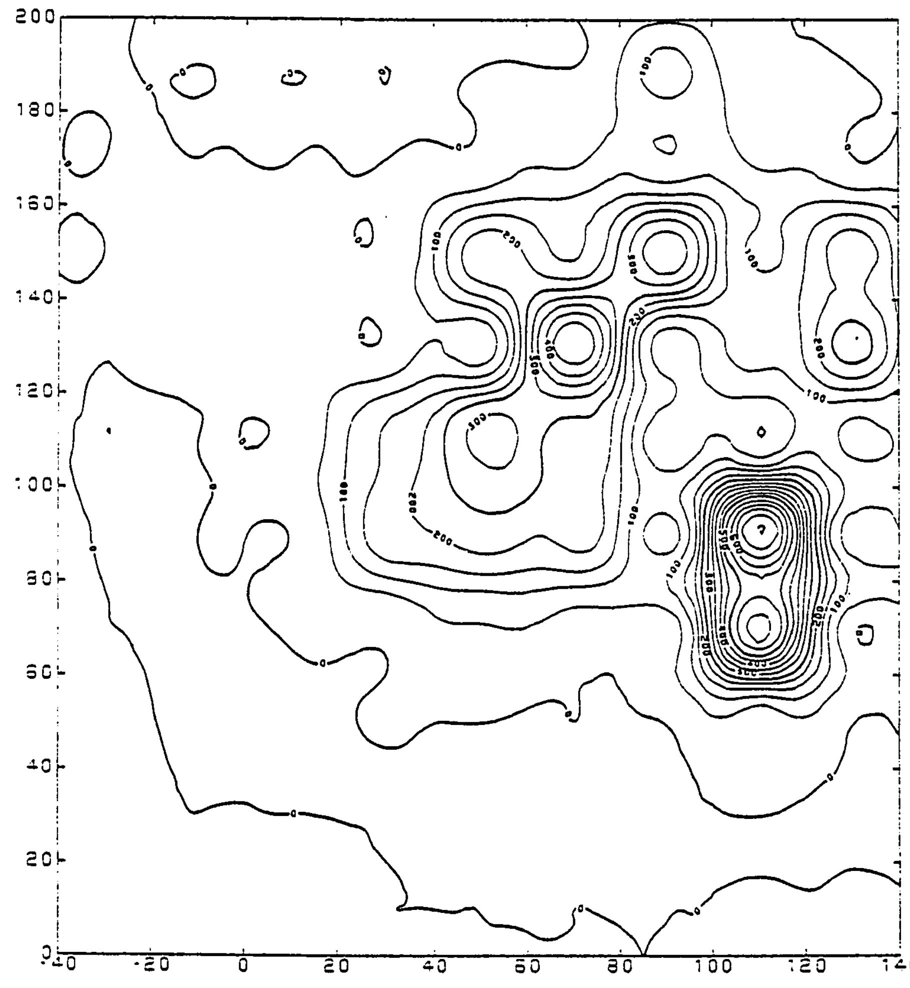


FIGURE 51. Site: 1 Tu 42 - Distribution of DAUB by weight in grams. Contour Interval = 50 grams. Distance between tick marks = 20 meters.

1 Tu 50

This site is a small truncated mound located on a bluff overlooking the south bank of the Warrior River .8 km north of Moundville. Jones visited the site during the 1933 survey and recorded its location on the survey form as the northwestern quarter of Section 31, Township 24 North, Range 5 East. However, his field map shows that actual location of the mound is farther west and near the eastern boundary of Sction 36, Township 24 North, Range 4 East. Acccording to Jones, in 1933 the mound measured 35 feet by 35 feet at its base and 30 feet by 30 feet at its plateau. The height of the mound varied from 10 feet at the south side, to 12 feet at the north side, to 21 feet at the west side (field notes, M.S.M.)

In 1975 the University of Alabama archaeological field school excavated a portion of the mound. A contour map of the mound prepared by the field team during this excavation is shown in Figure 53. It was not possible to trace building episodes in the mound stratigraphy, but it is possible that the mound may have been constructed in two or more stages (Krause, personal communication). A house was discovered and excavated along the southern margins of the mound.

The ceramics recovered from the mound excavaton were turned over to Steponaitis for study. A summary of the ceramics recovered is presented in Figure 21. Steponaitis (personal communication) cites the presence of Moundville Incised, several examples of folded flattened rims, and the absence of engraved ware, as good evidence that the final stage of the mound dates no later than the Moundville I period. Thus, the Tu 50 mound appears to be another small Moundville I civic-ceremonial center.

Figure 52. Aerial view of Moundville and 1 Tu 50.


TU50

TABLE 21
Site: 1 Tu 50 (mound)
University of Alabama Field School Excavation

CERAMICS

TYPE/VARIETY	N
GROG TEMPERED	
BAYTOWN PLAIN	
West Jefferson	34
MULBERRY CREEK CORD MARKED	
Aliceville	7
Subtotal	41
SHELL TEMPERED	
MISSISSIPPI PLAIN	
Warrior	501
CARTHAGE INCISED	
Unspecified	3
BELL PLAIN	
Hale	92
MOUNDVILLE INCISED	
Moundville	11
SHELL TEMPERED UNCLASSIFIED	
Unspecified	3
Subtotal	610
SAND TEMPERED	
BALDWIN PLAIN	
Unspecified	2
MCLEOD SIMPLE STAMPED	
Eutaw	2
Subtotal	4
Total Ceramics	655

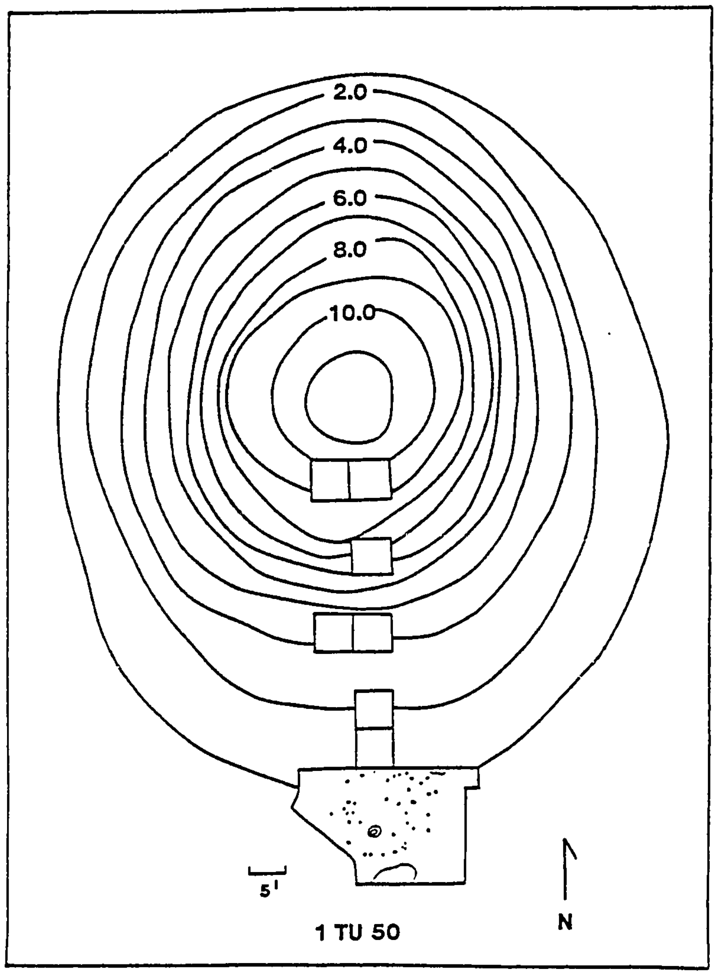


Figure 53. Site: 1 Tu 50 - University of Alabama field school contour map of mound. Contour interval = 1 foot.

1 Ha 1/2

This mound and village pair (not shown in Figure 1) is perhaps the most interesting and perplexing site visited by the UMMA survey team. The site is unique in that it was thought to be a Mississippian mound (Peebles 1978) located off the Warrior floodplain on a hill top 5 km east of the plaza at Moundville. In the 1933 survey Jones described the mound as conical in shape, 70 feet in diameter and 8 feet meters high. He notes that the mound was "somewhat eroded and plowed down" and had been dug into by someone "looking for money 10 yrs. ago". No material was collected from the mound and the dimensions of a village in the vicinity were recorded as 200 feet by 400 feet The village area contained material which Jones described as looking "like the Moundville Culture" (field notes, M.S.M.)

The 1933 survey form records the mound and village location as the center of Section 5, Township 23 North, Range 5 East. The UMMA survey team was unable to find a mound at this location. Hovever, a mound fitting the description of Ha 1 was discovered approximately 1.5 km northeast of the position given in the 1933 field notes.

This mound, located near the northern border of Hale County in Section 4, Township 23 North, Range 5 East, is conical in shape and measures 20 meters in diameter and 1.75 meters in height. It is impossible to be certain that this mound is Ha 1, but it is probable that the 1933 survey form was typed in error.

Unfortunately, the difficulties and uncertainties surrounding the site did not end with determining its location. The landowner would allow the mound to be mapped, but he withheld permission to excavate or to surface collect in the vicinity of the mound. Nevertheless, the surface material collected from the village area in 1933 was located in storage at Moundville. This collection contained 262 shell-tempered sherds and a single sherd of Baytown Plain, Var. Roper. The majority of the shell-tempered pottery was plain, but the collection did contain one sherd of Moundville Engraved decorated with a notched or beaded lip, two examples of sherds with notched rims, several white-slipped sherds, and several fine-line engraved sherds quite unlike Moundville Engraved. Also these latter sherds are not black filmed but are buff colored. Welch (personal communication) feels that the ceramic assemblage is late and may even be protohistoric or historic.

In sum, there is no demonstrated association between the material collected from the village area and the mound, nor is there any other clear evidence that the mound at is a Mississippian earthwork. The unique location of the mound off the Valley floor and its conical shape suggest that it is more likely that the mound was constructed during the Woodland period. Unfortunately this question cannot be resolved without excavation.

Figure 54. Aerial view of 1 Ha 1/2.

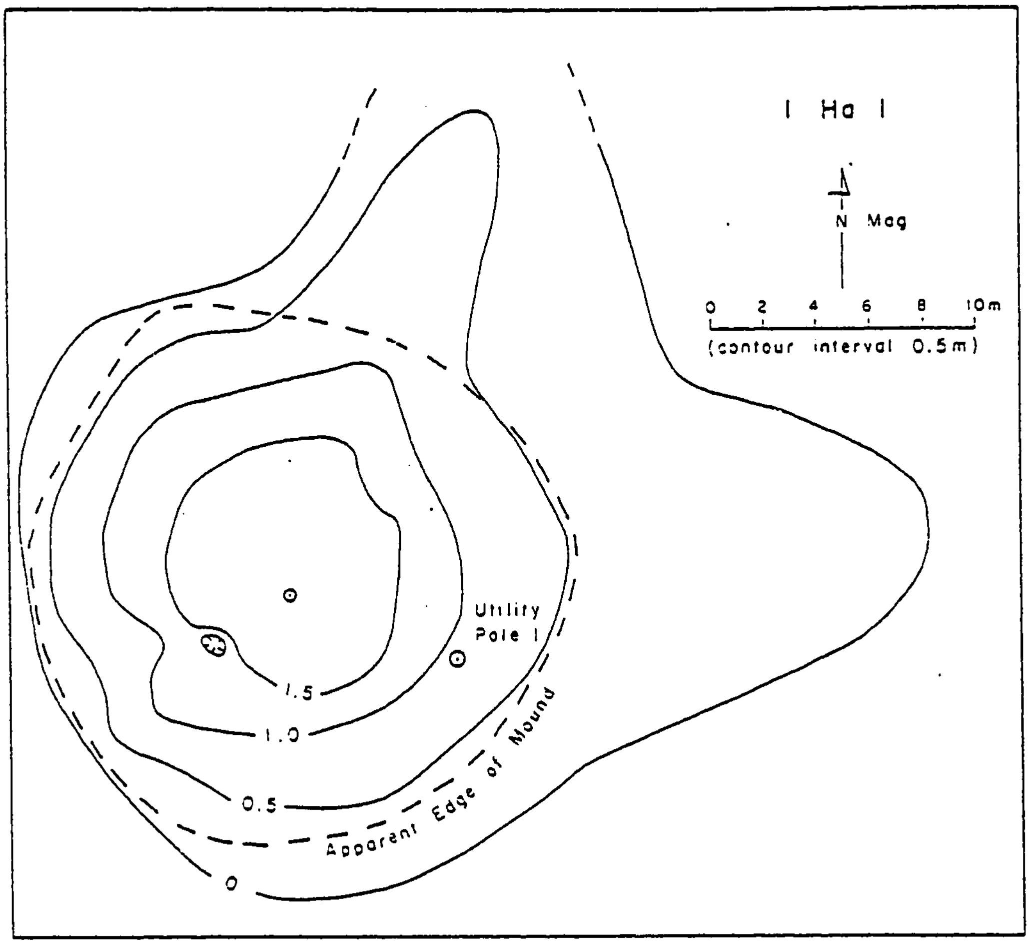


Figure 55. Site: 1 Ha 1 - Contour map of the mound.

Chapter 3

UMMA Survey Sites South of Moundville

1 Ha 9/10

This mound and village pair (not shown in Figure 1) was first reported in 1933 by Jones, who recorded the location of the mound as on a terrace above Elliotts Creek in the northwest quarter of Section 13, Township 23 North, Range 4 East. Jones's field notes describe the mound as conical, 20 feet is diameter and 6 feet high. A village area was located to the west of the mound on the boundary between sections 13 and 14. The village covering an area 100 to 200 feet by 200 to 400 feet was surface collected. No material was picked up from the mound (field notes, M.S.M.).

The UMMA survey was unable to relocate the mound or the village. An extensive check of the Alabama site files and interviews with local landowners indicated that the mound was located on the south bank of Elliotts Creek but was destroyed by plowing between 1933 amd 1935 (Welch, personal communication). The ceramic material collected from the village area in 1933 was found in storage at Moundville and consisted of 23 sherds of

Mississippi Plain, Var. Warrior; 12 sherds of Bell Plain, Var. Hale; two sherds of Baytown Plain, Var. West Jefferson; and a single sherd of Baldwin Plain, Var. Blubber.

In sum, there is no clear evidence to indicate that the mound was a Mississippian earthwork. There was a Mississippian setlement of undetermined size in the vicinity, but its association with the mound is undetermined. Indeed, both the conical shape of the mound and its distant position from the river suggest that it was another of the numerous Woodland mounds that dot the Warrior valley.

1 Ha 14/15

This mound and village pair are located along the edge of an oxbow lake 2.7 kilometers south-southwest of Moundville in the northeast quarter of Section 3, Township 23 North, Range 4 East.

During the 1932-33 survey of Warrior Valley sites, Jones recorded the mound as 5 feet high and conical, with a diameter of 78 feet. His field notes also contain the observation that "it looks like a burial mound" (field notes, M.S.M.).

When the UMMA survey visited the site, the mound measured roughly 40 by 26 meters at its base and 1 to 2 meters high (Figure 57). Accurate mound dimensions were difficult to determine because the earthwork is positioned on a rolling sand levee whose soil is nearly indistinguishable from the sandy fill of the mound. In addition, the mound is much plowed down on the southern half, and a county road has cut away a large portion of the northwestern slope.

A test excavation was begun just below the mound summit on the southern shoulder and a portion of the roadcut was cleaned and mapped. Vertical sections of the north wall of Unit 1 and of the roadcut are presented in Figures 58 and 59. Table 22 presents a summary of the artifacts recovered.

Unfortunately, recognizing construction episodes in the mound stratigraphy revealed in these two units proved to be a real problem. The mound fill contained numerous irregularly spaced horizontal bands of sesquioxide concretions which could be easily mistaken for humus developments. Even the soil below the mound was a levee-like deposit with multiple buried humic horizons. These factors made it difficult to distinguish the mound fill from the underlying soil and virtually impossible to confidently determine construction episodes within the mound.

Because of the stratigraphic problems just described, the breaks in deposition illustrated in the vertical section of the north wall of Unit 1 and in the vertical section of the roadcut must be viewed with some suspicion. Nonetheless, the upper surface of Stratum 3 in Unit 1 and the 145 cm point in the roadcut appear to be the base of the mound. It as also possible that a distinct change in soil color visible in the roadcut at 120 cm point may be the surface of an earlier mound summit. Beyond the tentative identification of the these two events, little else can be ventured about the construction history of the mound.

Despite the conical shape which led Jones to believe that the mound was a Woodland earthwork, the test excavation proved the mound to be Mississippian. A number of sherds of Mississipi Plain, Var. Warrior, were recovered, and while diagnostic sherds were few, two sherds of Moundville Engraved Vars. Havana and Tuscaloosa, were recovered from the mound fill. Variety Havana runs the full range of the Moundville phase, but Variety Tuscaloosa dates to the late Moundville II-Moundville III time period. This not very substantial evidence suggests that at least some part of the mound was constructed no earlier than late Moundville II.

The village area to the southwest of the mound was gridded into 36 twenty by twenty meter collection units (1.4 hectares) and a controlled collection accomplished. A summary of the artifacts recovered is presented in Table 23. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, Lithic Debris, and Daub are presented in Figures 60-63. Sizable West Jefferson and Moundville phase components are present on the site. Shell-tempered sherds were recovered from 32 of the 36 collection units, indicating that the Mississippian community was slightly larger than one hectare in extent.

Unfortunately, only a few diagnostic sherds were recovered from the village area. However, the presence of a sherd of Carthage Incised, Var. Carthage, suggests that the village was occupied during the Moundville III period.

Additional ceramic material from the site was found in storage at Moundville. In 1970 the Warrior river flooded the site and washed out a numbers of burials from the village area. The University of Alabama conducted a brief salvage operation and the materials recovered were stored at Mound State Monument (Nielsen et al. 1973:88). This collection contained several sherds of the type Carthage Incised, Vars. Akron, Moon Lake and Carthage, together with such such late vessel features as beaded rims and short neck bowls (Welch, personal communication). This evidence indicates that Ha 15 was occupied during late the Moundvile II/ Moundville III period.

Figure 56. Aerial view of 1 Ha 14/15.

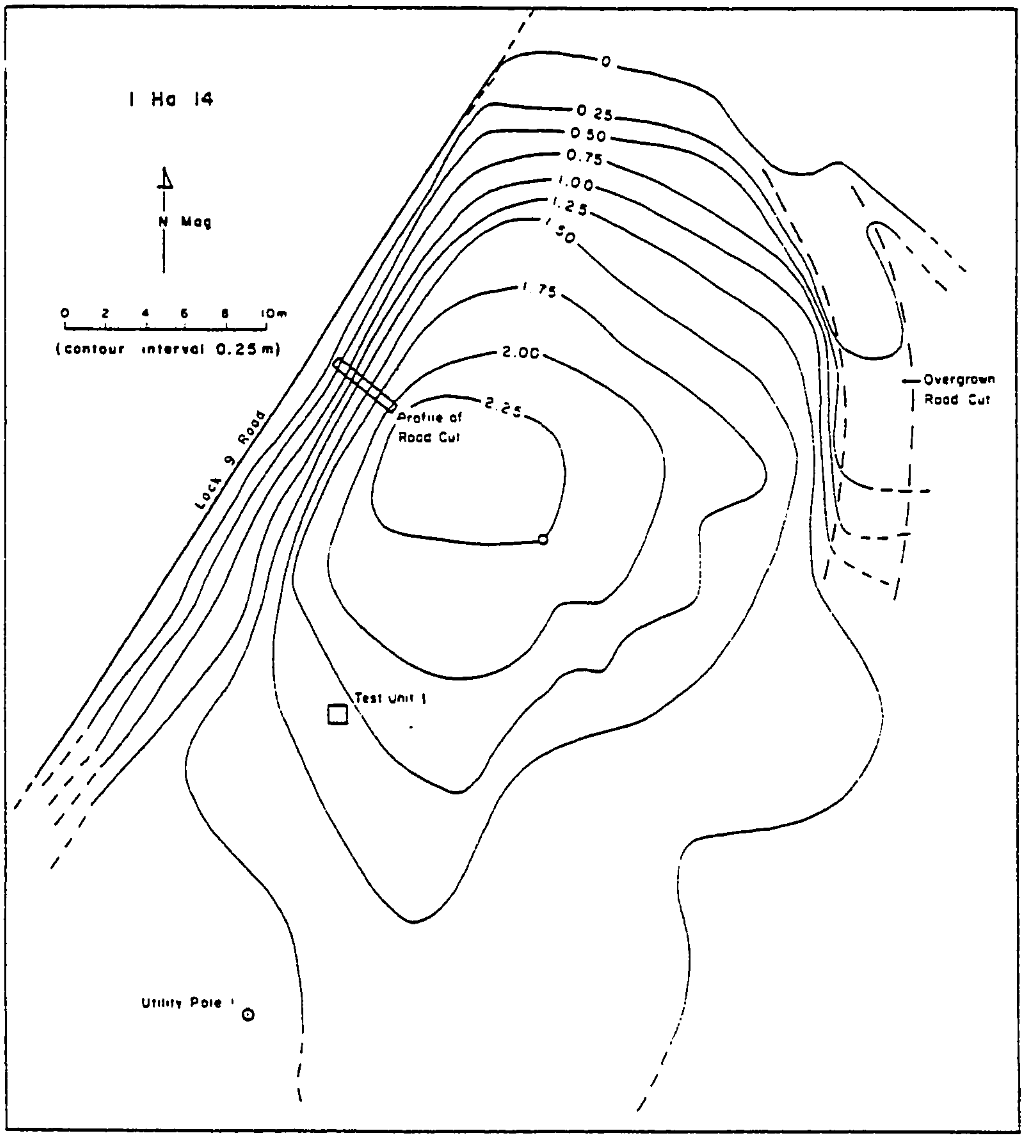


Figure 57. Site: 1 Ha 14 - Contour map of the mound.

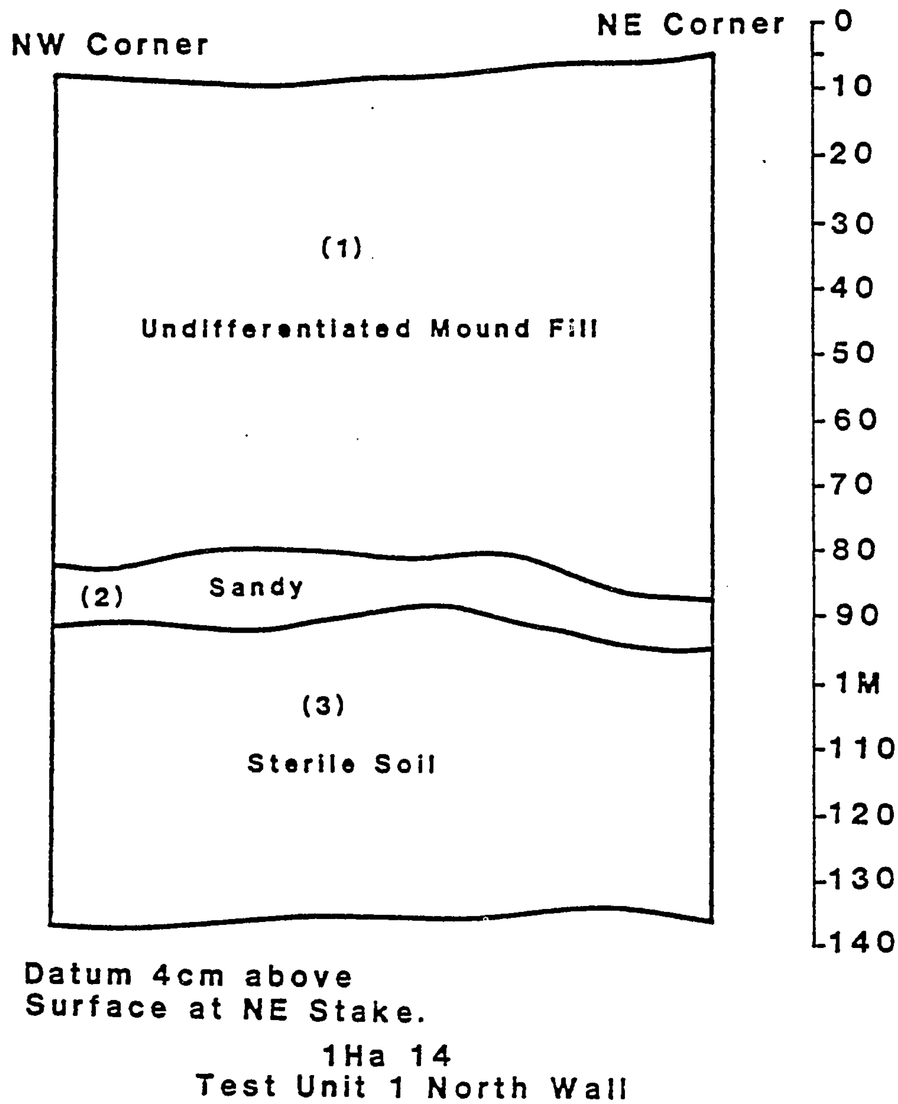

NW Corner
NE Corner
0
10
20
30
40
50
60
70
80
90
1M
110
120
130
140
(1)
Undifferentiated Mound Fill
(2)
Sandy
(3)
Sterile Soil
Datum 4cm above
Surface at NE Stake.
1Ha 14
Test Unit 1 North Wall

Figure 58.

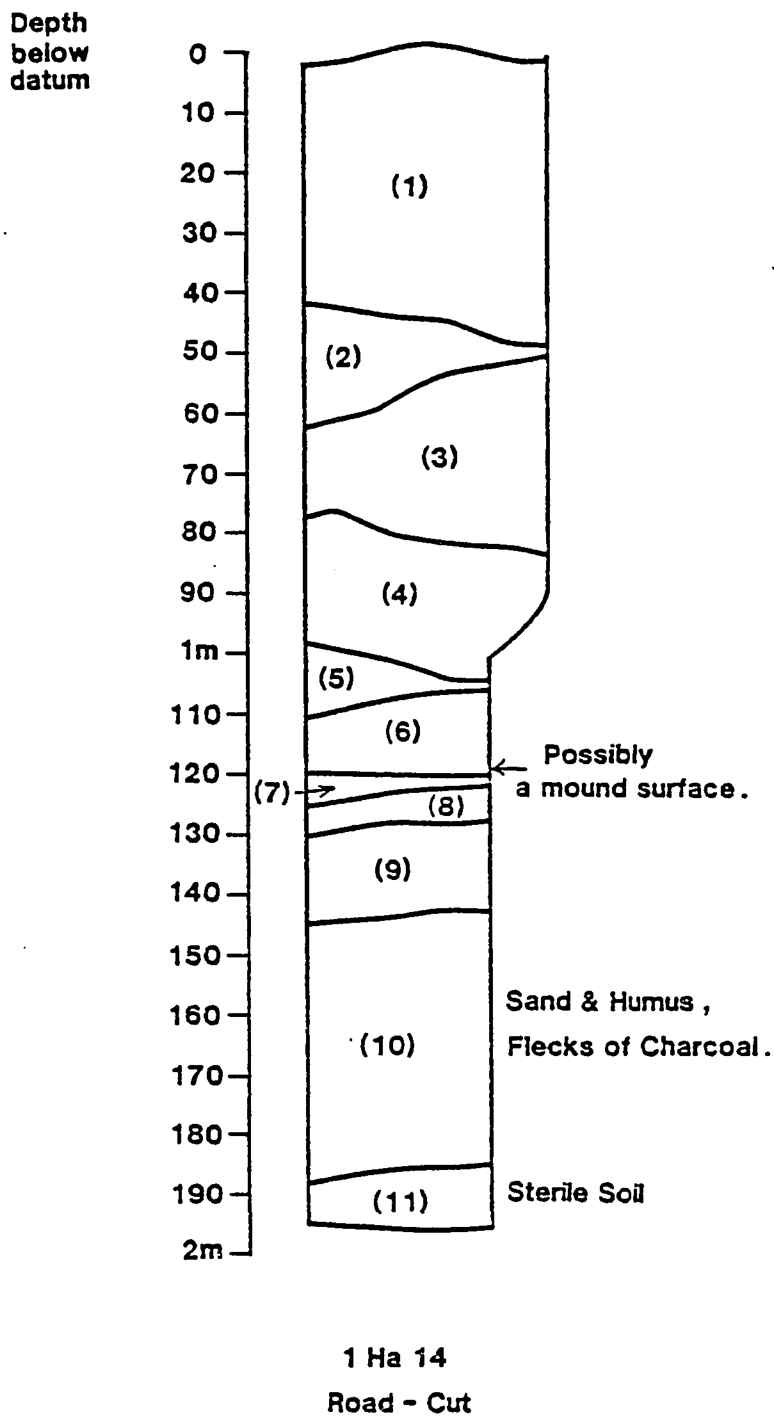


Figure 59. Site: 1 Ha 14 - Vertical section of roadcut excavation.

TABLE 22
Site: 1 Ha 14 FSM: 1-7 (mound)
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	8	92	566.0
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	15	218	729.4
MOUNDVILLE ENGRAVED			
Havana	—	1	3.2
Tuscaloosa	—	1	2.3
BELL PLAIN			
Hale	—	10	53.5
BARTON INCISED			
Unspecified	—	1	2.3
SHELL TEMPERED UNCLASSIFIED			
Incised	—	2	8.4
Subtotal	15	233	799.1
Total Ceramics	23	325	1365.1

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	40	77.2
(Treated)	37	70.1
(Untreated)	3	7.1
Unmodified Rock	60	1809.8

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Daub	30	82.4

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	10	24.4
Metal	16	90.3

TABLE 23
Site: 1 Ha 15 FSM: 1-39
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	60	2807	10702.9
MULBERRY CREEK CORD MARKED			
Tishomingo	—	2	11.4
Aliceville	4	16	135.6
WITHERS FABRIC MARKED			
Gainesville	1	8	40.8
River Bend	—	2	16.5
GAINESVILLE SIMPLE STAMPED			
Hickory	—	2	10.7
GROG TEMPERED UNCLASSIFIED			
Incised	—	1	2.0
Other	—	2	16.0
Subtotal	65	2840	10935.9
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	17	439	909.0
CARTHAGE INCISED			
Unspecified	—	2	5.5
Carthage	—	1	4.7
MOUNDVILLE ENGRAVED			
Unspecified	—	3	6.5
BELL PLAIN			
Hale	4	4	20.0
SHELL TEMPERED UNCLASSIFIED			
Incised	—	1	1.7
Unspecified	—	2	7.6
Subtotal	21	452	955.0
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	19	87.0
Subtotal	—	19	87.0
Total Ceramics	86	3311	11977.9

TABLE 23 Continued

MODIFIED LITHICS		
COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	2
Hamilton	—	2
Bradley Spike	2	—
New Market	1	—
Little Bear Creek	—	1
Gary	2	—
McIntire	1	1
P-11	—	2
Distal End Undetermined Type	—	6
BIFACIAL TOOLS		
Scraper	1	1
Knife	—	1
Chisel	1	5
Adze	—	4
Other Biface	—	1
Scraper Preform	1	—
UNIFACIAL TOOLS		
Scraper	1	—
Total	11	26

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Abrader	1	11.1

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	822	2149.3
(Treated)	664	1672.3
(Untreated)	158	477.0
Petrified Wood	2	15.0
Unmodified Rock	104	2444.6

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Bone	7	20.4
Daub	119	1630.4

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	193	1069.9
Metal	1	26.0

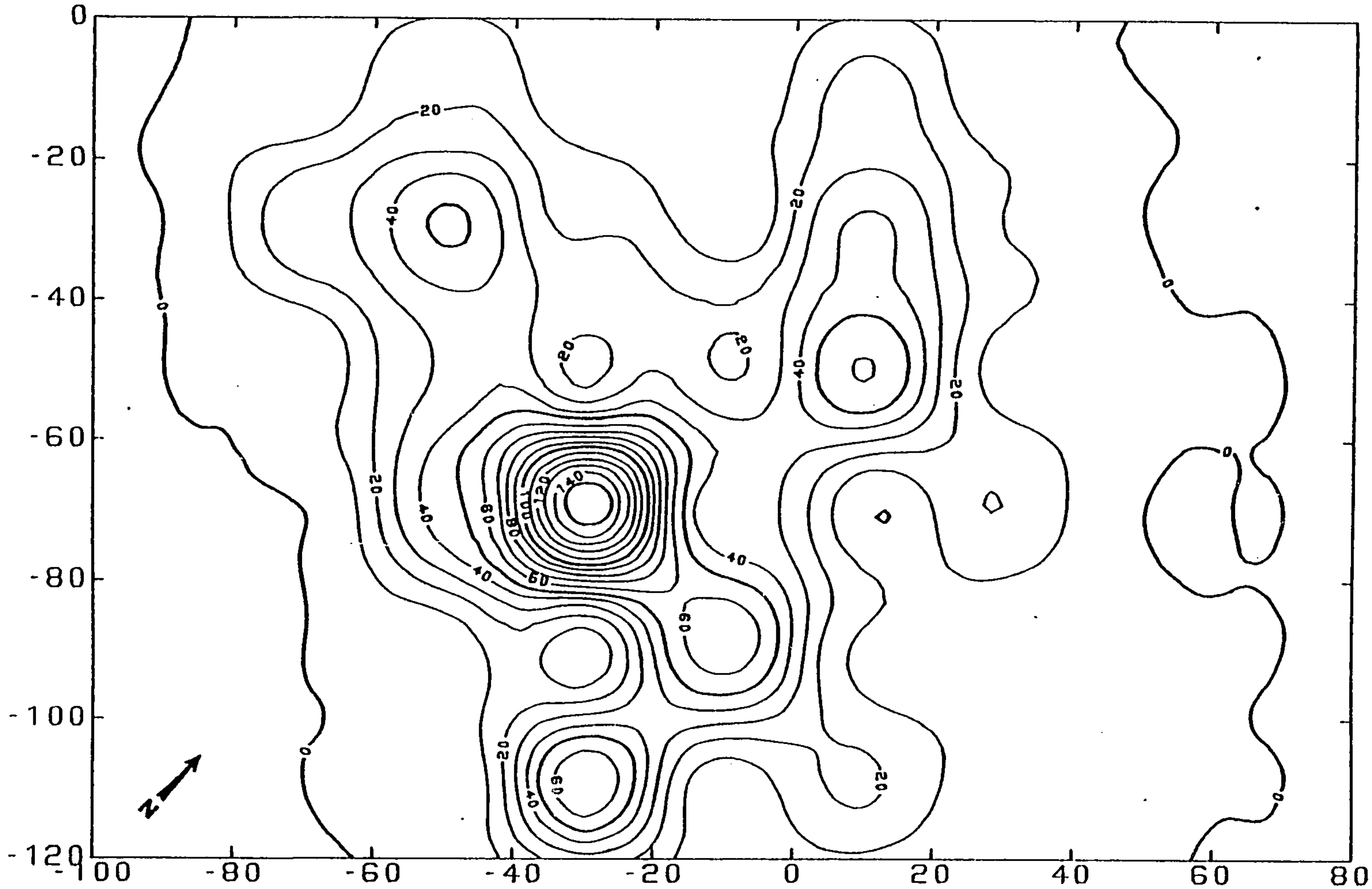


FIGURE 60. Site: 1 Ha 15 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

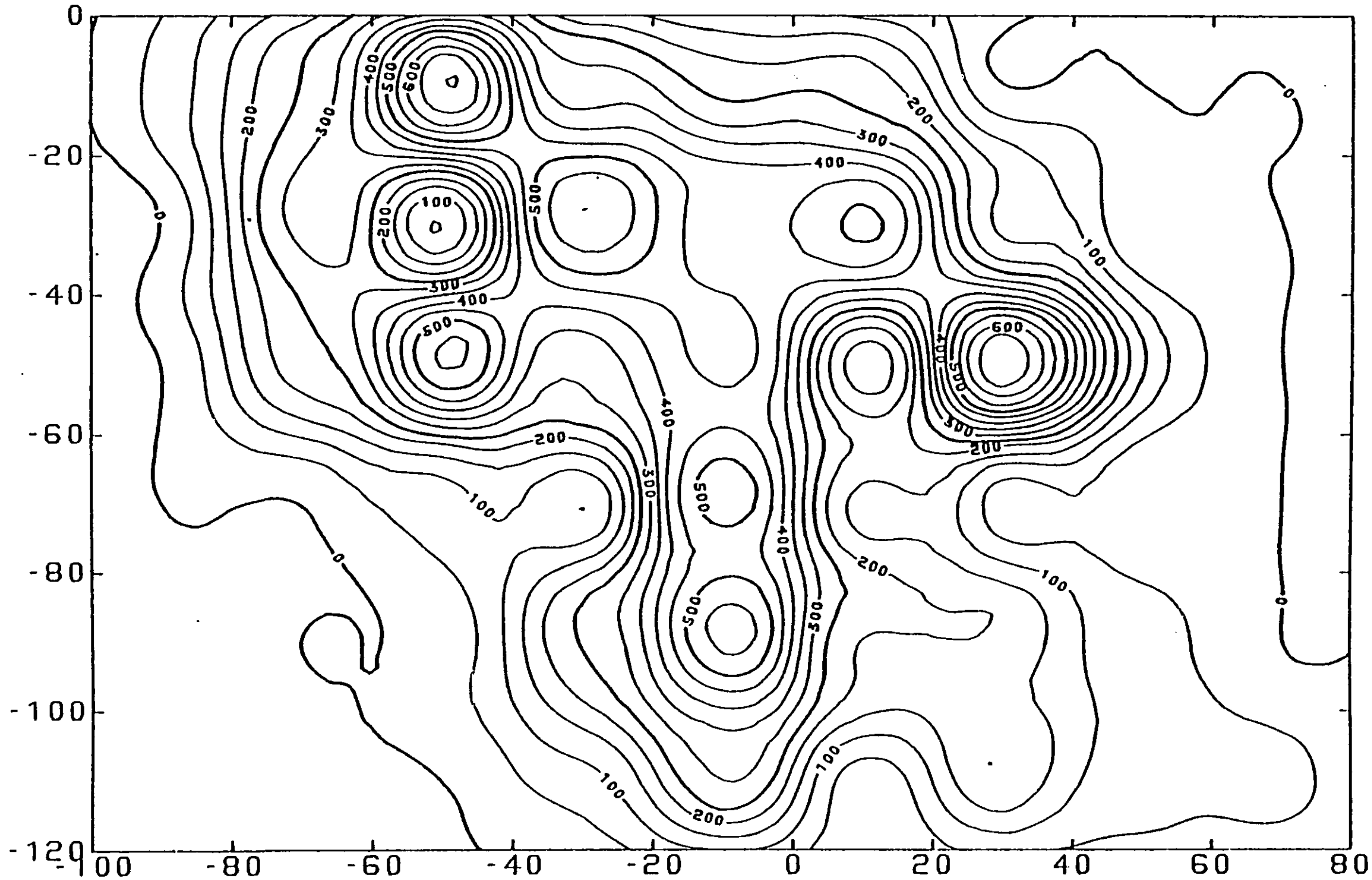


FIGURE 61. Site: 1 Ha 15 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 50 grams. Distance between tick marks = 20 meters.

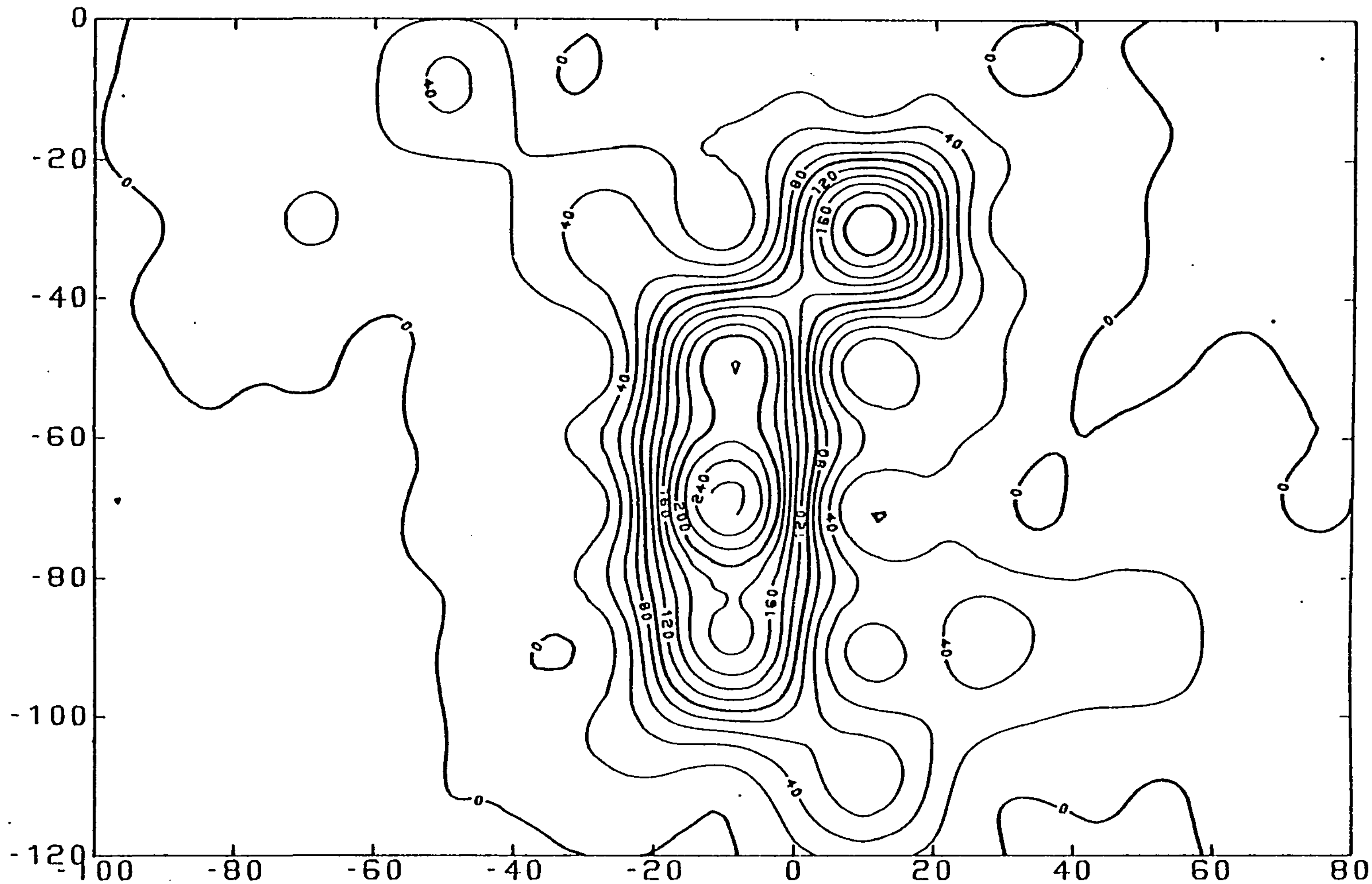


FIGURE 62. Site: 1 Ha 15 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 20 grams. Distance between tick marks = 20 meters.

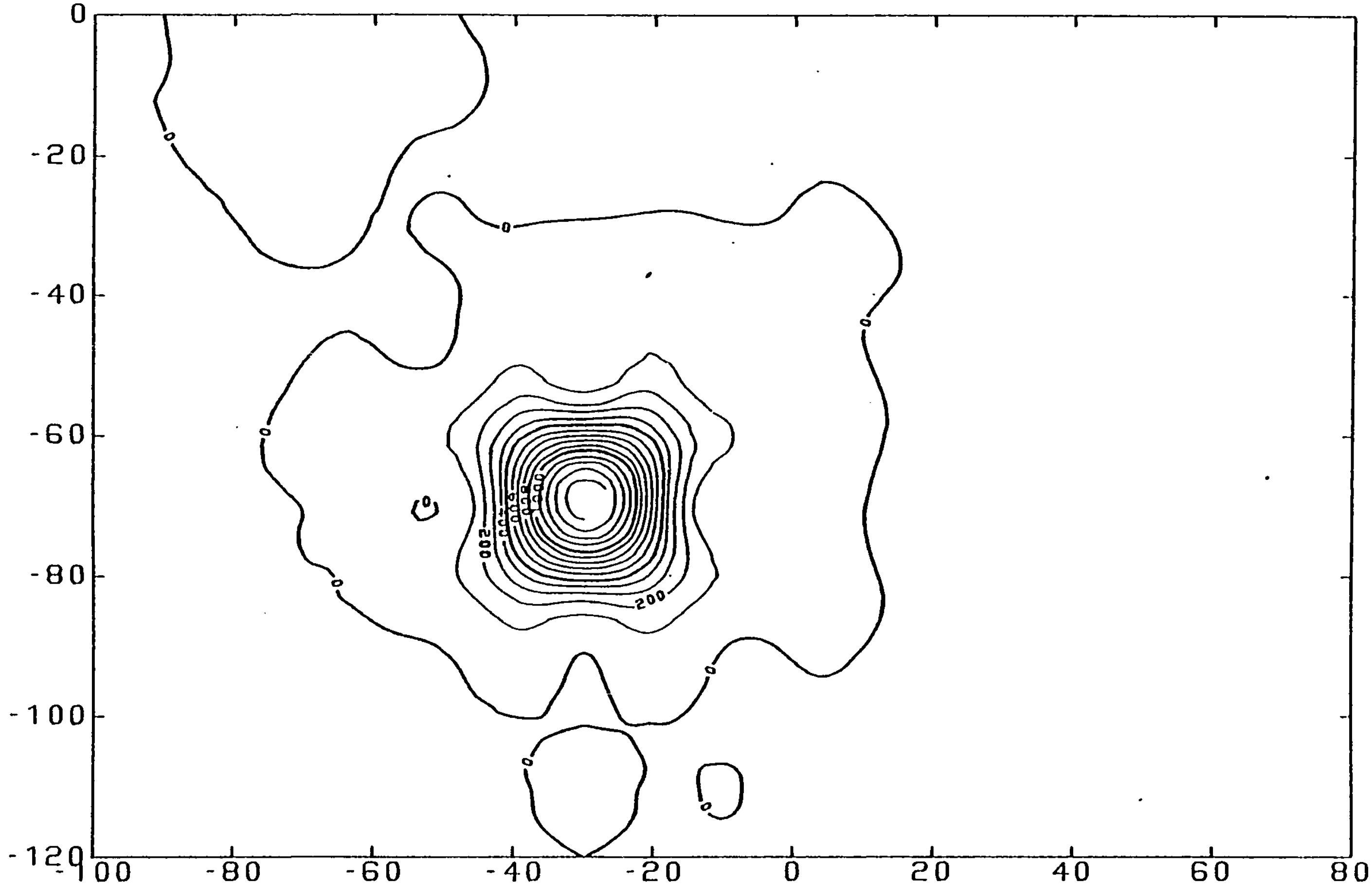


FIGURE 63. Site: 1 Ha 15 - Distribution of DAUB by weight in grams.
Contour Interval = 100 grams. Distance between tick marks = 20 meters.

1 Tu 387 - 393

First reported to the University of Alabama in 1975 (Curren 1981), this series of related sites lies along an old river channel in the western half of Section 27, Township 24 North, Range 4 East. Included are two mounds and several small surface scatters in the surrounding fields.

Tu 387 (Figure 64) is the larger of the two mounds and at the time of the UMMA survey was overgrown with mature trees and more rounded in shape than pyramidal. The mound measures 2.5 meters high, 45 by 40 meters at its base, and 20 by 11 meters at its summit, with its long axis oriented northwest to southeast. The second mound, Tu 388, is located 100 meters east of Tu 387 and is much smaller. It is a low rounded mound 0.5 meters high and approximately 10 meters in diameter.

Three test units were placed into the large mound. A summary of artifacts recovered from this mound is presented in Table 24. These excavations yielded only a few artifacts and revealed a stratigraphy which suggests a construction history quite different from the multi-stage construction typical of Mississippian platform mounds. Vertical sections from the north and west walls of Unit 1 are presented in Figure 65. With a single possible exception, no distinct breaks in mound deposition were discernible. This evidence indicates that the majority of the mound was probably constructed in a single episode. The single break in deposition was a distinct change in soil color and texture encountered in a small area near the center of the mound visible at about 150 centimeter below datum. This area, which is visible in the vertical sections of the north and west walls, appears to be the edge of a low primary mound constructed of clay. Unfortunately, this feature could not be throughly investigated because of the danger of collapsing excavation walls.

A small clay primary mound covered by a sterile sand fill is typical of Middle Woodland burial mounds. Nevertheless, the excavations in the large mound, Tu 387, recovered small numbers of shell-tempered sherds from all of the levels excavated, and grog-tempered sherds from five of the seven levels. This vertical distribution of shell-tempered sherds would seem to rule out the possibility that the mound is a Middle Woodland structure. Historic artifacts were recovered from the upper levels (0-40 cm) of Unit 3.

Excavation into the smaller mound, Tu 388, produced equally perplexing results. The test unit revealed no evidence of multiple building episodes. A single sherd of Mississippi Plain, Var. Warrior, was recovered from the upper 20 cm of the excavation. This level also produced historic artifacts.

In sum, the Tu 387 and Tu 388 mounds are a puzzle. They appear to date no earlier than the Moundville phase. An alternative possibility is that these earthworks are the result of historic farming activity. There are several small artifact scatters in the immediate vicinity and the few artifacts recovered from the mounds could well be surface material scooped up during construction. This would also explain why these mounds were unreported by both Moore and Jones.

1 Tu 389 - 393

These sites are a series of small surface scatters discovered in the fields near Tu 387 and Tu 388, most less than ten meters in diameter. These small sites all produced shell-tempered ceramics and each appears to be the remains of Moundville-phase farmsteads. Table 26 presents an artifact summary from Tu 389, which covered approximately 160 square meters and was the largest of these sites. Table 27 is a summary of the artifacts recovered from sites Tu 390-393.

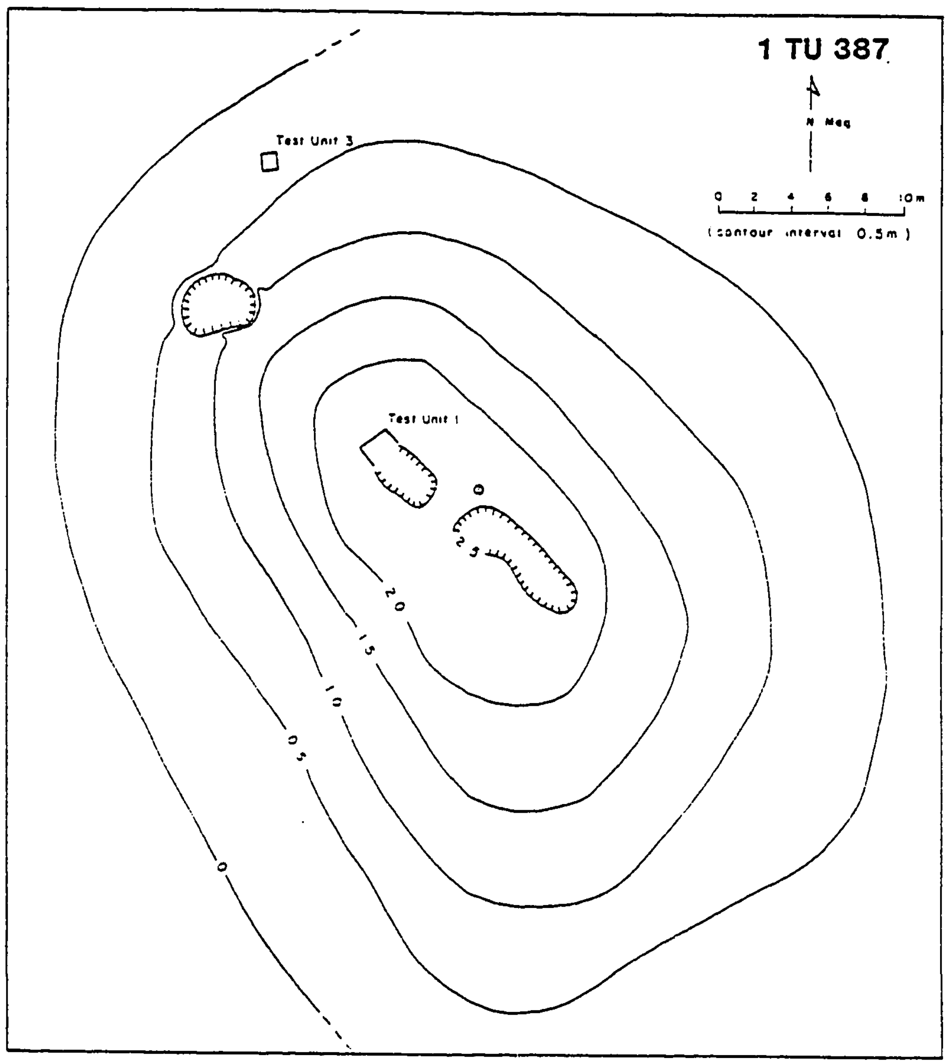


Figure 64. Site: 1 Tu 387 - Contour map of the mound.

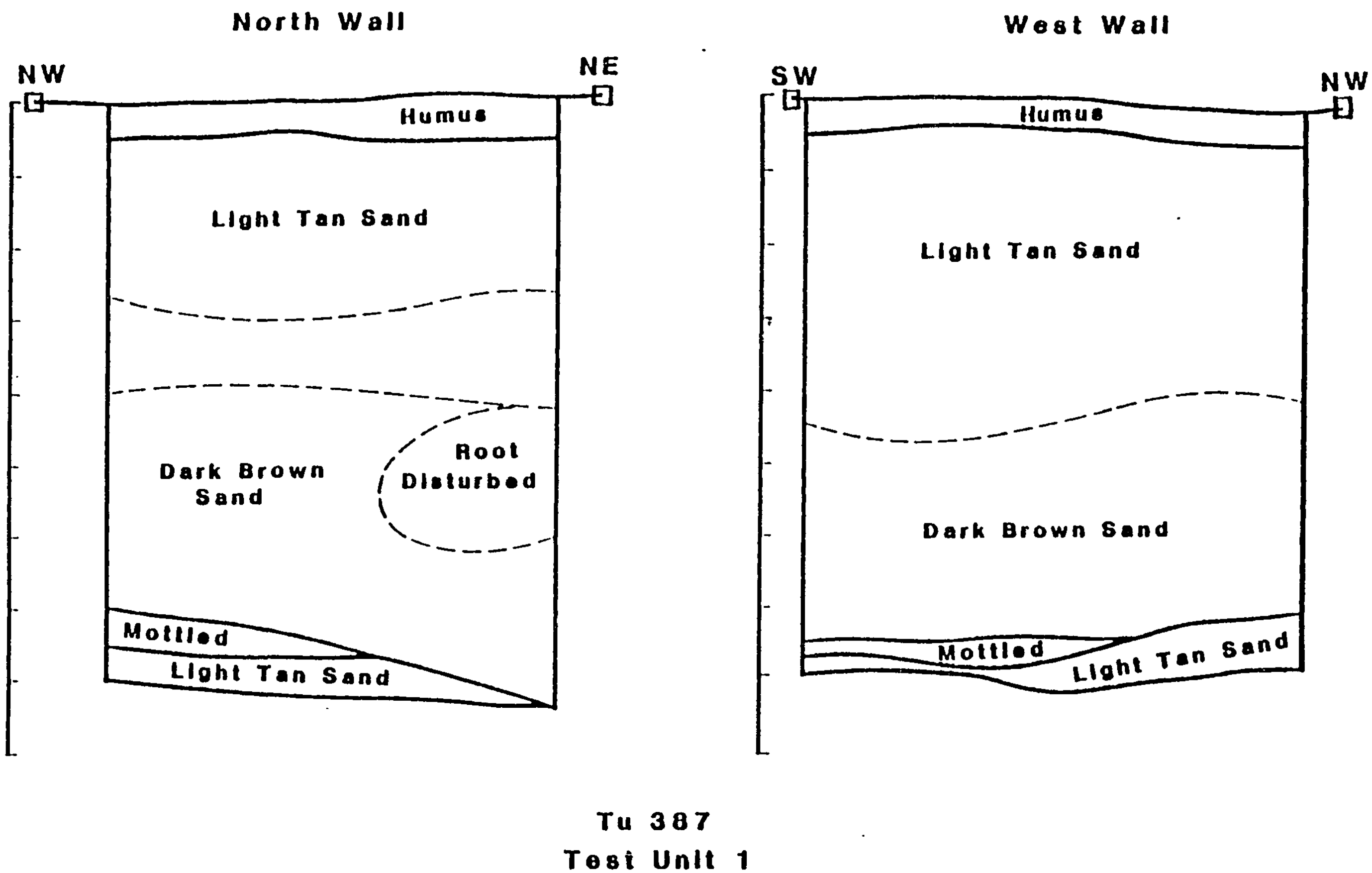


Figure 65. Site: 1 Tu 387 - North and West walls of Unit 1.

TABLE 24
Site: 1 Tu 387 FSM: 1-12
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	1	26	247.2
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	—	62	167.4
Hull Lake	1	—	6.8
Subtotal	1	62	174.2
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	1	3	29.8
MCLEOD SIMPLE STAMPED			
Eutaw	—	1	12.0
Subtotal	1	4	41.8
LIMESTONE/FIBER TEMPERED			
MULBERRY CREEK PLAIN			
Dead River	4	2	18.5
Total Ceramics	7	94	481.7

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Gary	—	1

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	98.7
Pitted Stone	1	839.0

TABLE 24 Continued

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	173	620.5
(Treated)	52	260.7
(Untreated)	121	359.8
Unmodified Rock	421	5393.8
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Shell	8	1.2
Bone	12	8.7
Daub	34	35.4
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	2	2.0
Metal	5	37.7

TABLE 25
Site: 1 Tu 388 FSM: 5-6
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior		1	4.7

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris		
(Treated)	3	0.9
Unmodified Rock	15	59.4

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	1	1.6
Metal	1	1.5

TABLE 26
Site: 1 Tu 389 FSM: 1-4
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	3	122	383.9
MULBERRY CREEK CORD MARKED			
Aliceville	1	1	6.5
WITHERS FABRIC MARKED			
Montgomery	—	1	13.0
GAINESVILLE SIMPLE STAMPED			
Hickory	—	1	34.0
Subtotal	4	125	437.4
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	11	53	126.8
BELL PLAIN			
Hale	2	—	7.7
SHELL TEMPERED UNCLASSIFIED			
Unspecified	1	—	16.0
Subtotal	14	53	150.5
Total Ceramics	18	178	587.9

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	1
Flint Creek	1	—
Little Bear Creek	—	1
Gary	3	—
Elora	1	—
Mississippian Triangular		
Unspecified Type	1	—
P-1	1	—
Distal End Undetermined Type	2	—
Base Undetermined Type	1	1

TABLE 26 Continued

BIFACIAL TOOLS		
Knife	—	1
Total	10	4
PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Celt	1	23.6
UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	78	411.5
(Treated)	66	353.4
(Untreated)	12	58.1
Petrified Wood	2	359.5
Unmodified Rock	78	1335.8
SHELL, BONE, DAUB	N	WEIGHT<GMS>
Bone	2	2.9
Daub	5	19.6

TABLE 27
Site: 1 Tu 390 - 393 FSM: 1
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	—	34	166.4
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	4	71	131.7
BELL PLAIN			
Hale	1	—	2.0
BARTON INCISED			
Cochrane	—	2	6.3
Subtotal	5	73	140.0
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	3	15.0
LIMESTONE/FIBER TEMPERED			
MULBERRY CREEK PLAIN			
Dead River	1	—	3.4
Total Ceramics	6	110	324.8

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Hamilton	—	1
Mud Creek	1	—
Elora	—	1
P-11	—	1
Mid Section Undetermined Type	1	—
Base Undetermined Type	—	1
Total	2	4

TABLE 27 Continued

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Pitted Stone	1	548.4
UNMODIFIED LITHICS AND INTRODUCED ROCK	**N**	**WEIGHT<GMS>**
Lithic Debris	19	122.6
(Treated)	8	95.9
(Untreated)	11	26.7
Unmodified Rock	13	2039.7
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Shell	1	1.0
Daub	6	15.8
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	5	22.1
Metal	1	2.4

1 HA 107A-L

These several neighboring sites are located on high floodplain deposits on the south bank of the Warrior River. Here the UMMA survey team recorded twelve individual surface scatters (Ha 107A-L) in a large field near the northern boundary of Section 4, Township 23 North, Range 4 East, (the boundary between Tuscaloosa and Hale counties runs through the center of the field).

C. B. Moore reported a mound at this position and described the earthwork as "so much ploughed over that a mere rise in the ground remained" (1905:127). Despite its eroded state Moore dug into the mound, but found no burials. Seventeen years later in July of 1933, Dr. Jones was able to relocate the mound, and his survey form also notes that the earthwork was largely obliterated by cultivation. Jones came away from the site with a small collection of sherds (which could not be found in storage). He recorded the mound as Tu 41, but neither he or Moore mention mound dimensions.

The UMMA survey team was unable to find the mound. The northern edge of field is now actively eroding into the Warrior River, and the mound has been completely destroyed by cultivation or has fallen into the river.

The UMMA survey team collected on each of the 12 small sites in the area. With the exception of Ha 107A which covered more than a .6 hectare area, these sites measured no larger than 10 to 30 meters in diameter. T

Ha 107A was large enough to be gridded, and a controlled surface collection was conducted. Table 28 presents a summary of the artifacts recovered. Figures 67-69 present Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, and Lithic Debris. The artifacts recovered reflect small West Jefferson and Moundville Phase settlements. The presence of the shell-tempered types Moundville Engraved, Var. Taylorville; Carthage Incised, Var. Unspecified; and Moundville Incised, Var. Moundville, suggests that the Moundville Phase occupation may have begun as early as early Moundville II and continued through late Moundville III times. A later date for the Moundville Phase settlement is suggested by the presence of two shell-tempered beaded rims, a secondary shape feature diagnostic of the Moundville III period. A Moundville III date for the Mississippian settlement is also supported by the presence of Moundville Engraved, Var. Taylorville, which though first introduced in early

Moundville II times, attains its maximum popularity in the early Moundville III period.

Table 29 presents a summary of the artifacts recovered from the other 11 small surface scatters. Most of the ceramic material collected from these small sites was shell tempered. Little diagnostic material was recovered, but the presence of a shell-tempered beaded rim suggests that these Mississippian farmsteads may also date to the Moundville III period.

Although the mound at Ha 107 has been destroyed, its general position with respect to the Warrior River and the volume of Mississippian artifacts recovered from the vicinity suggest that the mound at Ha 107 was probably a Moundville III minor ceremonial center.

Figure 66. Aerial view of 1 Ha 107A-L.

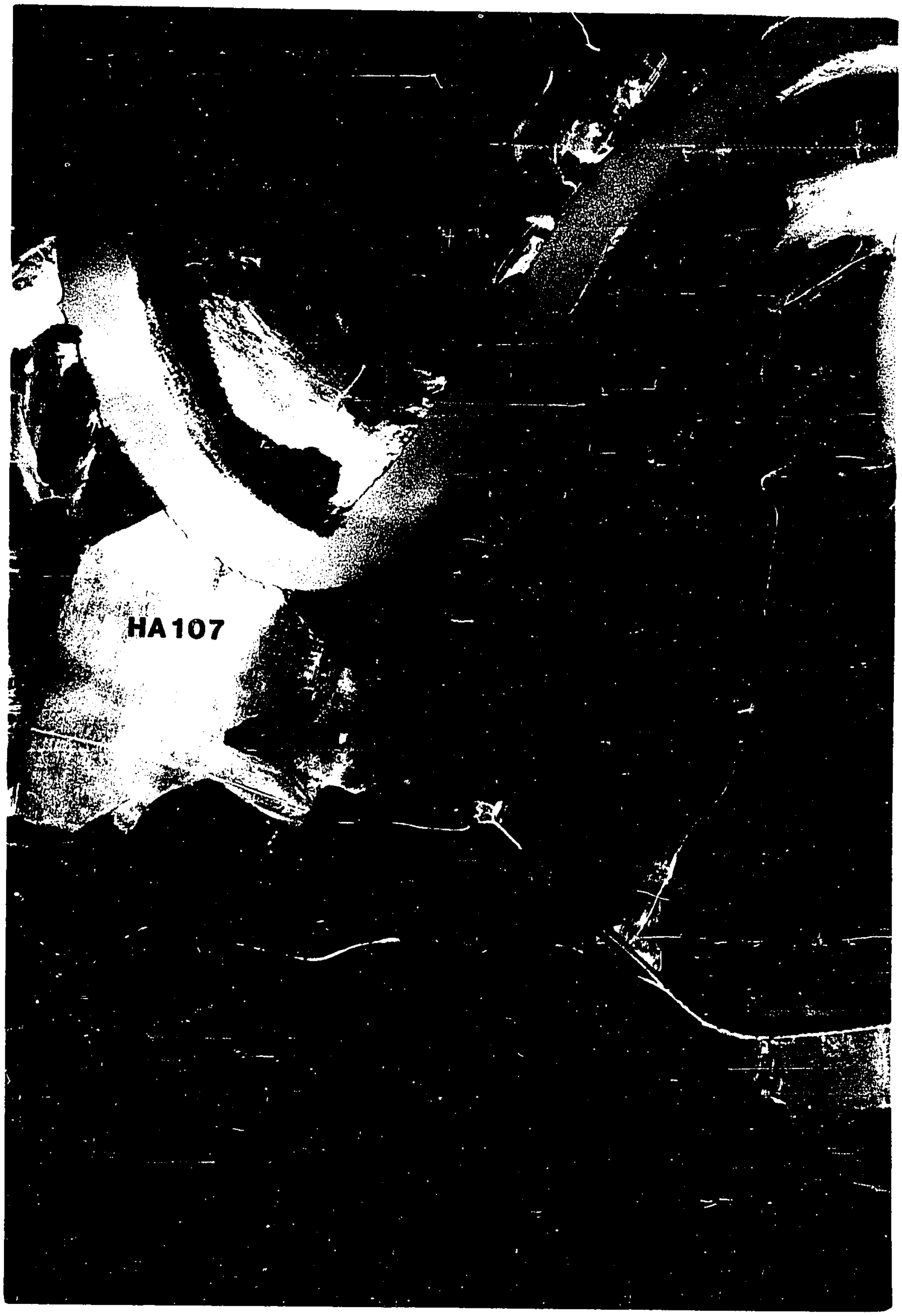

HA 107

TABLE 28
Site: 1 Ha 107A FSM: 2-9
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	6	161	780.6
MULBERRY CREEK CORD MARKED			
Aliceville	—	1	11.0
GAINESVILLE SIMPLE STAMPED			
Hickory	—	1	4.0
SALOMON BRUSHED			
Fairfield	1	—	28.0
GROG TEMPERED UNCLASSIFIED			
Incised	—	1	5.0
Subtotal	7	164	828.6
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	5	325	831.2
CARTHAGE INCISED			
Unspecified	—	1	4.0
MOUNDVILLE ENGRAVED			
Unspecified	—	1	7.5
Taylorville	—	1	2.2
BELL PLAIN			
Hale	6	3	47.0
MOUNDVILLE INCISED			
Moundville	—	1	3.0
Subtotal	11	332	894.9
Total Ceramics	18	496	1723.5

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	3
Hamilton	—	1
Elora	1	—
Kirk	1	—
P-11	—	2

TABLE 28 Continued

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
Distal End Undetermined Type	—	3
Mid Section Undetermined Type	—	2
Base Undetermined Type	—	1
BIFACIAL TOOLS		
Scraper	—	3
Drill	—	1
Chisel	1	1
Total	4	17

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	164.5
Stone Hoe	2	258.5
Stone Discoidal	5	248.1
Celt	5	120.4

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	314	2735.4
(Treated)	229	1969.7
(Untreated)	85	765.7
Petrified Wood	9	211.3
Unmodified Rock	242	6173.0

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	1	3.4
Bone	4	133.7
Daub	26	101.1

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	6	134.3
Metal	2	136.8

SELECTED SECONDARY VESSEL FEATURES	N
BEADED RIM	
Shell-Tempered	2

TABLE 29
Site: 1 Ha 107B-L FSM: 1
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	—	35	87.0
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	4	154	218.1
BELL PLAIN			
Hale	2	1	16.1
Subtotal	6	155	234.2
Total Ceramics	6	190	321.2

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	1
P-1	1	—
Distal End Undetermined Type	—	3
Other Biface	1	1
Total	3	5

PECKED, GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	590.0

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	16	68.0
(Treated)	13	47.8
(Untreated)	3	20.2
Unmodified Rock	26	890.5

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	1	0.3
Daub	24	21.3

TABLE 29 Continued

SELECTED SECONDARY VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	1

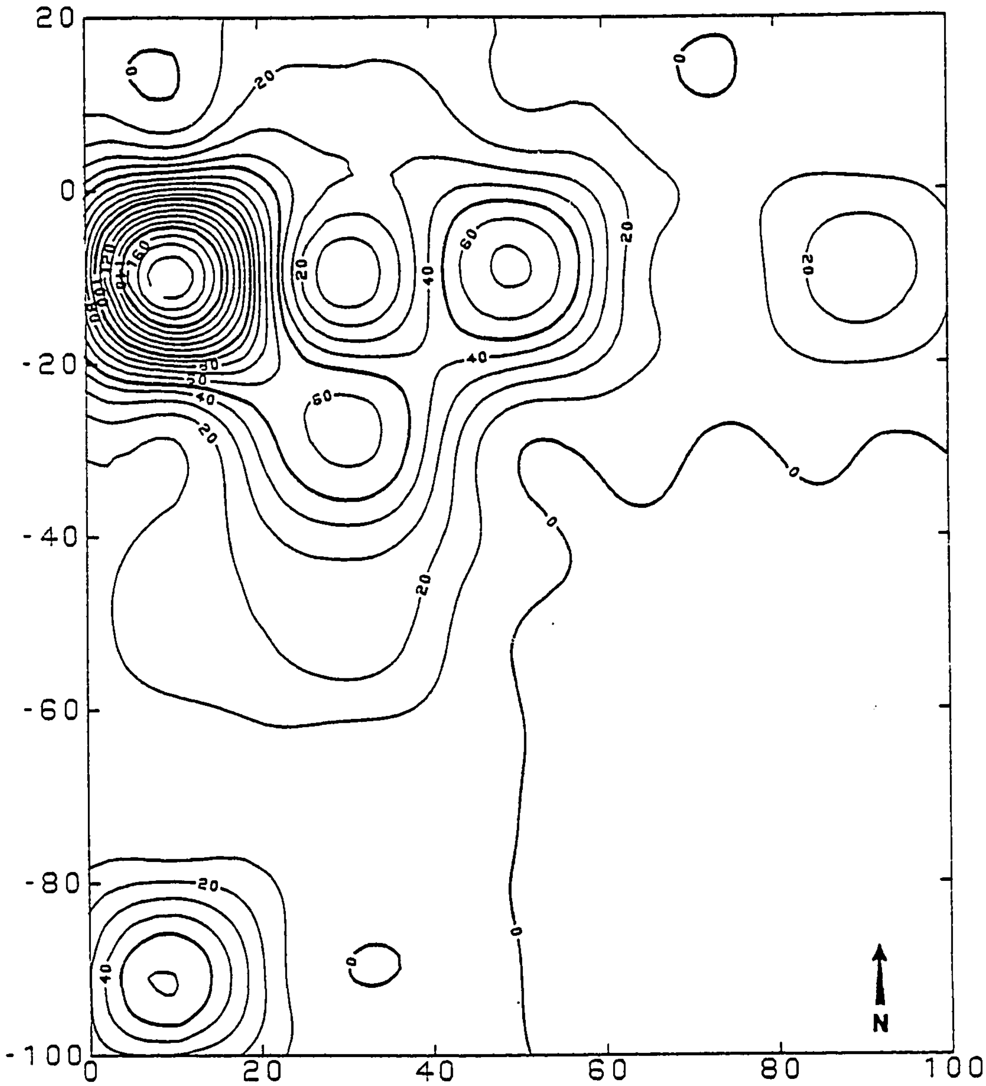


FIGURE 67. Site: 1 Ha 107A - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

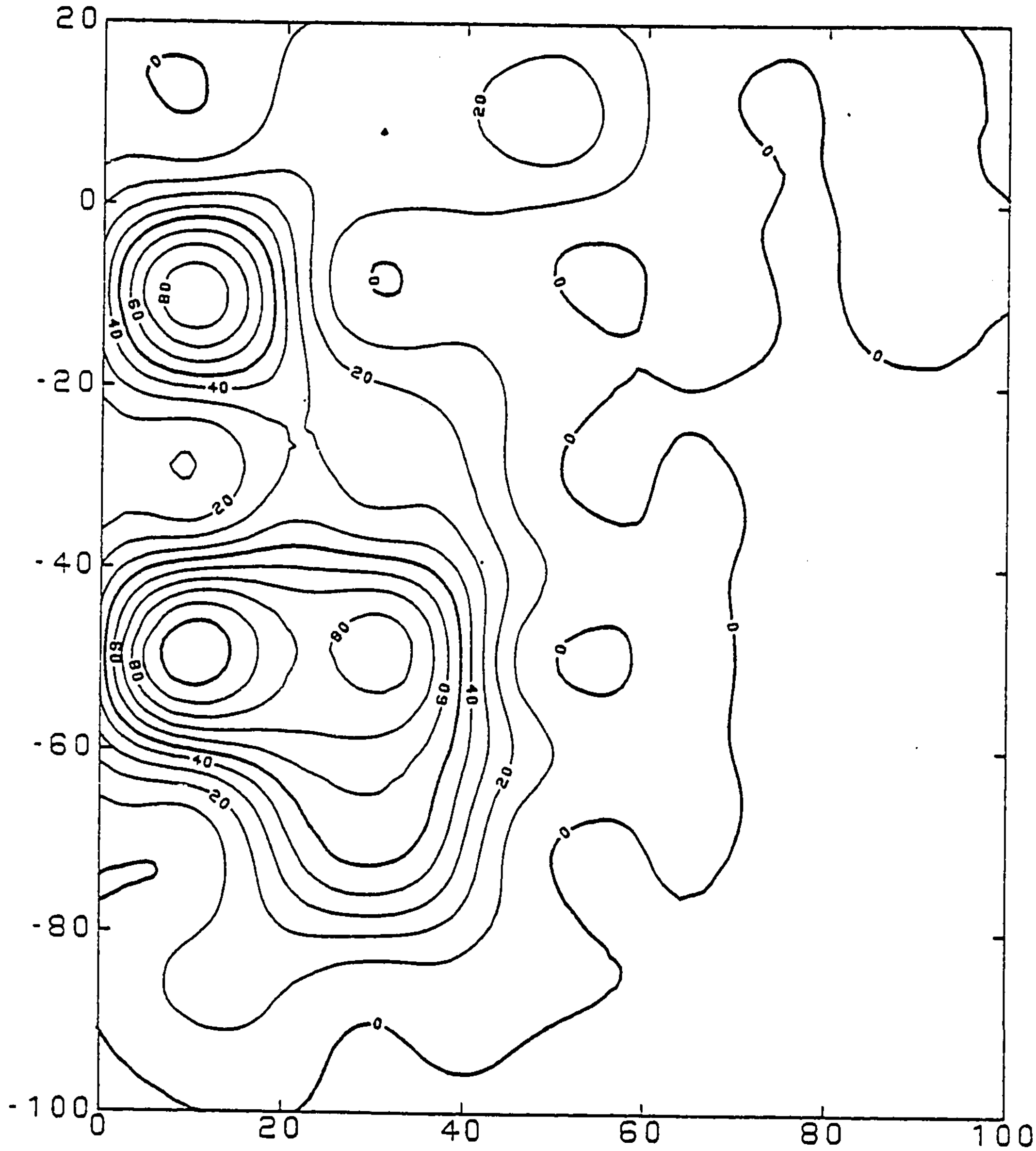


FIGURE 68. Site: 1 Ha 107A - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

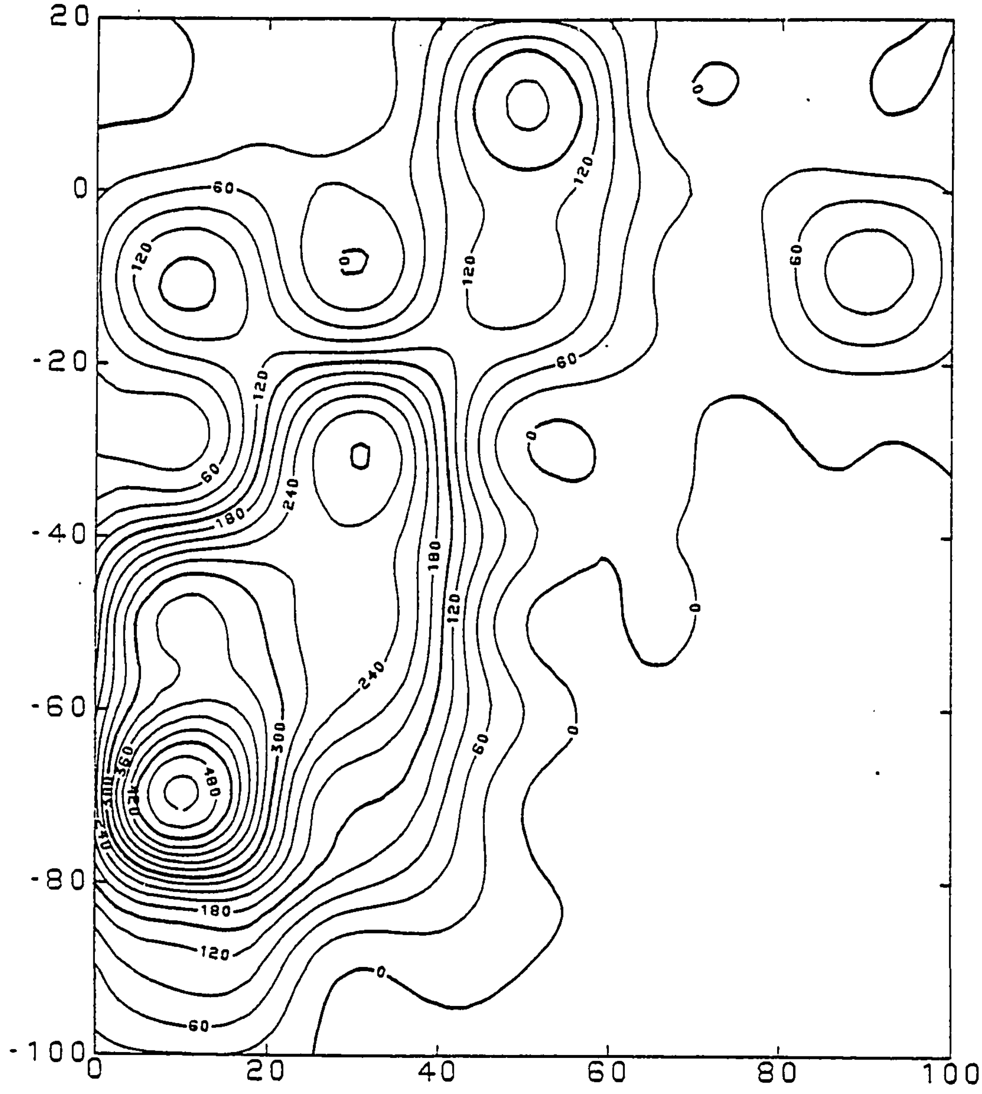


FIGURE 69. Site: 1 Ha 107A - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 30 grams. Distance between tick marks = 20 meters.

1 Ha 91

This is a previously unreported multicomponent site located near the center of Section 18, Township 23 North, Range 4 East. The site was gridded into 31 twenty by twenty meter collection units and a controlled surface collection accomplished. A summary of the artifacts recovered is presented in Table 30. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, and Lithic Debris are presented in Figures 70-72.

The primary component on the site was Mississippian with shell-tempered sherds recovered from 20 collection units (.8 hectares). The Moundville-phase ceramics were concentrated primarily in the southeastern portion of the site with another smaller area of artifact concentration in the northwestern corner. These concentrations may well be the remains of two groups of structures.

Among the few diagnostic sherds recovered were several sherds of Carthage Incised and Moundville Engraved, with one of the latter sherds large enough to be identified as Variety Maxwells Crossing. This variety reached its maximun popularity in the late

Moundville II - early Moundville III period. A Moundville II/III date for the Moundville phase occupation of the site is also indicated by the presence of a shell-tempered sherd decorated with a beaded rim. A single sherd of Alabama River Incised suggests that the occupation of the site may extended into the Alabama River phase.

A small West Jefferson component was also present on the site. In addition several late Archaic projectile points were recovered.

TABLE 30
Site: 1 Ha 91 FSM: 1-32
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	1	37	133.7
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	3	208	492.7
CARTHAGE INCISED			
Unspecified	—	2	6.0
MOUNDVILLE ENGRAVED			
Unspecified	—	2	6.5
Maxwells Crossing	—	1	4.5
BELL PLAIN			
Hale	2	—	9.1
ALABAMA RIVER INCISED			
Unspecified	—	1	5.3
SHELL TEMPERED UNCLASSIFIED			
Unspecified	—	1	7.0
Subtotal	5	215	531.1
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	1	2.3
Total Ceramics	6	253	667.1

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	1
Mud Creek	1	—
Little Bear Creek	—	1
Gary	2	3
Elora	—	1
P-7	1	—
Distal End Undetermined Type	1	1
Mid Section Undetermined Type	1	1
Base Undetermined Type	2	1

TABLE 30 Continued

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
BIFACIAL TOOLS		
Scraper	1	1
Knife	2	1
Drill	1	—
Scraper Preform	1	—
Total	13	11

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Stone Discoidal	2	33.7
Celt	1	7.5

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	479	2631.3
(Treated)	346	1795.7
(Untreated)	133	835.6
Petrified Wood	2	7.1
Unmodified Rock	217	3405.6

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	35	71.1
Bone	1	6.5
Daub	20	21.5

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	2	20.9

SELECTED SECONDARY VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	1

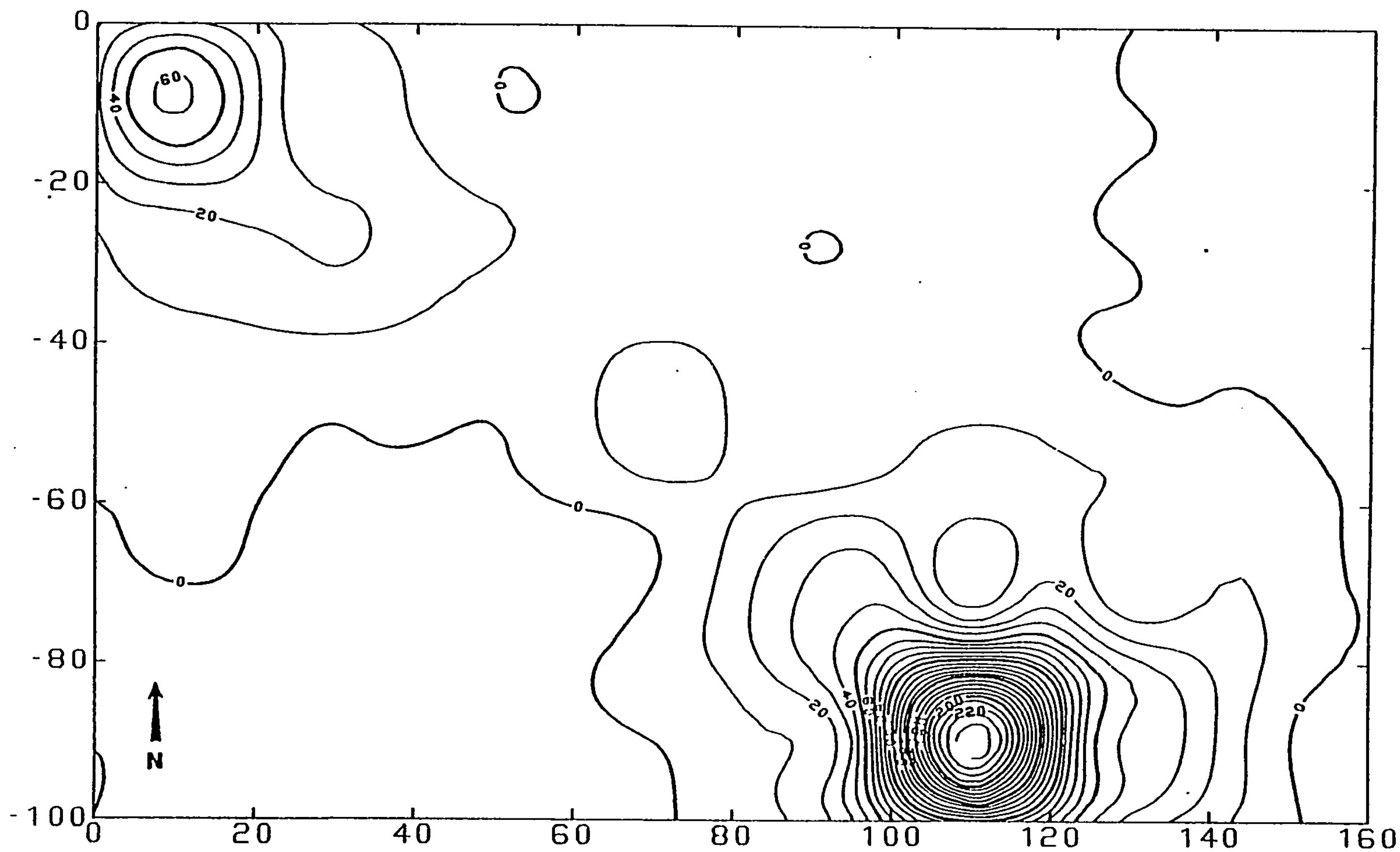


FIGURE 70. Site: 1 Ha 91 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

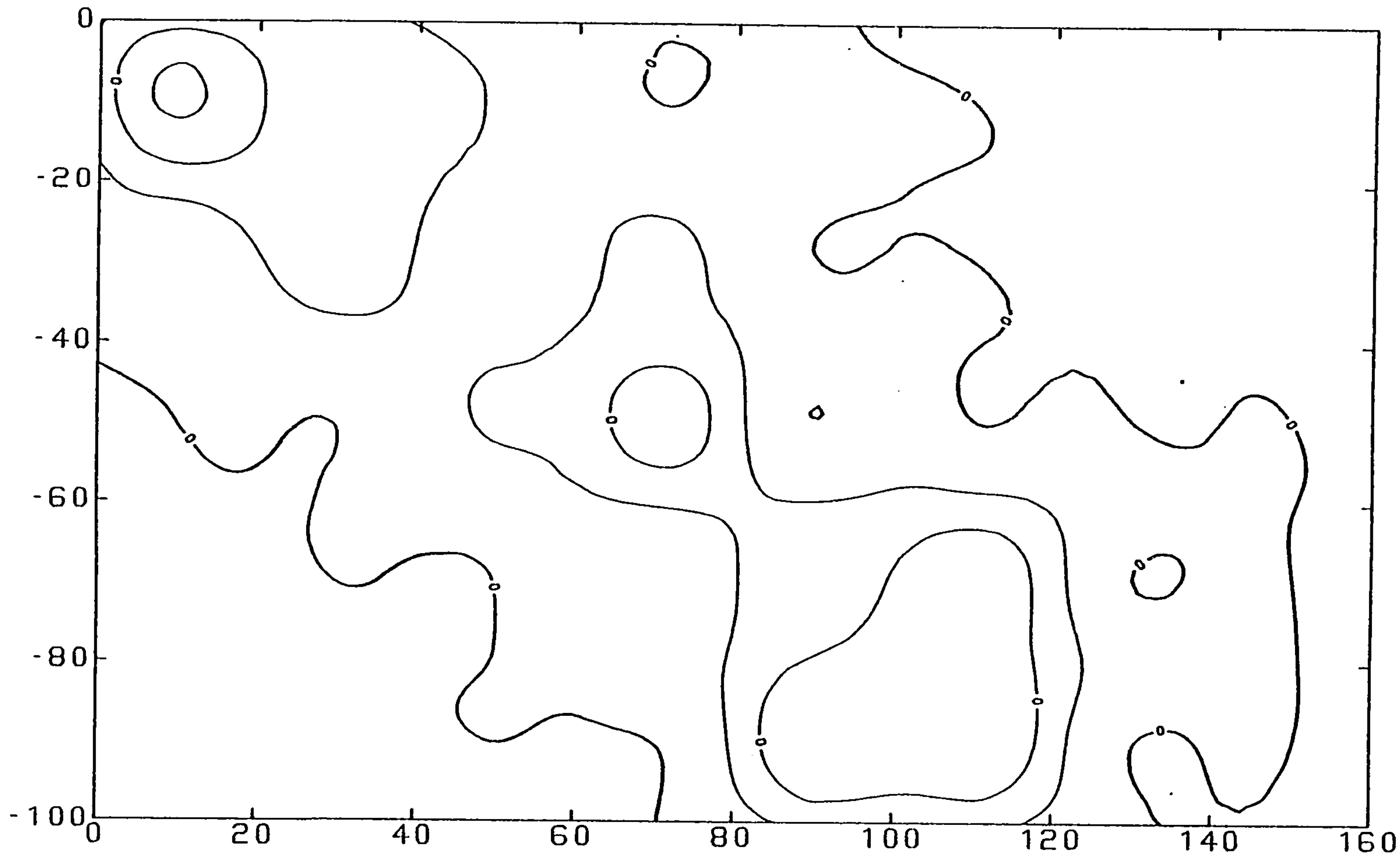


FIGURE 71. Site: 1 Ha 91 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 5 grams. Distance between tick marks = 20 meters.

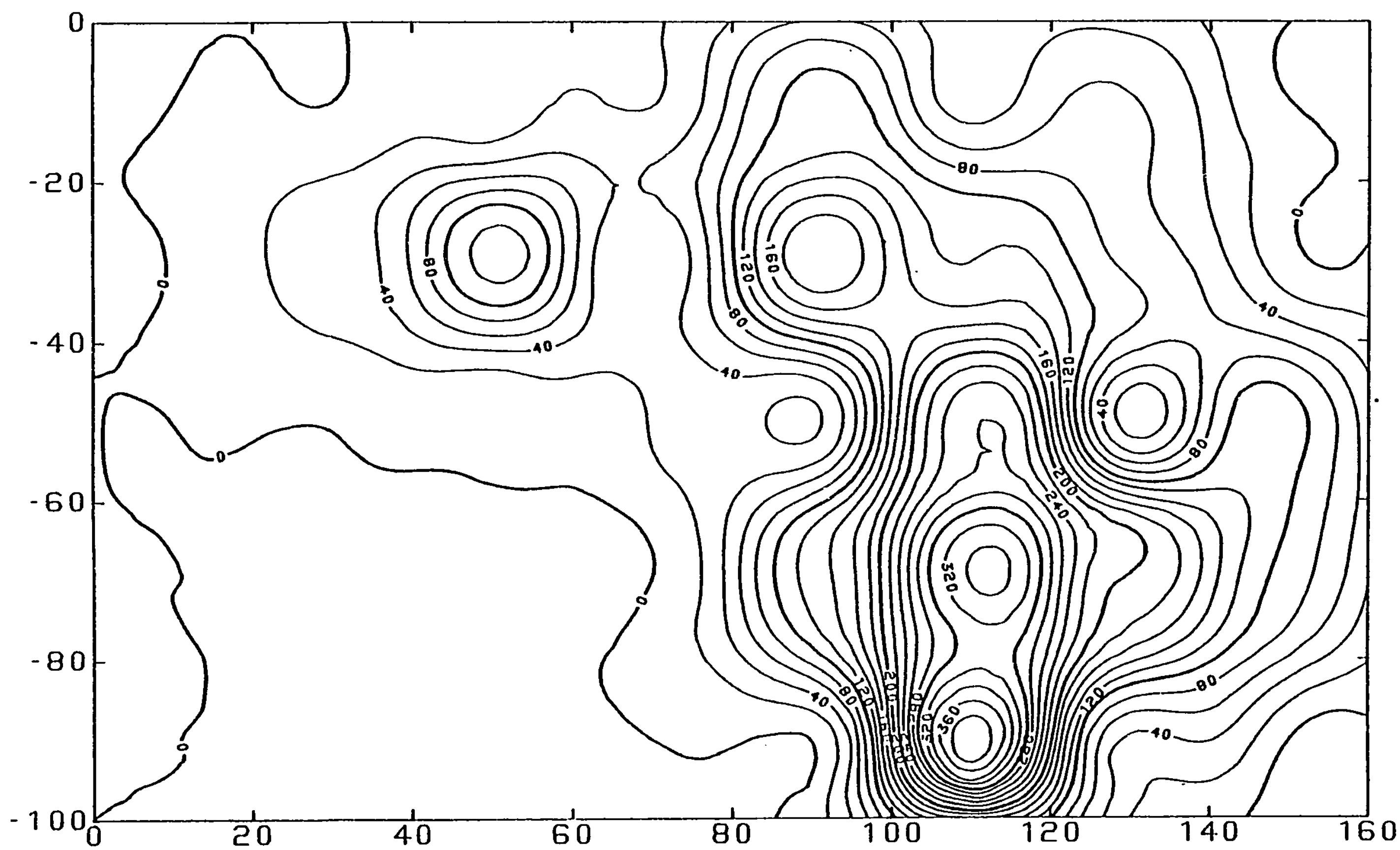


FIGURE 72. Site: 1 Ha 91 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 20 grams. Distance between tick marks = 20 meters.

1 Ha 92

This previously unrecorded 1.8 hectare site is located 9.2 kilometers south-southwest of Moundville on the left bank of Millians Creek near the center of Section 19, Township 23 North, Range 4 East. The site was gridded into 43 twenty by twenty meter units and a controlled collection accomplished. A summary of the artifacts recovered is presented in Table 31.

The site has a lengthy history of occupation, yielding evidence of sizable Archaic, Middle Woodland, and Moundville phase components. Surface II contour maps of the distribution of Shell-Tempered Ceramics, Grog-Tempered Ceramics, Sand-Tempered Ceramics, Lithic Debris, and Daub are presented in Figure X -X.

The Moundville phase component is concentrated in the northwestern portion of the site with a light scattering of surface material extending to the south. Shell-tempered ceramics were recovered from 30 units, covering an area of 1.2 hectares.

The Middle Woodland component, as evidenced by the distribution of sand-tempered ceramics, was also restricted to this area. The largest component on the site is West Jefferson, with material covering most of the surface area of the site but with the highest concentrations of grog-tempered ceramics located in the northwest and southeast quadrants. The distribution of lithic debris roughly follows the spread of grog-tempered ceramics.

The Moundville phase component appears to have reached its maximum size during the Moundville III period. The ceramics recovered include such late types as Moundville Engraved, Var. Maxwells Crossing; Alabama River Applique, Var. Alabama River; and Carthage Incised. Also several beaded rims were recovered.

TABLE 31
Site: 1 Ha 92 FSM: 1-46
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
ALLIGATOR INCISED			
Oxbow	—	2	19.5
Geiger	—	1	4.2
Unspecified	—	1	1.6
BAYTOWN PLAIN			
West Jefferson	71	7374	22184.2
MULBERRY CREEK CORD MARKED			
Aliceville	1	34	185.7
WITHERS FABRIC MARKED			
Gainesville	—	1	5.5
EVANSVILLE PUNCTATED			
Tishabee	2	—	9.5
SALOMON BRUSHED			
Fairfield	1	2	22.4
GROG TEMPERED UNCLASSIFIED			
Unspecified	—	2	4.3
Subtotal	75	7417	22436.9
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	6	372	549.6
CARTHAGE INCISED			
Unspecified	2	—	12.2
MOUNDVILLE ENGRAVED			
Unspecified	—	3	13.0
Maxwells Crossing	—	1	4.5
BELL PLAIN			
Hale	22	4	51.8
MOUNDVILLE INCISED			
Moundville	—	1	1.5
ALABAMA RIVER APPLIQUE			
Alabama River	1	—	7.8
SHELL TEMPERED UNCLASSIFIED			
Unspecified	—	1	1.5
Subtotal	31	382	641.3

TABLE 31 Continued

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	6	136	530.5
ALEXANDER INCISED			
Bodka Creek	—	1	7.7
Prairie Farms	—	1	6.9
ALEXANDER PINCHED			
Prairie Farms	1	—	3.5
SALTILLO FABRIC MARKED			
China Bluff	—	1	6.6
Tombigbee	1	—	6.8
FURRS CORD MARKED			
Pickens	—	1	2.2
SANTA ROSA PUNCTATED			
Unspecified	1	—	8.8
SAND TEMPERED UNCLASSIFIED			
Undetermined	1	2	20.5
Subtotal	10	142	593.5
LIMESTONE/FIBER TEMPERED			
MULBERRY CREEK PLAIN			
Dead River	1	—	1.0
WHEELER PLAIN			
Wheeler	—	2	18.0
Subtotal	1	2	24.2
Total Ceramics	117	7943	23690.7

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	1	43
Hamilton	—	15
Bradley Spike	2	—
New Market	2	2
Mud Creek	1	—
Flint Creek	3	1
Little Bear Creek	1	2
Swan Lake	—	1
Gary	5	—
Elora	2	5

TABLE 31 Continued

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
Kirk	1	—
Wade	1	—
P-1	3	—
P-7	1	1
P-11	3	6
Distal End Undetermined Type	8	27
Mid Section Undetermined Type	3	4
Base Undetermined Type	11	15
BIFACIAL TOOLS		
Scraper	8	7
Drill	2	5
Drill Bit	—	8
Chisel	2	32
Adze	—	1
Other Biface	6	23
UNIFACIAL TOOLS		
Scraper	1	2
Other Uniface	1	—
Total	68	198

PECKED. GROUND, AND POLISHED STONE	N	WEIGHT<GMS>
Hammerstone	1	1203.5
Pitted Stone	4	2469.0
Stone Hoe	3	435.1
Celt	1	72.6
Worked Sandstone	1	10.3

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	11834	26630.0
(Treated)	10130	20723.7
(Untreated)	1704	5906.3
Petrified Wood	36	442.2
Unmodified Rock	3336	35443.4

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	1	2.2
Bone	2	3.5
Daub	31	66.8

TABLE 31 Continued

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	26	242.9
Metal	9	371.3

SELECTED SECONDARY VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	4
SHELL TEMPERED HANDLES	
Late	1

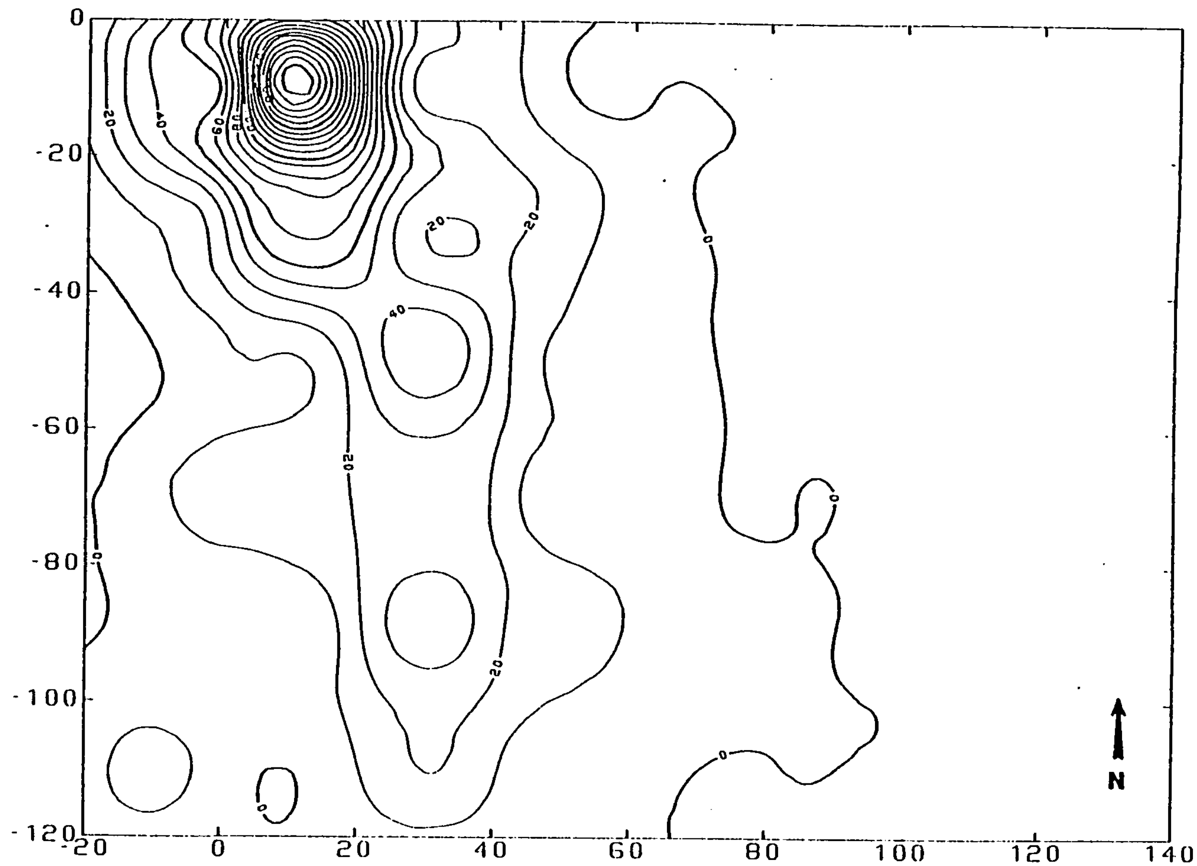


FIGURE 73. Site: 1 Ha 92 - Distribution of SHELL-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

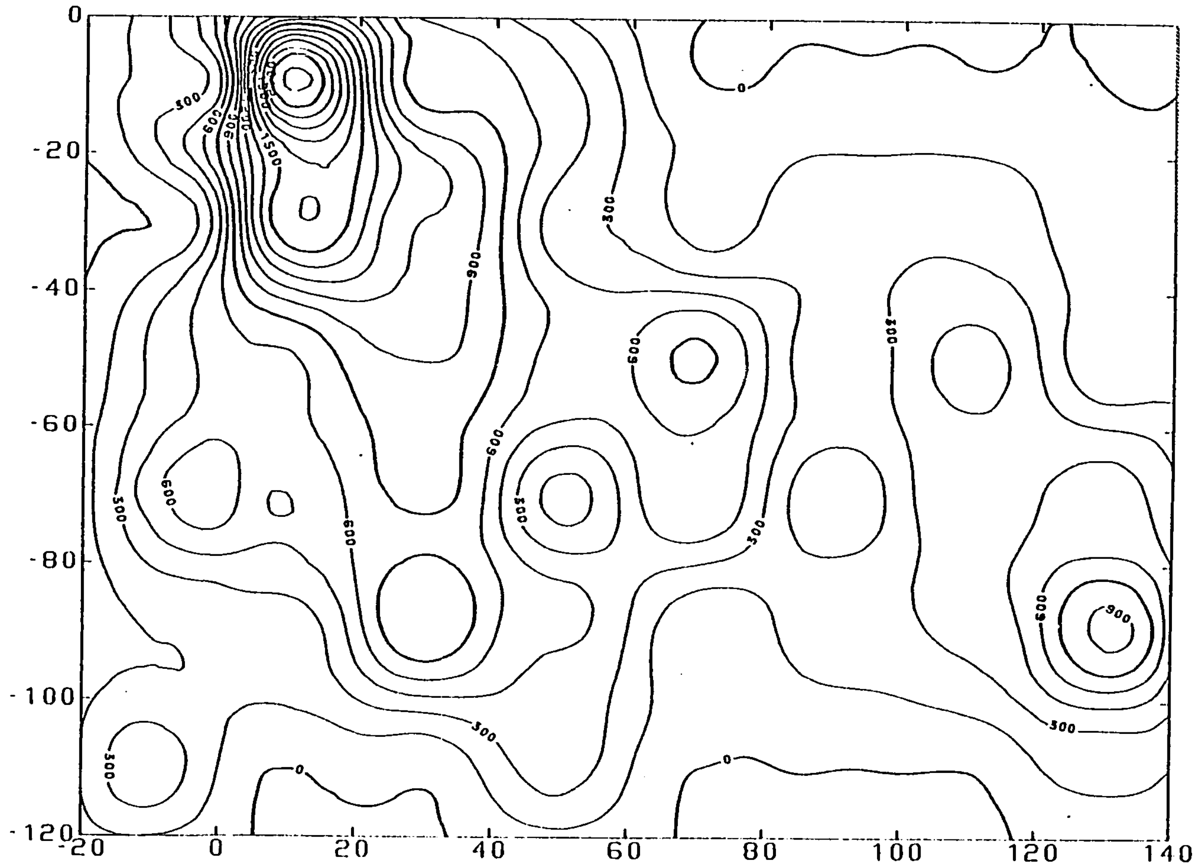


FIGURE **74**. Site: 1 Ha 92 - Distribution of GROG-TEMPERED CERAMICS by weight in grams. Contour Interval = 150 grams. Distance between tick marks = 20 meters.

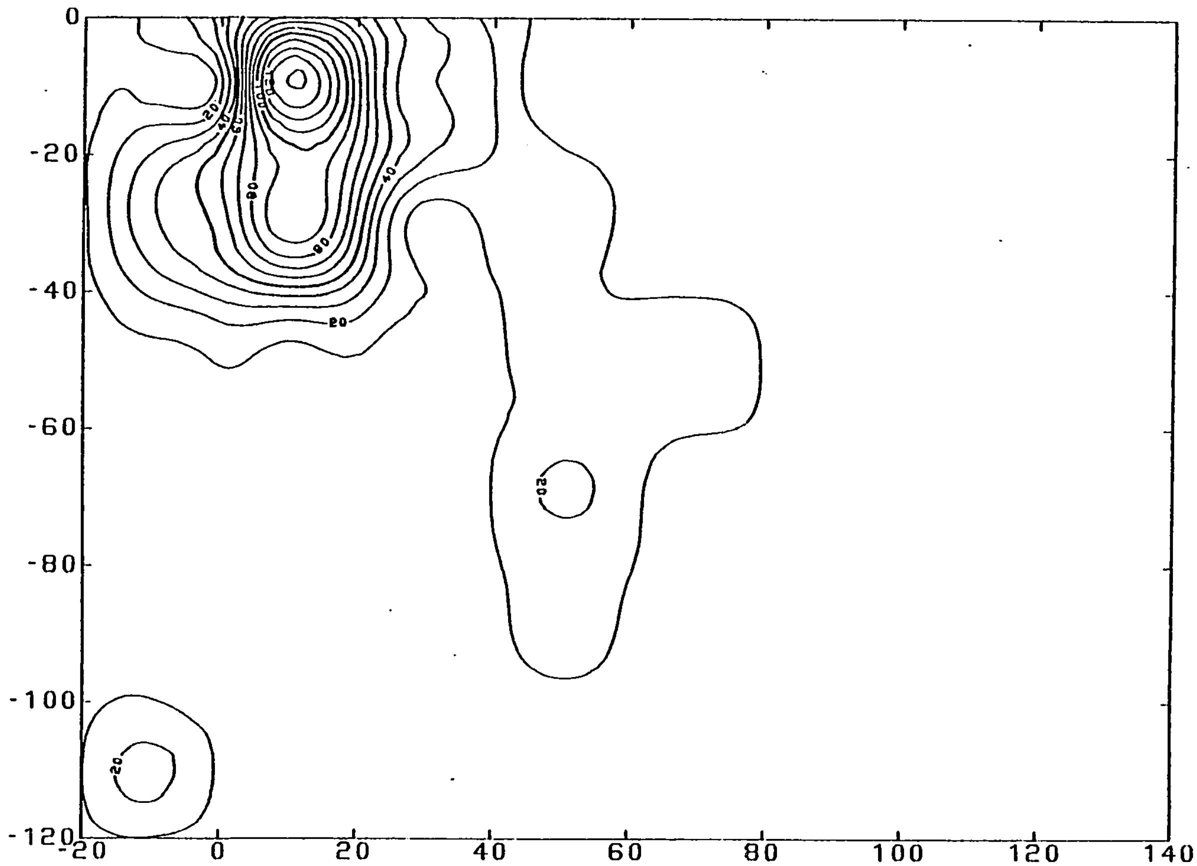


FIGURE 75. Site: 1 Ha 92 - Distribution of SAND-TEMPERED CERAMICS by weight in grams. Contour Interval = 10 grams. Distance between tick marks = 20 meters.

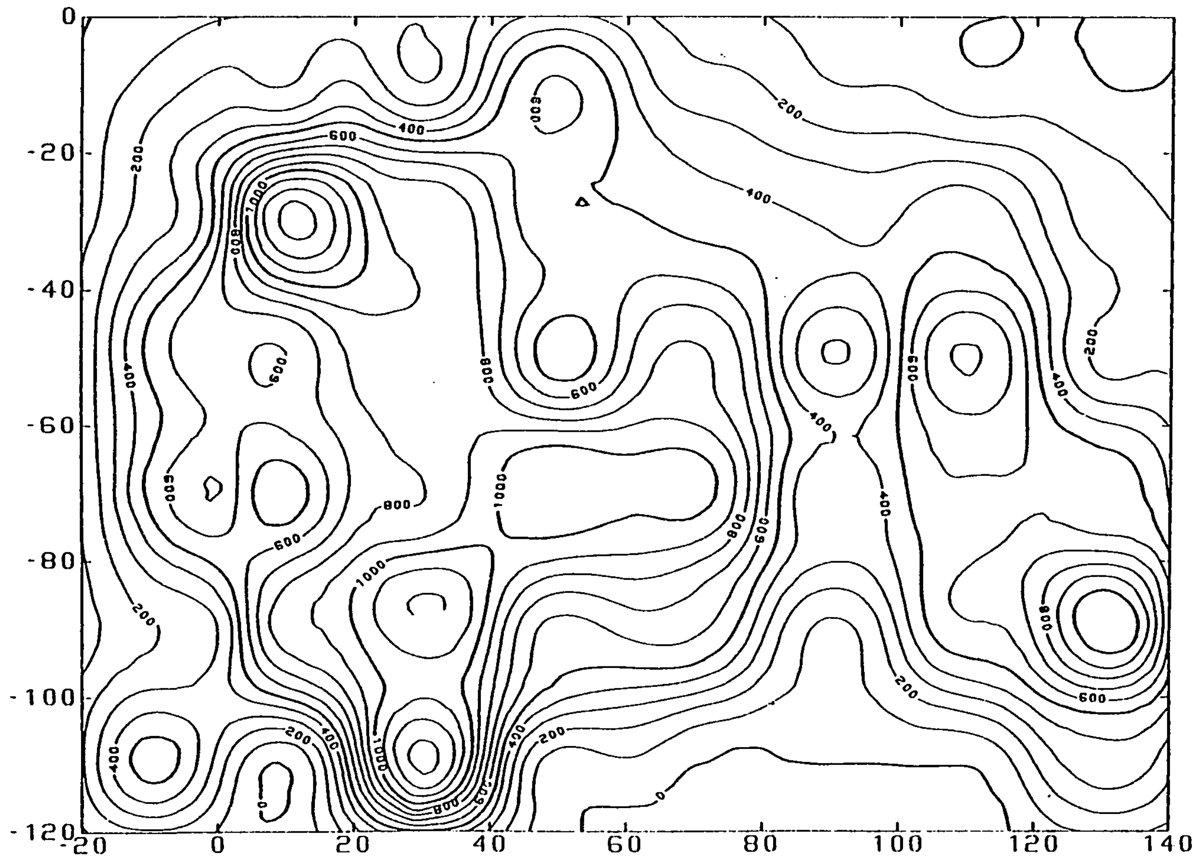


FIGURE 76. Site: 1 Ha 92 - Distribution of LITHIC DEBRIS by weight in grams. Contour Interval = 100 grams. Distance between tick marks = 20 meters.

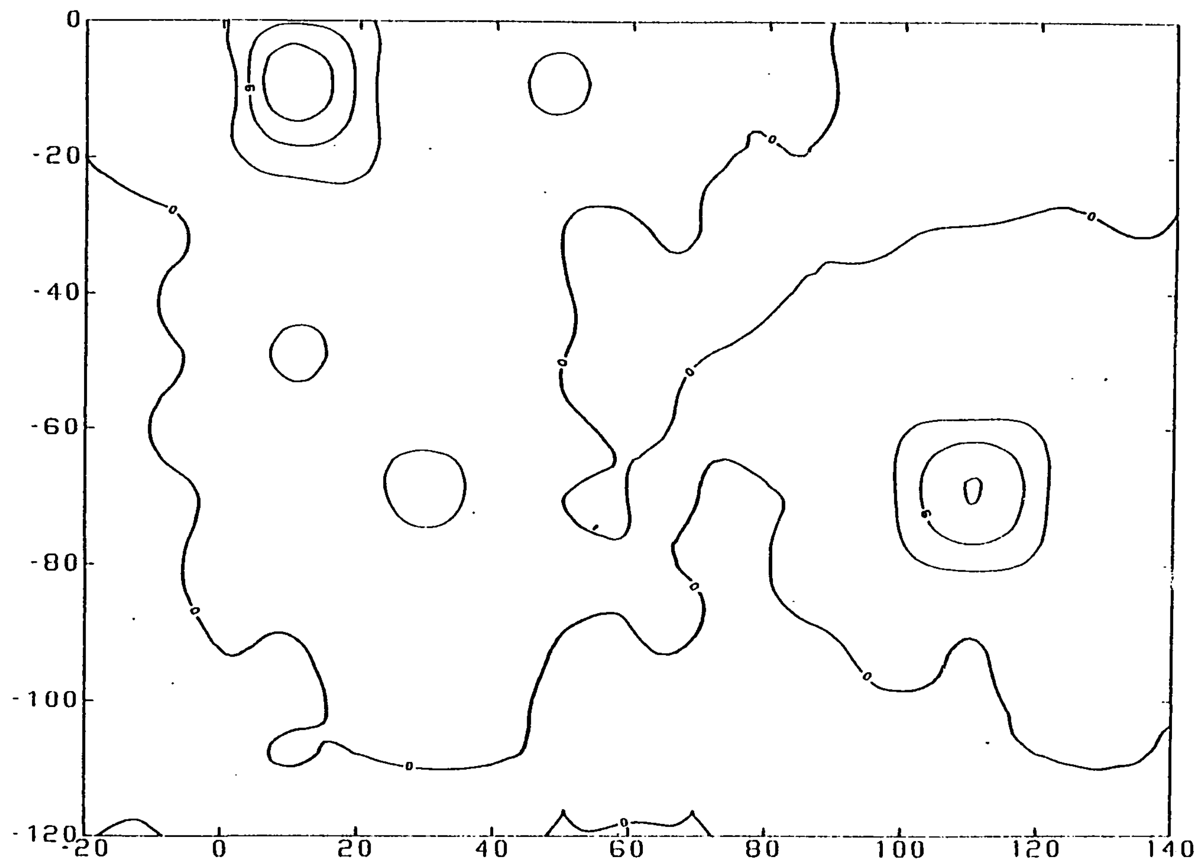


FIGURE 77. Site: 1 Ha 92 - Distribution of DAUB by weight in grams. Contour Interval = 3 grams. Distance between tick marks = 20 meters.

1 HA 7/8

The White Mound and Village

This mound and village pair is located in the northwest quarter of Section 36, Township 23 North, Range 3 East. The mound is the best preserved Mississippian pyramidal mound in the Warrior Valley outside the environs of Moundville itself. C. B. Moore described his visit to the mound:

> Following a road from the landing, through the swamp about three-fourths of a mile in an ESE. direction, one reaches a clearing on property of Mr. C. D. Cummings, Stewart Station, Alabama, in a high swamp, where is a deserted house, and, nearby, the mound with a small building upon it. This mound, the sides of which almost correspond with the cardinal points of the compass, is 13.5 feet in height. Neighboring trees show a deposit of mud left by freshets, almost 8 feet from the ground; hence this mound must have afforded a welcome refuge to the aborigines in flood-time. The western end of the mound is raised about 2.5 feet highter than the rest of the mound. The maximum diameter of the mound, E. and W., is as follows: 25 feet under each slope; the lower part of the summit plateau, 34 feet; beneath slope leading to the higher part of summit plateau, 18 feet; higher part of the summit plateau, 27 feet; total 129 feet. The maximum diameter N. and S. is 115 feet, 65 feet of which belong to the summit plateau. Considerable digging to a depth of 4 to 5 feet yielded in one place fragments of a human skull (Moore 1905:127).

In 1933 Dr. Jones and the Alabama Museum of Natural History relocated the mound and conducted extensive excavations in the Ha 8 village area. According to Jones's field notes, in 1933 the base of the Ha 7 mound measured 129 feet by 115 feet; the summit plateau was 79 feet by 65 feet; and the mound height was 13.5 feet at the western end and 11 feet at the eastern end. Jones also considered the mound to be barren of artifacts (field notes, M.S.M.).

When UMMA survey worked at the site in 1979, the mound measured 44 by 36 meters at the base; the lower level of the summit stood 2.7 meters above the floodplain and measured 16 by 20 meters; the smaller upper platform stood 3.3 meters above the floodplain and measured 8 by 20 meters.

A 2 by 1 meter test unit was placed into the eastern margin of the mound. A second 1 by 1 meter unit was placed on the lower platform and was excavated down to within 2 meters of sub-mound soil. Vertical sections from the South and West walls of this Unit 2 are shown in Figure 80.

The stratigraphy suggests the following intrepretation of construction history:

Level 1. - terminal stage
Level 2. - second major building epsiode
Level 3. - white clay cap
Level 4-9. - series of superimposed sand house floors
Level 10. - primary mound fill

The stratigraphy visible in Unit 2 can be traced in the vertical section of the West wall of Unit 1 (Figure 81). Level 1 and 2 are continuations of levels 1 and 2 in Unit 2. Levels 3 and 4 in Unit 1 appear to be rebuilding debris pushed off the upper mound surface during the construction activity evident in levels 4 through 9 in Unit 2. Level 5 in Unit 1 is the primary mound fill and corresponds to Level 10 in Unit 2. Level 6 in Unit 1 is pre-mound sterile soil.

A third unit was placed into the upper platform in an attempt to determine if the stratigraphy of the raised portion of the mound summit differed from that of the lower platform. This unit was excavated to a depth of 70 cm and revealed a homogeneous fill indistinguishable from the uppermost levels of the lower platform.

The lack of any evidence of building on the final summit of the mound may be due to leveling operations during the construction of a hunting shack prior to 1905. A summary of the artifacts recovered from the mound excavation is presented in Table 33. The two sherds of Alabama River Applique notes in Table 33 were recovered from the upper level of Unit 1 and did not appear to be associated with construction of the mound.

The village area surrounds the mound on three sides and at the time of the UMMA survey was covered in forest. The village perimeter was determined by a series of shovel tests. A summary of the artifacts recovered from the 1.3 hectare village is presented in Table 34. The ceramic material indicates both Mississippian and West Jefferson components on the site.

Jones and his party undertook an extensive excavation in the village area northwest of the mound. This effort yielded 28 burials and numerous artifacts, including a number of whole vessels. During his study of the Moundville ceramics Steponaitis located the Ha 8 artifacts in storage at Mound State Monument. He and the author examined and classified the ceramics according to the typology developed by Steponaitis for the Moundville phase. A summary is presented is Table 32.

Steponaitis considers all of the whole vessels to date from the late Moundville III - early Alabama River period. Indeed, the ceramics collections from both Jones's village excavation and the UMMA test excavations in the mound contain ceramics diagonistic of the late Moundville III period. The presence of several sherds of Moundville Incised in the Ha 8 collection suggests the possibility of some time depth for the settlement.

Table 32

1 Ha 8 Ceramics
Alabama Musuem of Natural History Collection

Types and Varieties present in Sherd Collection

Type/Variety	Count
MISS. PLAIN	
Warrior	135
Unsp.	1
BELL PLAIN	
Hale	33
CARTHAGE INCISED	
Carthage	5
Akron	6
Moon Lake	5
Poole	1
Unsp.	2
MOUNDVILLE ENGRAVED	
Havana	2
MOUNDVILLE INCISED	
Moundville	8
Carrollton	4
Unsp.	2

Secondary Shape Features

Beaded Rim	8
Notched Rim	2
Lug (bowl)	1
Effigy	3
Pedestal Base	1
Handles	17
Folded Rims	6
Nodes	1

Vessel Forms determined from Rim Sherds

Simple Bowl	15
Flaring Rim Bowl	11
Short Neck Bowl	6

Table 32 Continued

Whole Vessels from 1 Ha 8	
Miss. Plain, Warrior	Jar with more than 10 handles
Bell Plain, Hale	Restricted bowl with nodes
Alabama River Incised, Unsp.	Bottle

Figure 78. Aerial view of 1 Ha 7/8.

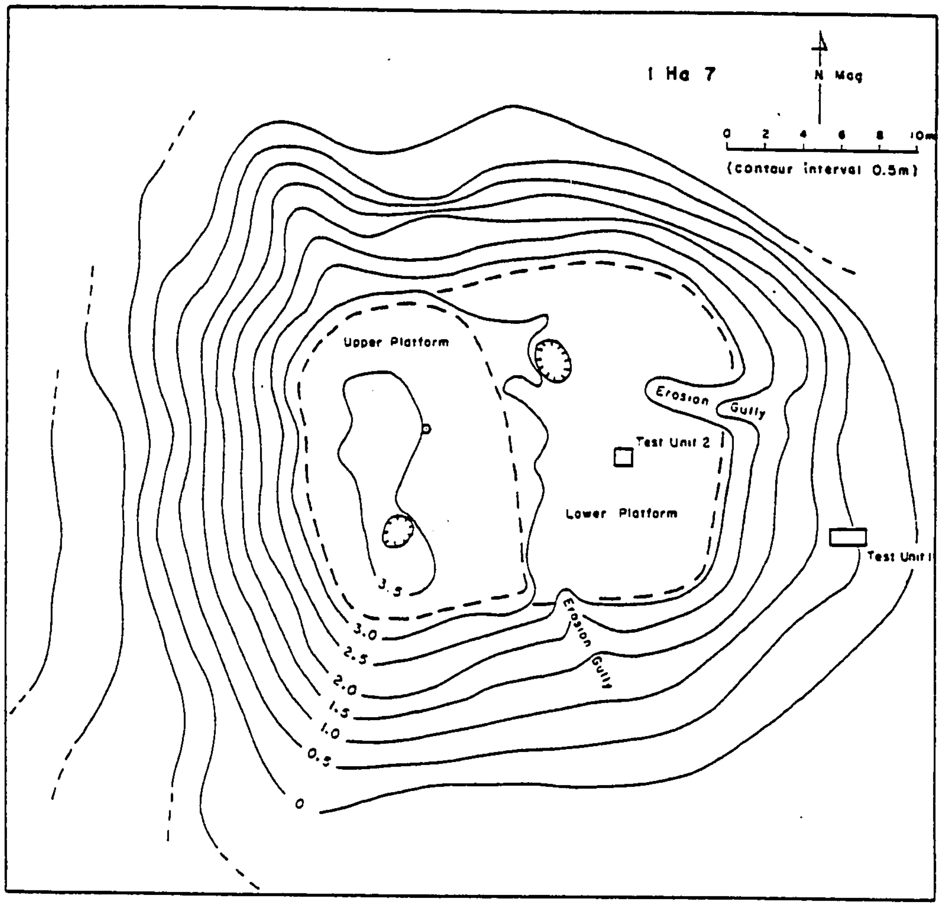
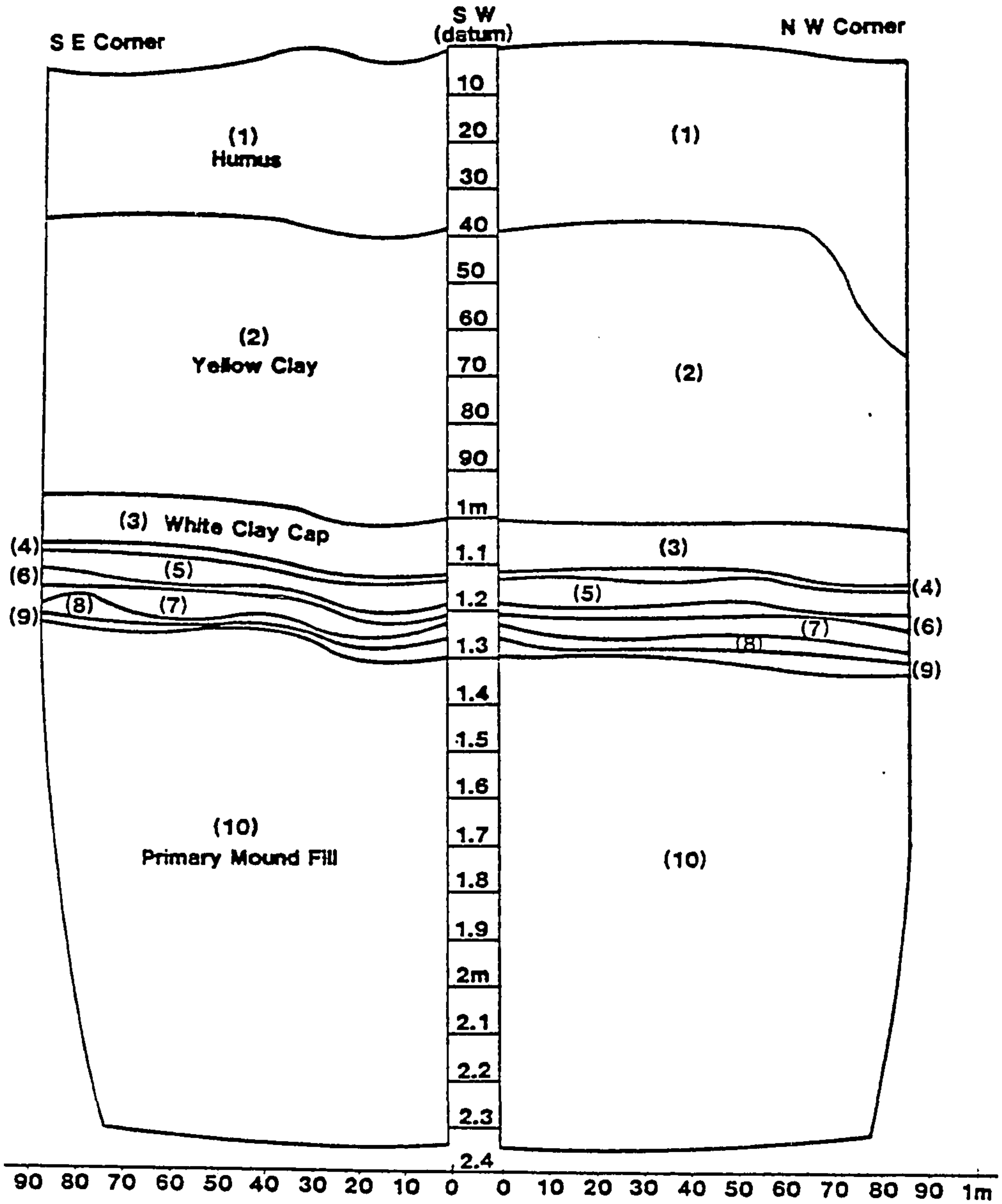
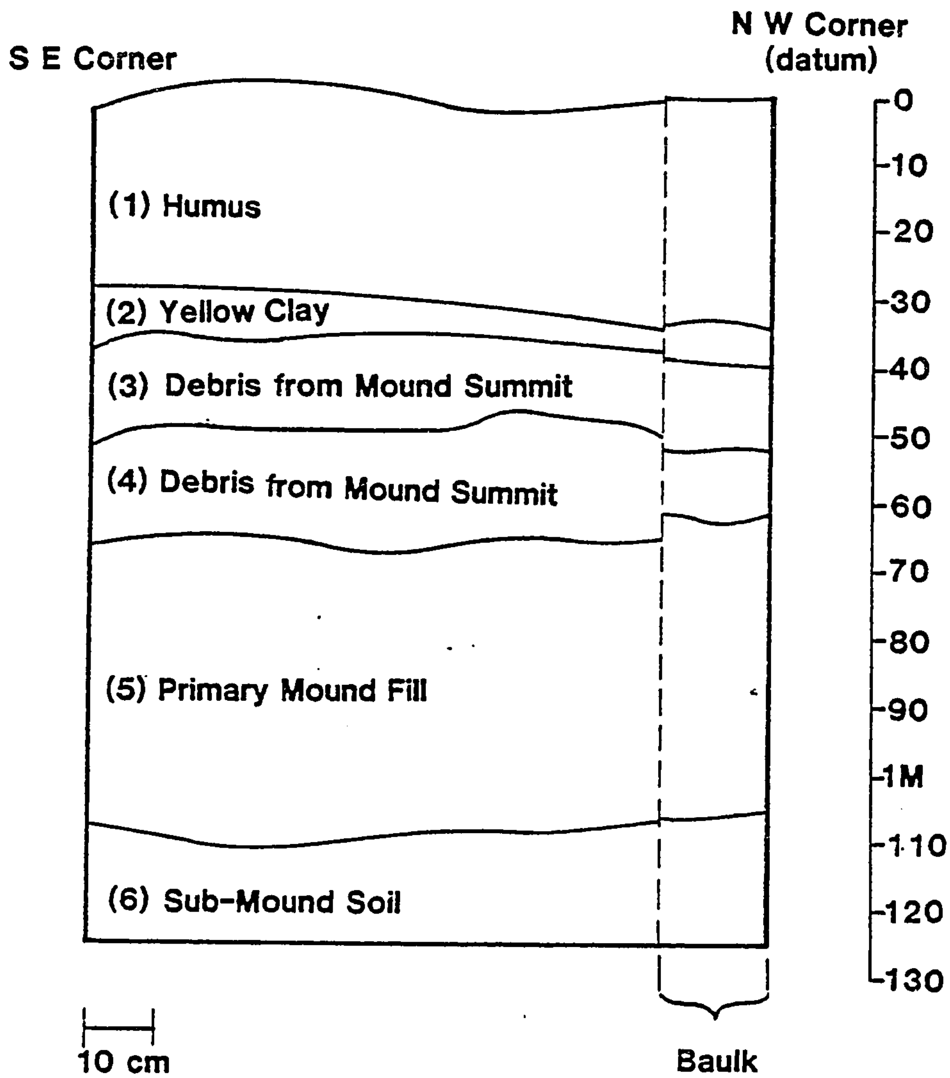


Figure 79. Site: 1 Ha 7 - Contour map of the mound.



1 Ha7
Test Unit 2
Vertical Sections South and West Walls

Figure 80.



1 Ha 7 West Wall Test Unit 1

Figure 81.

TABLE 33
Site: 1 Ha 7 FSM: 1-55
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	21	674	3216.5
MULBERRY CREEK CORD MARKED			
Aliceville	3	46	379.5
WITHERS FABRIC MARKED			
Craigs Landing	—	1	2.2
Gainesville	—	3	41.0
WHEELER CHECK STAMPED			
Sipsey	—	1	12.7
GROG TEMPERED UNCLASSIFIED			
Unspecified	—	1	2.9
Subtotal	24	726	3654.8
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	38	983	2704.1
CARTHAGE INCISED			
Carthage	—	1	3.7
MOUNDVILLE ENGRAVED			
Unspecified	—	2	11.6
BELL PLAIN			
Hale	5	21	136.1
ALABAMA RIVER APPLIQUE			
Alabama River	2	—	5.5
SHELL TEMPERED UNCLASSIFIED			
Incised	—	2	8.7
Red Slip	—	2	10.6
Subtotal	45	1011	2880.3
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	7	46.1
SAND TEMPERED UNCLASSIFIED			
Unspecified	—	1	11.6
Subtotal	—	8	57.7
Total Ceramics	69	1745	6592.8

TABLE 33 Continued

MODIFIED LITHICS		
COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
PROJECTILE POINTS		
Madison	—	4
Hamilton	1	4
Little Bear Creek	1	—
P-11	—	1
Distal End Undetermined Type	1	7
Mid Section Undetermined Type	—	1
Base Undetermined Type	1	—
BIFACIAL TOOLS		
Scraper	—	1
Drill Bit	—	1
Chisel	—	2
Total	4	21

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	1361	1206.2
(Treated)	1242	1056.7
(Untreated)	119	149.5
Petrified Wood	5	23.2
Unmodified Rock	147	1265.8

SHELL, BONE, DAUB	N	WEIGHT<GMS>
Shell	3	0.1
Bone	6	5.2
Daub	112	424.6

HISTORIC ARTIFACTS	N	WEIGHT<GMS>
Sherds	16	96.3
Metal	7	56.8

SELECTED SECONDARY VESSEL FEATURES	N
BEADED RIM	
Shell Tempered	1
SHELL-TEMPERED HANDLES	
Late	1

TABLE 34
Site: 1 Ha 8 FSM: 1-6
Summary of Artifacts Recovered from all Units

CERAMICS

TYPE/VARIETY	RIM	BODY	WEIGHT<GMS>
GROG TEMPERED			
BAYTOWN PLAIN			
West Jefferson	7	76	539.7
MULBERRY CREEK CORD MARKED			
Aliceville	4	15	243.9
WITHERS FABRIC MARKED			
Gainesville	—	2	17.6
SALOMON BRUSHED			
Fairfield	—	1	54.0
Subtotal	11	94	855.2
SHELL TEMPERED			
MISSISSIPPI PLAIN			
Warrior	3	141	607.8
CARTHAGE INCISED			
Poole	—	1	21.2
BELL PLAIN			
Hale	2	6	63.0
SHELL TEMPERED UNCLASSIFIED			
Incised	—	1	5.9
Red Slip	—	1	6.4
Subtotal	5	150	704.3
SAND TEMPERED			
BALDWIN PLAIN			
Blubber	—	1	2.7
Total Ceramics	16	245	1562.2

MODIFIED LITHICS

COUNT BY THERMAL CATEGORY	UNTREATED	TREATED
BIFACIAL TOOLS		
Scraper	1	—

TABLE 34 Continued

UNMODIFIED LITHICS AND INTRODUCED ROCK	N	WEIGHT<GMS>
Lithic Debris	48	142.1
(Treated)	34	109.4
(Untreated)	14	32.7
Unmodified Rock	22	139.2
SHELL, BONE, DAUB	**N**	**WEIGHT<GMS>**
Bone	2	11.4
Daub	26	103.6
HISTORIC ARTIFACTS	**N**	**WEIGHT<GMS>**
Sherds	3	14.0
Metal	6	59.5
SELECTED CERAMIC ARTIFACTS	**N**	
CERAMIC DISCOIDALS		
Shell-Tempered	1	

CHAPTER FOUR

Analysis and Conclusion

The preceding two chapters described the spatial extent, artifact content and distribution, and the temporal range of the individual sites of the Moundville phase included in the UMMA survey. It now remains to shift to a regional perspective and investigate the way in which these sites were articulated to one another within the Moundville settlement system.

This chapter will examine spatial relationships among the sites of the Moundville phase and relationships between individual sites and their surrounding habitat. Much of the analysis included in this chapter follows lines of inquiry originally begun by Peebles (1974, 1978, 1979, in press) and Steponaitis (1978). Finally, in a brief summary, the chapter traces major changes in settlement type and settlement system organization over the 500 years of the Moundville phase.

A primary goal of the following analysis is to achieve an insight into why the Moundville phase ceremonial centers are located where they are in the

Warrior Valley and to identify those factors which contributed to Moundville's rise to the position of sole administrative capital of a dual-level hierarchy of civic-ceremonial centers in the Black Warrior River Valley.

Underlying this analysis is the assumption that the Moundville phase settlements were elements in a politically unified system organized at a chiefdom or ranked level of complexity. This view is based on the considerable corpus of evidence presented by Peebles (1971, 1974, 1978) and Steponaitis (1978) and reviewed in the first chapter of this volume.

Moundville Phase Site Locations

Peebles (1978:393) has recently presented evidence to demonstrate that the sites of the Moundville phase in the Black Warrior Valley were grouped into three clusters:

> The northernmost, tightly clustered group contains two mounds, Tu-3 and Tu-56, a village, Tu-2, which is associated with Tu-3, and three additional villages, Tu-146, Tu-66, and Tu-183. The second, a widely dispersed group is composed of three villages, Tu-160, Tu-156, and Tu-34, plus two mound-and-village pairs, Ha-1, Ha-2, Ha-9, Ha10 and Ha-14, Ha-15 and a cluster for four sites, Ha-4, Ha-5, Ha-6, and Ha-11, which probably are one large village. South of the Moundville group are two isolated mound-and-village pairs, Ha-7, Ha-8, and Gr-14.

Peebles verified these clusters using methods for nearest neighbor analysis developed by Clark and Evans (1954) and later refined by Thompson (1956) and Dacey (1963, 1964). The latter author demonstrated that for the jth nearest neighbor when there is a "random pattern with a theoretical density of points per unit area, . . . the quantity $2\pi\lambda r^2$ is a chi-square variable with 2j degrees of freedom" (Dacey 1964:46, in Peebles 1978:398). As Peebles describes:

> This quantity, for a homogeneous random pattern obeying a Poisson probability function, measures the probability of a jth nearest neighbor being within a unit radius of a single point. Utilizing the additive nature of X^2, for N points, the formula becomes
>
> $$2\pi\lambda \sum_{i=1}^{N} / r_j^2$$
>
> This quantity is also distributed as chi-square with 2jn df (1978:398).

In the formula above, r is defined as the distance from site i to its jth nearest neighbor. Lambda (λ) is a measure of site density and is calculated:

$$\lambda = N/\text{Area}$$

Eighteen sites were included in Peebles analysis. Gr 14 was eliminated because of its proximity to the border of the study area, and Ha 4, Ha 5, Ha 6, and Ha 11 were treated as a single large Mississippian site. The area used for the lambda density determination was a 637.14 km portion of the Black Warrior Valley, bounded in the East and West by the limits of alluvial and terrace deposits and stretching from the fall line at Tuscaloosa in the North to the Warrior Lock and Dam in the South.

Table 35
Nearest-Neighbor Statistics (after Peebles 1978:398)

Order J	N	$2\pi\lambda\sum_{i=1}^{n} r_{ij}^{2}$ (X^2)	df=2jn	p
1	18	27.44	36	9>p>0.5
2	18	51.42	72	P=.95
3	18	77.49	108	p>.995

The results of Peebles's nearest neighbor analysis are presented in Table 35 above. He concluded that "for the second and third nearest neighbors, these sites show marked clustering; the observed distances are significantly less than the expected distances" (1978:398). He cited the clustering as evidence of a clear hierarchy among the 18 sites, with the village-hamlet units related to the major ceremonial center at Moundville only through the minor centers. Peebles thought the minor centers to be related equally to each other, to the major ceremonial center, and to the village-hamlet units (1978:400)

Lacking more recent data, Peebles based his spatial analysis on survey data recorded in the 1930s. We now have reason to believe that several of the sites which form the clusters identified by Peebles were either separated in time, predate the Moundville phase altogether, or probably possessed smaller Moundville phase settlements than the total area of surface scatter would indicate.

In the northern cluster there is good evidence that Tu 56 was occupied during the Moundville I period and was abandoned by Moundville III times when Tu 3 appears to have become the local civic-ceremonial center. In the central cluster we now suspect that the mounds at Ha 1 and Ha 9 are Woodland period earthworks and predate the Mississippian period entirely.

Finally, there is reason to question the size of "Mississippian" villages previously reported for the Warrior Valley. The evidence from Tu 66 and other Moundville phase sites where the Mississippian component was underlain by a large West Jefferson component suggests that the total area of surface scatter reported by W. B. Jones for Ha 4, Ha 5, Ha 6, Ha 11, Tu 160, Tu 156, and Tu 34 may not be a proper measure of the Moundville phase component at these sites. It is highly likely that the major component at each of these sites is

West Jefferson and the Moundville phase component is considerably much smaller than the total area of the site.

Unfortunately, all of these sites have been destroyed or could not be collected to obtain an accurate measure of the size of the Moundville phase component. Because the size and temporal range of the Moundville phase component on these sites cannot be confirmed, these sites have been eliminated from the following spatial analysis.

Next, given the lack of evidence for large Moundville phase settlements until late in the phase and in light of the evidence from Tu 66, the mouth of Big Sandy Creek, and Ha 107 to support the view that dispersed farmsteads and hamlets appear to have been the most common form of settlement during most of the Moundville phase, the focus of the spatial analysis which follows centers on the distribution of the minor civic-ceremonial centers and their position as intermediaries between the major center at Moundville and the resident Mississippian population.

In addition to the Moundville phase mound sites included in Peebles's analysis, the UMMA survey discovered one previously unreported mound site and confirmed the existence of three others, raising the total of reported Moundville phase mound centers to eleven (Figure 82). Of these eleven mound centers Moundville appears to be the only center constructed in the Moundville I period and occupied throughout the Moundville phase. Four other minor ceremonial centers (Tu 56, Tu 44, Tu 398, Tu 50) were constructed during the Moundville I/II period, but all appear to have been abandoned prior to the Moundville III period. Six of the eleven minor ceremonial centers were constructed during the late Moundville II/Moundville III period.

UMMA Sites--Locational Analysis

Table 36 presents the straight-line distances between first through third nearest neighbors for each of the five mound centers occupied during the Moundville I/II period. Table 37 presents the same information for the seven mound centers occupied during the Moundville III period. Moundville is present in both groups.

All of the mound sites in the Moundville I/II group lie to the north of Moundville with an average distance between sites of 3.46 km for first nearest neighbors, 9.9 km for second nearest neighbors, and 12.8 km for third nearest neighbors. The northernmost mound, Tu 56 is the

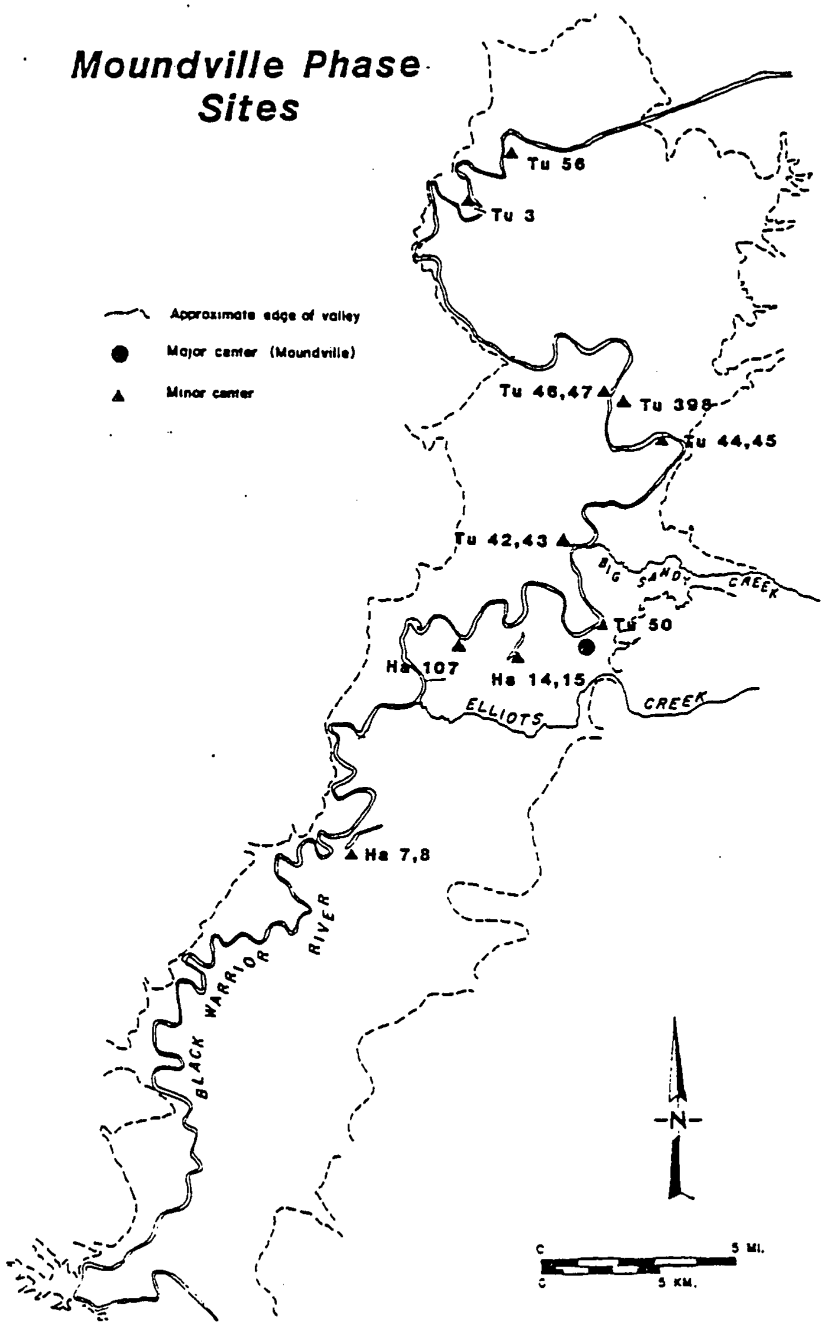


Figure 82. Location of minor ceremonial centers.

Table 36

Order-Neighbor Measures
Moundville I/II Mound Centers.
Straight-Line Distances in Kilometers

	First		Second		Third	
Base	Site	Dist	Site	Dist.	Site	Dist.
Tu56	Tu398	11.1	Tu44/45	13.3	Tu50	20.5
Tu398	Tu44/45	2.3	Tu50	9.7	Tu56	11
Tu44/45	Tu398	2.3	Tu50	8.6	M'ville	9.3
Tu50	M'ville	0.8	Tu44/45	8.6	Tu398	9.7
M'ville	Tu50	0.8	Tu44/45	9.3	Tu398	10.4

Table 37

Order-Neighbor Measures
Moundville III Mound Centers.
Straight-Line Distances in Kilometers

	First		Second		Third	
Base	Site	Dist.	Site	Dist.	Site	Dist.
Tu2/3	Tu46/47	10.4	Tu42	15.4	M'ville	19.8
Tu46/47	Tu42/43	6.5	Tu2/3	10.3	M'ville	10.8
Tu42/43	M'ville	4.6	Hal4/15	5.5	Hal07	6.5
M'ville	Hal4/15	2.7	Tu42/43	4.6	Hal07	5.2
Hal4/15	M'ville	2.7	Hal07	2.8	Tu42/43	5.5
Hal07	Hal4/15	2.8	M'ville	5.3	Tu42/43	6.5
Ha7/8	Hal07	9.7	Hal4/15	10.6	M'ville	12.7

most widely separated site; it is 11.1 km from its nearest neighbor, 13.3 km from its second nearest neighbor, and 20.5 from its third nearest neighbor.

Among the Moundville III centers the average distance between sites is 5.6 km for first nearest neighbors, 7.8 km for second nearest neighbors, and 9.6 km for third nearest neighbors. Outlying sites in this group are Tu 2/3 and Tu 46/47 in the north and Ha 7/8 in the south. Three sites, Tu 42, Ha 14/15, and Ha 107, lie within 6 km north and south of Moundville.

Table 38 gives order-neighbor statistics for Moundville and the Moundville I/II minor centers. Table 39 given order-neighbor statistics for Moundville and the Moundville III minor centers. All of the chi-square values for first, second, or third nearest neighbors in either the Moundville I/II group or the Moundville III group fall well below a probability of .95, the figure which Thompson accepts an indicator of clustering (1956:392). These low probability values fail to confirm Peebles's earlier nearest neighbor analysis. Indeed, they strongly suggest a lack of clustering among the Moundville phase mound centers, either early or late in the phase.

Nevertheless, the evidence for lack of clustering

Table 38

Nearest-Neighbor Statistics for M-I/II Mound Centers

Order J	N	$2\pi\lambda\sum_{i=1}^{N} r_{ij}^2$ (X^2)	df=2jn	p
1	5	6.66	10	p=.76
2	5	24.92	20	p=.20
3	5	40.93	30	p=.09

Table 39

Nearest-Neighbor Statistics for M-III Mound Centers

Order J	N	$2\pi\lambda\sum_{i=1}^{N} r_{ij}^2$ (X^2)	df=2jn	p
1	7	19.89	14	p=.13
2	7	37.48	28	p=.10
3	7	56.03	42	9=.07

among the Moundville phase ceremonial centers is consistent with Peebles's and Steponaitis's argument for the existence of a hierarchy among the Moundville phase sites, with the farmsteads, hamlets, and villages, related to the major ceremonial center through the local minor ceremonial center. The data recovered in the UMMA survey suggests that the minor ceremonial centers were positioned within provinces along the Warrior River floodplain to serve as a civic and ceremonial foci for local populations of dispersed farmsteads and hamlets.

As Smith (1978:409) points out, a dispersed pattern of small settlements represents an optimum solution to the problem of energy capture in an agricultural society but is a poor solution to the problem of group defense and boundary maintainance. To date there is no archaeological evidence of Mississippian fortifications in the Warrior Valley other than at Moundville itself. However, with additional excavation we may yet discover that the Moundville phase minor ceremonial centers were fortified for the protection of the neighboring population during periods of hostility.

Certainly these minor ceremonial centers were probably the permanent residence of individuals occupying important ceremonial-civic offices in the province.

Nevertheless, it is not until late in the Moundville III period that there is good evidence that any of the minor centers possessed sizable resident populations.

Smith also points out that it is reasonable to expect that these local centers would be "located adjacent to sufficient high-quality soil to support the horticultural gardens of the inhabitants, as well as having easy access to the protein resources of channel-remnant oxbow lakes" (1978:490). The productivity of the catchments associated with local centers would need to be adequate to support a small permanent population and during times of stress to provide for a larger population who, seeking the mutual protection and support of the larger group, would move in from the surrounding province.

With this background in mind the analysis turns to an examination of the relationships between the location of the sites of the Moundville phase and the productivity of the surrounding landscape.

Catchment Analysis

Fowler (1969) has proposed that hoe cultivation of corn in specially prepared row and furrow fields provided the agricultural basis that allowed the Mississippian temple-town type of expansion. As Fowler explains:

> This agricultural complex was carried out in farmsteads scattered over the fertile bottom land. These farmsteads provided the food resources to supply the rather large population concentrations of the temple-town communities which dominated the area both ceremonially and politically" (1969:374).

Ward (1969) was among the first investigators to examine the relationship between Mississippian site location and the agricultural productivity of the soils on which they lie. In a study of twenty-four Mississippian sites in Tennessee, Georgia, and Mississippi, he effectively demonstrated that all of the sites were "located on or approximate to soils with a high degree of natural fertility and a highly friable texture" (1969:45). He concluded that soil type was a primary factor in determining where Southeastern Mississippian settlements were located (1969:45). Recently Larson (1972) has suggested that prime agricultural soils may have been such a valued asset that many Mississippian communities were fortified to defend their agricultural fields.

Peebles (1978) has determined that Ward's prediction of an association between Mississippian sites and suitable agricultural soils is supported by the data from the Warrior Valley. Peebles reviewed soil surveys and soil maps compiled in the early twentieth century (U.S.D.A. 1912, 1914; Rowe et al. 1912; Winston et al. 1914) and confirmed that all Moundville phase sites then recorded in the Warrior Valley were located on soils excellently suited for the hoe cultivation of corn.

To determine the importance of good agricultural soils to the Moundville phase subsistence system, Peebles examined the relationship between the size of Warrior Valley Mississippian settlements, measured in terms of total surface area of artifact scatter, and the productivity of soils within walks of one and two kilometers. Productivity figures for catchments of a one kilometer radius were calculated in terms of the number of bushels of corn that could be produced without chemical fertilizers and hybrid corn seed. Estimates of the productivity of each soil type was based on corn yield figures reported for Hale, Greene, and Tuscaloosa counties in the early 1900s. Where the catchments of two sites overlapped, Peebles divided the productivity figure calculated for the shared area between the two sites (1978:409).

Table 39

Correlation Coefficients
Site Size by 1km Catchment Productivity*.
(after Peebles 1978:409)

CATEGORY	N	*r*
All Sites	14	.4184
Minor Centers	6	.5815
Village-Hamlets	7	.8685
Minor Centers and Village-Hamlets	13	.7243

*productivity adjusted in cases of catchment overlap.

Peebles then calculated a series of Pearson product-moment correlation coefficients between site size and several measures of catchment size and productivity. Table 39 presents the correlation coefficients he obtained between site size and adjusted catchments of 1 km radius.

The correlation coefficients presented in the table above indicate the following: (1) a strong correlation (*r* = .8685) between the size of the village-hamlet settlements and the productivity of the surrounding catchment; (2) a moderate correlation (*r* = .5815) between the size of minor ceremonial centers and the surrounding catchment, indicating that the size and location of the minor ceremonial centers appeared to be determined to a significant degree by factors unrelated to agricultural productivity; (3) the exclusion of Moundville from the sample greatly increases the correlation coefficient (from .4184 for all sites to .7243 for all sites other than Moundville), suggesting that almost none of Moundville's size can be related to the agricultural productivity of its catchment.

Peebles's analysis of Moundville phase site size and catchment productivity was based on the following three assumptions: (1) there is a relationship between population size and subsistence base; (2) there is a systematic relationship between settlement size and the size of the population resident therein; (3) "the surface size reported for all the sites but Moundville is an accurate reflection of settlement size" (1078:407-408).

Data recovered in the UMMA survey have indicated that this latter assumption is incorrect. As noted earlier in this chapter, many of the Mississippian sites in the Warrior Valley also contain large West Jefferson components. Thus, the measures of site size employed by Peebles were frequently skewed by surface material predating the Moundville phase.

In addition, the UMMA survey not only discovered new Moundville phase sites but it also established the location of previously reported sites with greater accuracy. At least one of the sites included in Peebles's catchment analysis was discovered to be at a slightly different location than previously reported.

Although Peebles's site size and location data require revision, the soil productivity figures he compiled seem reasonable. Table 40 presents corn productivity figures of various soil types reported by Rowe *et al*. (1912), Winston *et al*. (1914), and Strode *et al*. (1938) for Tuscaloosa, Hale, and Green counties. As Peebles has indicated (1978:403), these estimates of prehistoric yields are probably skewed by some constant factor but are useful as a relative scale of expected productivity for each soil type.

Catchment Analysis of the UMMA Survey Sites

In the analysis presented here, the procedures established by Peebles for defining catchments boundaries were followed, except that only catchment of 1 km radius are employed. As the first step in the analysis, circles

TABLE 40

Estimated Midpoints of Average Yields of Corn per Acre by Soil Type (after Pebbles)

Soil type	Yield is bushels per acre: Tuscaloosa County 1911	Hale County 1909
Huntington silt loam (Hu)	45.0	
Waverly clay loam (Wc)		35.0
Greenville loam (Gl)	40.0	
Cahaba loam (Ca)	32.5	32.5
Cahaba fine sandy loam (Cs)	27.5	15.0
Cahaba sandy loam (Cl)	20.0	
Cahaba silt loam (C)	30.0	
Ochlockonee fine sandy loam (Ock)	17.5	17.5
Ruston fine sandy loam (Rf)	35.0	
Guin sandy loam (Gs)	10.0	
Orangeburg gravelly sandy loam (Og)	17.5	10.0
Orangeburg fine sandy loam (Of)	17.5	12.0
Susquehanna fine sandy loam (Sl)	20.0	
Kalmia fine sandy loam (K)	8.0	
Bibb fine silt loam (Bf)	0	

of one kilometer radius were drawn on transparent film, the film centered on the site position on the soil maps, and the boundaries for each soil type within the catchment drawn on the film. Catchments were defined as only the land within one kilometer walking distance from the center of the site. No catchments were carried across significant bodies of water such as oxbow lakes or the Warrior River. In the case of oxbow lakes, the land on the opposite shore of the lake within the 1 km radius was included in the catchment if it could be reached in a one-kilometer walk around the margins of the lake.

A polar planimeter was used to measure the extent of the various soil types within each catchment. Except in those cases in which the UMMA survey determined the actual location of a site to be at a different location, Peebles catchment productivity figures were verified and are used here. Sites newly discovered or with corrected positions as a result of the UMMA survey required that new catchment areas be drawn and productivity figures calculated. Sites included in Peebles's catchment analysis which were not found by the UMMA survey were eliminated from the following analysis.

Table 41 compares the distribution of soil types for Tuscaloosa and Hale counties with the distribution of soils types for all of the Moundville phase site catchments. Table 42 presents a breakdown of the total acres of each soil type contained within individual catchments. Three soil series, the Cahaba (Ca, Cl, C), Huntington (Hu), and Waverly (Wc), account for more than fifty percent of all soils found within the Moundville phase site catchments. Each of these three soil series designate fine-textured alluvial material whose fertility and mechanical properties are excellently suited for hoe cultivation of corn. The evidence clearly suggests that the Moundville farmers were selecting for only a few of the most productive soil types in the Warrior Valley.

The Huntington series is found on the first bottoms of the Black Warrior and consists chiefly of wash materials from the disintegrated shales and sandstones of the Appalachian region of Alabama. Below Tuscaloosa on the Black Warrior there are numerous terraces of Huntington soils varing from four to seven miles in width. The most extensive development of the Huntington silt loams occurs in the river bends and as marginal strips along the Warrior River and its tributaries. The deposition of a thin layer of alluvium during period floods acts to maintain these soils in a high state of productiveness. Huntington silt loam was considered in

Table 41

Soil Type Totals (Acres)
Tuscaloosa and Hale Counties VS Moundville-Phase Catchments.

	Soil Type								
	Hu	Wc	Gl	Ca	Cs	Cl	C	Ock	Rf
Tcl Co + Hale Co	18496	37056	12480	41024	15936	576	18176	80064	93952
Catchment Totals	1640	795	55	1803	46	137	736	11	139
Total	20136	37851	12535	42827	15982	713	18912	80075	94091

	Og	Of	Sl	K	Gs	Bf	Other	Total
Tcl Co + Hale Co	41472	297280	61952	19520	12096	1984	533696	1285760
Catchment Totals	18	3	63	150	20	92	0	5708
Total	41490	297283	62015	19670	12116	2076	533696	1291468

Table 42

Soil Type Totals (Acres) for 1 Kilometer Catchments.

	Soil Type															
Site	Hu	Wc	Gl	Ca	Cs	Cl	C	Ock	Rf	Og	Of	Sl	K	Gs	Bf	Other	Total
Tu 56	250	0	0	0	0	0	132	0	0	0	0	0	0	0	67	0	449
Tu66	250	0	0	0	0	0	219	0	0	0	0	0	0	0	25	0	494
Tu2,3	365	0	0	0	15	0	0	0	0	0	0	55	0	20	0	0	455
Tu46,47	110	0	0	85	0	0	125	0	0	0	0	0	150	0	0	0	470
Tu398	395	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	410
Tu44,45	120	0	0	0	0	0	260	0	0	0	0	0	0	0	0	0	380
Tu42,43	0	0	0	250	16	137	0	0	0	0	0	0	0	0	0	0	403
Tu50 Adj	124	0	55	70	0	0	0	11	139	18	3	8	0	0	0	0	428
Ha14,15	0	159	0	499	0	0	0	0	0	0	0	0	0	0	0	0	541
Ha107	26	0	0	499	0	0	0	0	0	0	0	0	0	0	0	0	525
Ha91	0	120	0	474	0	0	0	0	0	0	0	0	0	0	0	0	594
Ha7,8	0	516	0	43	0	0	0	0	0	0	0	0	0	0	0	0	559
Total (%)	1640 (29)	795 (14)	55 (1)	1803 (32)	46 (1)	137 (2)	736 (13)	11 (.2)	139 (2)	18 (.3)	3 (.05)	63 (1)	150 (3)	20 (.3)	92 (2)	0 (0)	5708 (100)

the early twentieth century to be the best corn soil in Tuscaloosa county, often reaching 75 bushels to the acre without fertilizers (Winston 1911:51).

The four types of the Cahaba series are similar in composition and fertility to the Huntington series and are situated on the better-drained areas of the second bottoms. These soils were also formed by the silt and clay deposited by the floodwaters of the Black Warrior. Although less subject to annual flooding, the Cahaba series are easily handled and highly productive, yielding up to 40 bushels per acre (Winston 1911:59).

Waverly clay loams are similar to the Huntington and Cahaba series but are located to the south in Hale county along the lower first bottoms of the Warrior River. The most extensive area of Waverly soil lies to the west of Moundville. Here, as in much of Hale county, large areas of Waverly soil is poorly drained and known locally as "swamp". However, where drainage is adequate this soil is an excellent corn producer yielding 30 to 40 bushels per acre (Rowe _et al_. 1912:691)

Other soils which occur less frequently within Moundville catchments but whose friable structure and fertility would have made them attractive to the aboriginal farmers include the Greenville, Ochlochonee, and Ruston series.

Table 44

Correlation Coefficients
Site Size by 1km Catchment Productivity.

CATEGORY	N	r
All Sites	11	-.096211
All Sites except Tu42	10	.7072398
All Minor Ceremonial Centers	9	-.119124
All Minor Ceremonial Centers except Tu42	8	.7797807
M-I/II Minor Ceremonial Centers	3	.5405705
M-III Minor Ceremonial Centers	6	-.282213
M-III Mound Centers except Tu42	5	.8460761

From these soil summaries it is evident that the Moundville phase site catchments include some of the most productive agricultural soil in the Warrior Valley. Table 43 presents a listing of site size and catchment productivity for Moundville and the 12 other Moundville phase sites included in the UMMA survey. The site size listed in the table refers to the size of the Moundville phase component at the site.

Pearson product-moment correlation coefficients calculated between the site size measure and the measure of catchment productivity are presented in Table 44 above. Figure 83 is a scatter plot of site size and

TABLE 43

Catchments of 1 Kilometer Diameter
Site Size, Catchment Size, and Catchment Productivity

Site	Site size acres (ha)	Total acres (ha) in catchment	Catchment productivity (bushels of corn)
Tu-56	.7(.28)	449(182)	15210
Tu-66	2.9(1.16)	494(200)	17820
Tu-2/3	2(.96)	455(184)	181385
Tu-46/47	.7(.28)	470(190)	13240
Tu-398	1.6(.64)	410(166)	18188
Tu-44/45	1.2(.5)	380(154)	13200
Tu-42	5.4(2.2)	371(150)	10050
Tu-50*	Unk	543(220)	18740
M'ville	300(212.45)	569(230)	20506
Ha-14/15	3.2(1.3)	541(219)	17980
Ha-107a	1.5(.6)	525(212)	17343
Ha-91	2(.8)	614(248)	20255
Ha-7/8	3.2(1.3	559(226)	19457

*Adjusted for overlap with Moundville catchment.

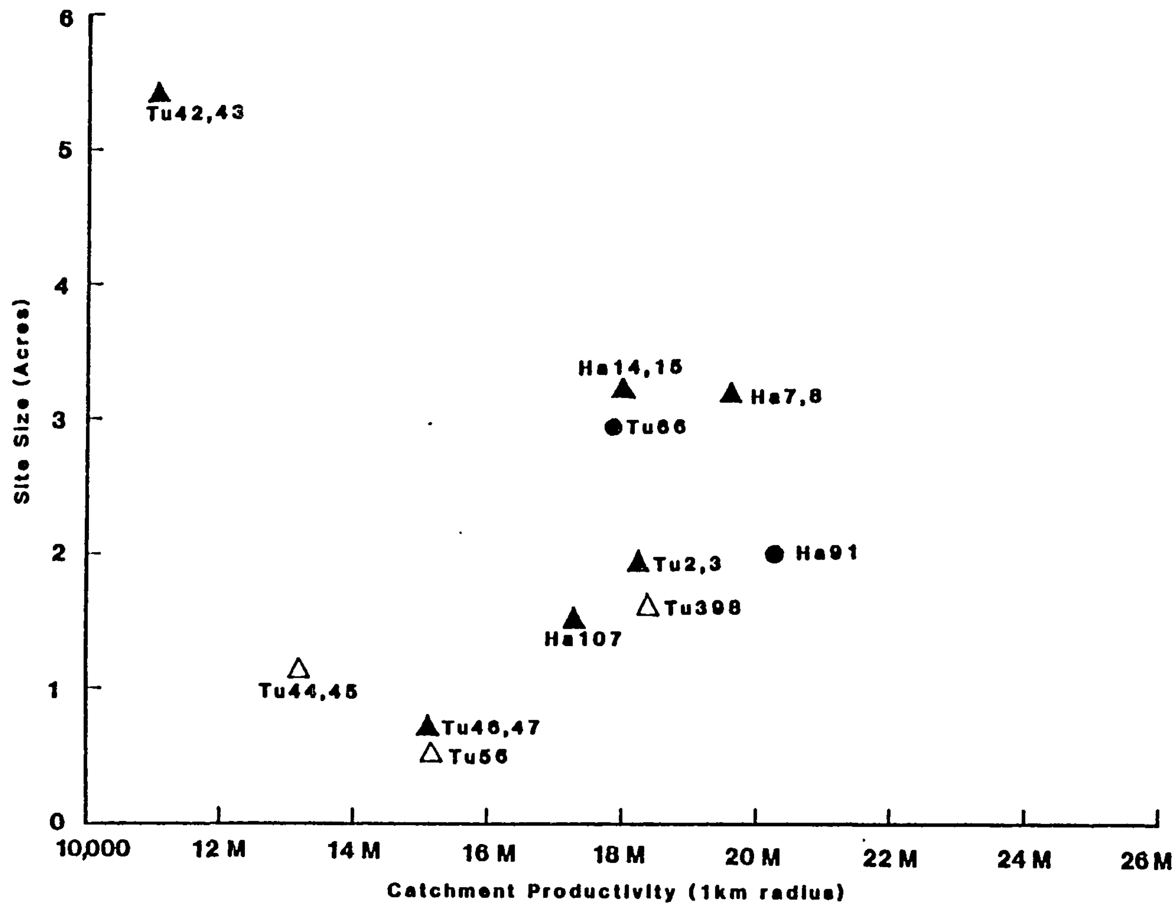


Figure 83. Scatter plot of site size and catchment productivity.

catchment productivity for all of the sites except Moundville. With the obvious exception of Tu 42, the sites appear to assume a linear relationship.

When Tu 42 is excluded from the sample the correlation coefficients indicate a significant correlation between site size and catchment productivity. Perhaps most interesting are the values of r for the eight minor ceremonial centers. The Moundville I/II centers show only a weak correlation (r = .54) between site size and catchment productivity, but this may be due to the small sample size (N = 3). The Moundville III minor ceremonial centers show a markedly stronger correlation (r = .85). If Tu 42 is excluded from the sample, over 70 percent of the variability in settlement size of the Moundville III centers can be explained by the productivity of the agricultural soils within a 1 km walk. These results contradict Peebles's earlier findings that there was no relationship between settlement size and catchment productivity with respect to the minor centers. Instead, the correlations lend additional support to Smith's hypothesis that the productivity of the land adjacent to the local center was an important factor in the selection of the site location.

It remains to explain why Tu 42 fails to fit into the model. The catchment associated with this site is restricted in size by the Warrior River on the east and to the north by an oxbow lake. Both the river and the lake represent protein sources that are unaccounted for in this catchment analysis. Also, the Mississippian component at Tu 42, the largest in the survey area, appears to be quite late. The presence of burial urns on the site (Curren and Welch: personal communications) indicates the occupation of the site extended into the Alabama River phase. There is a possibility that the measure of the site size at Tu 42 may include an unknown portion of the sizable Alabama River phase component at the site.

Nevertheless, there can be little doubt that oxbow lakes represented a valuable food source to Tu 42 and to other Mississippian sites in the Warrior Valley. Smith (1978:465) has recently pointed out that fish and waterfowl may have contributed upwards of 50 percent of the total protein intake of Mississippian peoples living within the meander belt habitat zone of the Mississippi. Thus, it is probably no accident that Tu 42/43, Ha7/8, Ha 91, Ha 14/15 and Ha 107 are all located within one kilometer of oxbow lakes.

The remaining topic to be treated in this analysis concerns the relationships between the major center at Moundville and the outlying minor ceremonial centers. Steponaitis (1978) has proposed that the Mississippian mound-sites in the Warrior Valley were politically unified in a clearly defined two-level hierarchy of ceremonial centers. Moundville, with a total of twenty mounds and an eighty-acre public plaza, was the largest site and the administrative capital of a series of minor ceremonial centers, each possessing a single platform mound. As Steponaitis points out, the tribute and labor required to maintain a capital the size and complexity of Moundville must have been substantial (1978:440).

In a recent study of Moundville phase ceremonial centers, Steponatis (1978) predicted that if a high degree of political centralization existed in the Moundville phase settlement system, it would be reflected in the spatial configuration of the ceremonial centers. If Moundville, as the administrative capital of the region, controlled and extracted tribute from the minor ceremonial centers, Moundville and its subordinate ceremonial centers would be positioned in the Warrior Valley to minimize movement costs between Moundville and the lower order centers. According to Steponaitis, a minor center would minimize transportation costs by locating not in the geographical center of population within its own district but instead at a point displaced toward the capital to which it paid tribute. Similarily, the optimal location of the capital would be principally determined with respect to the minor centers within its control. The most efficient location for the capital would be at the "center of gravity of the minor centers" (CGMC) (1978:435). The CGMC is defined as the geographical point within the region at which the sum of the distances from all the minor centers to the capital attains its lowest value (see Steponaitis 1978:450-451 for the procedure to calculate CGMC).

To determine the degree to which the location of Moundville approached the theoretical ideal, Steponaitis employed a measure described by Massam (1972, 1975) and expressed as follows:

$$E = \frac{\sum_{i=1}^{I} R_i^2}{\sum_{i=1}^{I} D_i^2}$$

where R_i is the distance from the CGMC to the minor center in the ith district, and D_i is the distance from the capital to the minor center in the ith district. Because the sum of R_i^2 is less than or equal to the sum of D_i^2 , E will be equal to a value of 1.0 when the capital is ideally located and will decrease as distance between the observed and ideal location increases (1978:436).

Steponaitis found that Moundville's location with respect to the minor centers closely approached the theoretical optimum. Moundville's spatial efficiency was very high, both when E was calculated using straight-line distances between Moundville and all of the outlying minor centers (E = .94) and when E was calculated using river distances between river-connected sites (E = .996).

The procedures used by Steponaitis to measure the spatial efficiency of the Moundville ceremonial centers seem appropriate, but additional evidence from the UMMA survey provides reason to revise and expand the analysis. Steponatis included in his analysis two sites (Ha 1 and Ha 9) which are now believed to date to the Woodland period. In addition, he lacked the temporal controls which would allow him to identify sites separated in time. Thus he was unable to recognize changes in the number and configuration of ceremonial centers over the 500 years of the Moundville phase. For example, in his calculations of an optimal location for Moundville Steponaitis gave equal weight to Tu 56 and Tu 3. It now appears likely that one of these sites replaced the other as a local center. The UMMA survey data indicates that Tu 56 was abandoned before major construction began on the mound at Tu 3. Similarly, Tu 44 and Tu 50 were Moundville I minor centers whose formal interaction with the capital at Moundville had most certainly terminated prior to Moundville III times.

Perhaps the most interesting aspect of the UMMA data is the possibility of identifying changes in the spatial efficiency of the Moundville settlement system. Given Steponaitis's model of developing hegemony at Moundville, it would seem reasonable to expect that as Moundville placed increased demands on the subordinate ceremonial centers, the minimization of movement costs between Moundville and the minor centers would become an important factor influencing the location of new subordinate ceremonial centers (Steponaitis 1978:443).

Spatial Efficiency of the Ceremonial Centers.

In order to determine if the spatial efficiency of the Moundville ceremonial center system improves through time, an index of spatial efficiency (E) for the straight-line distances between centers was calculated for each of the five Moundville I/II ceremonial centers: Tu 56, Tu 398, Tu 44, Tu 50, and Moundville. The results are presented in Figure 84. The spatial efficiency of Moundville, which is on the southern edge of the group, is quite low (E = .478). Three sites have higher spatial efficiency values, and only Tu 56 has a lower value (E = .2647).

Next, E was calculated for the straight-line distances between centers for each of the Moundville III ceremonial centers. The results presented in Figure 85 indicate that by Moundville III times Moundville's spatial efficiency has improved dramatically (E = .758). Nevertheless, three sites attain higher spatial efficiency values: Tu 42 (E = .954), Tu 14 (E = .820), and Ha 107 (E = .837).

Finally, a new CGMC was calculated for the six Moundville III ceremonial centers by measuring distances between centers along the Warrior River (Table 45). A new set of values for E was calculated with respect to this CGMC, and the results presented in Figure 86 show that when calculated in terms of distances by river between ceremonial centers, Moundville's spacial efficiency (E = .971) closely approximates the ideal predicted by Steponaitis's model.

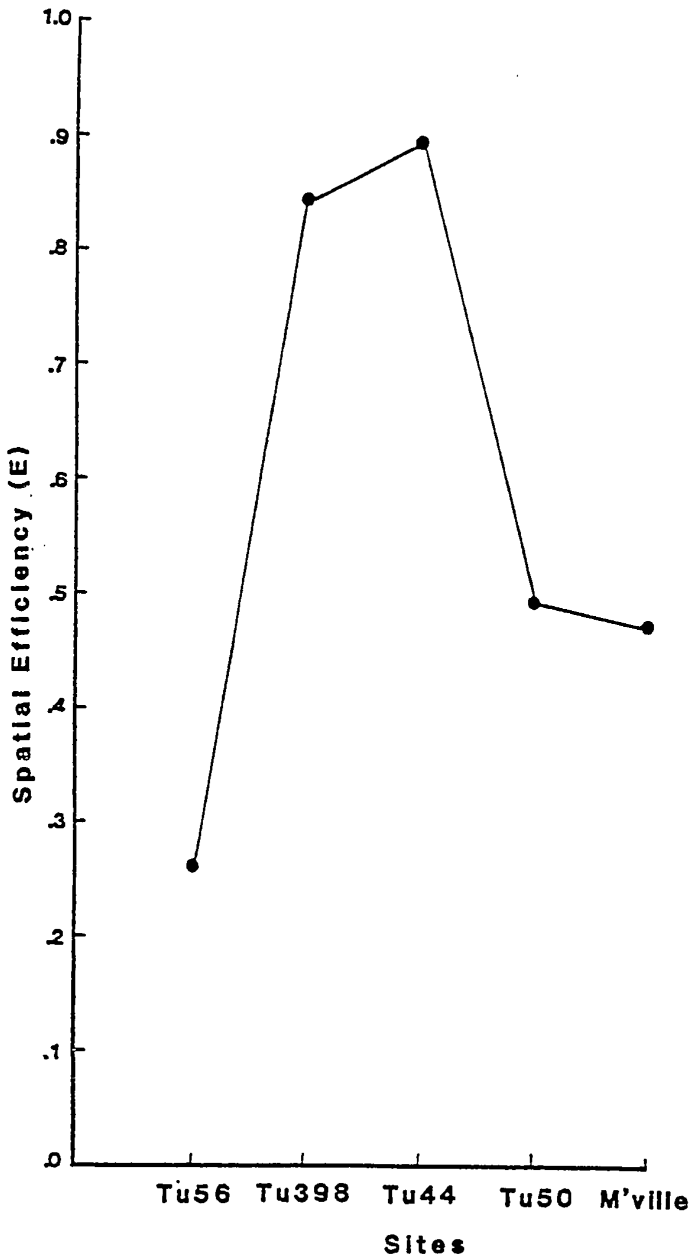


Figure 84. Spatial efficiency (E) of the locations of Moundville I/II centers.

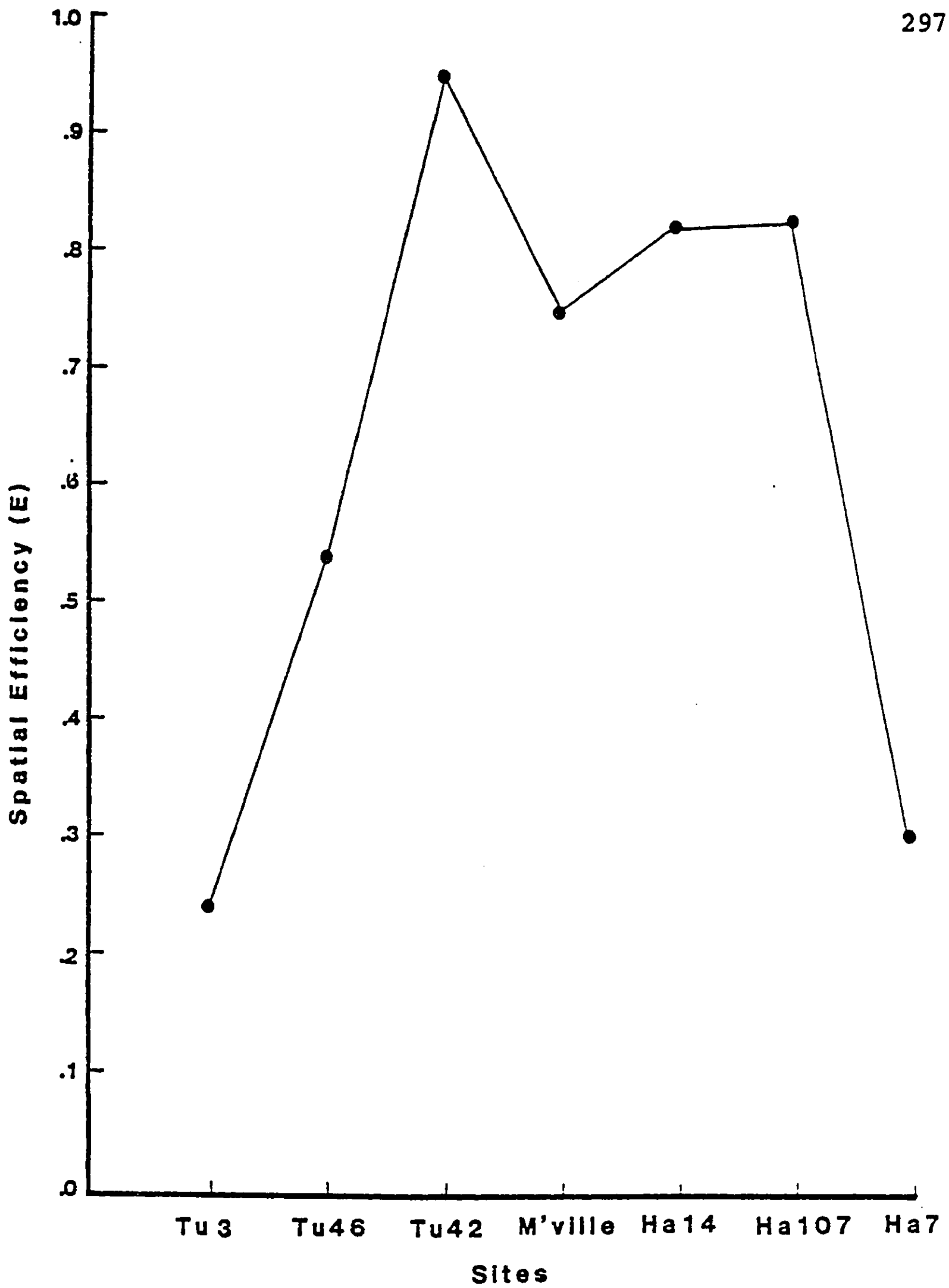


Figure 85. Spatial efficiency (E) of the locations of Moundville III centers.

Table 45

Moundville III Mound Centers.
River Distances between Sites in Kilometers

	First		Second		Third	
Base	Site	Dist.	Site	Dist.	Site	Dist.
Tu2/3	Tu46/47	23.8	Tu42	37.8	M'ville	42.6
Tu46/47	Tu42/43	14	M'ville	19	Tu2/3	23.8
Tu42/43	M'ville	4.8	Ha14/15	11.9	Ha107	14.8
M'ville	Tu42/42	4.8	Ha14/15	5.3	Ha107	9.7
Ha14/15	Ha107	4.5	M'ville	5.3	Tu42/43	11.9
Ha107	Ha14/15	4.5	M'ville	10	Tu42/43	14.8
Ha7/8	Ha107	19.3	Ha14/15	22.5	M'ville	29.6

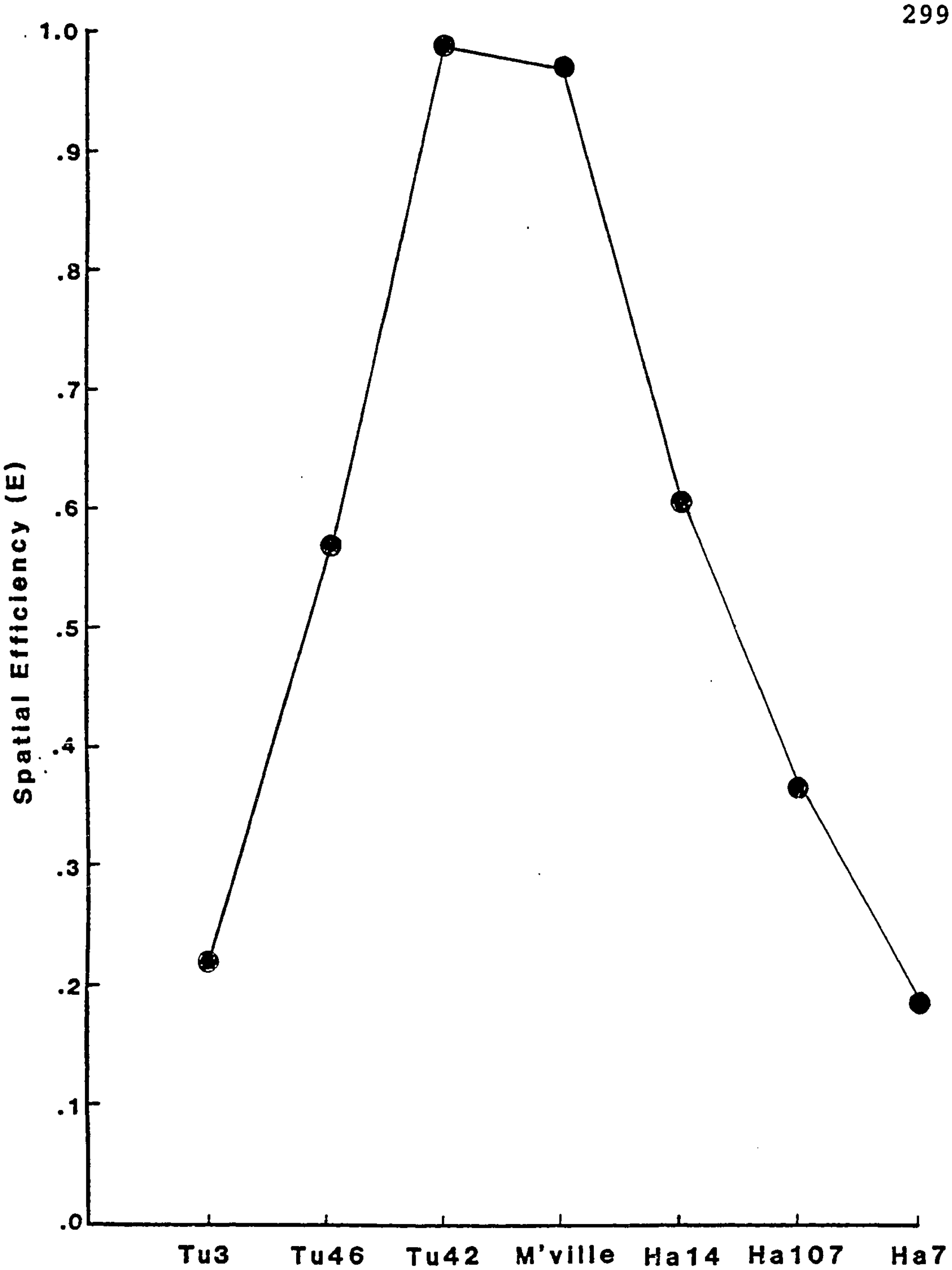


Figure 86. Spatial efficiency (E) of Moundville III centers with respect to river distances between sites.

The analysis indicates that changes in the spatial configuration of Moundville and its subordinate centers was directed toward the minimization of movement cost between Moundville and the minor centers.

This evidence also supports the view of Peebles and Steponaitis that the Warrior Valley was a politically unified area characterized by a hierarchy of sites: a single major ceremonial center, several minor ceremonial centers, and a dispersed pattern of hamlets and farmsteads. The increase in the value of E when river distances were used also suggests the importance of the Warrior River as the connecting link between sites.

Steponaitis has also suggested that minor centers more distant from Moundville may have enjoyed a greater degree of autonomy than the centers closest to the capital (1978:466). Certainly the size of the mounds at the subordinate centers supports this view. Table 46 lists an index of the size of the mound at each minor center arranged in order of increasing distance from Moundville. The fact the the mounds closest to Moundville are significantly smaller may indicate that these sites were supplying a disproportionate share of the tribute extracted by Moundville from the subordinate centers.

Table 46

Moundville III Mound Centers.
Index of Relative Size of Mounds
(modified from Steponaitis 1978:446)

Site	Land Distance (km) from Moundville	Mound dimensions L-W-H	Index of Size L x W x H
Tu3	19.5	42 x 42 x 3.5	6174
Ha7/8	12.7	44 x 36 x 2.7	4277
Tu46	10.8	50 x 45 x 2	4500
Ha107	5.3	Unknown	----
Tu42	4.6	Unknown	----
Ha14/15	2.7	40 x 26 x 1.5	1560

Note: Index of mound size calculated by multiplying basal dimensions by total height. Mound dimensions (in meters) used above are those determined by UMMA survey measurements.

Conclusion

Threading together all the lines of evidence so far discussed, this chaper concludes with a summary sketch of the major events of the Moundville phase in the Warrior Valley. Figure 87 presents the temporal range of the Moundville phase sites included in the UMMA survey.

Moundville I phase (A.D. 1050 - 1250)

Sometime shortly after the first millenium A.D. a series of significant changes began to take place in the Late Woodland population of the Warrior Valley. It is yet unclear if the introduction of Mississippian ideas among the resident Woodland population was accompanied by the actual movement of Mississippian people into the area. However, there can be no doubt that ultimate source of the rise of the Moundville phase was the Mississippian cultures to the north and west.

Although faunal evidence indicated that hunting remained important in the Moundville phase, it is evident that by the Moundville I period that hoe cultivation of cultigens, principally corn, had become a major element in the subsistence base of the local population. The intensification of agriculture was accompanied by

UMMA SURVEY SITES IN THE BLACK WARRIOR VALLEY
CHRONOLOGICAL POSITION WITHIN THE MOUNDVILLE PHASE

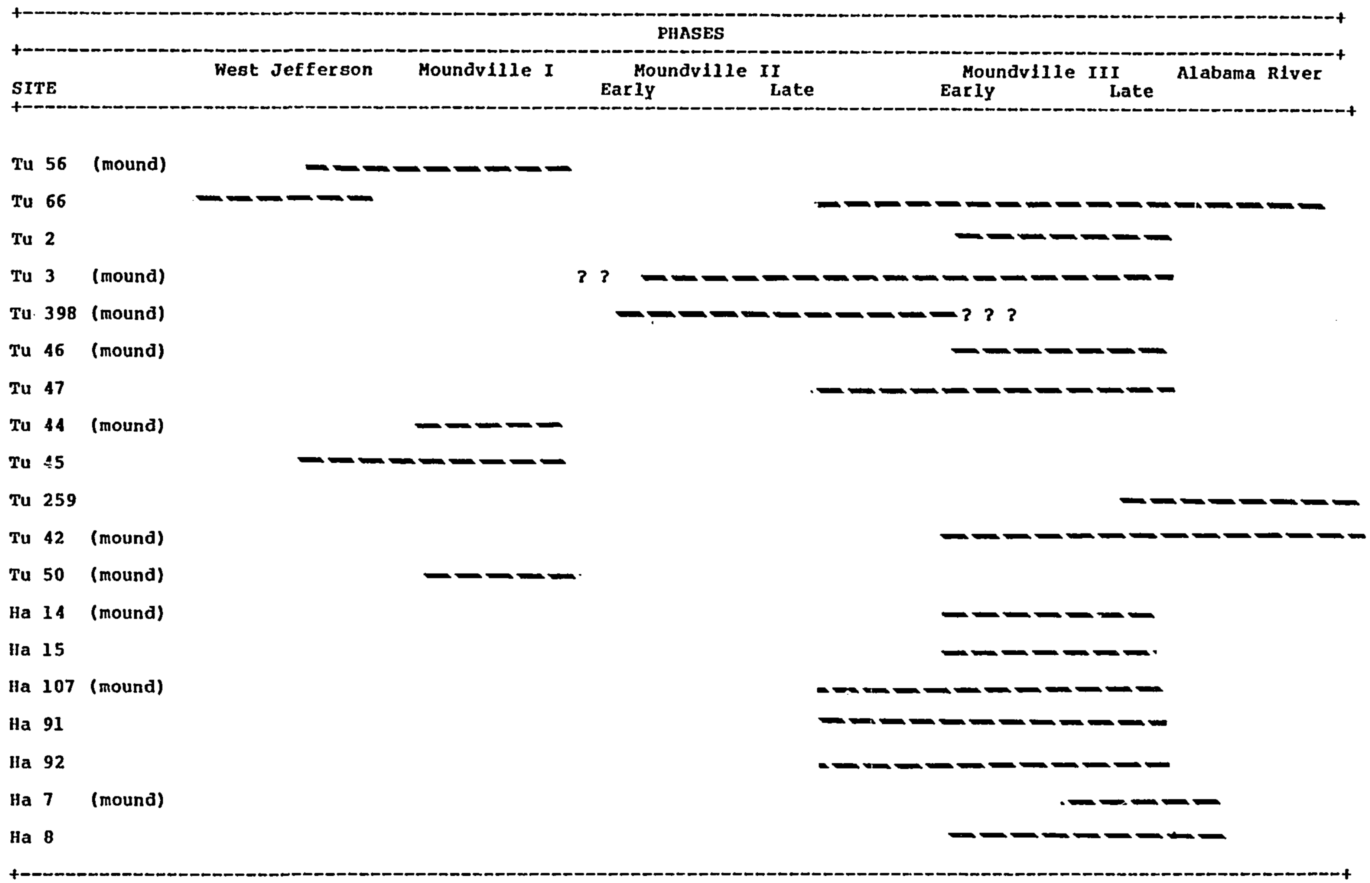


Figure 87.

attendant changes in settlement patterns. The evidence is that the majority of the population was distributed across the landscape in dispersed farmsteads and hamlets usually on or adjacent to the best floodplain agricultural soils. The habitat of these Mississippian farmers, like the Late Woodland population before them, was the environmentally rich meander-belt zone of the Warrior River. Here the Mississippian population enjoyed access to a variety of wild plants, animals, and backwater species of fish in addition to easily tilled alluvial soils.

With the changes in the economic basis of the Moundville phase population, significant changes began to take place in the social and political organization as well. Some time during the Moundville I period, civic-ceremonial centers were constructed at intervals along the Warrior River at Tu 56, Tu 44, Tu 50 and Moundville. Each of these sites possessed a single truncated mound which probably served as a platform for a structure of some civic or religious importance. It is noteworthy that each of these centers was constructed on the site of an earlier West Jefferson village, which, as Steponaitis points out, suggests that the transitions from West Jefferson to Moundville I occurred "in the context of a stable, indigenous population" (1980:277).

To the north out of the immediate Moundville area, a more elaborate center was constructed at Bessemer. Here as many as three mounds were built. Although the mortuary ritual practiced early on in the Moundville phase does not approach the complexity of subsequent phases, grave goods accompaning burials from this time period at Bessemer and Moundville indicate the presence of apparently high-status individuals (Steponaitis 1980:276).

Moundville II and III phases (A.D. 1250 - 1550)

The evidence indicates that at some time during the Moundville II period the sites at Tu 50, Tu 56, and Tu 44 ceased functioning as civic ceremonial centers. In the north, Tu 56 is replaced by Tu 3, and in the central area the civic-ceremonial responsibilites appear to shift to Tu 398 and then to Tu 46. However, it is at Moundville that the most dramatic changes occur. During the Moundville II/III period, Moundville grows from one of a number of small ceremonial centers to become the dominant ceremonial center in the region. Steponaitis estimates that by the beginning of the Moundville III period possibly as many as fourteen mounds had been constructed at Moundville (1980:277). It is during this period that mortuary ritual at Moundville reaches its greatest degree of complexity, reflecting a complex civic and religious organization.

In the Moundville III period several new minor ceremonial centers were constructed. Mounds were begun at Ha 14, Tu 46, and Ha 7. The construction of these mound centers south of Moundville suggests an increasing population in that area and perhaps in the Warrior Valley as a whole. It is also likely that construction of the mounds at Ha 107 and Tu 42 were begun at this time. As described earlier in this chapter, it appears that transportation costs to and from Moundville were an important factor in the selection of the locations of these minor ceremonial centers.

During the Moundville III period new stages were added to the mounds at Tu 3 and Tu 46. Moundville itself reached the zenith of its power as the regional center exercising control over and extracting tribute from its subordinate centers. These minor centers in turn served as province capitals serving a population of farmsteads and hamlets.

For most of the Moundvile II/III period, the regional population continued to be dispersed over the landscape in farmsteads and small hamlets. However, during the Moundville III period a trend towards nucleation of the population began. Settlements grew to a substantial size at Ha 14/15 Ha 7/8 Ha 91, Tu 2/3 and Tu 42/43. The latter site, Tu 42/43, appears very late in the period and became the largest village in the valley. This trend toward nucleation continued in the Alabama River phase according to Sheldon (1974) and Curren (personal communication). The inception of the trend late in the Moundville phase may well be an indicator of growing stress in the late Moundville III political system.

After A.D. 1500 the Moundville system entered a period of marked decline. The construction of large pyramidal mounds ceases. With the exception of Tu 42, the minor ceremonial centers appear to have been abandoned, and mortuary ritual no longer reflects the complex system of ranked social groups that characterized the Moundville phase. In sum, the structured social organization of the Moundville chiefdom collapses into the relatively impoverished egalitarian society of the Alabama River phase.

The causes of the Moundville phase remain a matter of speculation. Peebles (in press: 60-61) has proposed research designed to determine if the decline of the Moundville phase can be traced to internal causes connected with ever-increasing demands on the lower stratum of society for labor and goods needed to maintain the system.

ARTIFACT PHOTOGRAPHS.

FIGURE 88

1 TU 56

Top Row:
Moundville Incised, Var. Moundville; Mississippi Plain, Var. Warrior

Second Row:
Moundville Incised, Var. Carrollton; Moundville Incised, Var. Snows Bend; Moundville Engraved, Var. Havana

Third Row:
Alligator Incised, Var. Geiger; Hamilton (2 - 3); Swan Lake

Fourth Row:
Kirk


0 1 2 3 4
CM

FIGURE 89

1 TU 66

Top Row:
Alexander Pinched, Var. Prairie Farms (1 - 3); Baldwin Plain, Var. O'Neal (4 - 5)

Second Row:
Alexander Pinched, Var. Prairie Farms (1 - 3); Alexander Incised, Var. Pleasant Valley (4 - 6)

Third Row:
Alexander Incised, Var. Bodka Creek; Saltillo Fabric Marked, Var. China Bluff; Evansville Punctated, Var. Tishabee; Gainesville Complicated Stamped, Var. Gainesville; Alligator Incised , Var. Oxbow

Fourth Row:
Mulberry Creek Cord Marked, Var. Aliceville (1 - 5)

Fifth Row:
Mulberry Creek Cord Marked, Var. Aliceville (1 - 2)

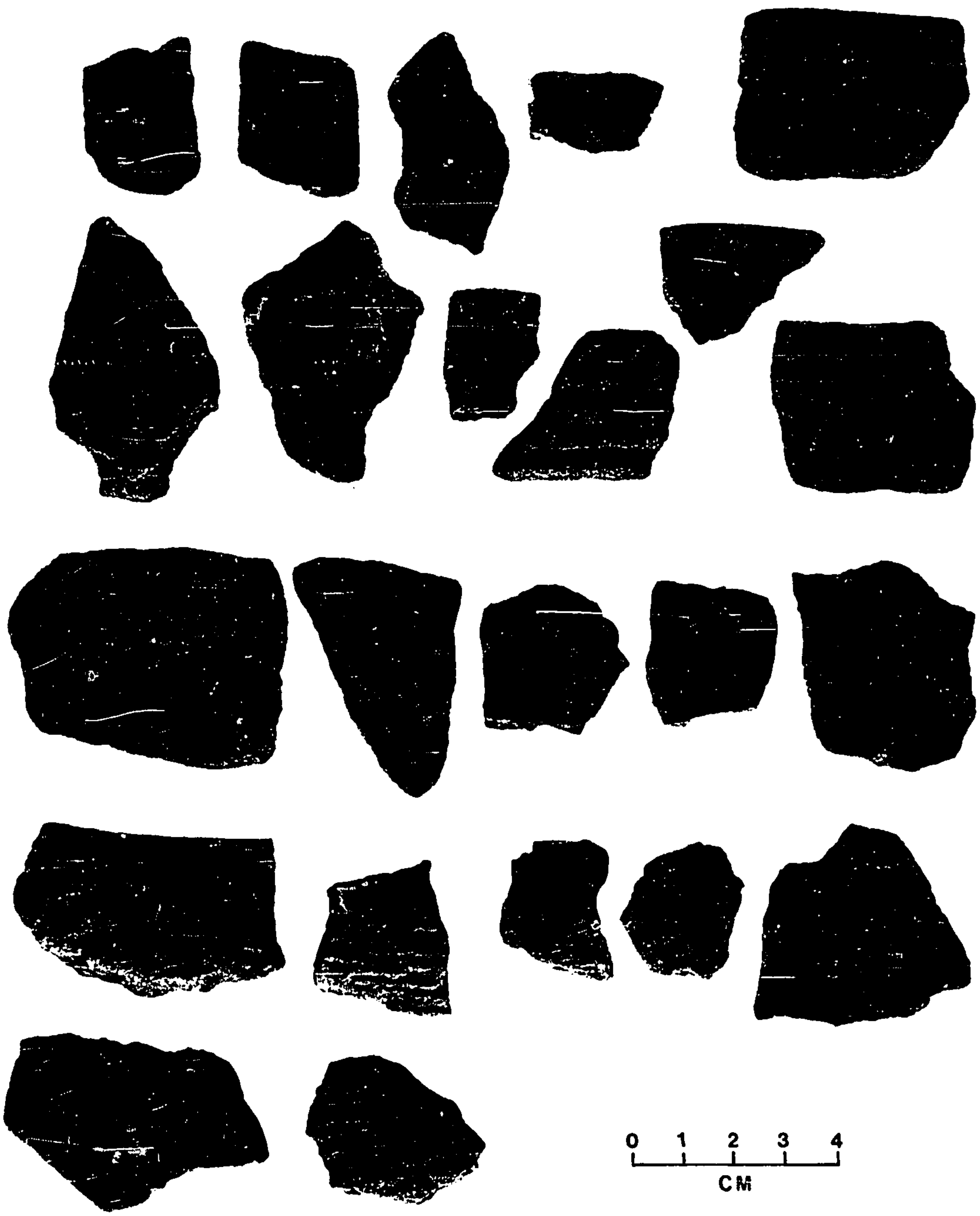

0 1 2 3 4
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FIGURE 90

1 TU 66

Top Row:
Carthage Incised, Var. Moon Lake; Marksville Incised, Var. Unspecified; Shell Tempered Unclassified, Painted; Carthage Incised, Var. Carthage

Second Row:
Bell Plain, Var. Hale--Beaded Rim (1 - 3); Shell-Tempered Ceramic Discoidal (4 - 5)

Third Row:
Madison Projectile Points (1 - 9)

Fourth Row:
Hamilton Projectile Points (1 - 8)

Fifth Row:
Drills (1 - 8); Gun Flint

Sixth Row
New Market (1 - 2); Swan Lake; Tombigbee Stemmed

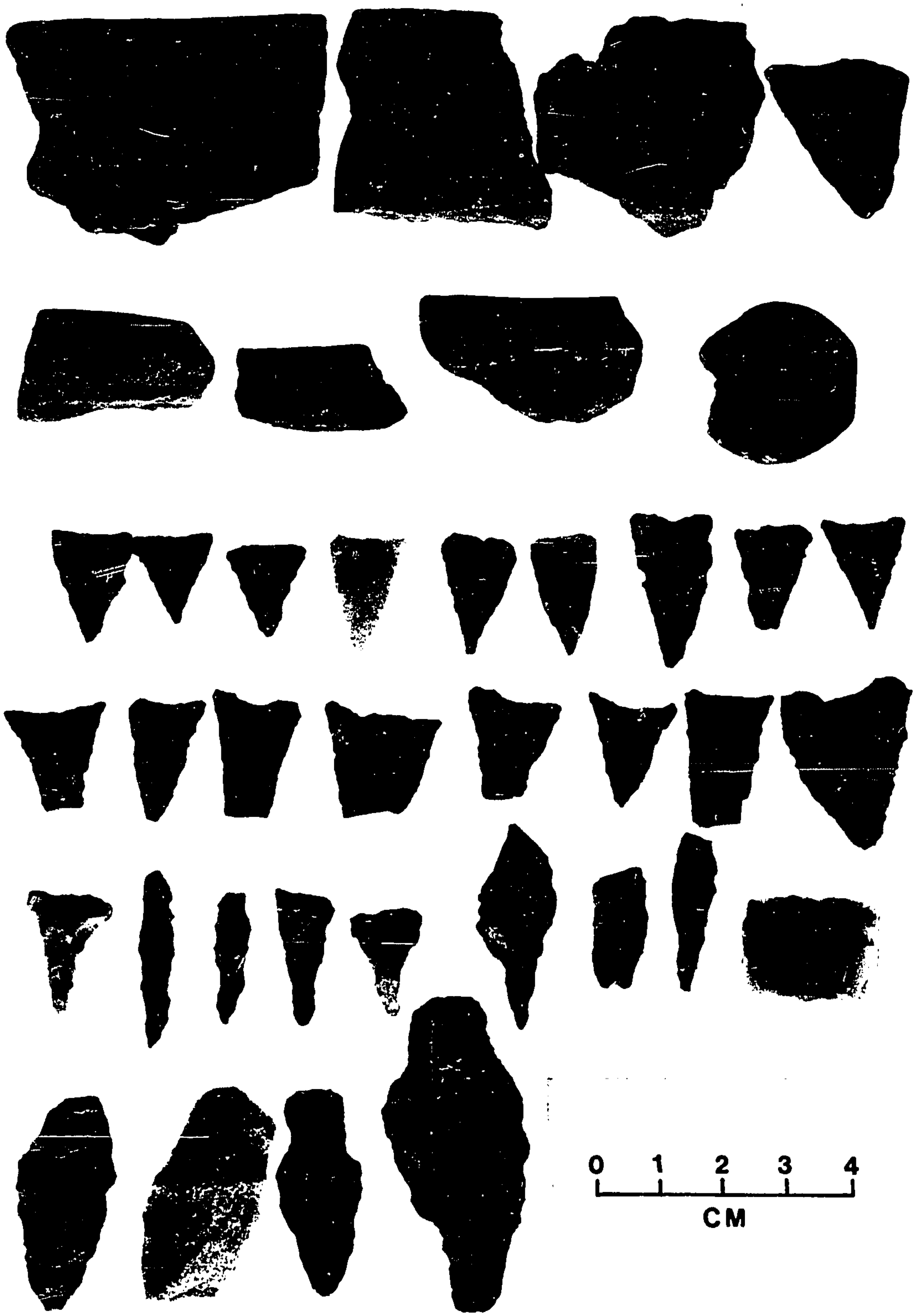
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FIGURE 91

1 TU 2

Top Row:
Carthage Incised, Var. Carthage; Shell-Tempered Discoidals (2 - 3); Drill; Madison Projectile Point

Second Row:
Drill; Madison; Little Bear Creek (3 - 4)

1 TU 3

Third Row:
Bell Plain, Var. Hale--Beaded Rims (1 - 2); Carthage Incised, Var. Carthage

Fourth Row:
Carthage Incised, Var. Unspecified; Moundville Engraved, Var. Unspecified

FIGURE 92

1 TU 44

Top Row:
Mulberry Creek Cord Marked, Var. Aliceville; Baytown Plain, Var. Roper

Second Row:
Moundville Incised, Var. Moundville; Moundville Engraved, Var. Havana; Moundville Engraved, Var. Havana (Curren collection)

Third Row:
Madison; Shell-Tempered Discoidal


0 1 2 3 4
CM

FIGURE 93

1 TU 42

Top Row:
Alexander Pinched, Var. Pairie Farms (1 - 4)

Second Row:
Alexander Incised, Var. Pleasant Valley (1 - 2);
Evansville Punctated, Var. Unspecified (3 - 4)

Third Row:
Wheeler Check Stamped, Var Sipsey; Baldwin Plain, Var O'Neal; Balwin Plain, vessel support

Fourth Row:
Wheeler Check Stamped, Var. Catfish Bend; Carthage Incised, Var. Carthage (2 - 3)

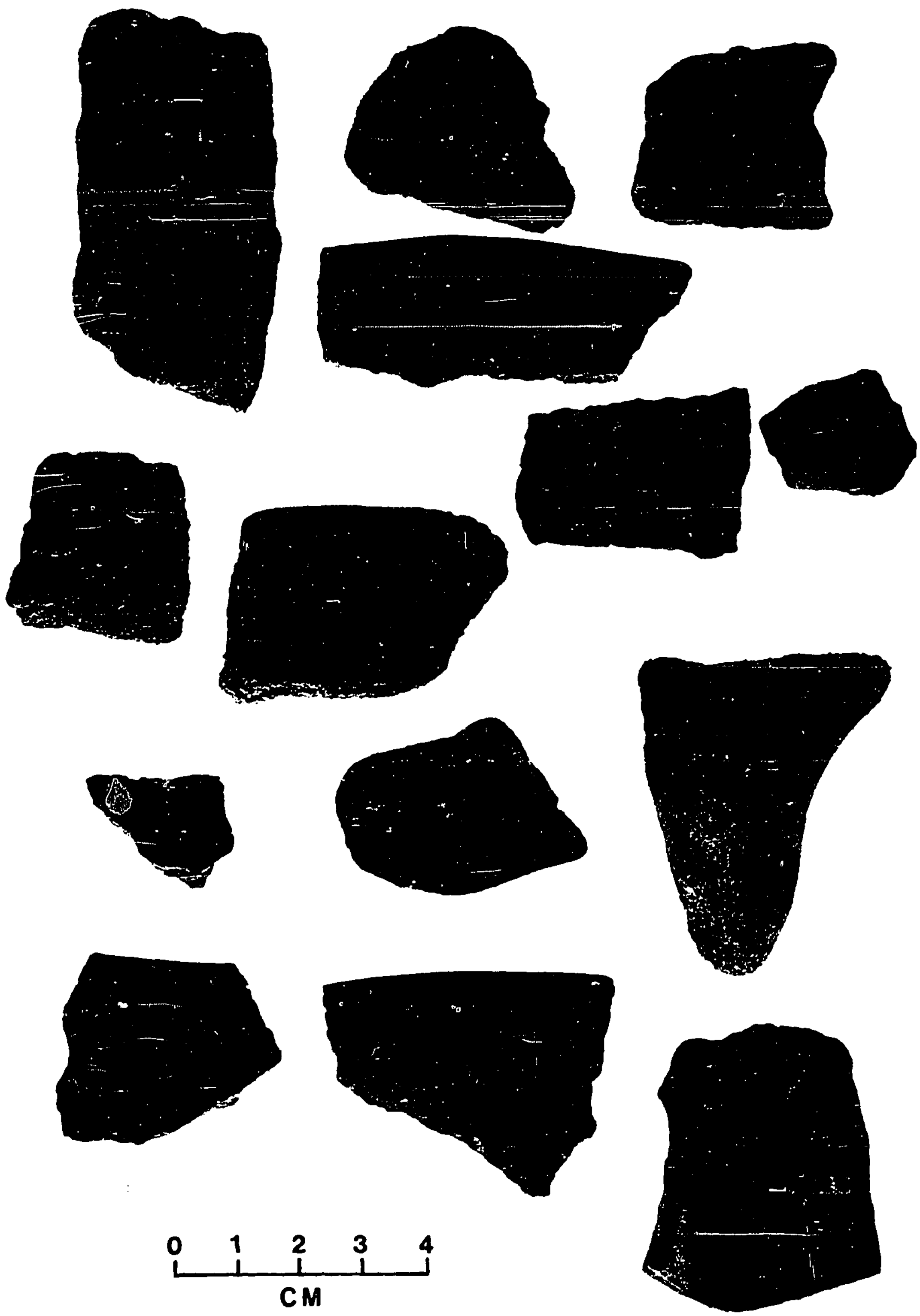
0 1 2 3 4
CM

FIGURE 94

1 TU 42

Top Row:
Carthage Incised, Var. Unspecified (1 - 2); Mississippi Plain, Var. Warrior--Late Handle; Moundville Engraved, Var. Unspecified

Second Row:
Alabama River Applique, Var. Alabama River (1 - 3)

Third Row:
Bell Plain, Var. Hale--Beaded Rim; Shell-Tempered Discoidal; Hamilton Projectile Point

Fourth Row:
Celt Fragment; Madison; Swan Lake

Fifth Row:
Madison (1 - 2)

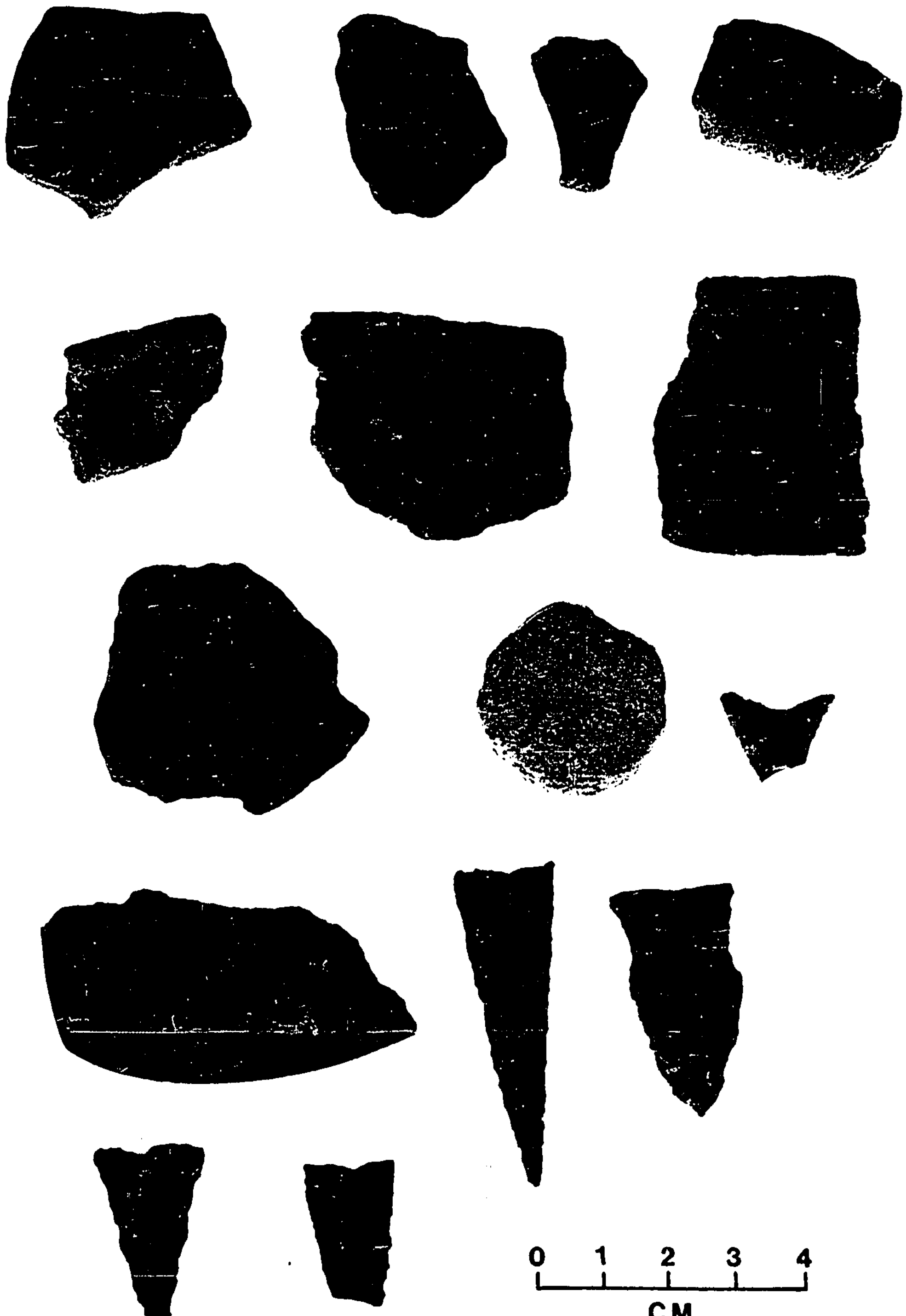

FIGURE 95

1 TU 259

Top Row:
Marksville Incised, Var. Unspecified (1 - 2); Withers Fabric Marked, Var. Gainesville

Second Row:
Withers Fabric Marked, Var. Gainesville (1 - 2) Baldwin Plain, Var. O'Neal

Third Row:
Flint Creek (1 - 3); Cotaco Creek

Fourth Row:
Gary; Mud Creek (2 - 3)


0 1 2 3 4
CM

FIGURE 96

1 TU 259

Top Row:
Hamilton (1 - 2); Madison (3 - 4); Gary

Second Row:
Drill (1 - 6)

Third Row:
Drill; Scraper (2 - 3); Scraper Preform

Fourth Row:
Perforator; Baytown Plain, Var. Roper--Lug


0 1 2 3 4
CM

FIGURE 97

1 Tu 398

Top Row:
Moundville Incised, Var. Carrollton; Moundville Engraved, Var. Unspecified (2 - 3)

Second Row:
Mississippi Plain, Var. Warrior--Handle; Bell Plain, Var. Hale--Beaded Rim (2 - 3)

Third Row:
Madison; Knife; Hamilton (3 - 4)

1 TU 107A

Fourth Row:
Bell Plain, Var. Hale--Beaded Rim (1 - 3)

Fifth Row:
Moundville Engraved, Var. Unspecified; Moundville Engraved, Var. Taylorville; Stone Discoidals (3 - 4)

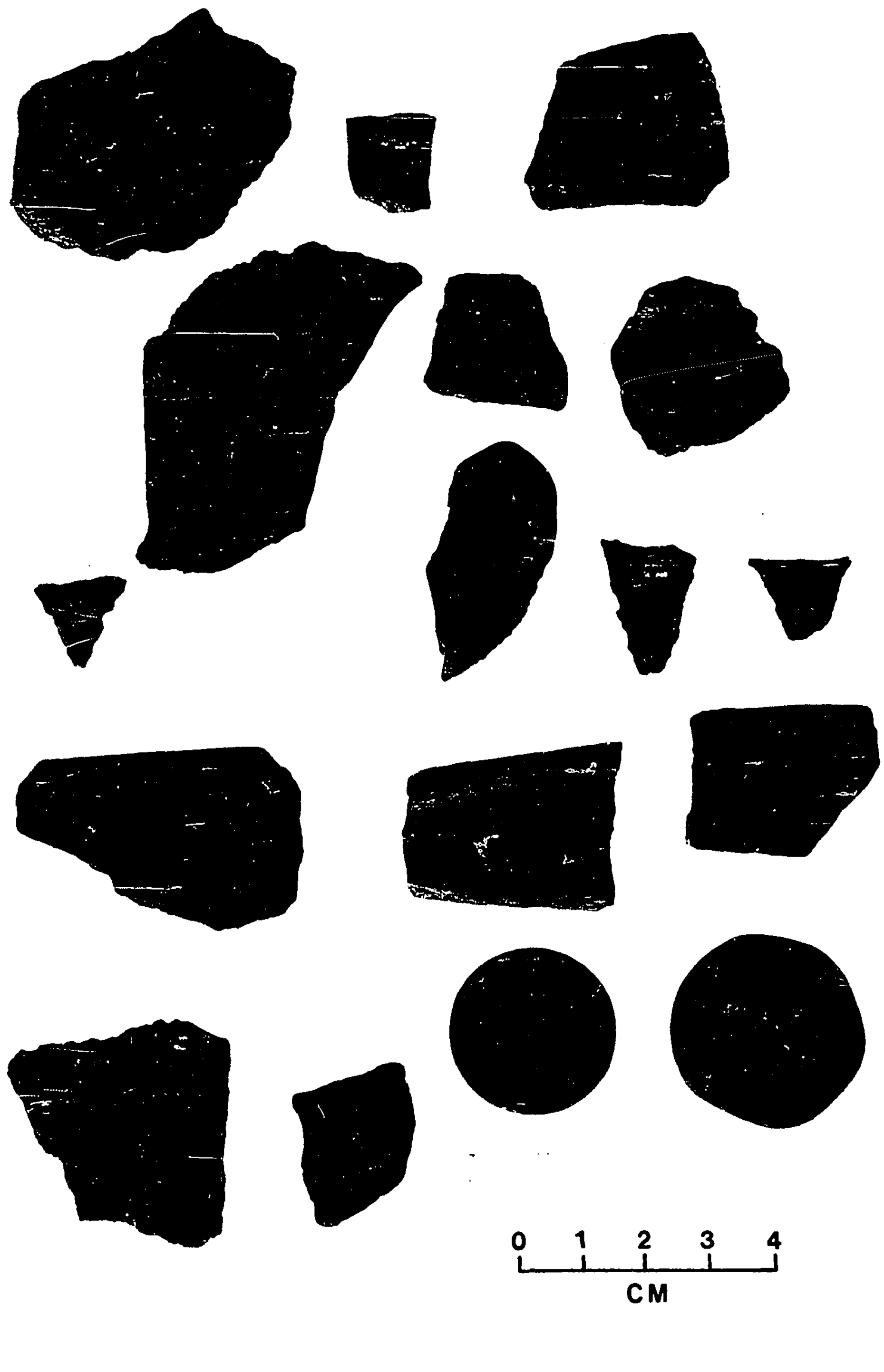
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FIGURE 98

1 HA 92

Top Row:
Bell Plain, Var Hale--Beaded Rim (1 - 2); Moundville Engraved, Var. Maxwells Crossing; Alexander Pinched, Var. Prairie Farms

Second Row:
Santa Rosa Punctated, Var Unspecified; Saltillo Fabric Marked, Var. Tombigbee; Mulberry Creek Cord Marked, Var. Aliceville

Third Row:
Celt; New Market; Gary (3 - 4)

Fourth Row:
Gary; Mud Creek; Flint Creek; New Market

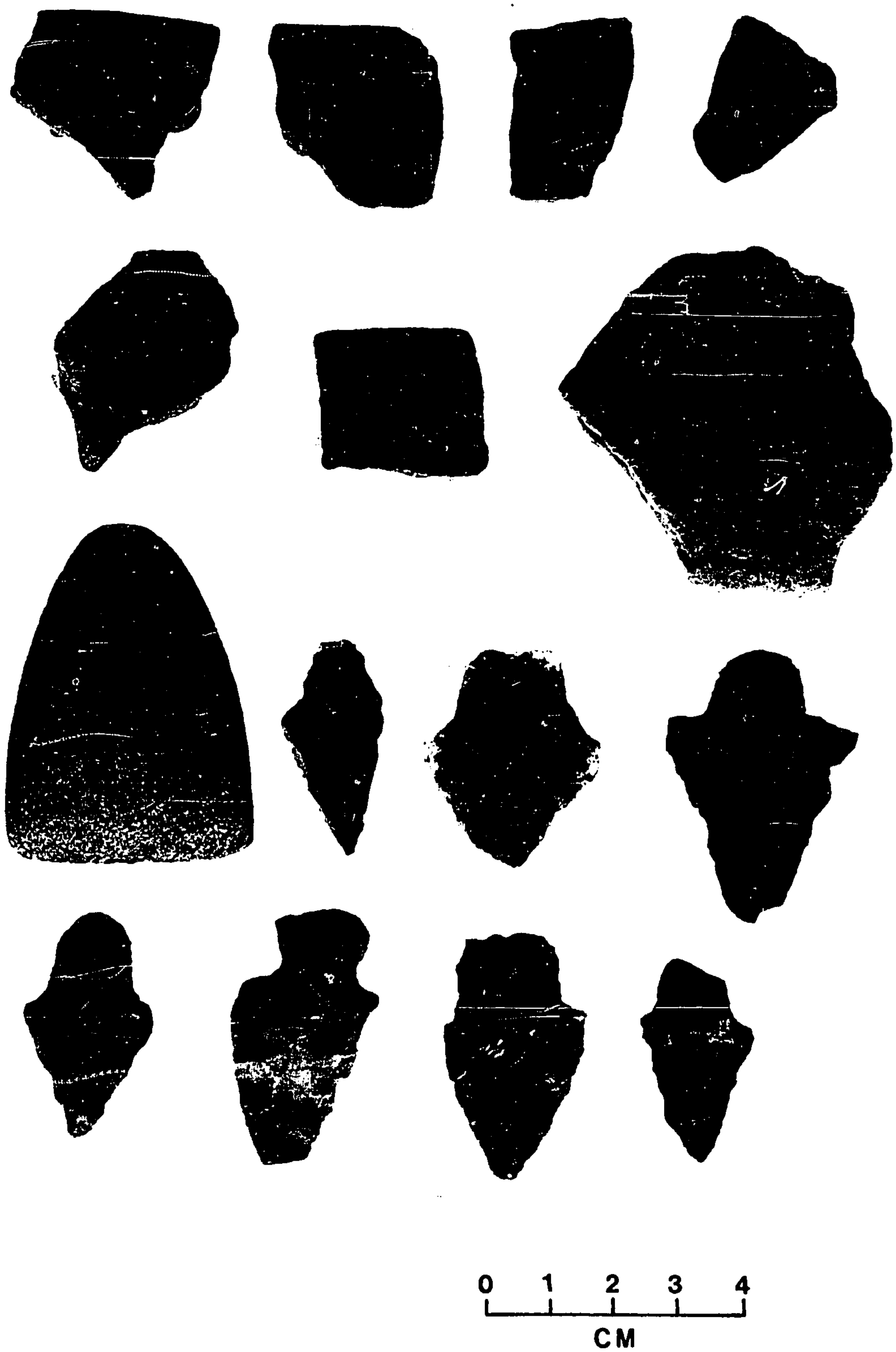
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FIGURE 99

1 HA 92

Top Row:
Gary (1 - 2); Wade; New Market

Second Row:
Little Bear Creek (1 - 2); Bifacial Scraper

Third Row:
Hamilton (1 - 4); Madison (5 - 6)

Fourth Row:
Bifacial Scraper (1 - 2)


0 1 2 3 4
CM

FIGURE 100

1 HA 7/8

Top Row:
Withers Fabric Marked, Var. Gainesville (1 - 3)

Second Row:
Alabama River Applique, Var. Alabama River (1 - 2);
Moundville Engraved, Var. Unspecified (3 - 4)

Third Row:
Bell Plain, Var. Hale--Beaded Rim; Madison

Fourth Row:
Carthage Incised, Var. Poole; Withers Fabric Marked, Var.
Gainesville


0 1 2 3 4
CM

FIGURE 101

Top Row:
1 Tu 46 - Greenstone Celt

Second Row:
1 Ha 107A - Greenstone Celt

Third Row:
1 Tu 66 - Greenstone Celt; 1 Ha 107A - Stone Discoidal

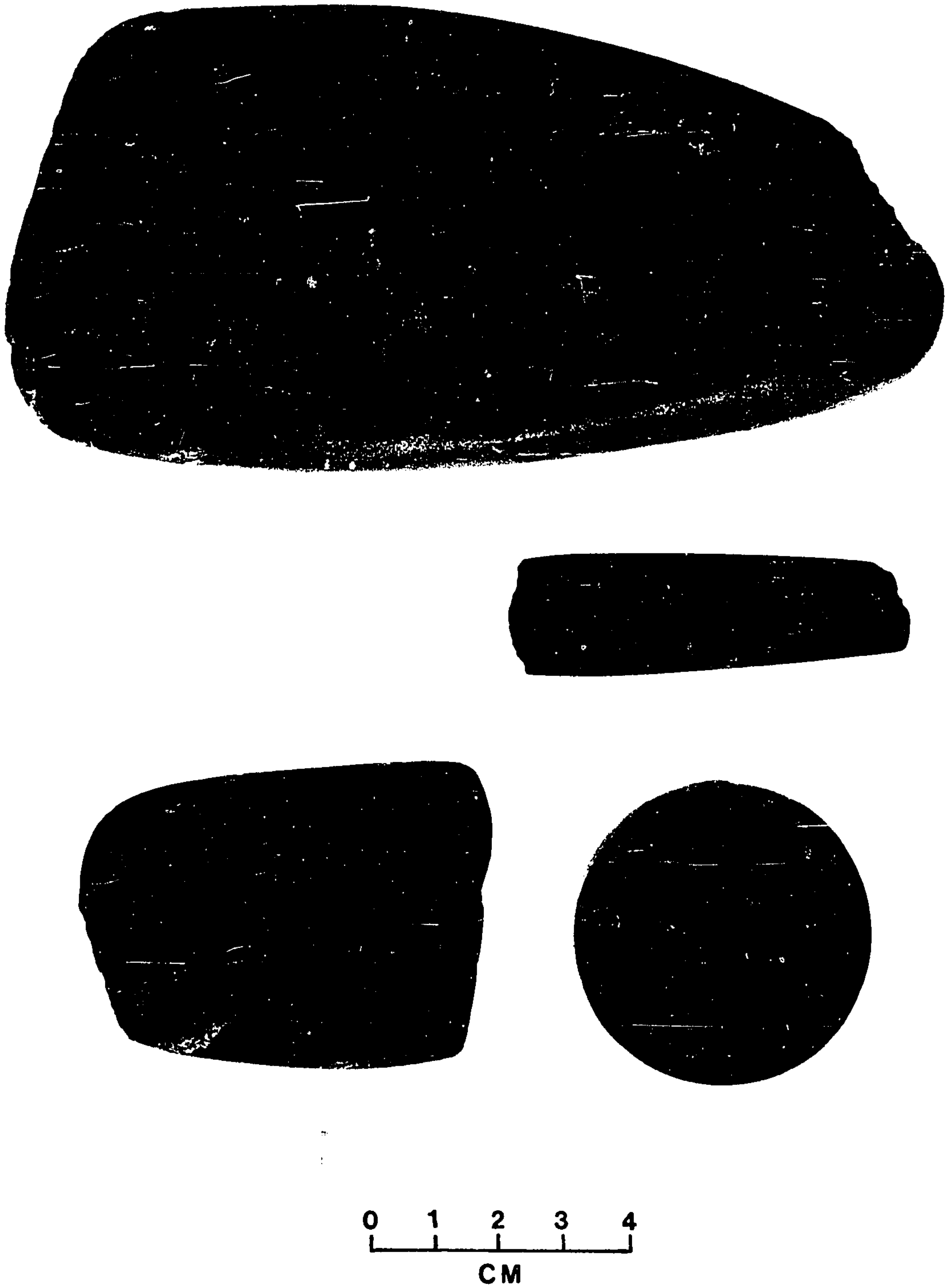
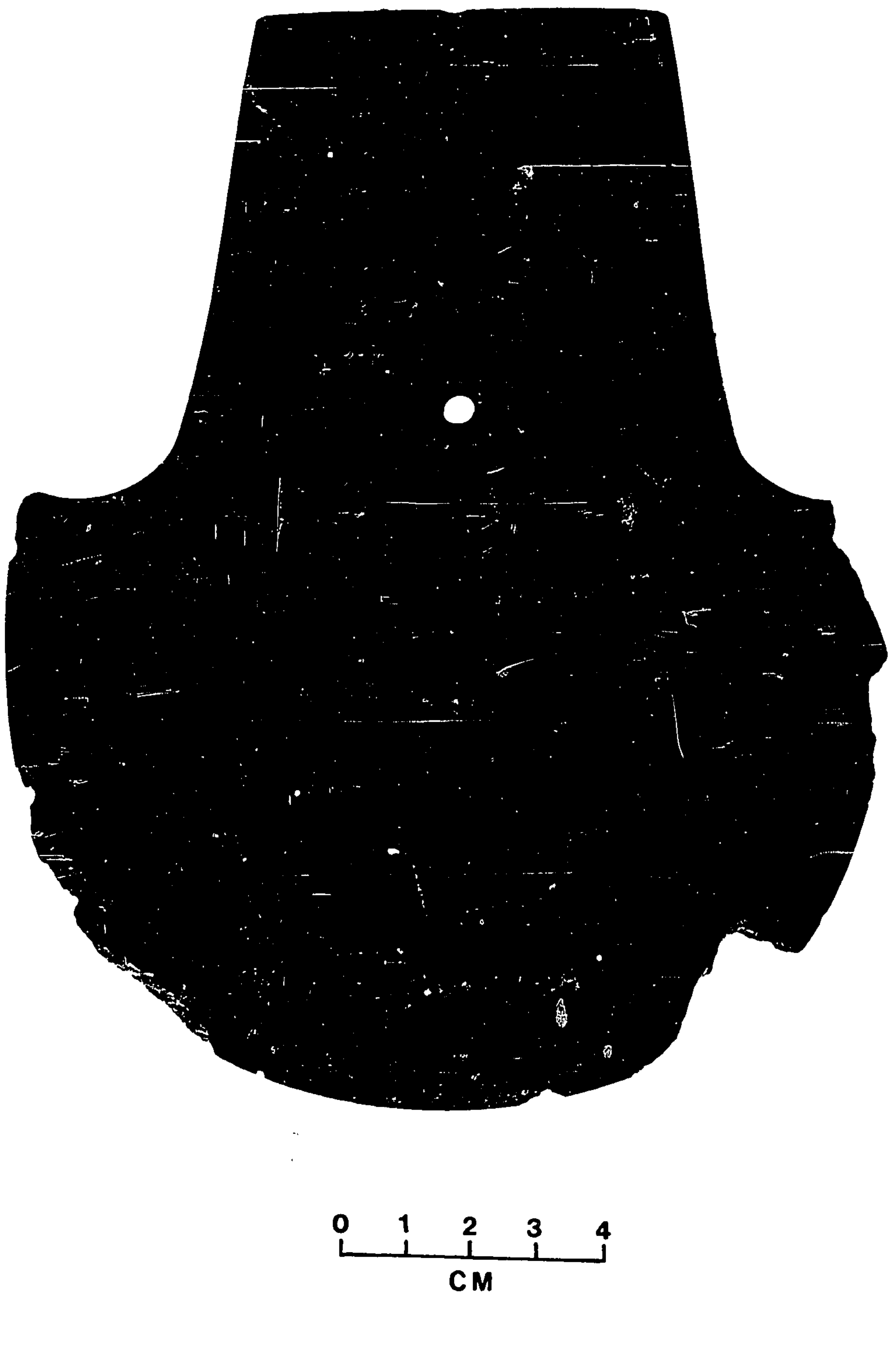

0 1 2 3 4
CM

FIGURE 102

1 TU 46

Greenstone "Spud"


0 1 2 3 4
CM

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