

Moundville: The Form and Content  
of a Mississippian Society

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## Introduction

Since its decline and eventual abandonment in the later part of the fifteenth or early part of the sixteenth century, the large Mississippi Period ceremonial center at Moundville, Alabama, has been preserved through a combination of good fortune and the efforts of a few dedicated scholars. Over the last five centuries, this site has managed to escape major depredations by looters, and, when comparatively small portions of the site were excavated in the first decade of the twentieth century and again in the era of the Great Depression, the archaeologists who directed this work were among the most skillful of their respective scholarly generations. These investigators left detailed records of their research, and their notes and collections have been conserved and are available for use today. In fact, these materials not only form the foundation for knowledge of the late prehistoric societies in the Black Warrior River Valley, but they have made major contributions to the understanding of Mississippian societies in the Southeast as a whole.

This paper will examine the results of almost 75 years of archaeological research at Moundville. It begins with a brief discussion of the sequent concepts used over the last century to guide archaeological investigations of "Mississippian Cultures" in the Southeast. In light of this conceptual framework, the paper will then focus on the excavations at Moundville and other Mississippi Period sites in the Black Warrior River Valley. Next it will pick up the threads of the "formal" criteria that have been used to define the Moundville Phase as a cultural-historical unit. These strands will be linked, albeit loosely, to the preceeding and succeeding archaeological phases in the region. The next two sections of the paper will explore

the variety within and pattern among Moundville Phase settlements and the social and political organization of this cultural system. The final section of the paper will outline the transformations that seem to have taken place in the organization and adaptation of this system between A. D. 900 and A.D. 1600.

## Moundville and the "Mississippian"

The Moundville phase and site are included in the Mississippi Period and are considered archetypes of the "Mississippian Culture." Shorn of the temporal modifiers "Early" and "Late," the Mississippian spans a period from approximately A.D. 1100 to A.D. 1500; invested with the geographical modifier "Middle," it encompasses archaeological remains in the lower Illinois Valley, the central and lower Mississippi Valley, the Tennessee and Cumberland Valleys, and the Black Warrior Valley. The site at Moundville, thereby, is the geographic marker for the southeast boundary of the "Middle Mississippian."

A variety of attributes have been used to define Mississippian in both its temporal and geographical senses, but aspects of ceramic technology have been the most durable of these criteria. As early as the 1890s W. H. Holmes (1903) had defined the "Middle Mississippi Valley group" of pottery on the basis of shell temper, the "carafe" bottle form, effigy vessels, and other distinctive vessel forms. Additional formal criteria for membership in the Mississippian have included large central settlements and associated temple mound (Ford and Willey 1941) and the art and iconography of the "Southern Cult" (Waring and Holder 1945).

Because of the large settlements, aesthetically pleasing art, and massive pyramidal mounds associated with Mississippian sites, the social and political organization of these societies were a subject of speculation and analysis. Warren K. Moorehead (1929) was one of the first scholars to bring the analysis of social organization of the prehistoric societies in the Eastern United States out of the realm of pure guesswork ("Vanished races," etc.)



and into the arena of measurement. He created a cultural scale of from one to nineteen points, in which nineteen points were assigned to complex civilizations and a score of one was given to the rudest of hunter-gatherer groups. He then applied this scale to the prehistoric remains of the Midwest and Southeast: Scioto Hopewell got thirteen points; Etowah and Moundville were given eleven points; Fort Ancient groups--who Moorehead considered "Middle Class"--were placed between the "Mound Builders" and the Illinois Hopewell to whom he gave eight points; lastly the inhabitants of the Georgia and Florida shell mounds were worth five points. Needless to say time and the tides of research have buried Moorehead's scale, but it was an attempt to apply objective method to the expression <sup>of</sup> subjective observations.

Although active considerations of social organizations continued after Moorehead, the main challenge to the archaeological methods of the 1930's came from the immense quantity of material produced by various of the federally-funded "works" projects. Cultures and culture types were the themes that lay behind the analysis of these data; effective categories were necessary to bring order to the chaos of observations. The adoption of the "Midwest Taxonomic Method" (McKern 1939) was one response to this problem. Therein the Mississippian was placed in the second most inclusive category, the "pattern," and its defining characteristics included manner of burial, ceramic variety, small projectile points, and choice of raw materials for the manufacture of tools and ornaments. Such a classification gave a basis for the comparison of archaeological remains in space and time.

The thread of interest in the social organization of Mississippian groups was not broken completely during the fast-paced fieldwork of the Depression Era. John Bennett, who later abandoned archaeology for a

distinguished career in social anthropology, wrote:

Middle Mississippi pottery, with its extreme standardization, divisions into utilitarian and decorative types, and areal consistency is extremely revealing of the basic dynamisms of the culture as a whole. We only lack the necessary logics to interpret these structural characteristics of material culture complexes (Bennett 1943: 219).

It would be almost two decades before someone would attempt to develop the framework for the analysis of Mississippian social organization. Instead, after World War II, when the major syntheses of the excavations of the 1930s were either written or published (e.g. Lewis and Kneberg 1946, Griffin, ed. 1952), the social organization of the Mississippian was not included as an analytical category. In most instances, the "cause" of the Mississippian was seen as the result of the diffusion of Mesoamerican crops and ideas, and Mississippian social organization was seen as a pale reflection of Aztec and Toltec society. In one case (Lewis and Kneberg 1958) analogies with the migrations and dispersals of Thracians, Phrygians, and Dorians were invoked, and wandering Aztecs were cited as the cause of Southeastern temple mounds and Southern Cult art.

It was William Sears (1958, 1961), more than any other scholar, who caused the reintegration of the concepts of social, religious, and political organization into the analysis of Southeastern prehistory. He argued that several aspects of archaeological observation and analysis could provide information about a society's organization. At one level, the size of dwelling units, community plan, and relationships among communities (settlement pattern) would yield broad measures of social and political complexity. At

yet a finer level, mortuary ritual would provide evidence of both social ranking and ceremonialism. In addition, he pointed out that a Mississippian temple mound could be "read" by the archaeologist as a sequence of fossilized ceremonies (Sears 1961), and that the size and configuration of a "council house" would serve as a good measure of the size of a society's decision-making unit (Sears 1958: 148). In brief, Sears demonstrated that knowledge of social, political, and religious organization in the prehistoric Southeast was within the grasp of archaeologists, and he pointed to the classes of data which, when analyzed, would produce this knowledge.

In his later work, Sears sought to show that the Mississippian societies of the Southeast were organized as states (Sears 1962, 1968). In doing so he followed a rather fruitless argument and moved far away from the archaeological and ethnohistoric data of the Mississippian and early historic periods. Sears' analysis, which hinges on Hoebel's definition of the state [The state is " . . . the organized association of men (the group) for whom a specialized sub-organization functions to transmit policy into social action." (Hoebel 1949: 377)] ; sets up three criteria for the identification of the state.

To identify a prehistoric state then, we need to:

- (1) Identify, archaeologically, the group which is presumed to be composed of a number of communities.
- (2) Define the territory of the group, which is essentially equivalent to defining the group itself.
- (3) Identify a specialized suborganization that could (and hypothetically did!) transmit state policy into social action (Sears 1968: 135).

To these three criteria Sears added the proviso that states are organized along lines of territory and place rather than through the web of kinship.

There are several problems in the use of this implicit definition of the state (group, sub-organization, territory), and there are insurmountable problems in its archaeological application. First, Hoebel's 1949 definition of the state is non-exclusive. Although his views have changed since (see Hoebel 1972: 522-538), in 1949 Hoebel wrote:

where there is political organization there is the state.  
If political organization is universal, so then is the  
state. One is the group, the other an institutionalized  
complex of behavior (Hoebel 1949: 376).

In effect, if politics are present, then this notion of a state cannot serve to differentiate among societies of varying social complexity. Second, the holding of a "territory" is not an exclusive feature of states; both hunter-gatherer and village-agricultural societies traditionally "hold" territories. Third, many societies that today would be called chiefdoms do have specialized decision-making bodies which codify and implement policy (cf. Wright 1977). Finally, the Natchez, which Sears cites as an example of a Southeastern state, were organized in terms of consanguinity and affinity; that is, their <sup>social structure had at its base</sup> a highly ramified, hierarchical web of kinship. In short, there are problems not only with the adequacy of these arguments for the existence of Mississippian states but in their application to archaeological remains as well.<sup>1</sup>

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<sup>1</sup> A similar evaluation can be offered for some more recent interpretations such as Olah's (1975) repetition of Sears position, Sperber's (1976) suggestion that the Mesoamerican "cargo" system operated to organize Mississippian societies, and Gibbon's (1974) assertion that Cahokia and Teotihuacan had similar forms of socio-political organization.

In spite of these shortcomings, much of Sears' earlier work is important to the ongoing analysis of the Mississippian Period. Recent work on societies of this period has focused on the concepts of socio-political organization, adaptation, and subsistence base. For example, James B. Griffin uses the term Mississippian ". . . to refer to the wide variety of adaptations made by societies in the Eastern United States which developed a dependence upon agriculture for their basic, storable food supply" (Griffin 1967: 189).

Bruce D. Smith (1978) goes one step further and isolates biogeographic factors common to the habitat selected by Mississippian societies. He shows that these cultural systems exploited a very narrow range of domesticated plants, plus a selected number of wild plants and animals, and that these societies were restricted to biomes that receive large natural subsidies of energy. In effect, besides being "ecological specialists" (see also Ford 1974, 1977), Smith shows that Mississippian cultural systems located their settlements within highly circumscribed, narrow bands of alluvium, oxbow lakes and backswamps, and nearby river terraces that received not only solar energy but additional, imported energy from nutrients deposited by annual floods. As a result, these highly localized biomes had a net primary productivity and an agricultural potential far in excess of upland biomes, and thereby presented a concentrated, spatially efficient resource base for Mississippian settlement.

Lastly, the Mississippian has been defined so that it includes only those prehistoric cultural systems in the Eastern United States that symbolize genealogical ascriptive, hierarchical ranking of persons and

and that evince a two-level hierarchy of political and ritual offices (Peebles and Kus 1977, Peebles 1977). That is, Mississippian Societies were organized as chiefdoms, and recruitment to political office seems to have been restricted to a geneologically defined upper strata of society.

The conjunction of the concepts of adaptation and organization, plus the judicious use of key artifact types, does provide a workable analytic definition of the Mississippian. This definition serves to set off these cultural systems from contemporary, egalitarian agricultural societies to the north and east (Fort Ancient and prehistoric Iroquois), and it heightens the contrast with earlier Late Woodland phases in the Southeast. Like all categorical statements, this definition has its shortcomings. First, because it has been drawn with sufficient latitude to encompass all Mississippian societies, it sacrifices the rich detail within and contrasts among the individual societies.\* Second, it provides an essentially static framework and thereby ignores the processes that lie behind the development, operation, and demise of these cultural systems. Such drawbacks, however, are overcome by the analysis of individual Mississippian societies, and it is to that end that this paper turns to the Moundville site and phase.

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\*See use of Pan-Southern Tradition in Concluding Chapter (ed.).

### Excavations at Moundville: 1905 to 1975

Although some minor collecting and digging must have taken place at Moundville during the nineteenth century (there are items in the Field museum and the Peabody Museum of Archaeology and Ethnology attributed to Moundville), the first major excavations at the site were conducted in 1905 and 1906 by Clarence B. Moore. Moore came to Moundville, as he came to many other sites in the Southeast, to collect museum specimens which would illustrate the excellence of Native American craftsmen and artists. His excavation technique was far from adequate by today's standards, but for 1905 his field work was far superior to that of most archaeologists. As part of his investigations, Moore produced maps of the sites he excavated, recorded graves, grave-lots, and skeletons together, and located the areas he excavated on his site maps. Most important, he published lightly edited versions of his field notes as well as detailed illustrations of the materials he recovered. His two volumes on Moundville (Moore 1905, 1907) remain the major source of information available on the contents of the truncated mounds at the site.

Between 1906 and 1929 no active archaeological work took place at Moundville: cotton was grown in the plaza, and mature trees grew on the slopes of the mounds. In 1929, however, at the behest of Mrs. Jeff Powers and other members of the Moundville Historical Society, Dr. Walter B. Jones, State Geologist and staff member of the Alabama Museum of Natural History, began an active program of research at the site. As Dr. Jones has recounted (with deserved pride) he started his work at Moundville to

show that Moore had not "milked the site dry," and that it remained a valuable scientific resource. Once he determined that the vast majority of the site was intact, Dr. Jones began to buy portions of the site so that it would be protected. He even mortgaged his home on several occasions to get sufficient cash to buy out some landowners (Walthall 1977:4). From the beginning, Dr. Jones was aided in his research by David L. DeJarnette, who later became curator of Mound State Monument. Between 1931 and 1939 James DeJarnette, Tom DeJarnette, Steve Wimberly, and Maurice Goldsmith served as archaeological supervisors for excavations at Moundville. Active, large-scale investigations continued at Moundville until 1941.

The field techniques used to excavate at Moundville between 1929 and 1932 followed those of Moore: graves were located and excavated; notes were kept on grave locations and artifact associations. During the summer of 1932 David DeJarnette enrolled in the University of Chicago field school directed by Fay-Cooper Cole. Upon his return from Illinois, the field techniques employed at Moundville changed radically. Modern archaeological techniques were adopted. Soil stains and depositional features were recognized and recorded; features other than burials were sought actively; archaeological deposits were screened; and a grid system was imposed on each excavation. This approach, it should be added, became the base for the many innovations that were adopted during the large-scale excavations in the Tennessee Valley between 1935 and 1940.

By the mid-1930s, the work at Moundville--like so much of the archaeology in the Southeast--had come under the sponsorship of one or another of the federal relief projects: the Civilian Conservation Corps, Works Progress



Administration, or Tennessee Valley Authority. Officially a Civilian Conservation Corps camp, a "side-camp" of C. C. C. Camp SP-7 at Murford, Alabama, was established at Moundville in the fall of 1934. In actual practice, each of the three agencies made some contribution to research at Moundville: David DeJarnette worked for the T. V. A. and commuted to Moundville on weekends; the Anthropology laboratory at Birmingham, Alabama, which catalogued much of the material excavated from Moundville, was run by the W. P. A.; and the C. C. C. provided the labor and funds for excavations at the site. By 1941, when the very real threat of a world war suspended operations, over one-half million square feet of the Moundville site had been excavated either by Moore or by the Alabama Museum of Natural History. These excavations included a sample of approximately 4% of the entire site and approximately 15% of the intensively utilized portions of the site.

Although World War II ended the excavation of Moundville (and the lives of some of the excavators), work at the site did not cease entirely. Mr. E. H. Chapman, an employee of the Alabama Museum of Natural History and a patient and precise man, spent the war years making an inventory of the artifacts and records produced by the excavations of the preceding eleven years. After the war, David L. DeJarnette, who for a time after his army discharge had been Curator of the Museum of Atomic Energy in Oak Ridge, Tennessee, returned to Moundville as Curator of Mound State Monument; he later became a professor of anthropology at the University of Alabama as well. Since his return, only four small excavations have been undertaken at Moundville, but curatorial work and construction of museum exhibits have continued apace.

The mass of data produced by the excavations at Moundville between 1929 and 1941 is immense. In total more than 480,000 square feet were excavated. From these excavations came 2250 burials, and when added to the 801 burials found by Moore, a total of 3051 burials have been recovered from Moundville. Of these, over 1,000 burials were found with associated grave goods. In addition to several hundred other features, the Alabama Museum of Natural History's investigations mapped over 75 structure-patterns, many of which had artifacts recorded in situ on their floors. The total number of artifacts recovered from all excavations at the site includes more than 1,000 whole vessels, almost all of which were associated with burials, over 200,000 sherds, most of which can be placed in some archaeological context, and over 10,000 additional sherds, all of which can be placed in stratigraphic context. Other artifacts recovered range from stone monolithic axes and copper axes found with burials in the mounds to a single magnolia seed clutched in the hand of one burial and charred corn cobs stuffed in the mouth of another. In all, one can suggest that this collection can answer many more questions than those posed in the following sections of this paper.

### The Moundville Phase: Form, Time, and Geography

A "Moundville Culture" was recognized by Dr. Walter B. Jones and David L. DeJarnette from the inception of their work at the site (Jones 1932: 34). This recognition was given added expression by David L. DeJarnette and Steve B. Wimberly (1941) in their report of excavations at the Bessemer Site. They grouped Moundville, Bessemer, and several sites in the Tennessee River Valley into an unnamed Aspect of the Mississippi Pattern. A formal definition of the Moundville phase was presented by Douglas McKenzie (1966), and further areal subdivisions of this phase have been made by John Walthall (in press).

#### The Moundville Phase

The core of the definition of the Moundville phase, apart from truncated temple mounds, ceremonial artifacts, and a unique art style, has been provided by a series of diagnostic ceramic types. These ceramic types were defined first from materials recovered at the Bessemer Site (DeJarnette and Wimberly 1941: 79-97), and only later were they applied directly to the materials found at Moundville (Wimberly 1956). The list of pottery types was refined and expanded by Douglas McKenzie (1965, 1966), and modified yet again by John Walthall (in press). The following discussion has drawn from all these works, from my own work with the Moundville collection, and especially from the unpublished observations of James B. Griffin and Vincas Steponaitis. In the widest terms, the ceramics found at the Moundville Site fall into four broad divisions: 1) an indigenous utilitarian ware designated either Warrior Plain or Moundville Incised; 2) an indigenous

finely-made ware designated either Moundville Black Filmed, Moundville Filmed Engraved, Moundville Engraved Indented, Moundville Filmed Incised, or Moundville Red Filmed; 3) a group of a few vessels that seem to be indigenous to Moundville but do not fit into any of the established ceramic types; and 4) a number of vessels that have been imported from the Caddo area, the Lower Mississippi Valley, and the Tennessee-Cumberland region.

The type Warrior Plain (Figure 1) encompasses a group of undecorated hemispherical bowls and jars; many of the jars have two or more strap handles attached between the lip and shoulder; both the bowls and jars are made from a shell-tempered paste much like that Philip Phillips (1970: 131-135) has described for Mississippi Plain. In a tabulation of the approximately 100,000 shell-tempered sherds from the Roadway Excavation at Moundville, Wimberly (1956) found that over 81% could be assigned to this type. Moundville Incised differs from Warrior Plain only in the addition of an incised scalloped line and incised geometric motifs perpendicular to this line placed around the shoulder of the vessel. Moundville Incised accounts for slightly more than 4% of the sherds found at Moundville and comprises a small but unmeasured percentage of the vessels found with the burials at that site.

The second of the major ceramic divisions includes the black and red filmed ceramics. Moundville Red Filmed, which makes up less than 1% of the sherds from Moundville, and which is equally rare with burials from that site, had a paint of iron oxide applied to the surface of the vessel before firing. Little is known about the range of vessel shapes encompassed by this type, but both shallow bowls and plates have been identified thus far.

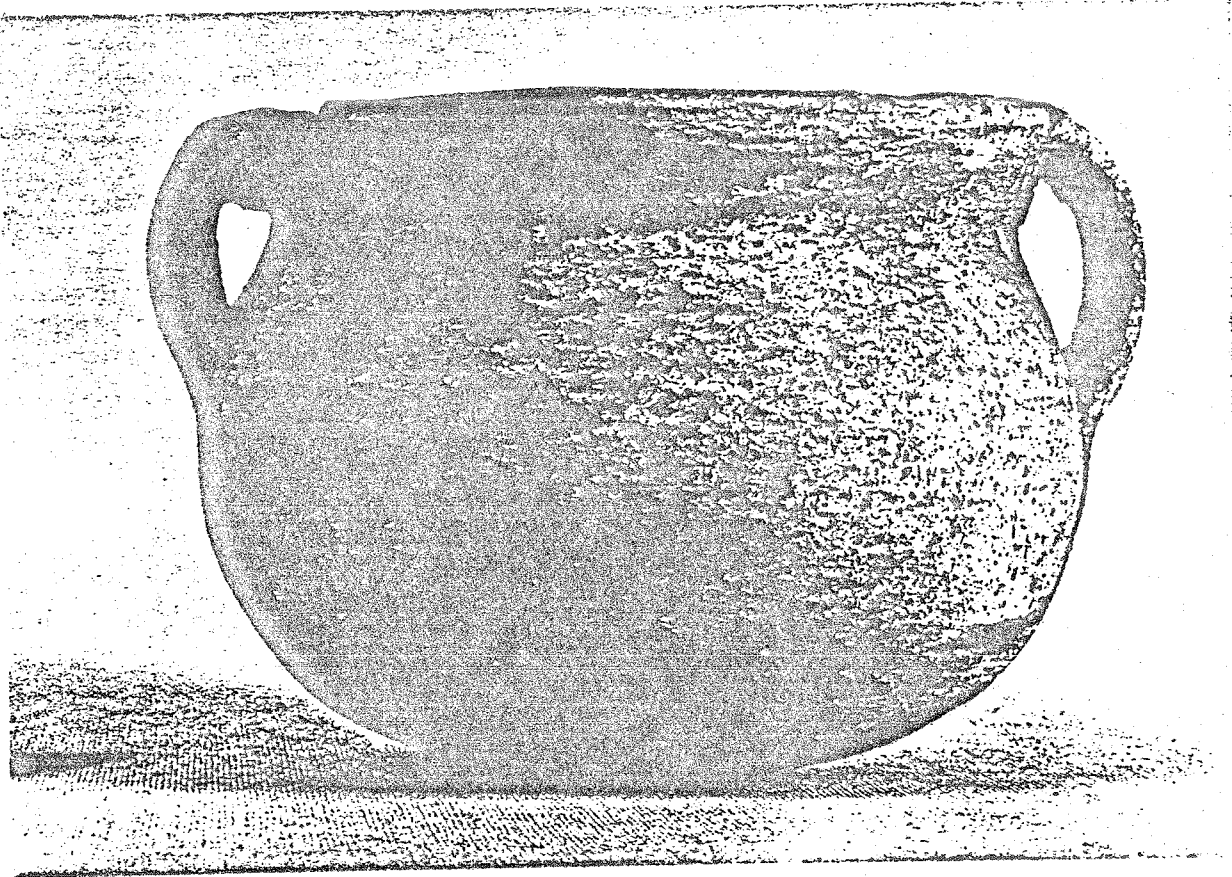


Figure 1. Warrior Plain Jar.

The vast majority of the indigenous decorated ceramics at Moundville and other Moundville phase sites were made from a fine shell-tempered paste to which a black film had been applied to the finished surface of the vessel. Heimlich (1952: 28-32) has suggested that such a black film probably was produced in the following manner. Once the vessel had been constructed the surface was polished when it was "leather-dry" and then the vessel was fired. After it cooled an organic wash was applied to the surface and the vessel was refired for a brief time. The resultant black finish then needed only a light polish to bring it to a high luster. Recent work by Vincas Steponaitis and Ned Jenkins has shown that careful control of a reducing atmosphere during firing will produce the characteristic black surface.

The following ceramic types all share the black "filmed" surface; they differ in the decoration applied and in the range of vessel forms found in each type. Approximately 60% of vessels found with the burials at Moundville come from one or another of these types, but only 11% of the sherds from the Roadway Excavation were from such black-filmed vessels.

Moundville Black Filmed vessels have no decoration beyond their black surface. The range of vessel forms in this type include jars (Figure 2), bottles, and various effigy forms (Figure 3).

Moundville Filmed Engraved vessels were decorated after the second firing. One or more of the Southern Cult motifs or geometric designs were engraved through the black surface and into the body of the vessel. Only bowls and bottles (Figures 4-5) are represented in this type.

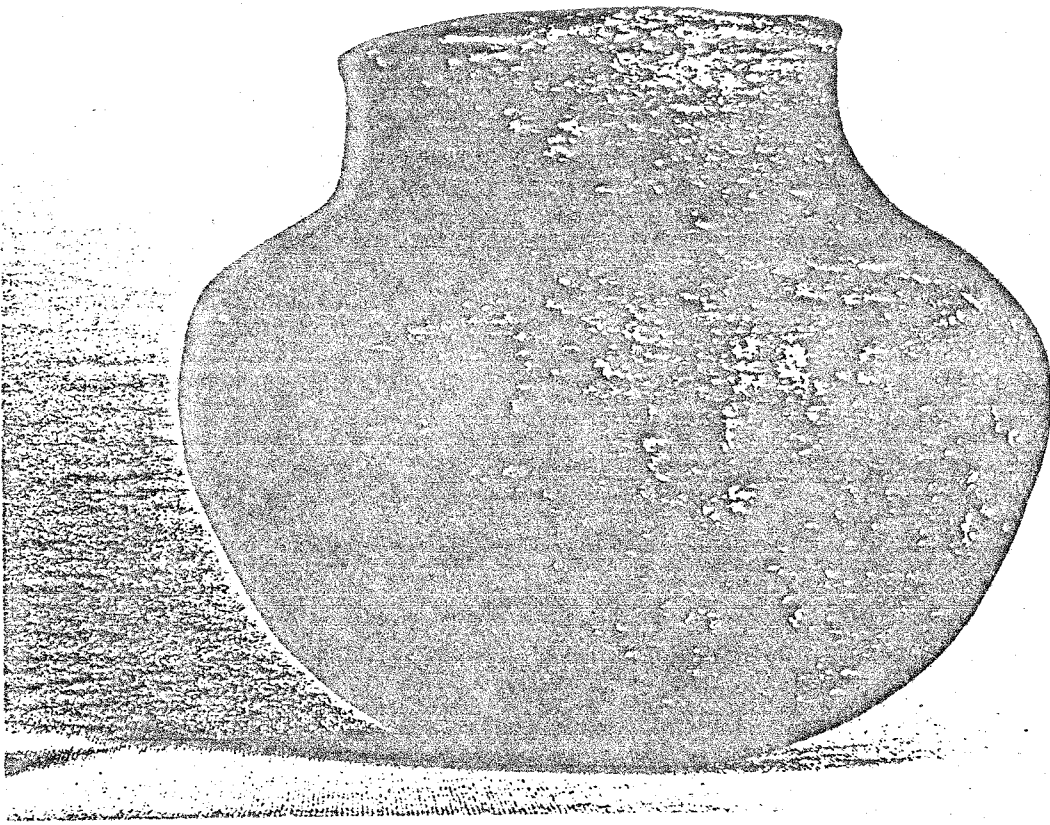


Figure 2. Moundville Black Filmed bottle.

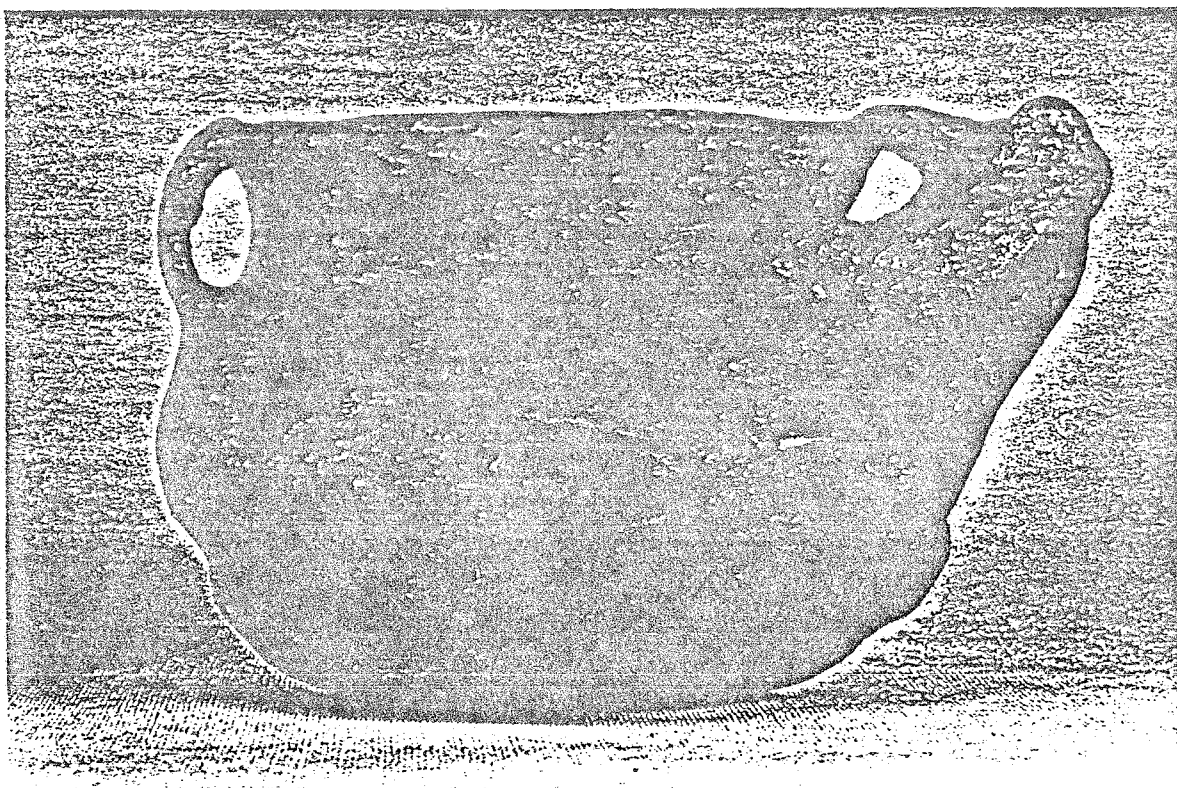


Figure 3. Moundville Black Filmed frog effigy bowl.





Figure 4. Moundville Filmed Engraved bottle.

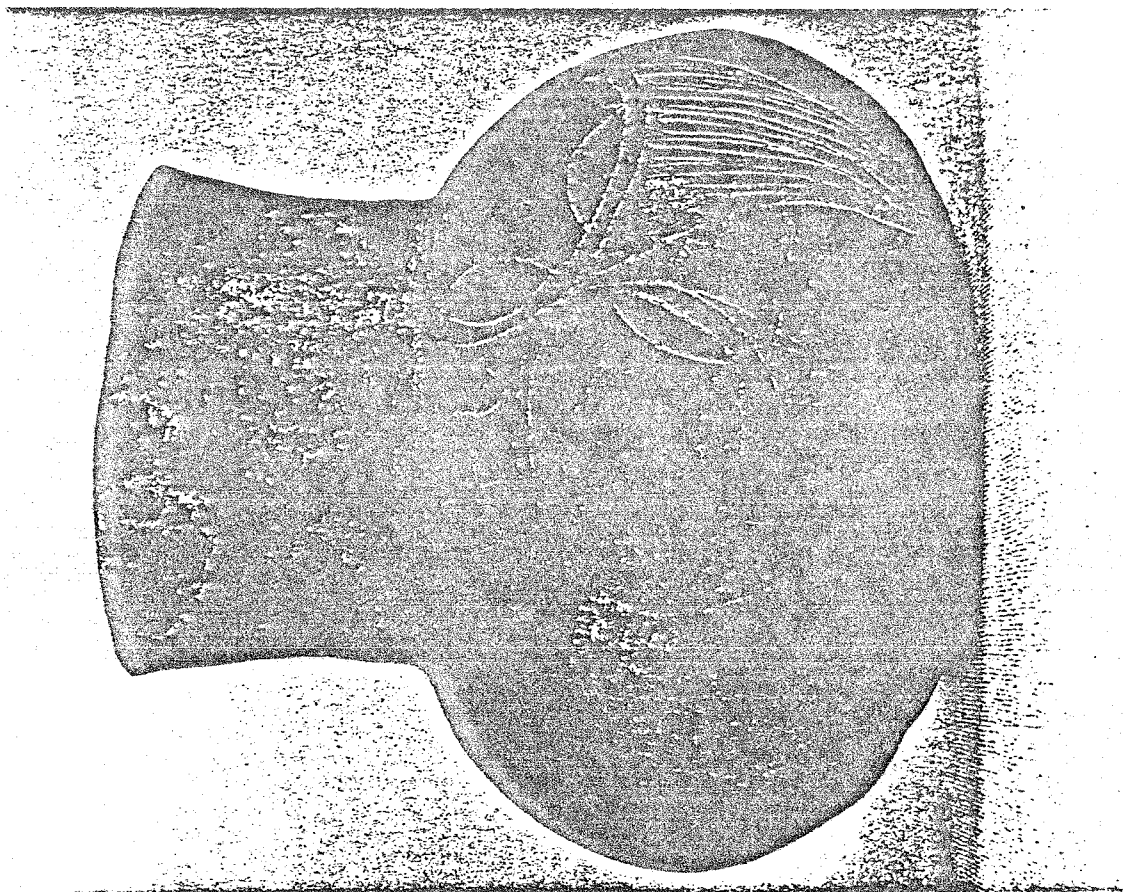


Figure 5. Moundville Filmed Engraved bottle.



Figure 6. Moundville Filmed Incised beaker.

Various motifs were cut into Moundville Filmed Incised vessels before firing. Both Southern Cult motifs and geometric designs make up the motifs; the vessel forms include water bottles, bowls, beakers (Figure 6) and various composite shapes.

Moundville Engraved Indented water bottles had thumbprint sized impressions pushed into the body of the vessel and geometric designs were engraved around the indentations (Figure 7).

There are several vessels which neither fit the established ceramic types which define the Moundville phase nor can be assigned to the category of imported vessels. Most of these vessels have shell-tempered paste like that of Warrior Plain but show a variety of incised, noded, or other applied surface decorations.

There is, in addition, one vessel-form which is either filmed or painted and which deserves special note. The vessel-form is that of a Pueblo terraced ceremonial bowl (cf. Bunzel 1929: Plate VIII). Eight vessels of this form have been found at Moundville. Three undecorated black filmed terraced bowls were reported by Moore (1905: Figure 76; 1907: Figure 22, Figure 23). The remaining five bowls were found during the course of the Alabama Museum of Natural History excavations. One bowl is a variant of Moundville Black Filmed (Figure 8). Two of these bowls seem to be variants of Moundville Filmed Engraved (Figures 9-10), one is clearly a variant of Moundville Filmed Incised (Figure 11), and the fourth (Figure 12), which is painted, is almost identical to a vessel found in the Big Black River Valley of Central Mississippi (Ford 1936: 119, Figure 23h).

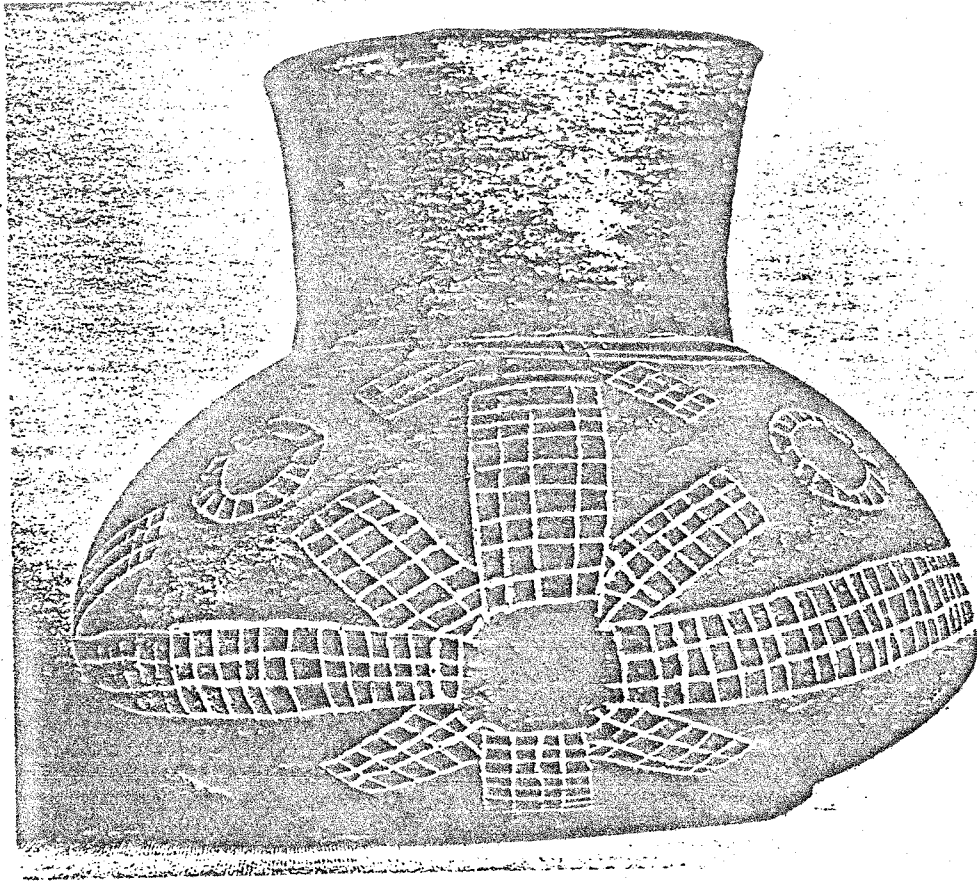


Figure 7. Moundville Engraved Indented bottle.

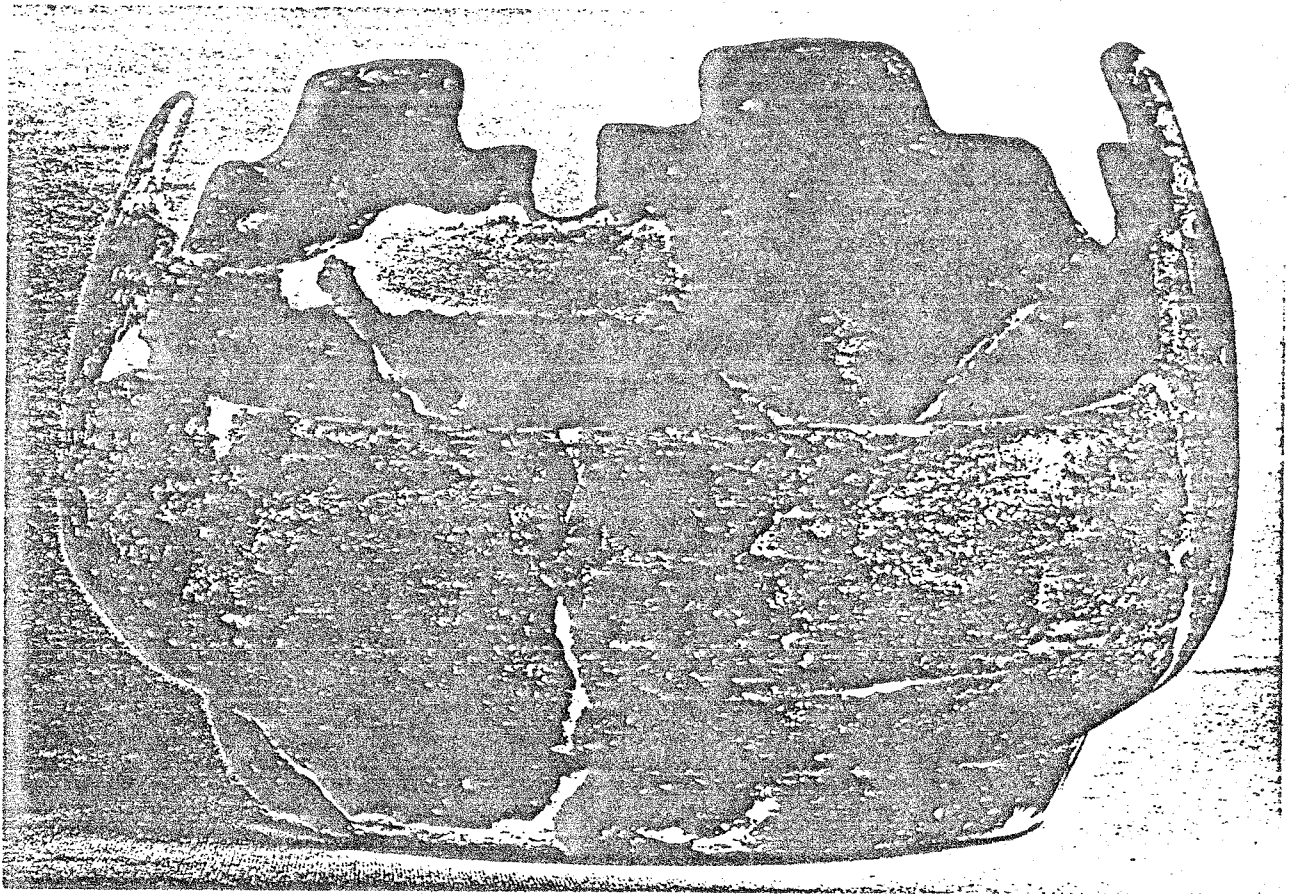


Figure 8. Moundville Black Filmed terraced ceremonial bowl.



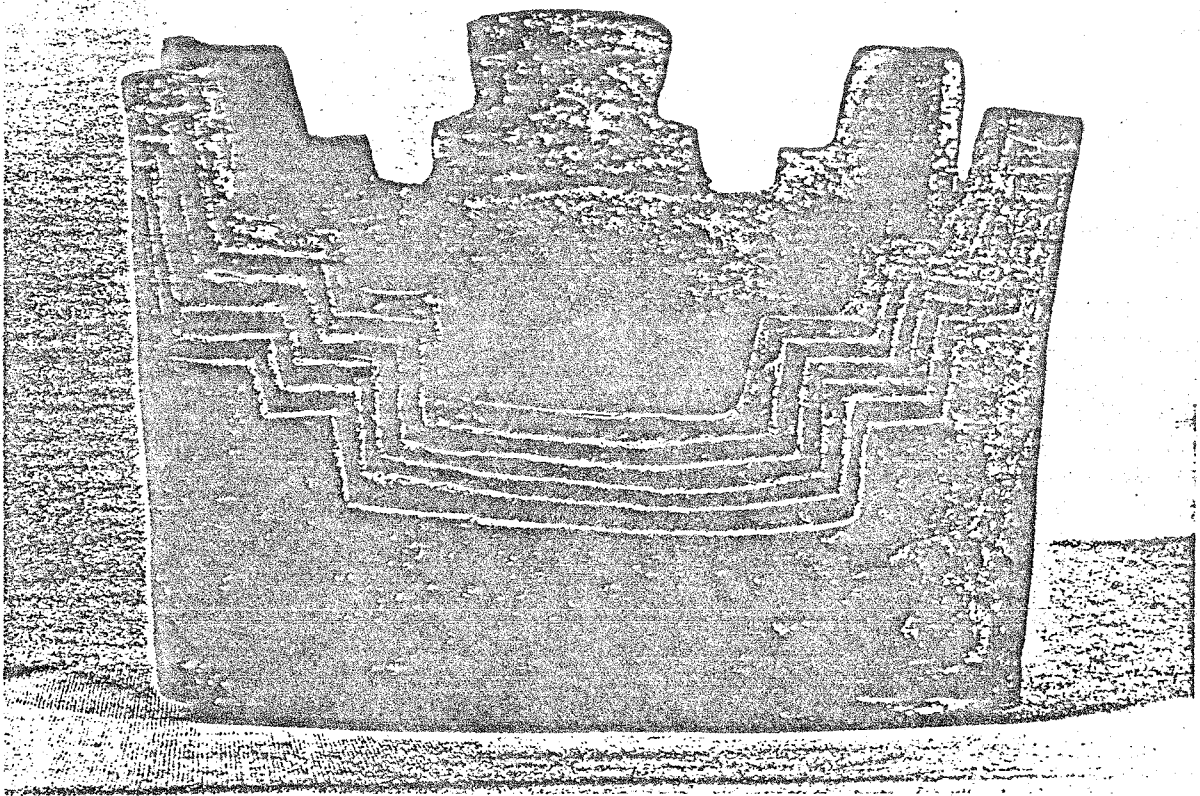


Figure 9. Moundville Filmed Engraved terraced ceremonial bowl.

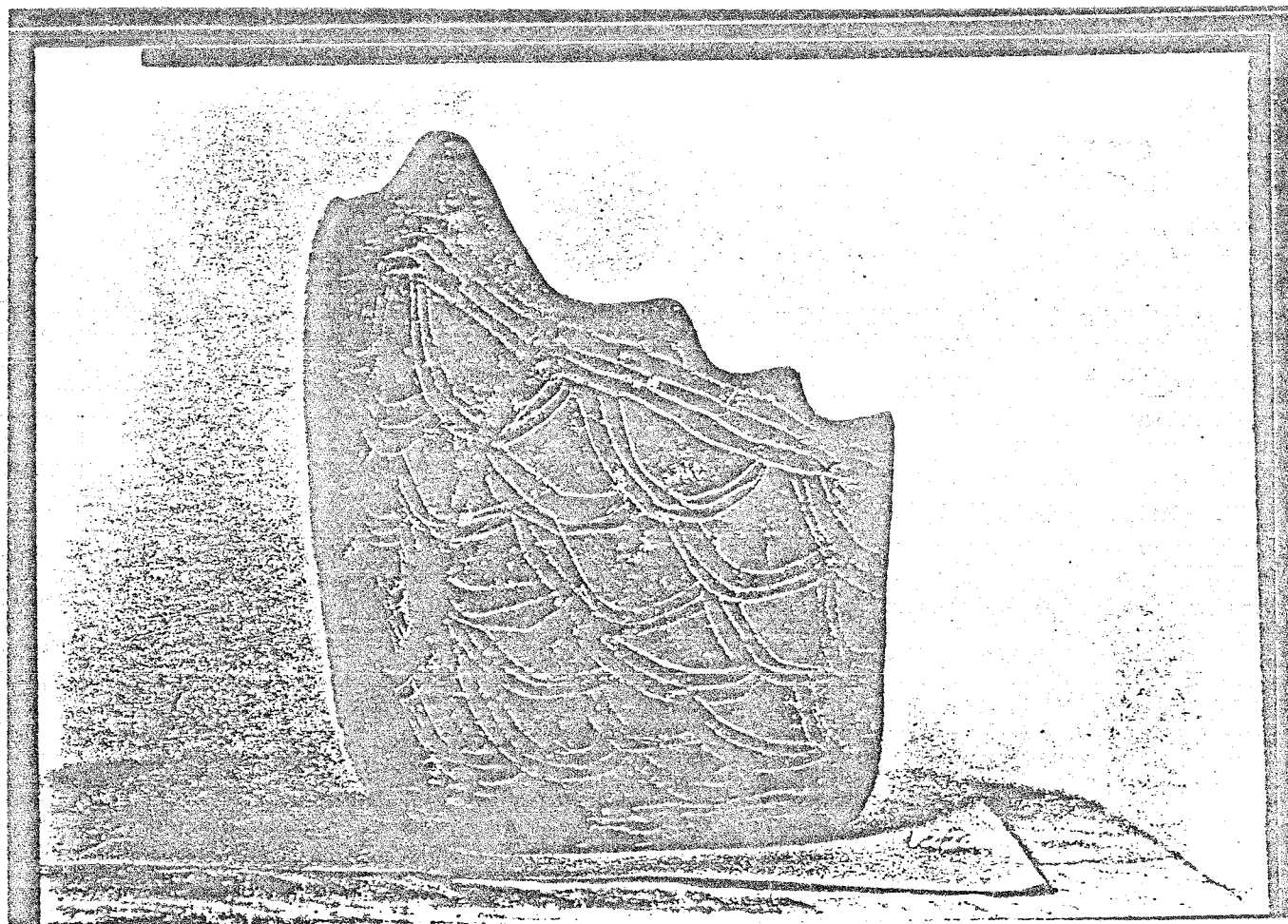


Figure 10. Moundville Filmed Engraved terraced ceremonial bowl.



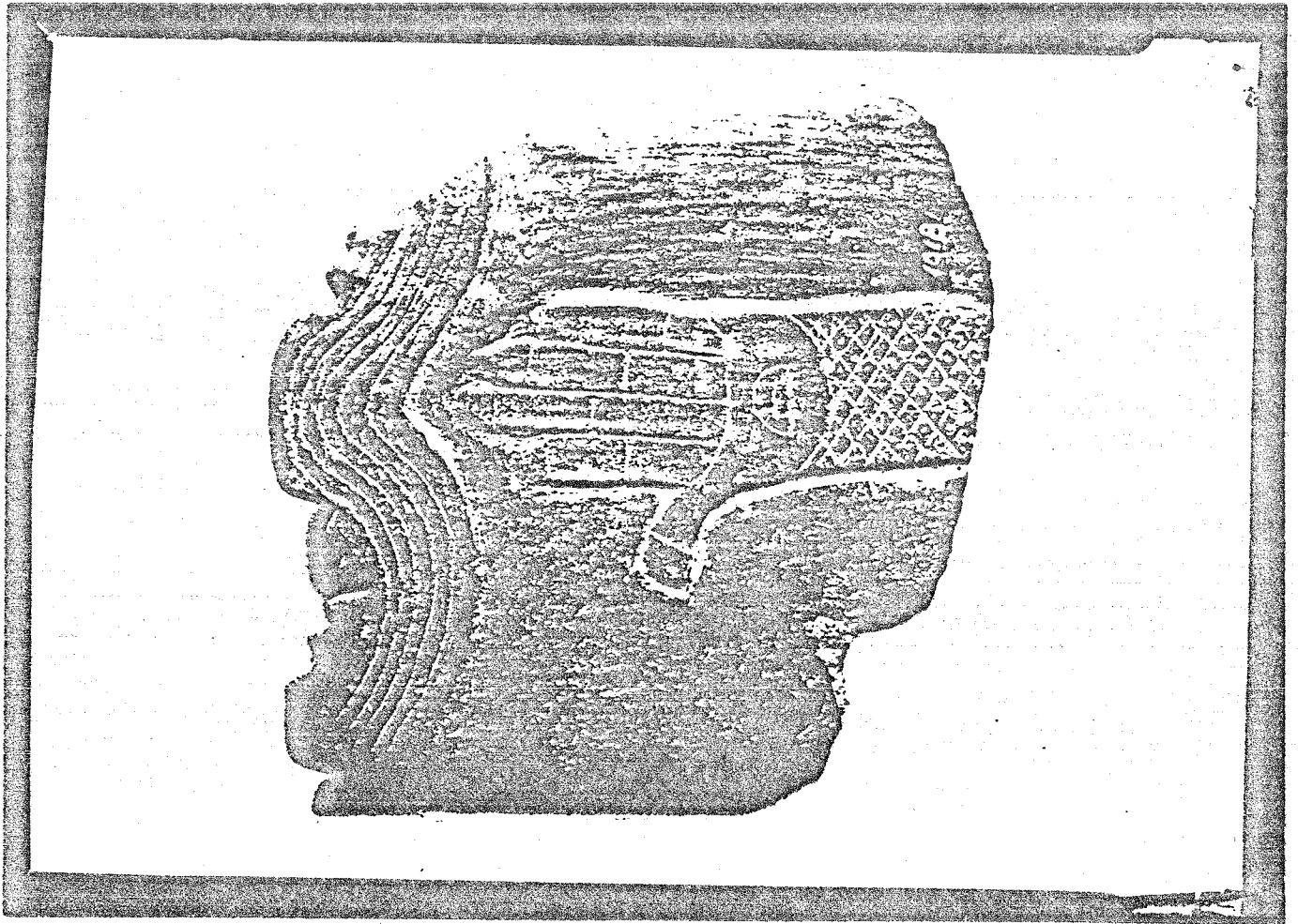


Figure 11. Sherd of a Moundville Filmed Incised terraced ceremonial bowl.

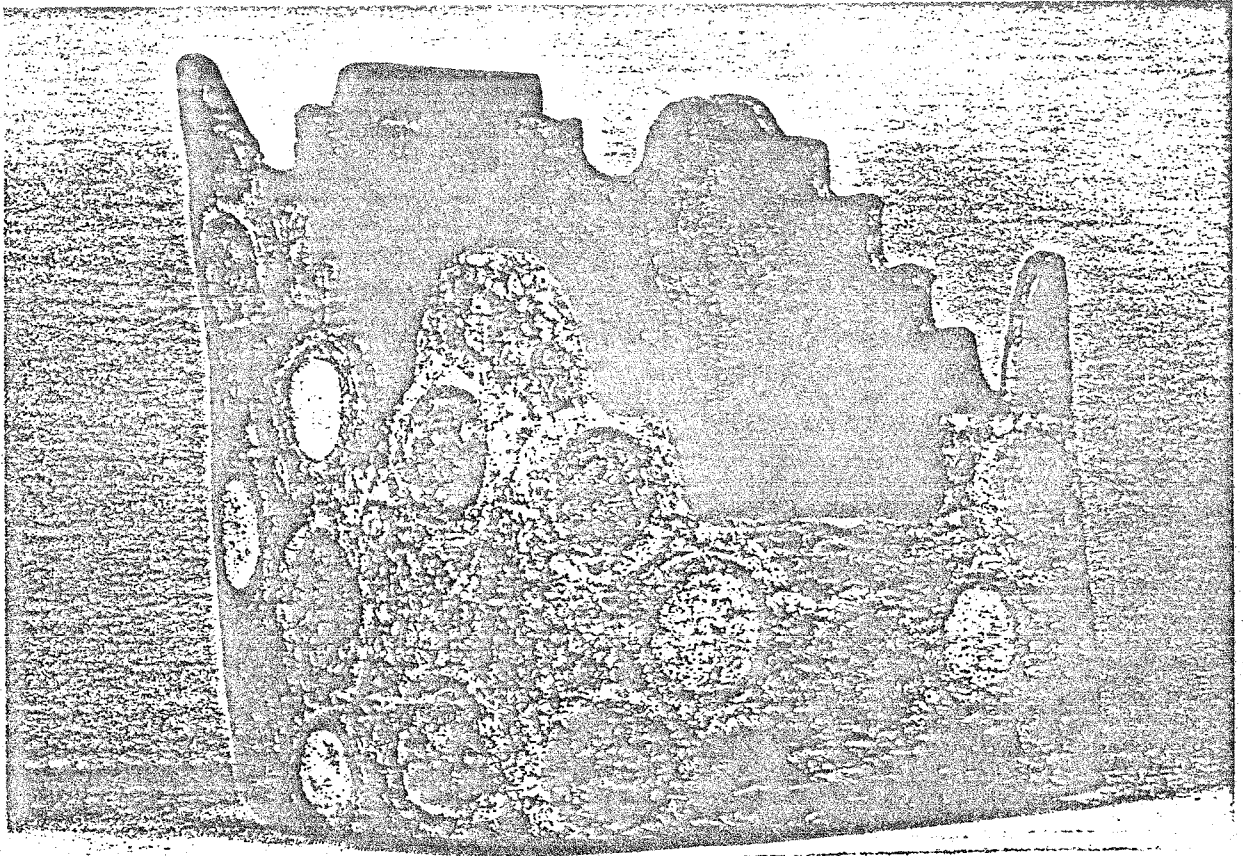


Figure 12. Painted terraced ceremonial bowl.

Many of the imported vessels found at Moundville come from the part of the Lower Mississippi Valley between Memphis, Tennessee, and Vicksburg, Mississippi. To date, Nodena Red-and-White, Leland Incised, Parkin Punctated, and Walls Engraved (Phillips 1970) tentatively have been identified in the collections from Moundville. Vessels of Nashville Negative Painted (Phillips 1970) and Halley Engraved (Brown 1971) also seem to be present at that site.

In addition to the ceramic vessels, a wide variety of other artifacts have been recovered from Moundville and other Moundville phase sites. Utilitarian objects include "Madison" projectile points, greenstone celts, bone awls, pins, and needles, fishhooks, abrading and polishing stones of various forms, and the remains of cane mats. Ceremonial artifacts include the full range of Southern Cult items (Waring and Holder 1945). There are celts made from copper and stone, monolithic stone axes, engraved stone discs, shell gorgets and beads, copper ear spools, gorgets, and "symbol badges." These objects are associated exclusively with burials, and, as will be shown below, serve to mark social status and political office.

The temporal span of the Moundville phase can be set between A. D. 1200 and A. D. 1500. Two radiocarbon dates from material excavated at Moundville by the Alabama Museum of Natural History in the 1930s fall within this span: 690 $\pm$ 85 radiocarbon years, A. D. 1260 (UGa-1661) and 485 $\pm$ 160 radiocarbon years, A. D. 1465 (UGa-1662) (John Walthall, personal communication, July 1977). Moreover, ceramic cross-dating with sites in the Lower Mississippi Valley (McKenzie 1966) Lyons Bluff (Marshall 1977), and sites in the Tennessee River Valley (DeJarnette and Wimberly 1941) tends to confirm this general temporal position.

The geographical extent of the Moundville phase is delimited by the Black Warrior River Valley between Tuscaloosa, Alabama, and Demopolis, Alabama. There are several sites in the "Big Bend" of the Tennessee River which might be included in this phase (Peebles 1971), and Ned Jenkins (personal communication) has included a large site on the Tombigbee River near Aliceville, Alabama, in the Moundville phase. Richard Marshall (1977: 56) has noted the relationship between the Lyons Bluff phase in northeast Mississippi and the Moundville phase, and Douglas McKenzie (1966: 53) argued that the Moundville phase was a transplantation of the Walls and Nodena phases to Alabama from an area near Memphis, Tennessee. Finally, William Sears (1964) has postulated that many of the ceramic types from the Alabama River Valley and Gulf Coast of Alabama and Florida were derived from Moundville phase types; Nicholas Holmes (1963) among others would place the Bottle Creek site, which is located near Mobile, Alabama, in the Moundville phase. At the moment, however, it seems reasonable to restrict the Moundville phase to sites in the Black Warrior River Valley north of Demopolis, Alabama.

#### Early to Late Mississippian

The Moundville phase is preceded by an Early Mississippian horizon which provisionally can be subdivided into at least two sequent phases. The earlier of these cultural-historical units has been designated the West Jefferson phase (Jenkins 1975 and references therein). The ceramics from sites of this phase include globular jars which have either loop or strap handles attached to the lip and shoulder of the vessel. The paste

is either grog or shell-tempered, and the proportion of shell-tempered vessels increased from 0 to 10% through time. Likewise, the proportion of vessels with strap handles increases through time (O'Hear 1975). These ceramics show the first stage of a transformation from Late Woodland, McKelvey and Miller III cord-marked ceramics to Moundville phase types.

West Jefferson phase sites have been located north and south of the Fall Line in the Black Warrior River Valley and in the upper reaches of the Cahaba River Valley. The sites north of the Fall Line are clustered around Birmingham, Alabama. These sites seem to have been small hamlets, each made up of one or two circular dwellings. The food remains in the pits around these dwellings show that the inhabitants cultivated some corn (Zea mays) and collected a wide variety of wild foods. A sequence of radiocarbon dates from three sites located near the Locust Fork of the Black Warrior River west of Birmingham, Alabama, ranged from A. D. 875 to A. D. 1060 (Futato 1977: 47). The West Jefferson phase sites found south of the fall line near Moundville have not been excavated, but surface collections from these sites suggest that they were composed of several dwellings and were much larger than sites found north of the fall line.

During the later part of the West Jefferson phase a small ceremonial center was constructed near Bessemer, Alabama. This site was located south of Birmingham, Alabama on a small tributary of the Black Warrior River. This location seems to have been central to West Jefferson phase hamlets in the area. At its fullest extent the Bessemer site consisted of two truncated platform mounds and a small conical burial mound (Figure 13). Approximately 50% of the sherds from this site were shell-tempered and

50% were clay-tempered, yet the vessel forms were all clearly like those of Moundville phase ceramic types. Moreover, as was noted above, the first formal descriptions of Warrior Plain and other Moundville phase types were drawn from the Bessemer ceramics assemblage. Based on the limited ceramic and settlement data, it seems useful to designate this later part of the Early Mississippian Period as the Bessemer phase. For purposes of cross-dating, it must be noted that the copper plate found with burial 11 (DeJarnette and Wimberly 1941: 76, Figure 58) at Bessemer is almost identical with the copper sun discs (Fairbanks 1956: Plate.23) found in the Early Mississippian burial mound at Macon Plateau. Two radiocarbon dates have been obtained from the Bessemer Site: one, 855 $\pm$ 55 radiocarbon years, A. D. 1070 (UGa-1663) can be associated with the Early Mississippian component; the other, 330 $\pm$ 65 radiocarbon years, A. D. 1620 (UGa-1664) clearly is associated with a large tree root that intruded into the mound (Walthall and Wimberly 1978).

Although there are not sufficient data to completely define the Bessemer phase, there are a number of obvious contrasts with the West Jefferson. These points include not only ceramics, but ceremonialism, site pattern, site size, and probably the percentage of domesticated plants in the diet. When such a "Bessemer phase" finally is defined, it will then mark the lower temporal bound of the Moundville phase.

The upper temporal bound of the Moundville phase is marked by the appearance of the so-called "Burial Urn Culture" in central Alabama. Craig Sheldon (1974 and references therein) and John Cottier (1970) have analyzed materials of this period from sites of the Alabama River phase and

sites from as yet unnamed phases in the Black Warrior and Tombigbee River Valleys. Sheldon shows that the major difference between the Moundville phase and the Burial Urn Cultures is the loss of the complex ceremonialism, including temple mounds, large centers, and most Southern Cult iconography. He also shows that there is continuity of ceramic development between the two, and that the subsistence economy remains virtually unchanged in the transition. For purposes of cross-dating, the ceramics of the Alabama River phase seem to begin about A. D. 1500, and European trade goods placed with some of the later Urn burials suggest a terminal date of approximately A. D. 1700. Since Sheldon wrote his summary, additional burial urn sites have been located near Tuscaloosa, Alabama, and these base sites seem to have been occupied in the sixteenth century, A. D. (Curren, personal communication). Moreover, Vincas Steponaitis has identified a significant Alabama River phase component in the ceramic collections from Moundville.

Although based on incomplete evidence and at odds with several of my Alabama colleagues (cf. Jenkins 1975), the cultural-historical outline for west-central Alabama can be summarized as follows. Sometime between A. D. 700 and A. D. 900 a transformation in subsistence-strategy took place in one or more of the indigenous groups that have been lumped together as the Late Woodland, McKelvey and Miller III phases. The resultant, Early Mississippian groups, which were small-scale agriculturalists and hunter-gatherers, were spread over small river terraces north of the fall line and large expanses of alluvium south of the fall line. The earliest of these groups has been designated the West Jefferson phase and can be

placed in time between A. D. 875 and A. D. 1060. As social density and dependence on agricultural crops increased, inter-community dependence likewise increased. There were transformations in social organization, and focal points that served to unite several local communities were founded. The Bessemer Site was one such center, and a small Early Mississippian burial mound near the southern border of the Moundville Site is a potential candidate for another such center. There was continuity in ceramic development during this period, and the ceramic types that assume prominence in the ceremonialism of the Moundville phase sites made their first appearance no later than A. D. 1100 in the context of Early Mississippian ceremonial centers.

By A. D. 1200 agricultural crops had become the most important component in the subsistence system, and Moundville phase settlements were located only on broad expanses of alluvium south of the fall line. There was a concomitant increase in social complexity, the variety of sites in the settlement organization, and population density. As before, the changes seem to have been indigenous. The continuity in ceramic styles suggests internal growth and development rather than invasions and population replacement. By the same token, when, at approximately A. D. 1500, the cultural system that was the Moundville phase collapsed, it seems to have been a destruction of the ceremonial system and symbols plus a redistribution of the population, not a massive depopulation or population displacement.

In brief, as will be discussed in the following sections, although the social and natural environments were a creative force in the development of the Moundville phase, neither massive diffusion nor actual movements of populations need be invoked to explain this development.



## Settlement and Social Organization of the Moundville phase

For purposes of analysis the areal extent of the Moundville phase has been restricted to eighteen sites in the valley of the Black Warrior River (Figure 13). All these sites have produced the distinctive ceramic markers of this phase, and many of them have yielded West Jefferson phase ceramics as well. In the following discussion, because there has not yet been established an internal chronology by which the development of each site can be measured, these sites and their contents will have to be treated as if they all simultaneously achieved their maximum size and complexity. That is, despite evidence to the contrary, they will be treated as a single structural moment in time.

### Settlement Organization

Of the eighteen Moundville phase settlements in the Black Warrior River Valley, Moundville is by far the largest and most complex. This palisaded settlement covers over 300 acres, and, within this area, twenty truncated pyramidal mounds set off a plaza of over 100 acres. On all but the northern (river) side of the site, buildings of varying size and function were erected. The most densely built-upon areas of the site were near the western and eastern margins of the plaza and between the palisade and the southernmost row of mounds. Large "public" buildings were located at the northeast and northwest corners of the plaza (Figure 14 I, V); a "sweat house" (Figure 14 VII) and a "charnel house" (Figure 14 VI) were placed within the southern border of the plaza; an "elite" residential

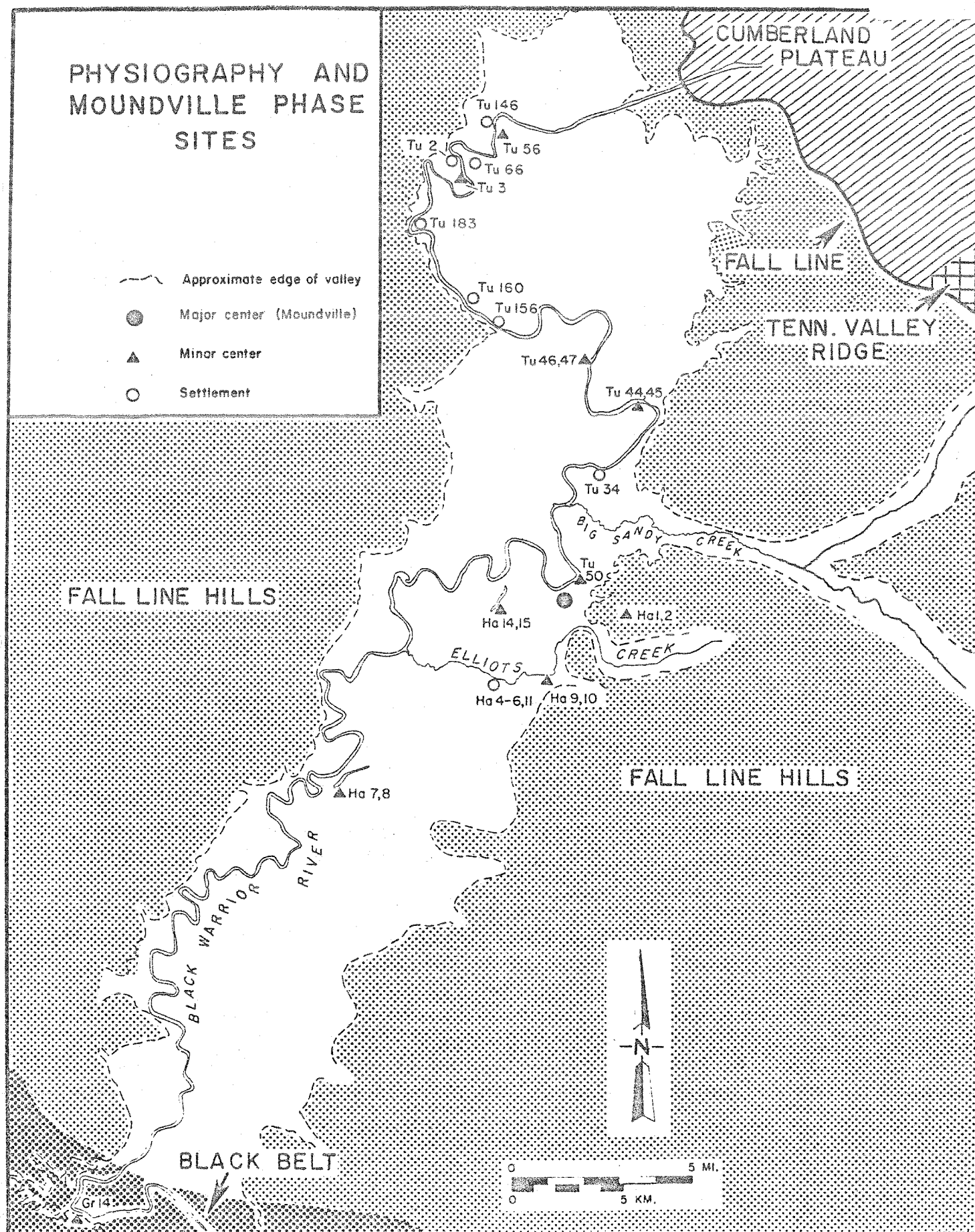


Figure 13. Location of Moundville phase sites in the Black Warrior River Valley.

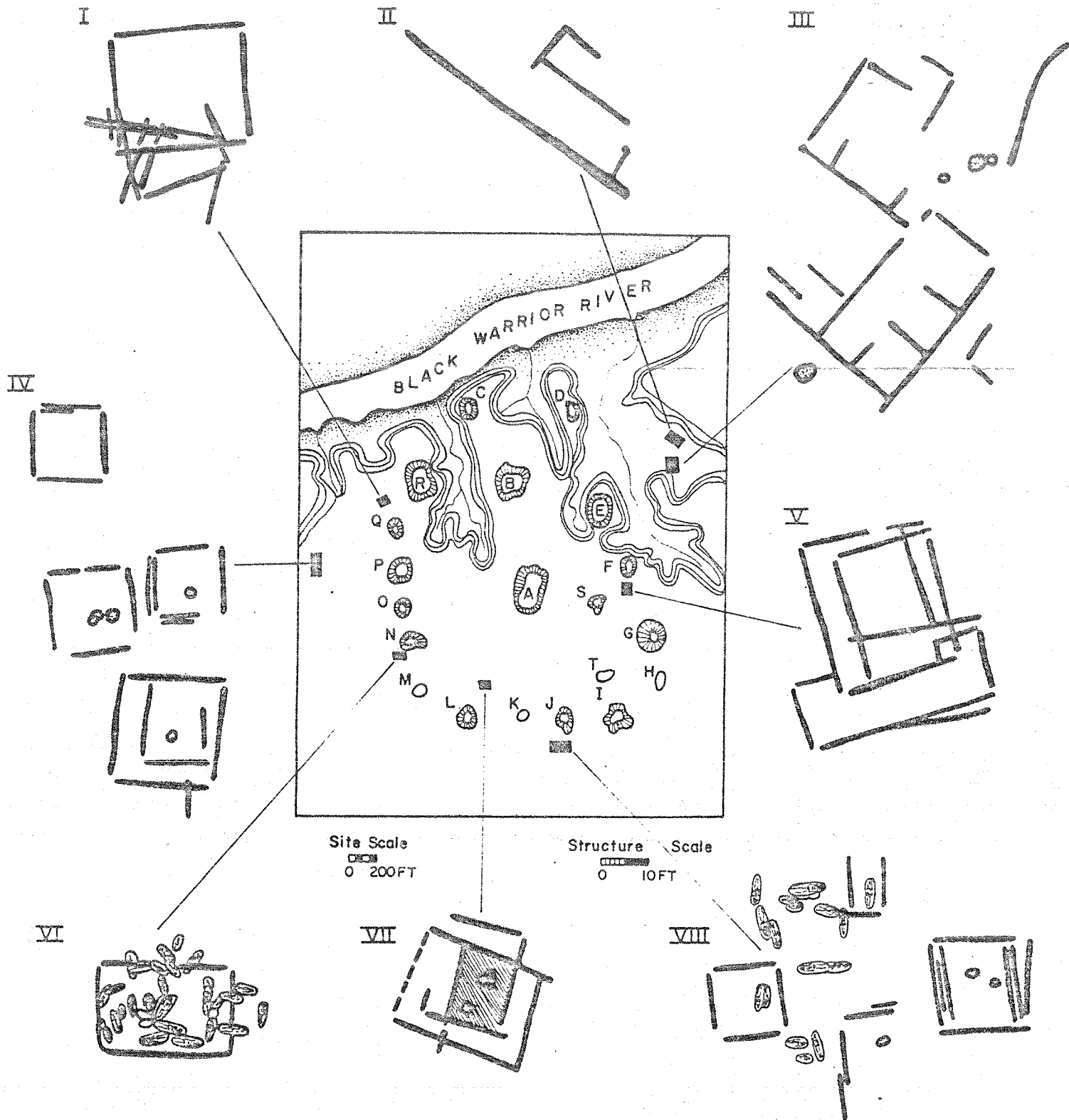


Figure 14. Structures and their distribution at Moundville.

area--complete with a seven-room house (Figure 14 VII)--was situated in the extreme northeast corner of the site; and residential areas (Figure 14 IV, VIII) were located away from the plaza in the southeastern, southern, and southwestern quarters of the site. The whole of the settlement was enclosed by a thick, bastioned palisade wall (Figure 14 II).

Analysis of the distribution and density of artifacts per unit of excavated area at Moundville show that most of the day to day trash was discarded into the river and ravines. Some of this trash, however, ended its journey somewhat short of the river's bank. The major areas of artifact concentration were in the northeast quarter of the site, and northwest of Mound R. Moreover, sufficient artifacts escaped the "trash collectors" to allow delineation of major activity areas within other parts of the site. The by-products of shell bead manufacture were found east of Mound E; ceremonial items such as paint pigments and copper fragments were discovered near the "public" buildings; large bone awls and the sandstone fragments on which they were sharpened were found only in portions of the northeast quarter of the site that were devoid of buildings. Charles Hudson (personal communication) has suggested that this might have been a hide-working area. Pottery-working tools, caches of shell and clay, and large open hearths (kilns?) were located west of Mound P. Finally, heavy processing tools, projectile points, and household debris were found in the village areas of the site.

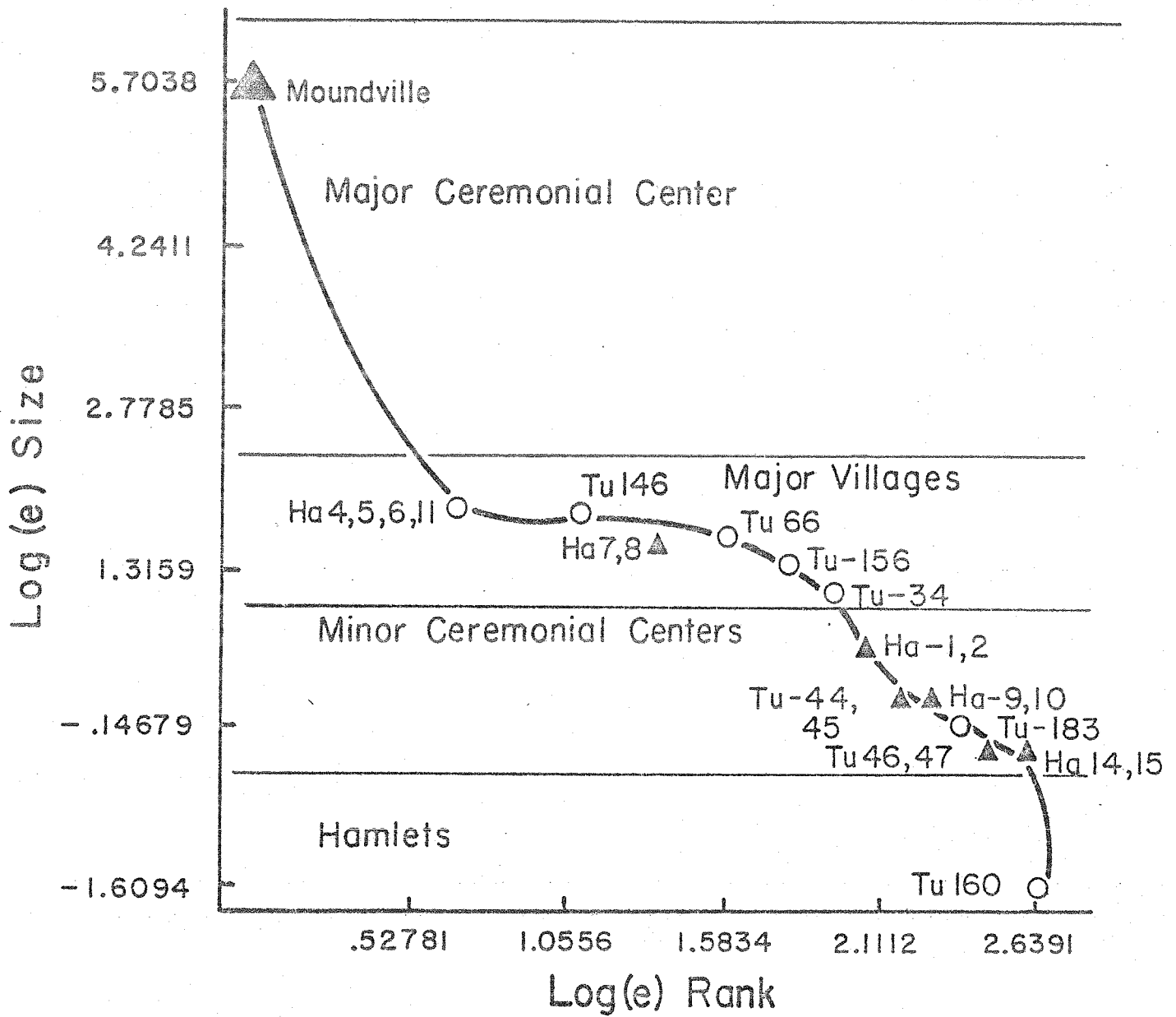
Except for the cemetery at Snow's Bend (DeJarnette and Peebles 1970), test excavations at Ha-7, Ha-8, and tests in 7 mounds in Tuscaloosa County during the summer of 1978, none of the Moundville phase sites in the Black

Warrior River Valley have been excavated. There are sufficient data, however, to suggest that neither the large villages nor the outlying ceremonial centers, each with one truncated mound, were as internally complex as Moundville. Each was a satellite of this major center.

By most generally accepted measures, the relationships among the size, location, and complexity of Moundville phase sites show clear hierarchical patterning. If, for example, measures of site size (acres of surface scatter) and site rank (1=largest, n-smallest) are transformed logarithmically and then plotted one against the other, four classes of sites emerge (Figure 15). Moundville, which covers 300 acres and ranks first, stands alone. The second group of sites, which range in size from 6.5 to 3.0 acres and which rank from second to seventh, are all large villages, except Ha-7, Ha-8, which is a mound and village pair. The third group of sites, which cover from 1.8 to 0.7 acres and which rank from eighth to thirteenth, are all mound and village pairs, except Tu-183 which is a small village. Finally, the smallest and lowest ranking site, Tu-160, is a hamlet 0.2 acres in extent.

This four-fold categorization--major ceremonial center, major village, minor ceremonial center, hamlet--is one which corresponds to the general pattern of Mississippian settlements in the Southeast. However, Moundville differs from the "norm" in the small number of hamlets compared to other types of sites and the absence of "extractive" sites such as hunting camps, quarries, etc. The absence of the latter is certainly due to the lack of archaeological survey in the uplands; the paucity of hamlets may be a reflection of the fact that this settlement configuration was not a

# Moundville Phase Sites: Size vs. Rank



15. Rank order of Moundville phase settlements.

major element in Moundville's settlement system, but it may also be due to the lack of intensive survey in the floodplain.

The spatial arrangement of Moundville phase sites in the Black Warrior River Valley seems to have been conditioned by both natural and "political" factors. A "nearest-neighbor" analysis (Clark and Evans 1954; Dacey 1964) shows that the distances between the first through third nearest neighbor sites are less than would be expected if they were randomly distributed over the valley floor (Peebles 1978). That is, these sites are markedly clustered within the confines of the valley.

When nearest neighbor sites are compared in terms of the four-fold typology of sites given above, a site hierarchy emerges. Moundville, the major ceremonial center, has only minor ceremonial centers for its first through fourth nearest neighbors, and the major villages have minor ceremonial centers for their first or second nearest neighbor. No village is more than one settlement removed from a minor ceremonial center; every village has at least one minor ceremonial center interposed between it and Moundville. This arrangement suggests that the line of communication and control was from Moundville to the minor ceremonial centers and then to the villages.

A further exploration of this pattern (Steponaitis 1978) shows that Moundville was ideally located to minimize the aggregate costs of the movement of goods, people, and information to and from the minor ceremonial centers, and that the spatial configuration of the minor ceremonial centers likewise minimized overall costs of movement from the region that they served to Moundville. Such a pattern would have been optimal from the standpoint of facilitating the collection of tribute and the flow of

administrative information within the political hierarchy of sites. Moreover, Steponaitis presented evidence to suggest that the amount of tribute extracted from each of the minor centers in the valley was not uniform, but rather that the centers closer to Moundville were taxed more heavily for their labor than those farther away.

#### Environmental Correlates of Settlement Location

Chief among the natural factors that conditioned the location of Moundville phase sites was the productivity of forest biomes for hunting and access to prime agricultural lands (see Larson 1971, 1972; Ward 1965; Smith 1974, 1975, 1978; Peebles 1978). The forests that were above the floodplain of the Black Warrior River were a mixture of oak-hickory and pines facies that mirrored the physiographic complexity of the area. As Figure 13 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 is the climax biome. South of the Black Belt, the pine barrens of the Coastal Plain was the dominant forest type. Between these two forests, in the Fall Line Hills, the interfingering of these two forests plus the floodplain 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. It should be noted that comparable physiographic and biotic diversity was not present in the river valleys immediately to the east, south, and west of the Black Warrior River Valley, and these areas did not support Mississippian populations of a size comparable to Moundville (site files, Mound State Monument).

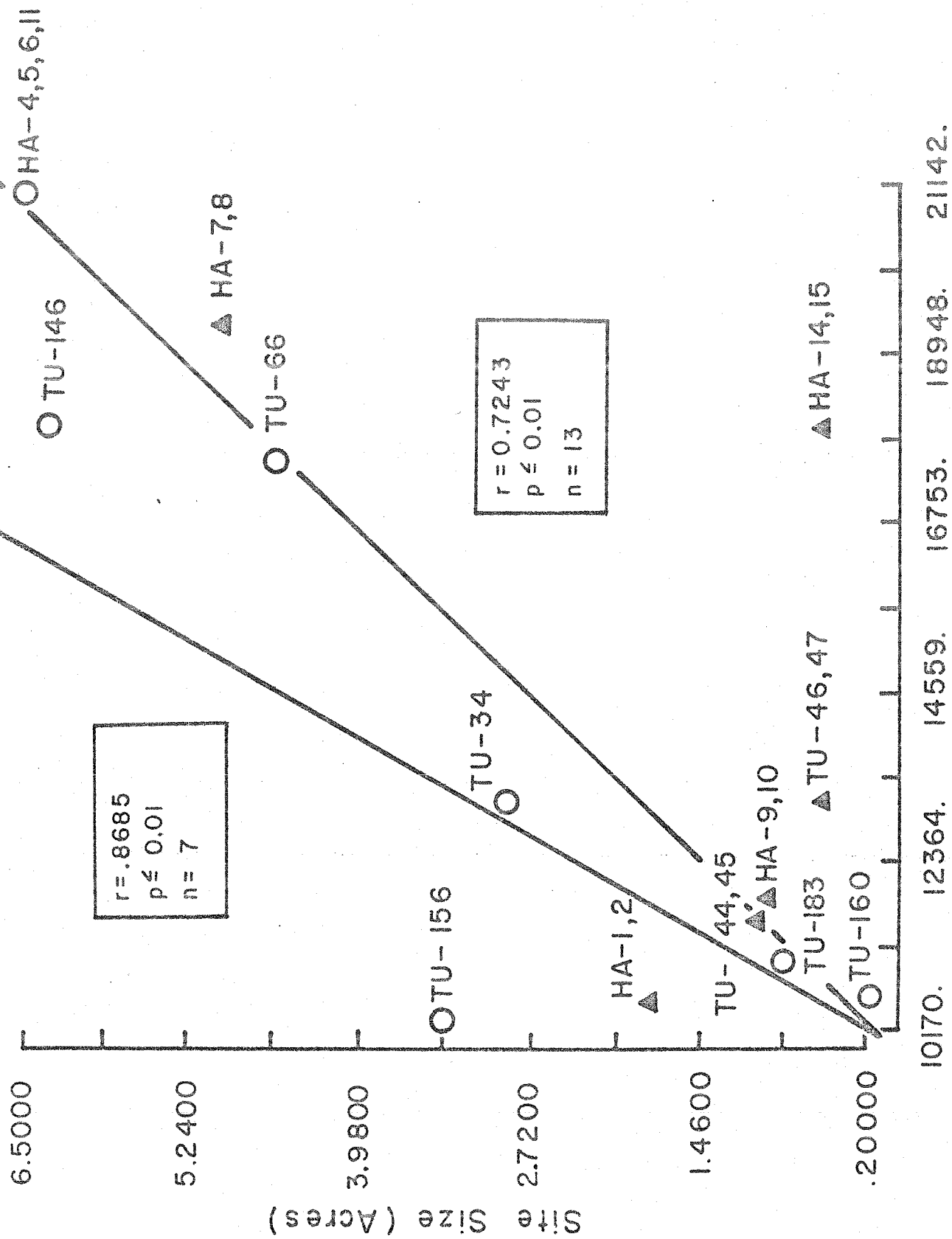


All the Moundville phase sites in the Black Warrior River Valley are situated on prime agricultural soils, and no major expanse of such soil that has been examined--if it is sufficiently elevated to be immune from waterlogging at planting time--is without a Moundville phase site. The importance of these soils to this subsistence system can be demonstrated by an analysis of the relationship between the productivity of soils within a 0.6 mile (1 km) walk of each site and the size (population) of the settlement they supported (Peebles 1978).

The productivity of catchments of 0.6 mile radius was measured in terms of the number of bushels of corn they would produce without chemical fertilizers and hybrid seed corn (figures from the early 1900s were used for the estimates). Pearson product moment correlation coefficients ( $r$ ) were calculated between site size (area of surface scatter in acres) and catchment productivity. Where the catchments of two sites overlapped, the productivity figure in the shared area was allocated between the two sites. The correlation coefficient for all sites except Moundville was  $r=0.7243$ ,  $p<0.01$  (Figure 16). If the major villages and hamlet are considered alone, then  $r=0.8685$ ,  $p<0.025$ ; the figure for the minor ceremonial centers is  $r=0.5815$ ,  $p>0.05$ . For all sites, including Moundville,  $r=0.4184$ ,  $p>0.05$ .

In brief, approximately 75% of the variability in the size of the major villages can be "explained" by reference to the agricultural productivity of their catchments, but only 35% of the variability in the size of the minor ceremonial centers can be "explained" in such terms, and almost none of Moundville's size can be related to the agricultural productivity of its immediate catchment. It seems as though productivity sets an

# SCATTER PLOT MOUN. VILLE CATCHMENT ANAL. 315



Adjusted Productivity (Catchment Radius 0.6)

Figure 16. Correlations between settlement size and agricultural productivity.

upper limit on the size of the major villages, whereas administrative decisions constrain the size of the settlements associated with the minor ceremonial centers, and Moundville has the products of other villages and their productivity as its catchment. The results of this analysis give added weight to the locational analysis of Steponaitis (1978) that concluded that the minor ceremonial centers were arranged to provision Moundville.

#### Social Organization at Moundville

The hierarchical arrangement of Moundville phase sites is reflected in the pattern of mortuary ceremonialism accorded individuals buried at Moundville and other sites of the phase. The 3051 burials excavated from Moundville make up the most extensive class of features from this site. Because burials contain more information per cubic meter of deposit than almost any other archaeological feature, and because burials represent the latent images of cultural and biological persons frozen in clearly delimited segments of space and time, they provide a very fertile ground for analysis. The age, sex, physical abilities, history of diet, and disease can be assessed from the skeletal material. The mortuary ritual, which reflects in some measure the status of the deceased, can be reconstructed from the post mortem treatment of the corpse, the sequence of acts that created the interment, and the grave goods included with the corpse. Given these two major classes of data, plus an adequate sample of burials, models of the social and demographic organization of a community can be constructed. The conceptual basis for the reconstruction of social organization through mortuary ritual is given in Binford (1971), Saxe (1970), and Peebles (1974); the substantive work by many scholars in this area,

much of which is either in press or unpublished, is cited in Peebles (1977).

The initial analyses of the Moundville burials were designed to test the proposition that this society was organized as a chiefdom, and that ascriptive, hierarchical ranking of persons provided the framework for the allocation of prestige and recruitment to ritual and political offices. The criteria for such an identification can be outlined as follows:

A test for ranking based on the mortuary ceremonialism of an archaeologically defined society must confirm the prediction of two clear, independent dimensions of social personae represented in the burials. The first, superordinate dimension, must be a partial order which is based on symbols, energy expenditure, and other variables of mortuary ritual, and which is not simultaneously ordered on the basis of age and sex. That is, membership in the class and some variability within the class are based on the ascriptive qualities of an individual's genealogy. In the superordinate dimension some infants, some children, and some adults will be found in every scale category except the paramount category. This apical class will contain only adults, and probably only adult males. That is, in the superordinate dimension some infants and children will be ranked equally with some adults and higher than other adults in a lower scale position. Some infants and children will have greater amounts of energy expended on their mortuary ritual than some adults; in the same manner some women will be ranked higher than some men and will share status-specific symbols with some men.

The second, subordinate dimension will be a partial order based on symbols, energy expenditure and other variables, which generally will be ordered on the basis of age and sex. That is, beyond the "given" features of age and sex, variability in this dimension will reflect achievement through life histories of individuals: the older an individual, the greater the opportunity for accomplishment, therefore, on the average, the higher the rank. In the subordinate dimension, as the chronological age of the burial increases so will the energy expended on that individual's burial: adult burials will be more complex and evince greater energy expenditure than those of children; child burials will be more complex and evince greater energy expenditure than those of infants. Children and infants will have some items as grave goods that will not be shared by adults; women will have some items as grave goods not shared by men. In general, the symbols of rank and office (Binford's sociotechnic artifacts), of the superordinate dimension will not be found in the subordinate dimension. In addition, the energy expended for the lowest ranking burials in the superordinate dimension will be higher than that expended on the highest ranking burials of the subordinate dimension. Lastly, the numbers of burials in each scale category in the superordinate dimension should decrease markedly as one goes higher on the scale, thereby reflecting the ranking pyramid. The number of individuals in each scale category of the subordinate dimension should reflect the age and sex pyramid of the population through time (Peebles and Kus 1977: 431).

A series of bivariate and multivariate analyses were applied to 2053 of the most thoroughly documented of the burials from Moundville. These analyses consistently yielded the two predicted dimensions of mortuary ritual. The results of one of the multivariate analyses (a polythetic agglomerative cluster analysis that minimized the error-sum-of-squares within clusters) is summarized in Figure 17. Each of the "segments" defined in this figure contain clusters that are closely related to one another but are distantly related to clusters in other segments. That is, Clusters I and II in Segment A are more similar to one another than either or both are to Cluster III. In turn, Cluster IV is more similar to Cluster II than it is to Cluster V. In the complete order, Cluster I is closest to Cluster II, more distant from Cluster V, and most distant from Cluster X.

Clusters I and II of Segment A define the superordinate dimension. This pair of clusters, which probably can be associated with the chiefly lineage, is defined by burials whose mortuary ritual evidence great expenditures of energy and whose grave goods are, in large measure, made up of the items and iconography of the "Southern Cult." Included in these items are large copper axes, oblong copper gorgets, engraved stone discs, copper ear spools, and shell beads. The complexity of burials in this dimension, with two exceptions noted below, does not covary with the age of the burials. Burials of infants and children in many instances are more complex than burials of adults. This pattern suggests that an individual's superordinate rank is dependent in the first instance on the situation into which he or she was born. That is, the superordinate dimension seems to measure ascription.

SEGMENT

A

B

C

# CLUSTER

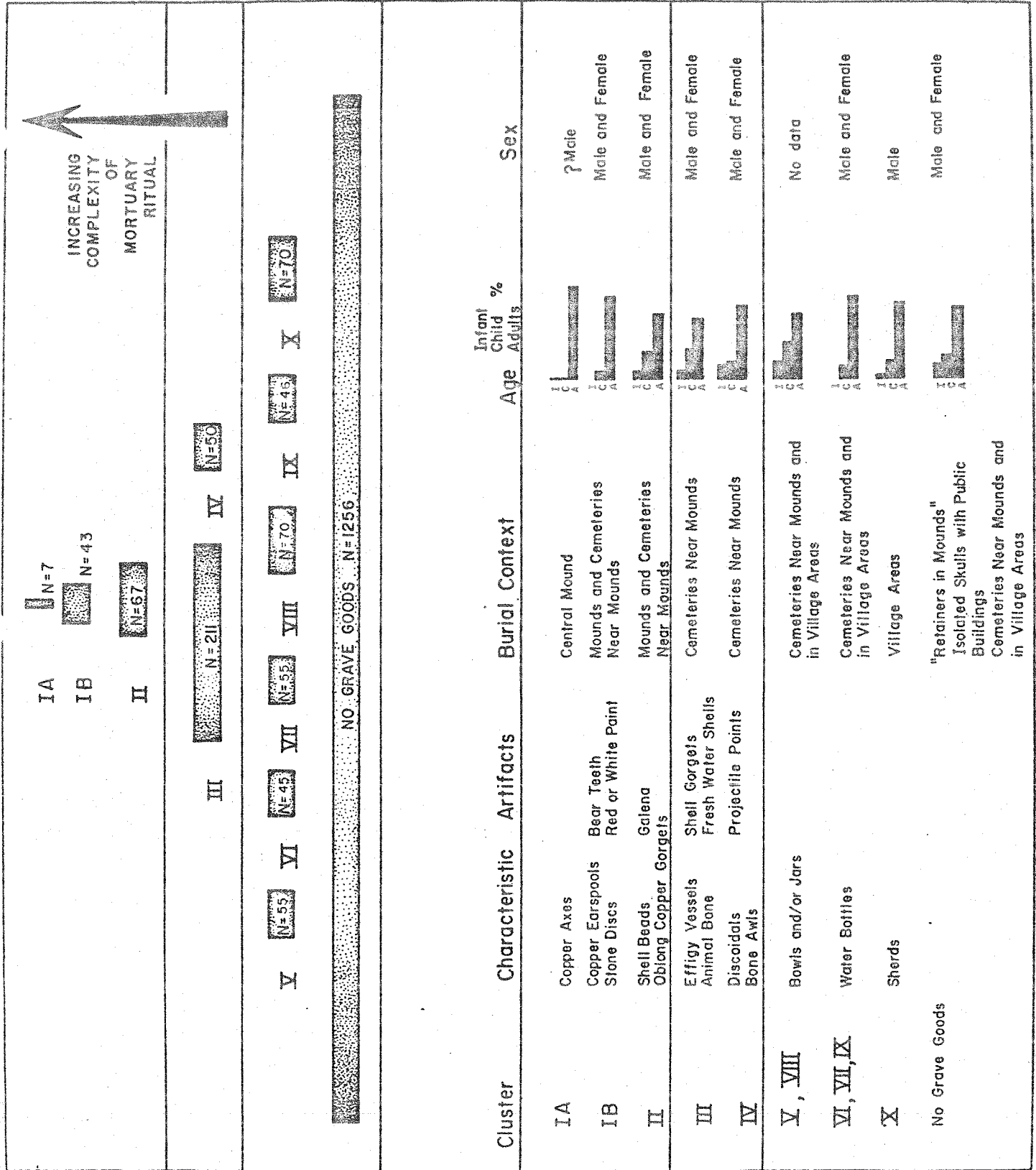


Figure 17. The hierarchy of burials at Moundville.

The second, subordinate dimension is subsumed by Segments B and C, and includes Clusters III through X and the burials interred with no grave goods. In Clusters III through X, males are contrasted with females, adults with children, and children with infants. In Cluster III adult males and females are accompanied by "effigy" vessels, but only older children and adult males are buried with stone "ceremonial celts." And only adult males are accompanied by "utilitarian" celts. In Cluster IV adult males and females are buried with projectile points, discoidals, and bone awls. The remaining clusters, V through X, are defined on the basis of the inclusion of various kinds of pottery vessels as grave goods. Water bottles are never found with infants, and rarely are found with children; large sherds, which are usually placed under the skull, are found generally with adults; only bowls and jars are found with both sexes and all ages. Lastly, there is the large group of burials which have no associated grave goods. This group of burials contains a disproportionate number of infants and children.

In general, this subordinate dimension can be partitioned on the basis of age and sex, and the complexity of mortuary ritual accorded individuals in this dimension does covary with the age of the burial. This pattern suggests that in this dimension rank is dependent on an individual's life history and achievement rather than on rank ascribed at birth.

There is one category of "burials" that should be noted at this point. There are interments of isolated skeletal parts, usually skulls, which seem to be "ritual" by-products rather than burials in their own right. These "non-persons" include caches of skulls placed near the "public"



buildings, at the bottoms of large post molds, and in the floors of the mounds; infant skeletons mixed with the fill of the most complex (Cluster IA) burials in the mounds; and three achondroplastic dwarfs located north of Mound G. All are clearly outside the main structure of ranking at Moundville.

Within the ranking system, the superordinate, ascriptive dimension contains two clearly defined groups of adult male burials whose mortuary ritual points to their association with either political or ritual offices. One group of burials (n=7) clearly represents the highest of statuses and the ultimate of offices in the society. These individuals are interred in the truncated mounds and are the products of an elaborate mortuary ritual which included the use of infants and skulls as part of the burial ceremony. Large copper axes were placed in the graves of these burials, and these artifacts were probably the material representation of the offices held by these individuals.

The second group of burials (n=17) are interred in or near the truncated mounds and have, among other items, paint palettes (engraved round and oblong stone discs), and red, white, green, and black mineral-based pigments as part of their grave goods. The individuals represented by this group of burials probably held second-order ritual or political offices. The duties of their office probably included the application of body paint or tattoos to individuals at appropriate seasonal or situational junctures.

It should be noted that individuals representing the highest offices, those buried with copper axes and infants, are found only at Moundville;

the infant ceremonialism without the copper axes serves to define the office represented by central mound burials at other Moundville phase sites (Peebles 1971). The offices identified by the paint palettes occur both at Moundville and other Moundville phase sites. As such, these offices were probably a necessary adjunct to the ongoing life of most Moundville settlements.

### Summary and Conjectures

Several propositions about the development and operation of complex forms of social organization--in this case chiefdoms--can be explored and tested with the data from the Moundville phase. Thus far the analyses of these data have shown a society organized as a hierarchy of settlements and persons: as a ranked ensemble of functions, behaviors, statuses, and roles. The analysis of the burials produced a hierarchical arrangement of persons in which a small upper stratum was clearly set off from the major part of society. Moreover, this "elite" group was defined by ascriptive criteria other than those of age and sex, whereas in the remainder of the society relative social rank was defined by age, sex, and achievement. A second result of the analysis of the burials was the demonstration that the occupants of the two major ritual and political offices in the society were drawn from among the adult male members of the "elite" stratum.

The analysis of the settlement system showed three major classes of settlements: a single major ceremonial center, minor ceremonial centers, and agricultural villages. The spatial relationships among these settlements were arranged in a way that would maximize the flow of goods, services, and information from the villages to the minor ceremonial centers and ultimately to the major ceremonial center. By the same token, this arrangement facilitated control of lower-ranking units by higher-ranking units. The organization of this settlement system was reflected in the distribution of members of the "elite" social stratum and ritual offices

among the settlements. The highest of offices and social ranks were found only at the major ceremonial center, and within this settlement their residences and places of interment were ritually and spatially segregated from those of the other inhabitants. Likewise, lower-ranking members of the "elite" stratum were segregated in life and death from the majority of the society. This pattern was reproduced, although at a less exalted level, at the minor ceremonial centers, and at an even less grand level at the agricultural villages. This arrangement gave a unified political and ritual system which radiated out from a single center to all settlements within the society.

The conditions under which such a hierarchy of regulation and control would prove adaptive has been outlined by Susan Kus and myself (Peebles and Kus 1977). We also pointed out the behavioral--and ultimately archaeological--correlates of a ranked, hierarchical form of organization, and thereby attempted to bridge the gap between social theory and the archaeological deposit with an argument other than direct ethnographic analogy. We believe that the critical aspect in the evolution of chiefdoms was the emergence of a second level of clearly defined offices which were invested with the functions of social regulation and control. We further proposed that the selective milieu in which such a transformation would take place would be one in which the information processing capabilities of a single-level, segmentary network were transcended and that higher-level controls became necessary for the ongoing reproduction of the society. We proposed that critical environmental fluctuations could be dealt with by changes in organization, and that such changes would entail a shift from the complete interaction of similar social segments

to a loosely-coupled, hierarchical organization in which like segments were grouped under a specialized social unit that received, evaluated, and then transmitted information among these segments. Henry Wright, upon whose work we built, has since characterized chiefdoms as societies in which

. . . central decision-making activity is differentiated from, though it ultimately regulates, decision-making regarding local production and local social process; but is not itself internally differentiated. It is thus externally but not internally specialized. Lacking internal specialization, any delegation of decision-making prerogatives is a complete delegation, and the subordinate decision-maker would be capable of independent action. The dominant strategy of decision-making with regard to lower level organization is that there should be only two levels of actual decision-making hierarchy--local and central--and that local units should handle as many of their own operations as possible, each placing few demands on the central regulator and thus allowing it to control a larger number of local units given its limited capacity or span of control. One way to do this is to adjust local unit territories so that all of them have access to most resources and there is little exchange between units (Wright 1977: 381).

Finally, following R. A. Rappaport (1971a, 1971b, 1976), we suggested that the emergence of such a specialized decision-making unit, in the absence of coercive means of social control, would be in the organization and content of the ritual system.

The view of social regulation and control sketched above has major implications for the analysis of subsistence and economic systems in chiefdoms. The argument that "redistribution" of goods among villages of specialized producers by the chief both caused and maintained chiefdoms falls by the wayside (Peebles and Kus 1977). Local autonomy and self-sufficiency are expected except when catastrophe strikes. Goods funneled into the chiefly larder may be used as a buffer against disaster, but, more importantly, they carry information upward through the hierarchy about the state of the local units, and they provision the chiefly organization and household.

Moreover, as Sahlins (1972: 123-148) demonstrates, the hierarchical arrangement of chiefdoms transcends local units of production and consumption; it "institutes a public economy greater than the sum of its household parts" (ibid: 140). Such an economy can not only exhort a "surplus" and rationalize production for society as a whole, but it can support part-time craft specialists and others in the chiefly retinue. The nature of such "surplus" production also contains the seeds of the destruction of chiefdoms. If the economic costs of inter-settlements integration and chiefly maintenance go beyond the socially defined limits of "surplus" production and begin to take resources that are needed for the ongoing reproduction of these local units, then, as Jonathan Friedman (1975) has proposed, a "devolution" to autonomous local units takes place.

In the case of the development and operation of the Moundville phase, and perhaps for many of the Mississippian societies in the Southeast, two interrelated factors must be taken into account: agricultural intensification and warfare. Richard Ford has presented a model based

on these two variables in the context of the ecological correlates of the evolution of Mississippian chiefdoms:

For Late Woodland cultures, probably living in multilineage villages, raiding was a fear, but the simplified ecosystem caused by a high dependence upon corn led to even greater threats. Raiding another's fields or house was not a dependable means of coping with crop failure. Instead, ritually controlled redistributions of food as part of community-wide ceremonies enveloping corn planting, fertility and harvesting would exist. In the absence of a means for monitoring production and consumption of individual households, the donations given at the behest of spirits can be shared with everyone. Without a strong polity this is one of the few means for wrenching stored food from household larders. Reliance on ceremonies is not as effective, however, as are stratified social systems with persons whose function it is to assess production and to correct discrepancies. Perhaps the first chiefs were ceremonialists already endowed with esoteric ritual knowledge and respected for their special powers. Whatever their origin, when combined into a larger regional social network, their local authority is subsumed under yet a higher level of authority reinforced by kinship ties and sanctified by still more power of an almost divine nature. For a village or population segment living in large towns like Kincaid or Cahokia, accessibility to food production from a large, politically unified territory can counter local disparities and even total loss can be ameliorated from communal stores of crops grown successfully elsewhere.

This built-in monitoring and correcting system is more effective than those found in tribal societies, but it is more expensive, since a higher authority sets the contribution required by the local, low-ranking chief, who must assess a tribute of corn or labor from his villagers. At the same time this is an inherently unstable system, with rebellion at the local level a response to mistreatment. Thus palisades become effective protection against kinsmen as well as invaders. It is not surprising then that the umbrella of sanctity rallies the believers while hiding the avarice of the leaders. On the other hand, it is an efficient social organization for expeditiously remedying disruptive problems that were the bane of Late Woodland tribal societies. One such solution was the institution of redistributive ceremonies at harvest time, and the swift and far-flung borrowing of these as witnessed through their archaeological expression, the Southeastern Ceremonial Complex, argues that it was effectual for system integration and maintenance (Ford 1975: 406-407).

On the one hand as the dependence on agriculture increased, the risk of catastrophic crop failure increased, and the risk of local hostilities decreased. On the other hand, as local units were integrated into larger political units, the risk of hostility from equally large neighboring polities increased and insecurity again increased. This left either alliance or large-scale preemptive raids as one strategy to eliminate the unpredictable element in a society's environment. Therefore, the regulatory functions of the chief were to make alliances, or war, as well as to prevent or buffer against the possibility of crop failure.



Such a view might explain the fact that a part of the iconography of the Southern Cult is related to warfare (Brown 1976), and that it served as well as a common set of symbols among several societies. It symbolized the equality of leaders among allies, equals among enemies, and it emphasized rank within a single polity. Such a view also goes far toward the understanding of warfare among chiefdoms. Such societies engaged in massive raids, but they generally did not take and hold the territory of the group over which they were victorious. Instead they contented themselves with uprooting crops, destroying stored food, taking captives, and generally disrupting their enemies. If warfare was the least predictable element in a chiefdom's environment, and if it could not be rendered predictable by an alliance, then complete disruption of the enemy group would remove it from contention for at least one seasonal cycle. It seems from the ethnohistoric record of the Southeast that warfare was of this nature and not the result of territorial ambitions of one group for another's land (cf. Larson 1972; Gibson 1974).

Aspects of the evolution, operation, and decline of the Moundville phase generally conform to the conceptual framework sketched above. Moreover, such propositions can be tested further with data from Moundville phase sites. First, at least on the surface, there seems to have been a correlation among agricultural intensification, increase in social complexity, and the construction and maintenance of bastioned palisades. Given increased temporal controls, which are being developed by Step-naitis, each of these macro-variables can be measured either from data that are now in hand or data that can be obtained from additional excavation. For example, the proportion of agricultural crops in the diet,

the number of offices, the size of an "elite" stratum, and even the effects of interpersonal hostile acts are reflected in food remains, burials, and healed fractures. Second, the effects of the quantity and quality of diet among individuals can be measured (in principle) from the trace element and isotopic composition of their bones. From such measurements the proportion of agricultural products (principally corn) in the diet of the population can be measured through time; moreover, the quantity and quality of the diet of the "elite" stratum can be monitored. If the quality of the diet declines toward the end of the Moundville phase, first among the village residents, then among the "elite" population at Moundville, but there is no concomitant population decrease, then the decline of the Moundville phase can be explored as the internal collapse of the ritual organization rather than as the result of European diseases or environmental fluctuations. Finally, there are data to further explore the internal operation of this social system and its relationships with other contemporary societies. There are data that suggest not only internal craft specialization and tribute flow, but widespread if limited external exchange. The linking of the one with the other of these "economic" measures through time might provide not only evidence of the internal economic process but shifting alliances throughout the Southeast.

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## References Cited

- Bennett, J. W.  
1943 Recent Developments in the Functional Interpretation of Archaeological Data. *American Antiquity* 9: 208-219.
- Binford, L. R.  
1971 Mortuary Practices: Their Study and their Potential. *Memoir of the Society for American Archaeology* 25: 6-29.
- Brown, J. A.  
1976 The Southern Cult Reconsidered. *Midcontinental Journal of Archaeology* 1(2): 115-135.
- Bunzel, R. L.  
1929 *The Pueblo Potter*. New York: Columbia University Press.
- Clark, P.J. and F. C. Evans  
1954 Distance to Nearest Neighbor as a Measure of Spatial Relationships in Populations. *Ecology* 35(4): 445-453.
- Cottier, J. W.  
1970 The Alabama River Phase: A Brief Description of a Late Phase in the Prehistory of South Central Alabama. Report to the National Park Service. Copy on file at Mound State Monument, Moundville, Alabama.
- Dacey, M. F.  
1964 Two-Dimensional Random Point Patterns: A Review and an Interpretation. *Papers of the Regional Science Association* 13: 41-55.
- DeJarnette, D. L. and C. S. Peebles  
1970 The Development of Alabama Archaeology: The Snow's Bend Site. *Journal of Alabama Archaeology* 16(2): 77-119.
- DeJarnette, D. L. and S. B. Wimberly  
1941 The Bessemer Site. Museum Paper 17, Geological Survey of Alabama.
- Ensor, H.  
1976 Interstate 65 Archaeological Salvage Excavations Jefferson County, Alabama. Department of Anthropology, University of Alabama.
- Fairbanks, C. H.  
1956 Archaeology of the Funeral Mound, Ockmulgee National Monument, Georgia. National Park Service: Anthropological Research Series Number 3.

Ford, J. A.

- 1936 Analysis of Indian Village Site Collections from Louisiana and Mississippi. Department of Conservation, Louisiana Geological Survey: Anthropological Study No. 2.

Ford, J. A. and G. R. Willey

- 1941 An Interpretation of the Prehistory of the Eastern United States. American Anthropologist 43: 325-363.

Ford, R. I.

- 1974 Northeastern Archaeology: Past and Future Directions. Annual Review of Anthropology 4: 385-414.

- 1977 Evolutionary Ecology and the Evolution of Human Ecosystems: A Case Study from the Midwestern U. S. A. In Explanation of Pre-historic Change. James N. Hill, ed. Pp. 153-184. Albuquerque: University of New Mexico Press for the School of American Research.

Friedman, J.

- 1975 Tribes, States, and Transformations. In Marxist Analyses and Social Anthropology. M. Block, ed. Pp. 161-202. New York: Wiley.

Futato, M.

- 1977 Selected Radiocarbon Dates from Alabama. Journal of Alabama Archaeology 23(1): 37-52.

Gibbon, G. E.

- 1974 A Model of Mississippian Development and its Implications for the Red Wing Area. In Aspects of Upper Great Lakes Anthropology. Eldon Johnson, ed. Pp. 129-137. St. Paul: Minnesota Historical Society.

Gibson, J. L.

- 1974 Aboriginal Warfare in the Southeast: An Alternative Perspective. American Antiquity 39(1): 130-133.

Griffin, J. B., ed.

- 1952 Archaeology of Eastern United States. Chicago: University of Chicago Press.

- 1967 Eastern North American Archaeology: A Summary. Science 156: 175-191.

Hatch, J. W.

- 1976 Status in Death: Principles of Ranking in Dallas Culture Mortuary Remains. Ph.D. dissertation, Anthropology Department, Pennsylvania State University.

Heimlich, M. D.

- 1952 Gunter'sville Basin Pottery. Geological Survey of Alabama: Museum Paper 32.

Hoebel, E. A.

1949 *Man in the Primitive World*. New York: McGraw Hill.

1972 *Anthropology: The Study of Man*. New York: McGraw Hill.

Holmes, N. H., Jr.

1963 The Site on Bottle Creek. *Journal of Alabama Archaeology* 9(1): 16-27.

Holmes, W. H.

1903 Aboriginal Pottery of the Eastern United States. 12th Annual Report of the Bureau of American Ethnology. Pp. 1-237.

Jenkins, N. J.

1975 Terminal Woodland-Mississippian Interaction in Northern Alabama: The West Jefferson Phase. Paper presented at the Annual Meeting of the Southeastern Archaeological Conference, Tuscaloosa, Alabama.

Jones, W. B.

1932 Remarks given at the Conference on Southern Prehistory, Washington: National Research Council. Pp. 34-37.

Larson, L. H., Jr.

1971 Settlement Distribution During the Mississippi Period. Southeastern Archaeological Conference Bulletin 13: 19-25.

1972 Functional Considerations of Warfare in the Southeast During the Mississippi Period. *American Antiquity* 37(3): 383-392.

Lewis, T. M. N. and M. Kneberg

1946 *Hiwassee Island*. Knoxville: University of Tennessee Press.

1958 *Tribes that Slumber*. Knoxville: University of Tennessee Press.

Marshall, R. A.

1977 Lyon's Bluff Site Radiocarbon Dated. *Journal of Alabama Archaeology* 23(1): 53-57.

McKenzie, D. H.

1965 Pottery Types of the Moundville Phase. Southeastern Archaeological Conference Bulletin 2: 55-64.

1966 A Summary of the Moundville Phase. *Journal of Alabama Archaeology* 12(1): 1-58.

McKern, W. C.

1939 The Midwestern Taxonomic Method as an Aid to Archaeological Culture Study. *American Antiquity* 4: 301-313.

Moore, C. R.

1905 Certain Aboriginal Remains of the Black Warrior River. *Journal of the Academy of Natural Sciences of Philadelphia, Second Series* 13(2): 124-244.

1907 Moundville Revisited. *Journal of the Academy of Natural Sciences of Philadelphia, Second Series* 13(3): 334-405.

Moorehead, W. K.

1929 Mound Areas in the Mississippi Valley and the South. *Bulletin of the National Research Council*, No. 74. Pp. 74-78.

Muller, J.

1978 The Kincaid System: Mississippian Settlement in the Environs of a Large Site. *In* *Mississippian Settlement Systems*. B. D. Smith, ed. Pp. 269-292. New York: Academic Press.

O'Hear, J. W.

1975 Site 1Je32: Community Organization in the West Jefferson Phase. M. A. Thesis, Department of Anthropology, University of Alabama.

Olah, J. A.

1975 An Investigation of Ethnographic and Archaeological Political Structure in Southeastern United States. *Journal of Alabama Archaeology* 21: 145-169.

Peebles, C. S.

1971 Moundville and Surrounding Sites; Some Structural Considerations of Mortuary Practices, II. *Memoir of the Society for American Archaeology* 25: 68-91.

1972 Monothetic-Divisive Analysis of the Moundville Burials: An Initial Report. *Newsletter of Computer Archaeology* 8(2): 1-13.

1973 Excavations at Moundville, 1905-1951. Manuscript available from Museum of Anthropology, University of Michigan and Department of Anthropology, University of Alabama. Pp. 1-1212. Ann Arbor: University of Michigan Press.

1974 Moundville: The Organization of a Prehistoric Community and Culture. Ph.D. dissertation, Anthropology Department, University of California Santa Barbara.

1977 Biocultural Adaptation in Prehistoric America: An Archaeologist's Perspective. *In* *Biocultural Adaptation in Prehistoric America*. R. L. Blakely, ed. Southern Anthropological Society Proceedings, No. 11. Pp. 115-130. Athens: University of Georgia Press.

1978 Determinants of Settlement Size and Location in the Moundville Phase. *In* *Mississippian Settlement Patterns*. B. D. Smith, ed. Pp. 369-416. New York: Academic Press.

Peebles, C. S. and S. Kus

1977 Some Archaeological Correlates of Ranked Societies, *American Antiquity* 42(3): 421-448.

Phillips, P.

1970 Archaeological Survey in the Lower Yazoo Basin, Mississippi, 1949-1955. *Papers of the Peabody Museum of Archaeology and Ethnology*, Harvard University, Vol. 60. Cambridge: Harvard University.

Phillips, P., J. A. Ford, and J. B. Griffin

1951 Archaeological Survey in the Lower Mississippi Alluvial Valley. *Papers of the Peabody Museum of Archaeology and Ethnology*, Vol. 60. Cambridge: Harvard University.

Rappaport, R. A.

1971a Ritual, Sanctity, and Cybernetics. *American Anthropologist* 73(1): 59-76.

1971b The Sacred in Human Evolution. *Annual Review of Ecology and Systemics* 2: 23-44.

1976 Adaptation and Maladaptation in Social Systems. In *The Ethical Basis of Economic Freedom*. Ivan Hill, ed. Pp. 39-79. American Viewpoint.

Sahlins, M.

1972 *Stone Age Economics*. Chicago: Aldine.

Saxe, A. A.

1970 Social Dimensions of Mortuary Practices. Ph.D. dissertation, Anthropology Department, University of Michigan.

Sears, W. H.

1958 The Wilbanks Site (9CK-5), Georgia Bureau of American Ethnology Bulletin 169: 129-194.

1961 The Study of Social and Religious Systems in North American Archaeology. *Current Anthropology* 2(3): 223-246.

1962 The State in Certain Areas and Periods of the Prehistoric Southeastern United States. *Ethnohistory* 9: 109-125.

1964 The Southeastern United States. In *Prehistoric Man in the New World*. J. D. Jennings and E. Norbeck, eds. Pp. 259-287, Chicago: University of Chicago Press.



Sears, W. H.

- 1968 The State and Settlement Patterns in the New World. In Settlement Archaeology. K. C. Chang, ed. Pp. 134-153. Palo Alto: National Press Books.

Sheldon, C.

- 1974 The Mississippian-Historic Transition in Central Alabama. Ph.D. dissertation, Anthropology Department, University of Oregon.

Smith, B. D.

- 1974 Middle Mississippi Exploitation of Animal Populations: A Predictive Model. American Antiquity 39(2): 274-291.
- 1975 Middle Mississippi Exploitation of Animal Populations. Anthropological Papers, Museum of Anthropology, University of Michigan, No. 57.
- 1978 Variation in Mississippian Settlement Patterns. In Mississippian Settlement Patterns. B. D. Smith, ed. Pp. 479-503. New York: Academic Press.

Sperber, J.

- 1976 Mississippian Socio-Political Organization: An Alternative Approach. Paper Presented at the Annual Meeting of the Southeastern Archaeological Conference, Tuscaloosa, Alabama.

Steponaitis, V. P.

- 1978 Location Theory and Complex Chiefdoms: A Mississippian Example. In Mississippian Settlement Patterns. B. D. Smith, ed. Pp. 417-453. New York: Academic Press.

Walthall, J. A.

- 1977 Moundville: An Introduction to the Archaeology of a Mississippian Chiefdom. Tuscaloosa: Alabama Museum of Natural History.

(in press) The Archaeology of Alabama. Tuscaloosa: University of Alabama Press.

Walthall, J. A. and S. B. Wimberly

- 1978 Radiocarbon Dates from Bessemer and Moundville. Manuscript in possession of the author.

Ward, T.

- 1965 Correlation of Mississippian Sites and Soil Types. Southeastern Archaeological Conference Bulletin 3: 42-48.

Waring, A. J., Jr. and P. Holder

- 1945 A Prehistoric Ceremonial Complex in the Southeastern United States. American Anthropologist 47: 1-34.

Wimberly, St.

1956 A Review of Moundville Pottery. Newsletter of the Southeastern Archaeological Conference 5(1): 17-20.

Wright, H. T., III

1977 Recent Research on the Origin of the State. Annual Review of Anthropology 6: 379-398.