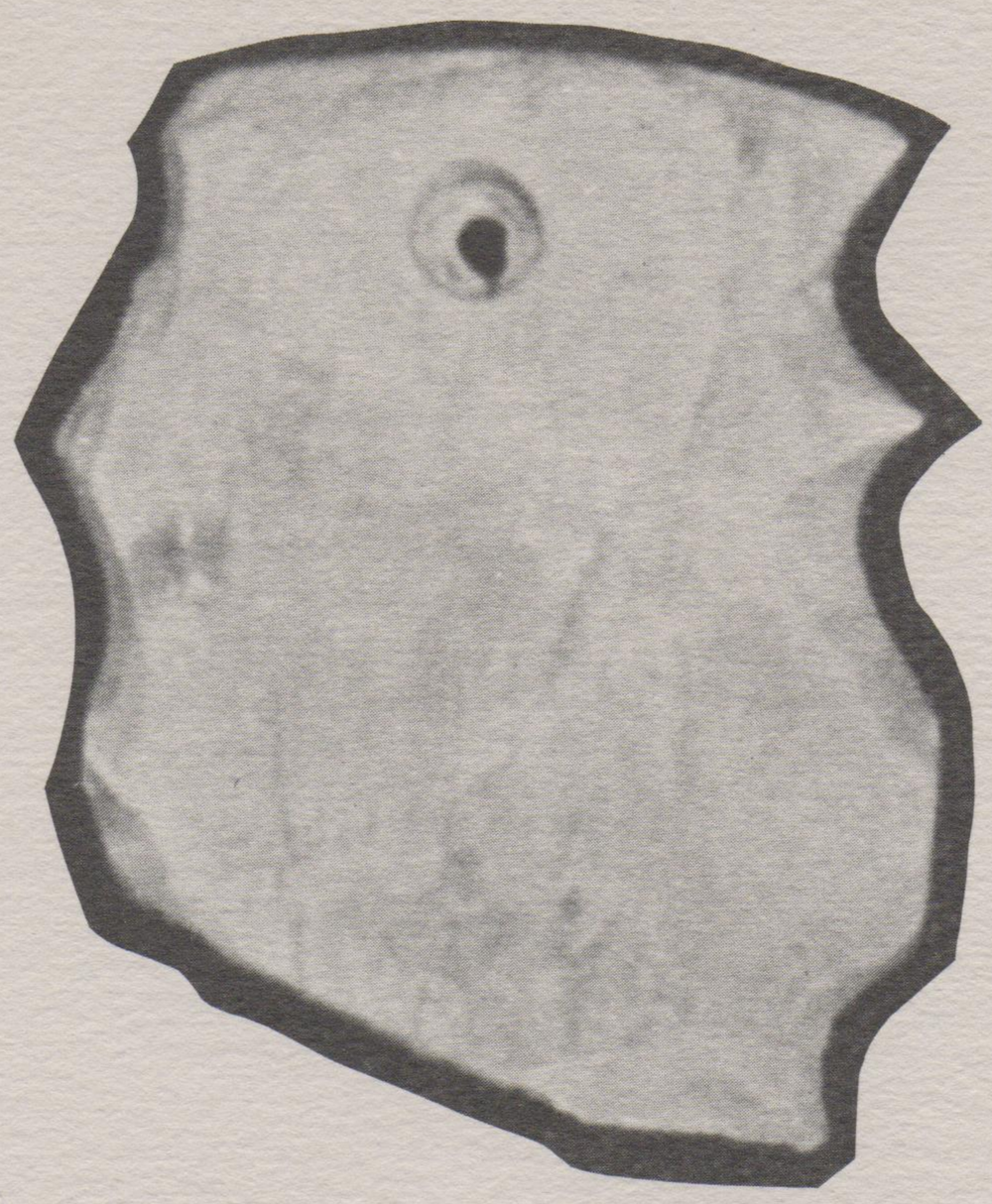
Archaeological Report No. 7

THE SLATE SITE
A POVERTY POINT LAPIDARY INDUSTRY
IN THE SOUTHERN YAZOO BASIN, MISSISSIPPI

James Lauro and Geoffrey R. Lehmann



Mississippi Department of Archives and History

Archaeological Report No. 7

THE SLATE SITE
A POVERTY POINT LAPIDARY INDUSTRY
IN THE SOUTHERN YAZOO BASIN, MISSISSIPPI

James Lauro and Geoffrey R. Lehmann

Mississippi Department of Archives and History
Jackson, Mississippi

1982

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF PLATES

ABSTRACT

The Slate site is located within the neck of a large meander loop within the Stage 4 meander belt of the Mississippi River in Humphreys County, Mississippi. Three components have been identified indicating occupation during the Poverty Point, Baytown, and Historic periods. Archaeological investigations at the site included controlled surface collections, auger tests to depths of up to 3.8 meters, and the excavation of a single test pit.

The Poverty Point component is the result of special activities focused upon the production of lapidary items principally from slate, but including other materials such as quartz crystals, quartz, bauxite, quartz diorite, and jasper. The lapidary items include disc, tubular and barrel-shaped beads, effigies, and miniatures. Other artifacts diagnostic of the Poverty Point culture include micro-tools and cores, a consistent variety of projectile points and other chipped stone implements, boat stones, pendants, perforated gorgets, pitted stones, and plummets. Baked clay Poverty Point objects have not been found at this site. The artifact assemblage and geomorphological data suggest an occupation relatively late in the Poverty Point period. The lack of data on the Poverty Point occupation within the Yazoo Basin renders interpretation somewhat speculative, but the existence of a special activity site devoted to the production of non-utilitarian items from a variety of exotic materials may indicate a relatively complex form of sociopolitical organization with increasing autonomy and less reliance upon interaction with the broader Poverty Point complex in the Lower Mississippi Valley.

The Baytown period component includes a small midden mound and a very small ceramic assemblage. The Historic component includes an abandoned cemetery and the remains of several small tenant houses.

ACKNOWLEDGEMENTS

Several people are responsible for calling attention to the Slate site (22-Hu-655) in Humphreys County, Mississippi. Located in the extreme southeastern portion of the Lower Yazoo Basin on Wolf Lake, an oxbow lake of the Mississippi River, the Slate site sits atop a natural levee occupying nearly 32 acres (13.2 ha). Poverty Point occupation on the site appears to be a special activity area where non-indigenous materials such as slate and quartz crystals were processed into non-utilitarian artifacts. Prior to the discovery of the Slate site, no other Poverty Point period site was known to possess such an extensive slate and quartz lapidary industry.

Dr. John Neal Brown, Jackson, Mississippi, is responsible for providing the location of the Slate site. Tom Fouche, the landowner, was gracious in allowing us to work in his cotton field for the project's duration. Tom Rightmer and Ed Gill of Jackson allowed us to record their rather large collections made from the site over a period of years. Mrs. Martha McBride, Jackson historic preservation advocate, visited the Slate site offering encouragement and contacting local people who might be able to assist in the project. Her enthusiasm should serve as a model for young and old alike.

Several professional archaeologists and/or geologists have offered advice on possible source locations for exotic material and comments regarding the topography, soil series, and geomorphology of this area. Richard Marshall of the Cobb Institute of Archaeology, Mississippi State University, offered his comments most helpfully. Dr. Bob Newman, Louisiana State University, gave his perspective on this rather unique cultural manifestation. Dr. Roger Saucier, United States Corps of Engineers, Waterways Experiment Station, Vicksburg, in his typical generous fashion offered valuable information on some of the basic concepts of river valley dynamics and the resultant geomorphology. Thanks also are due to David Dockery and Danny Harrelson of the Mississippi Geological Survey and to Dr. Wendell Johnson of the Millsaps College Geology Department for their assistance in identifying some of the lithic materials from the site. Dr. Jon Gibson, of the University of Southwestern Louisiana, provided helpful comments as well as reference materials on the Poverty Point culture.

Of course, the staff at the Department of Archives and History helped when possible from the inception to the conclusion of the project. Elbert Hilliard, State Historic Preservation Officer and Director of the Department, was enthusiastic and supportive. Bob Bailey,

director of the Division of Historic Preservation, visited the site and, along with Sam McGahey, senior archaeologist, backed us every step of the way. Staff archaeologists John Connaway and Sam Brookes helped transform our rough draft into a more professional report. Special thanks go to Robert Horton, photographer, for his quality photographic efforts; he spent much time in setting up the plates.

The Slate Site

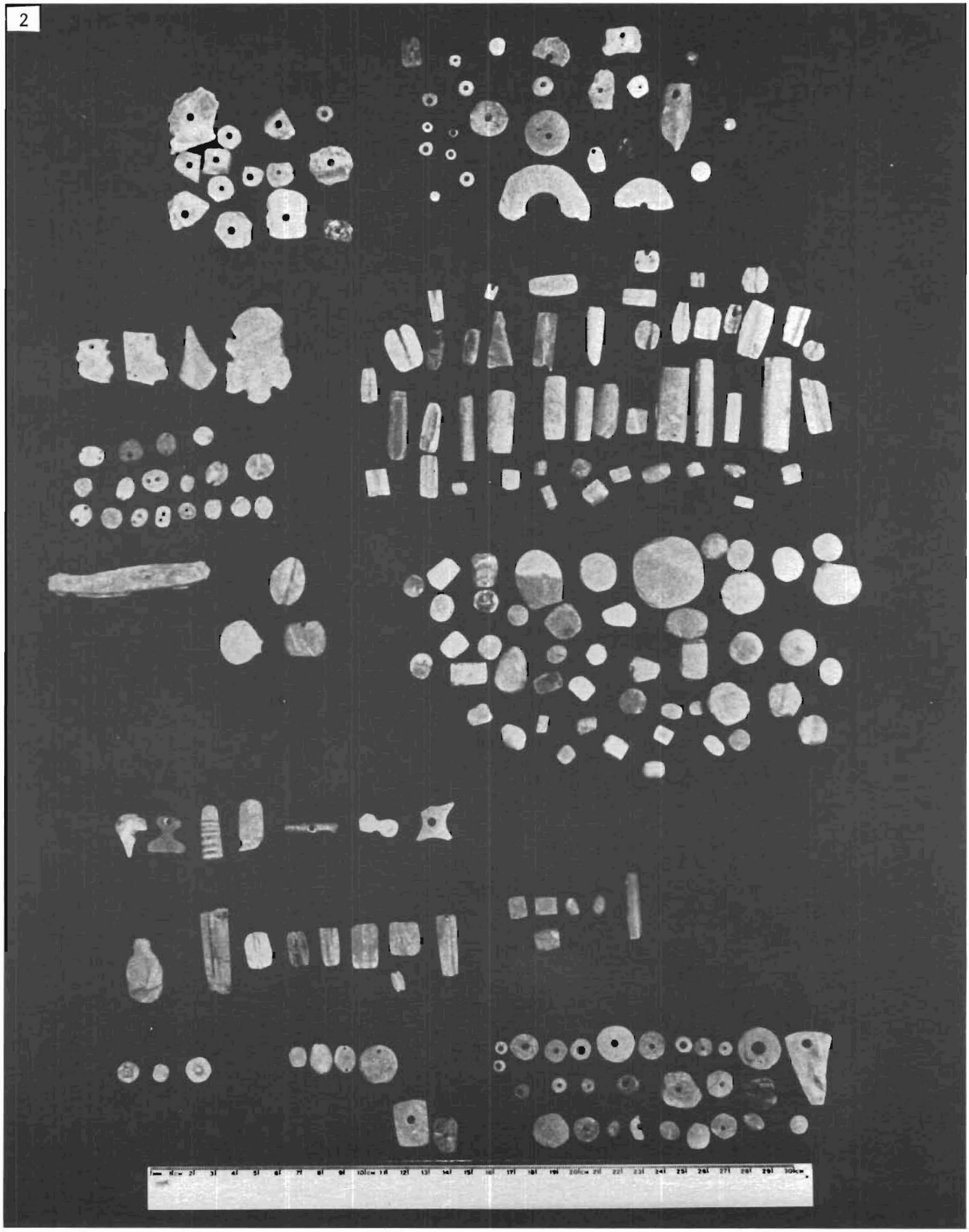


Plate 1. A variety of slate artifacts from the Slate site.

I. INTRODUCTION

SUMMARY OF INVESTIGATIONS AT THE SLATE SITE

Several collections were brought to the Mississippi Department of Archives and History (MDAH) in the spring of 1980, and an inspection of the material seemed to hint at a connection with Poverty Point, a cultural manifestation not uncommon in the Yazoo Basin. A high proportion of artifacts were manufactured from non-indigenous materials: quartz crystals, slate, and novaculite. A slate lapidary industry provided the bulk of the cultural items (Plate 1). Quartz crystals were numerous. Reportedly the cultural material covered quite a considerable area; unfortunately, however, we were not able to ascertain the site's location at this time.

Several months passed and an opportunity to speak with an amateur Jackson archaeologist, Dr. John Neal Brown of the University of Mississippi Medical Center, resulted in a trip to the Slate site in August, 1980. At that time the site was planted in cotton; this fact coupled with the 1980 drought provided poor surface visibility. Nevertheless, slate, quartz crystals, novaculite projectile points, and pieces of quartz were picked up. The site was large yet an accurate assessment of its size was not possible due to heavy ground cover. A mound approximately 2.3 meters high of uncertain cultural affiliation was recorded in the northwest quadrant of the site. Several more small surface collections were made in the early fall and plans were made to return under more favorable conditions to conduct controlled investigations at the site. Permission was granted from the landowner, Mr. Tom Fouche of Benton, Mississippi, to conduct studies after the crops were harvested in the early winter. Further attempts were made to locate people who might have collections from the site; this was successful to a certain degree. Several collectors reported to have collections of artifacts from the Slate site refused permission to record their materials. This was unfortunate, since it was recognized early on in the fieldwork that considerable amounts of cultural materials were missing from the site. While damage by chisel plowing has certainly taken its toll, damage by uncontrolled relic collecting is probably more devastating than the agricultural practices.

In early December, 1980, a five-week archaeological investigation was undertaken by MDAH. During the interim from early fall to the inception of the field work we were able to record several large collections made by Tom Rightmer and Ed Gill at the Slate site over the course of five to six years. A slate lapidary industry was well represented along with large quantities of quartz crystals. A number of typical Poverty Point period projectile points of local cherts and several novaculite projectile points were included in these collections. Their collections were valuable in this study.

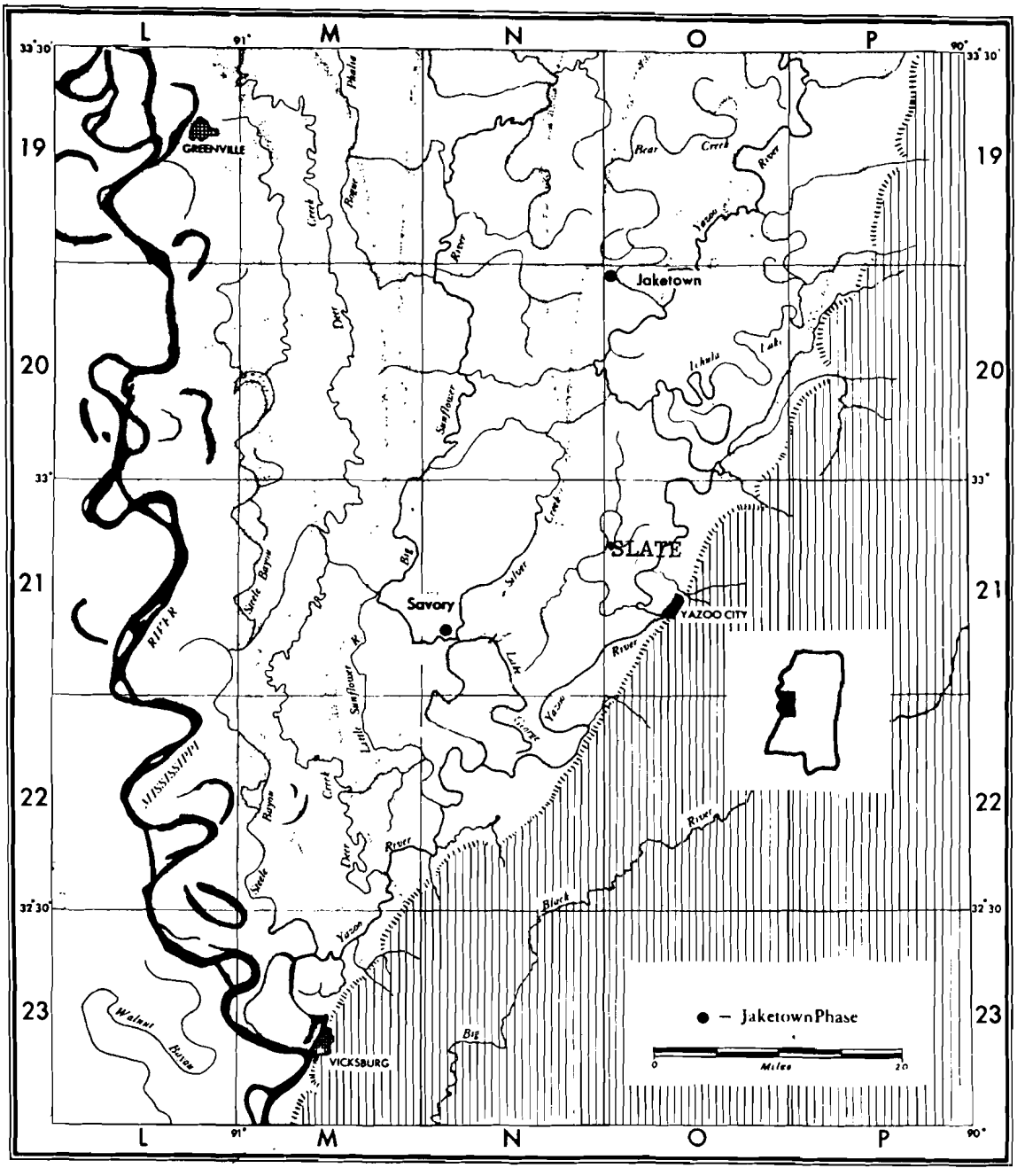


Figure 1. Location of the Slate Site (22Hu655), southern Yazoo Basin, Mississippi (adapted from Phillips 1970).

A controlled surface collection along two east/west transects and one north/south transect of 5 meter^2 units, borings at nine locations with a bucket auger to depths of up to 3.8 meters, and excavation of a single 1 meter^2 test pit were carried out from December 10, 1980, through January 15, 1981. This study combines data resulting from MDAH's testing program and from the examination of surface collections made at the Slate site by amateur archaeologists. Figure 1 shows the location of the Slate site within the Yazoo Basin.

NATURAL ENVIRONMENT

Geological Setting of the Slate Site

About 5,000 years ago, a major diversion of the Mississippi River caused the abandonment of the Sunflower meander belt ridge (Stage 3) and the initiation of the Yazoo meander belt (Stage 4) along the eastern wall of the Yazoo Basin. At about 4,000 years ago, a further diversion occurred, which allowed for partial flow to proceed down the valley in the general area of the present meander belt (Saucier 1974:21). Some flow, however, continued down the Yazoo course until about 2,600 years ago, at which time the more westerly course (Stage 5) received the full discharge of the river (Saucier 1981).

The Slate site is located on the Stage 4 meander belt of the Mississippi (Figure 2), dated from 4800 to 2600 B.P. It is situated on natural levees flanking the last relict channel to occupy the meander belt. This is the same meander belt on which other Poverty Point period sites in the Yazoo Basin are located (Teoc Creek, Neill, and Jaketown). However, the Slate site, unlike Teoc Creek, Neill, and Jaketown, which exhibit buried midden and discernible stratigraphy, appears to be a surface manifestation with no occupational midden and no discernible stratigraphy. Teoc Creek, Neill, and Jaketown were occupied while the channel was still active, resulting over a period of years at Jaketown in a situation where cultural midden is capped by over 8 feet of alluvium (This is also true at Teoc Creek, and to a degree, at Neill). At this time the Stage 4 meander belt was still in an active stage, and its overflows are reflected in the stratigraphic context.

As the Stage 4 meander belt matured and the river gradually occupied the present channel (somewhat later in time) the Slate site was occupied by Poverty Point peoples. Augerings to depths of 3.8 meters revealed the absence of buried midden and cultural materials. As Slate occupation is apparently restricted to the plowzone (60 cm), with no discernible stratigraphy, it is quite possible that the site dates late in the Poverty Point period. It is highly doubtful that any materials which would allow for C-14 samples will be discovered. Continuous chisel plowing to depths of over 60 cm has undoubtedly destroyed any context in an archaeological sense. Preservation of organic material is

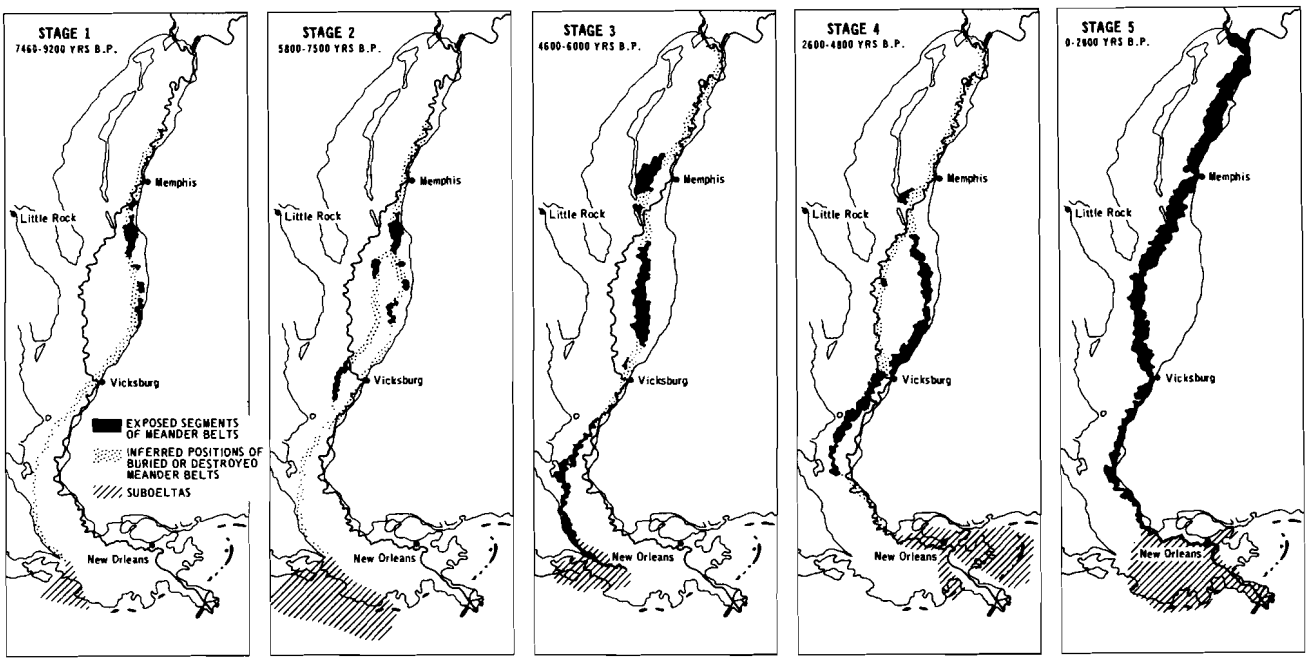


Figure 2. Sequence of Holocene meander belts and subdeltas of the Mississippi River (Saucier 1975:25).

poor in the Yazoo Basin, and this fact, taken together with the absence of any Poverty Point baked clay objects which might be used for thermoluminescent dating, implies a general absence of materials which would permit absolute dating.

Physiography and Environment in the Yazoo Basin

The Yazoo Basin lies in Fisk's central division of the Lower Mississippi Valley and extends for 200 miles from Memphis to Vicksburg, draining a total of 14,000 square miles (Anderson 1950:14) The Yazoo Basin ("Mississippi Delta") has a maximum width of approximately 60 miles, bounded on the west by the Mississippi River and on the east by the Loess Bluff Hills rising to over 150 feet above the level of the floodplain (Lowe 1919:269). The Delta may be characterized as flat and low-lying, with elevations ranging from 80 to 200 feet above mean sea level and abrupt changes in relief in excess of 10 feet being uncommon. Local topographic relief is provided by natural levees and alluvium from existing and previous river meanderings. Other significant topographic features in the Delta are the many abandoned courses, channel scars, and oxbow remnants of the Mississippi River and smaller streams.

At present the environmental setting particular to the individual meander belts is not clearly understood by archaeologists. The suggestions that site type and site location varied and shifted around the individual meander cutoffs in response to the development or evolution of the meander cutoff is made by Weinstein(et al. 1979) from studies conducted on Swan Lake in the west-central Yazoo Basin. The information

necessary to attempt to formulate and describe ideas about the Yazoo Basin natural environment and its potentially procurable resources is beginning to come to the surface in bits and pieces. It may be that the development, stabilization, and abandonment of a meander belt is an ongoing, rather long term dynamic process, a process that may have allowed for a rather rich and diverse environment, i.e., a broad and varied resource base for human use. Until enough detailed geomorphological studies describing the history of individual meander belts and their environmental potential as it relates to prehistoric man have been carried out, it is tenuous, at best, to attempt to depict a constant environmental setting for an entire meander belt.

Flora and Fauna

The vegetation of this region has been classified by Shelford (1963:19) as belonging to the Temperate Deciduous Biome represented in portions of the Mississippi Valley. The alluvial floodplain displays a mosaic of disparate vegetation types consisting of prairie, oak-hickory forest, swamp forest, and mixed mesophytic forest communities (Braun 1950:157). Thorne notes that the character of the forest community has changed considerably in recent years because of artificial environmental controls and changes imposed by dams, levees, and extensive land clearing (1977:12). The original bottomland forest community, whose basic constituent was hardwoods, is no longer extant. Extensive swamps and some overflow habitats have also disappeared.

The larger and more important fauna that would have supplied a food source for the aboriginal population were: opossum, eastern cottontail, swamp rabbit, eastern gray squirrel, fox squirrel, southern flying squirrel, beaver, muskrat, red fox, gray fox, racoon, striped skunk, bob cat, and white tail deer.

A large number of bird species inhabit the area. These include: wood duck, mallard, black duck, blue winged teal, egret, great blue heron, green heron, yellow crowned heron, American bittern, and American coot.

The river environment was capable of producing the following: sturgeon, gar, catfish, white bass, white and black crappie, bluegill, sunfish, largemouth bass, and sauger.

Freshwater mussels, fourteen species of pelecyods, and four species of gastropods have been identified as existing in the Yazoo River and seem to have been utilized rather extensively during the Deasonville phase of the Baytown period in the Southern Yazoo Basin.

OCCUPATIONAL HISTORY OF THE SLATE SITE

The Slate site artifact assemblage indicates occupation during three periods: Poverty Point, Baytown, and Historic. The rationale for this assignment will be considered below.

Poverty Point

The variety of lapidary items and such exotic materials as quartz crystals strongly suggested a Poverty Point occupation even in the complete absence of any Poverty Point objects. Consideration of a number of elements corroborates this impression. Webb (1968) has compiled a list of primary, secondary, and tertiary diagnostic traits for Poverty Point assemblages. Of the primary characteristics, the Slate site exhibits micro-flints (cores, lamellar blades, and a Jaketown Perforator) and a single partially drilled unformed jasper bead blank. (In addition, hematite plummets have been reported from collections to which access has been denied.) Although few of the primary traits appear, the secondary characteristics include a consistent variety of projectile points and other chipped stone implements, boat stones, pendants, perforated gorgets, and other stone beads. Tertiary diagnostic traits include quartz, pitted stones, and plummets other than hematite. Gibson (1974c:11) stresses the importance of a wide variety of exotic materials in assigning a component to the Poverty Point culture and in this respect the Slate site conforms well. Also, the location of the Slate site on the Stage 4 meander belt coincides with expected patterns in the Yazoo Basin (Webb 1970a).

The available data suggest that the Slate site was occupied rather late in the Poverty Point period. This late occupation is indicated by the apparent stability of the meander belt during the site's occupation, by the narrow stems and blades of the projectile point assemblage, and by the apparent focus on the production of non-utilitarian artifacts. Gibson (1974c) considers this last aspect to be the outstanding feature of the Florescent phase of the occupation at the Poverty Point Site, ranging from 1000 to 800 B.C. Gibson notes, however, that the Florescent phase at the Poverty Point site tended to de-emphasize resources available from Arkansas in favor of midwestern materials (1974c:15). The bulk of the exotic material at the Slate site apparently has Arkansas origins.

Baytown

The Baytown Period component is identified on the basis of a small ceramic assemblage consisting of Baytown Plain (vars. Reed and Unspecified) and Mulberry Creek Cordmarked var. Edwards. This component is attributed to the small mound in the northeast quadrant of the site. A large "pot hole" in the mound afforded a profile view which revealed about a meter of midden from which several of the ceramic specimens were recovered. The current height of the mound, over 2 meters, may in part

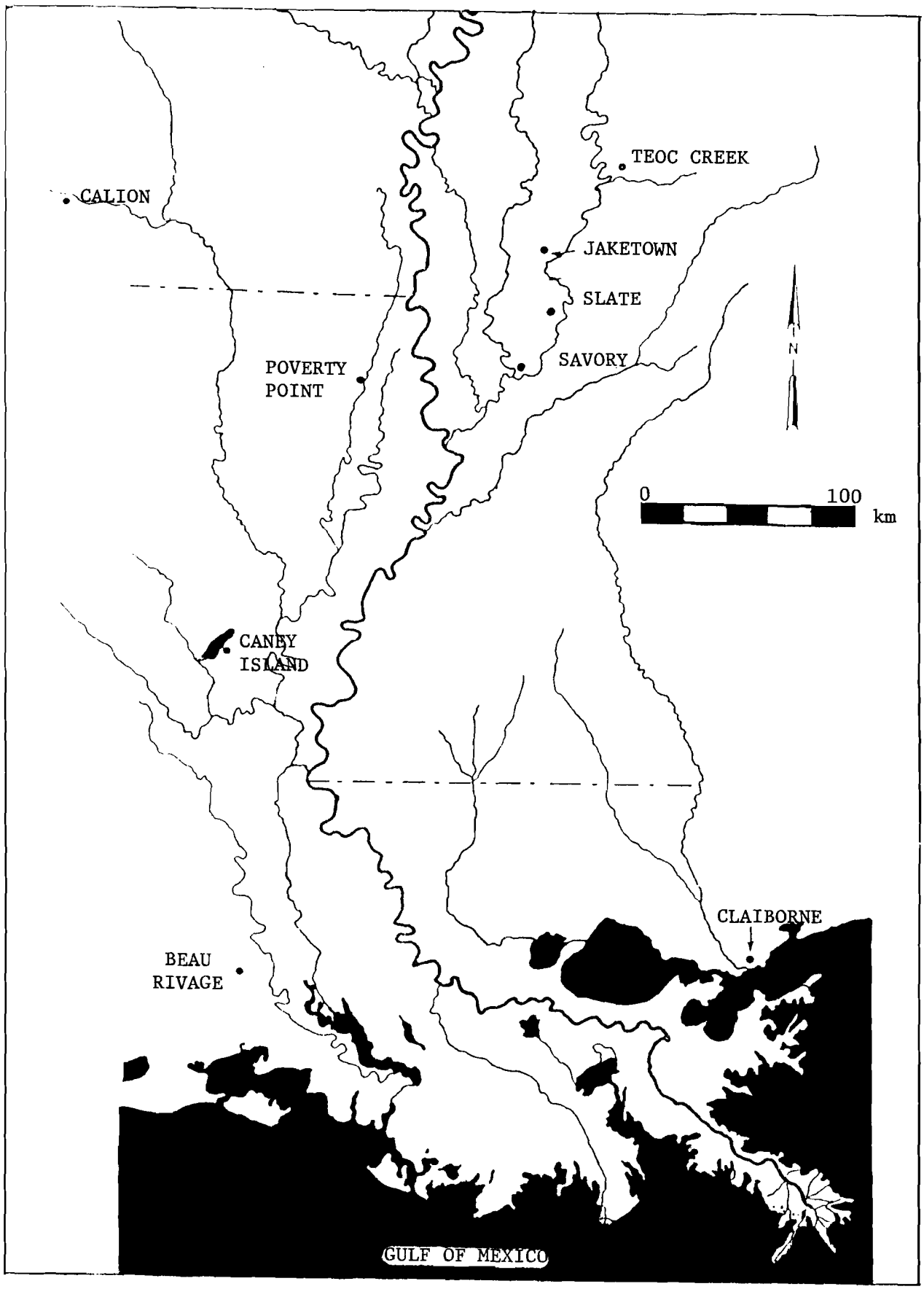


Figure 3. Poverty Point sites in the Lower Mississippi Valley (adapted from Altschul 1979).

be attributable to the erosion of the surrounding field. The nearby historic cemetery has not been subject to plowing, as is apparently the case with the mound, and a difference in elevation of approximately .5 meter between the cemetery and surrounding field is evident.

Baytown Plain var. Reed	16	42.1%
Baytown Plain var. Unspecified	12	35.5%
Mulberry Creek Cord Marked var. Edwards	2	5.2%
Unidentified	6	16.7%
Total	36	

Table 1. Ceramic Inventory from Slate Site.

Historic

Current use of the Slate site is almost completely confined to modern agricultural purposes. The small cemetery in the northeast quadrant is unkempt and apparently abandoned. Several extant structures are in the vicinity of the site, but there are none now located on the site proper. The historic artifact assemblage points to the previous location of several small homes on the site. In addition, a small paved road traverses its entire western border.

In summary, the Slate site has been occupied during the latter part of the Poverty Point period, during the Baytown period, and is now used as an agricultural field and cemetery, though occupied by several residences earlier in modern times. No discernible stratigraphy has been discovered, and the artifacts have thus far been observed only within the plow zone. This surface material is scattered in varying densities across about 32 acres (13.2 ha) of land within the neck of a large meander loop.

POVERTY POINT CULTURE

The following discussion of Poverty Point culture derives primarily from studies of the Poverty Point site itself and the cluster of sites around it. This material is presented to provide background information against which Poverty Point sites in the Yazoo Basin in general and the

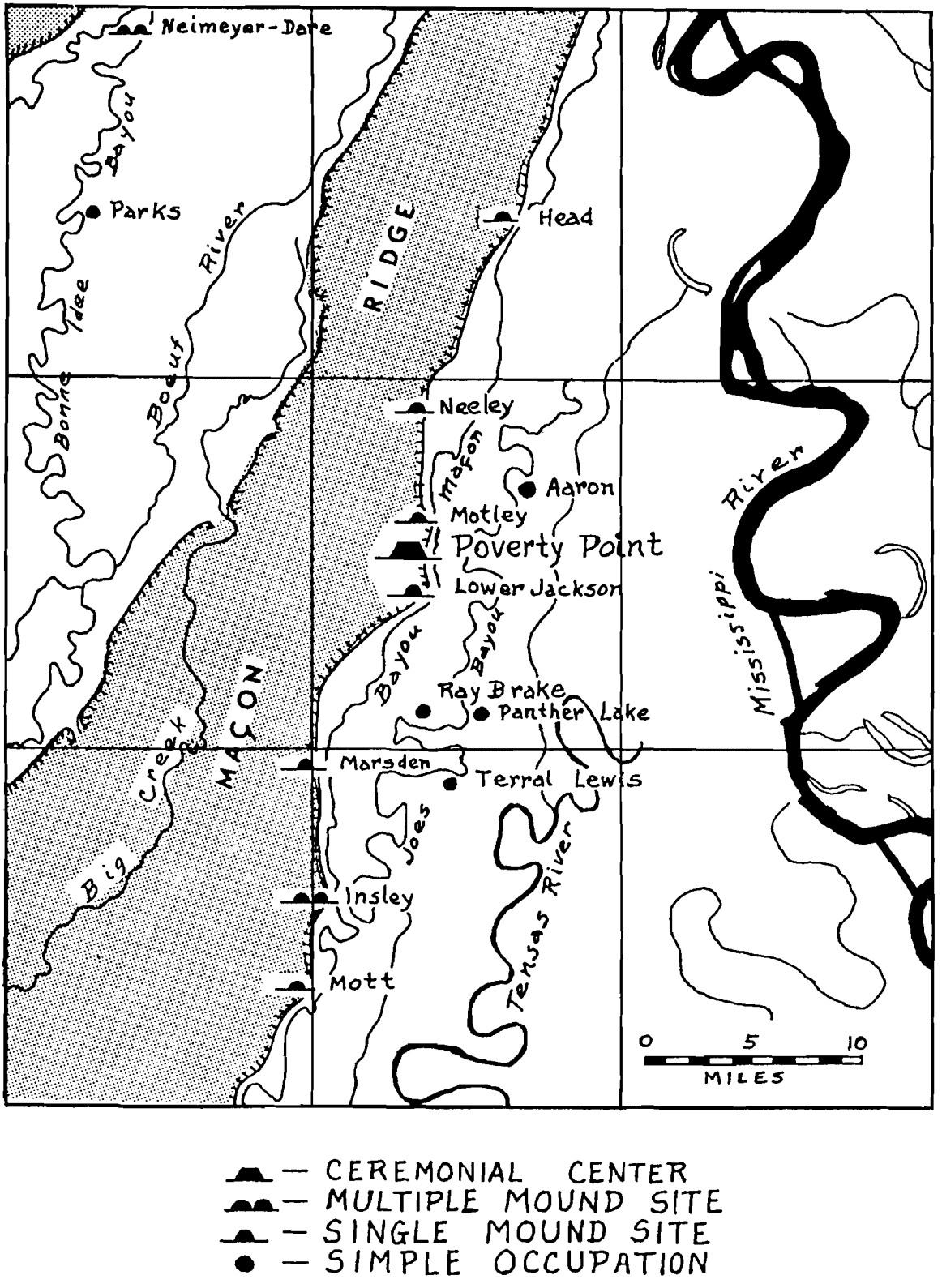


Figure 4. The Poverty Point Interaction Basin (from Webb 1970).

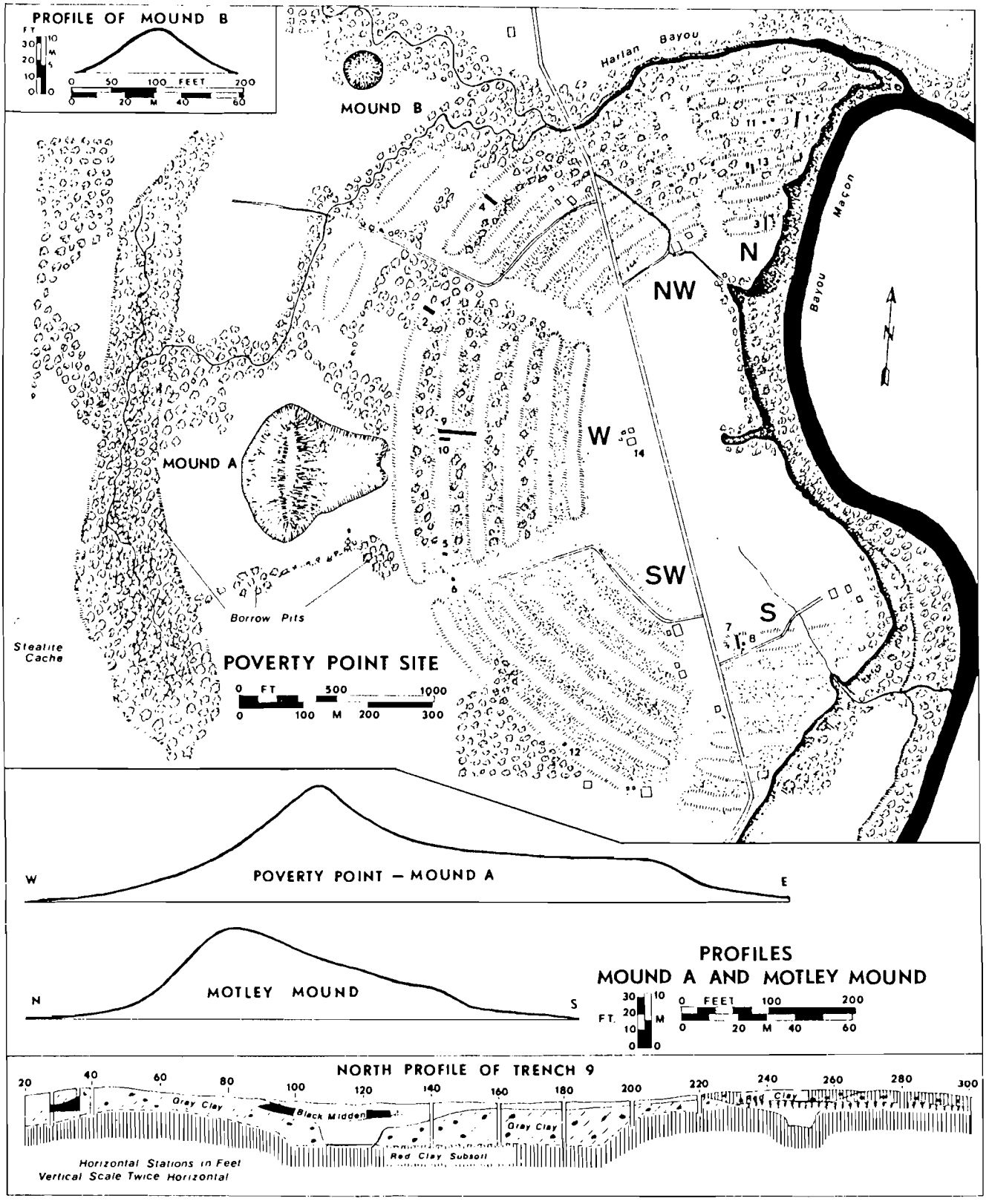
Slate site in particular may be viewed. The sociopolitical organization of Poverty Point as manifested at the Poverty Point site, its development, and its relations with other clusters of Poverty Point sites are the principal concerns.

"The Poverty Point culture is a prehistoric manifestation in the southern United States, transitional in nature, that participates in the American formative shift from Archaic band existence to a village--regional center--great ceremonial center complex with ranked societal organization on a chiefdom level" (Gibson in Webb 1977:3). Gibson recognized four clusters within a geographic region marked by sharp divisions between floodplains and uplands, each cluster exhibiting characteristic settlement patterns, and suggested that "a relatively stable rural population resided in small villages outside large provincial centers" (1974a:99). These four clusters include the Jaketown area of the Yazoo Basin of Mississippi (which lacks the floodplain/upland contrast), the Poverty Point area in the Macon Ridge--upper Tensas Basin of northeast Louisiana, the Beau Rivage area west of the Mississippi River Delta, and the Claiborne area of coastal Louisiana and Mississippi (Gibson 1973:30; see Figure 3). In addition, Webb (1977), Hunter (1970) and Phillips (1970) recognize the Catahoula phase of Poverty Point near Catahoula Lake in central Louisiana, and the Calion area of the Ouachita River--Bayou Bartholomew drainage in southeast Arkansas has been described by Gibson (1973) and Webb (1977). Another phase of Poverty Point culture may have existed in what is now northeastern Arkansas, but sufficient data does not exist for a certain definition (Webb 1977, Phillips 1970). The Poverty Point area has been studied in the greatest detail, with the Jaketown area running a rather distant second.

Gibson (1973) refers to the Poverty Point area of northeast Louisiana as the Poverty Point interaction basin (Figure 4). This basin contains 14 known Poverty Point components (Webb 1977). Contemporaneity of these components is largely assumed, but Gibson provides reasonable arguments to support such an assumption (1973:117-124). The basin is delineated geographically as the area between the Macon Ridge escarpment on the west, the relict Arkansas river system on the east and south, and the Tensas swamp on the north. Eight sites, including the Poverty Point site, are located on the escarpment and the other 6 are located within the floodplain adjacent to Joes Bayou (Webb 1977).

Webb (1977:61-62) characterized Poverty Point as an outstanding cultural development that ranks alongside Olmec and Chavin. The Poverty Point site has monumental construction exhibiting solar orientation. Subsistence was based upon hunting, fishing, fowling, and gathering, with the possible development of horticulture. A society on a chiefdom level with matrilocal residence patterns is attributed to Poverty Point. The tool assemblage includes the baked clay Poverty Point objects and a specialized blade tool industry. Stone carving was highly developed and the exotic materials employed are suggestive of regular long distance trade.

Figure 5. The Poverty Point Site (from Webb 1977).



The Poverty Point interaction basin is dominated by the Poverty Point site itself, distinguished by a semicircular construction of six concentrically arranged earth embankments, with two and possibly three additional earth mounds (Figure 5). The innermost ridges of the semicircular embankments measure nearly 600 meters in diameter and the outermost ridges measure 1201 meters in diameter. Radiocarbon dates and stratigraphic analysis suggest four phases of cultural development: Nascent (1500-1200 B.C.: Archaic seasonal round/limited importation of exotic material/no mound construction); Developmental (1200-1000 B.C.: Microblade industry increases/expanded use of Poverty Point objects/no mound construction); Florescent (1000-800 B.C.: Mound construction/expansion in variety and sheer numbers of artifacts and materials/greatest cultural elaboration); and Post-florescent (800-600 B.C.: Mound construction already completed/reduced population/decreased variety and number of artifacts and materials) (Gibson 1973:76-87).

Gibson (1973, 1974a) suggests that the sociopolitical organization within the Poverty Point interaction basin was that of the chiefdom, as defined by Service (1962). The principal characteristics of a chiefdom, particularly those of the Lower Mississippi Valley, include:

> (1) an average population between 1,000 and 10,000 people and densities between 1.0 and 2.0 persons per square kilometer; (2) a spatial organization consisting of definable provinces, scattered villages and a large center; (3) economic redistribution; (4) a ranked social hierarchy based on proximity to the chiefly line; and (5) a surplus-producing subsistence base characterized by the familial mode of production, a division of labor based on age and sex, a specialization based on ecological condition and/or communal construction projects as well as craft specialization (Gibson 1974a:98-99).

Of particular importance is the postulated redistributive economic system, supported by Lehmann (n.d.), and the subsistence base suggested by Gibson (1973, 1974a, 1974b), which has received recent criticism (Thomas and Campbell 1979). A redistributive economic system is a central feature of chiefdoms (Service 1962, 1975), and its operation within the Poverty Point interaction basin is crucial for the classification of that phase of Poverty Point culture as a chiefdom level of sociopolitical organization. The Poverty Point subsistence base is as yet an unsettled question, but one which has broad implications for the interpretation of many Poverty Point cultural features.

A redistributive economic system is a form of integration responsible for the coherent movement of objects and activity through time and space (transactions, storage, shipment, etc.) and designates movements toward an allocative center and out of it again, requiring as a background some measure of centricity in the economic group (Polanyi 1968).

Service (1962) considers redistribution to be the consequence of specialization with the attendant need to coordinate production and allocate products. Specialization may refer either to the ecological specialization of residential units or to the pooling of skills in large-scale cooperative production. The ecological specialization of residential units implies that productive units occupy varied ecological zones. Service suggests that in a geographically homogeneous environment diversification of local skills may provide redistributional impetus, particularly if long-distance trade is important (1975:75). Large scale cooperative productions may relate to specific types of subsistence activities (communal fish harvests, for example) or to activities of a non-subsistence nature (such as mound construction). To be advantageous, both forms of specialization should increase production. Individual craft specializations may also occur if certain crafts are valued highly enough to warrant subsidy of craftsmen through the redistributive mechanism (Service 1962:148).

The movement of both subsistence and non-subsistence items is to a large degree terminated at the redistributive center. The centralized controlling organization, such as the chief and his entourage, siphons off a large amount of goods to perpetuate itself. The outflow of goods from the redistributive center may be best associated with the subsidy of specialists and public construction, public festivities, and the occasional subsistence crisis, or with the supply of non-local essential materials or esoteric items.

Gibson (1973:142-154) argues that collective building projects and long-distance trade directly support the hypothesized existence of a redistributive economic system within the Poverty Point interaction basin and that the ecologically diverse settlement distribution and the economic implications of large labor forces engaged in non-subsistence related work support such a system by inference. Lehmann (n.d.) suggests that the hierarchy of sites, geographic specialization, and indicated differences in site functions support an argument for a redistributive economic system. Further, the probable support of craft specialists at the Poverty Point site strengthens the argument for a redistributive economic system.

Altschul (1979) contends that a redistributive economic system should be viewed with respect to local versus long-distance redistributive networks, or goods moved within the local setting as opposed to the movement of goods over long distances. He views long-distance trade as "usually confined to the exchange of exotic goods by the elite sectors of society" (Altschul 1979:15). These exotic goods are then redistributed to higher ranking lineages. Such exchange he considers to be the consequence of and not a cause of the development of a chiefdom. This form of redistribution served to stabilize relationships between major centers engaged in political and economic relationships. Altschul further contends that the existence of a local redistributive network, which he considers a causal factor in chiefdom development, cannot be demonstrated within the Poverty Point interaction basin.

Rathje (1972) has developed a model for the development of civilizations in the lowland rainforests of Mesoamerica in which the desirability of non-local materials could have fostered a centralized economic force. Thus what Altschul (1979) considers a long-distance redistributive network primarily responsible for the movement of exotic goods available only to higher statuses is instead capable of providing a redistributional impetus itself. Altschul counters the possibility of a redistributive network supplying utilitarian stone tools by pointing to the concentration of exotic material at regional centers such as Poverty Point, Jaketown, and Claiborne and to extensive use of locally available materials at Teoc Creek in the Yazoo Basin (1979:17-18). But, as noted above, the concentration of exotic materials at redistributive centers can be expected where the movement of goods is largely terminated at the center in order to support a chiefly entourage. In addition, within the Poverty Point interaction basin cherts are not locally available and yet constitute significant proportions of artifact inventories from its outlying sites (Gibson 1973; Gregory, Davis and Hunter 1970). Thus, not only does the evidence for redistributional impetus within the Poverty Point interaction basin derive from the supply of essential non-local items, but the indirect evidence offered by Gibson (1973) and Lehmann (n.d.) suggests the movement of local goods as well.

It is generally accepted that Poverty Point sociopolitical organization represented a relatively complex form compared to the previous cultures in the area, to contemporary forms elsewhere in North America, and to the later Tchefuncte culture in the Lower Mississippi Valley (Altschul 1979, Gibson 1973, 1974a, 1974b, Muller 1978, Webb 1977, etc.). The exact characteristics of such organizations are, however, still subject to debate, as the discussion cited above demonstrates. Concomitant with this discussion is the argument over independent local development versus outside influence on the evolution of such a complex socio- political organization. Ford (1969) in particular is concerned with the connections between the Poverty Point and contemporary Mesoamerican cultures, pointing to such similarities as circular settlements, crude figurines, fiber tempered pottery, and a lapidary industry. Muller (1978), however, suggests that the question of influence and its direction is not the central issue in the study of the development of societies, that the introduction of technology or ideas does not account for development, and that a local culture can progress only so far as existing social and environmental conditions permit. "People do not form chiefdoms because someone has told them how wonderful chiefdoms are but because such organizations are necessary to cope with local problems" (Muller 1978:298). Muller goes on to point out that the lack of evidence for the local development of chiefdom organization is the greatest weakness of Poverty Point research.

The subsistence base of the Poverty Point culture has always been considered a key element in the development of its complex form of sociopolitical organization. For a while many considered it only natural that the Poverty Point culture had as its subsistence base a form of maize agriculture (Ford and Webb 1956, Webb 1968). Gibson

(1973) has taken this position to task and offered as a more viable alternative an enhanced version of Caldwell's "Primary Forest Efficiency" (1958). Gibson suggests that mammal and waterfowl hunting, fishing, collection of wild plant foods, and collection and possibly incipient cultivation of a series of weeds common to the floodplains constituted the basis of a forest edge efficiency which maximized the availability of resources from separate ecological zones. These subsistence activities were scheduled to take advantage of maximum yields of available resources as well as to allow for long-distance travel to acquire exotic materials. The patterning of sites within the Poverty Point interaction basin upon the Macon Ridge and within the adjacent floodplain supports an argument for such a diversified subsistence base.

The uncertain feature of Gibson's postulated subsistence base is the problem of movement of either people or goods within the basin, that is, whether the villages both upon the terrace and within the floodplain were occupied year-round or seasonally. Lehmann (n.d.) argues that sedentary groups occupied sites within diverse zones simultaneously and that goods not obtainable within one zone were available through the redistributive network. Gregory, Davis, and Hunter (1970) contend that seasonal movements of different groups kept the Poverty Point site occupied year-round. Around the large Poverty Point site would be "a series of local contributive units which were occupied seasonally by some groups, probably extended families" (Gregory, Davis, and Hunter 1970:44). They do not consider it likely that high status individuals would be involved in subsistence production and so imply that a chiefly entourage or other high status group might occupy the Poverty Point site year-round.

Subsistence data from sites on the periphery of the Poverty Point site indicate that maize agriculture was not practiced and that the primary emphasis of the sites upon the Macon Ridge was on nuts and seeds available in autumn, with little evidence of fish, mammals or fowl (Thomas and Campbell 1979). Very little evidence of Gibson's (1973) postulated weed complex was recovered. Thomas and Campbell (1979) conclude that the primary subsistence emphasis of the inhabitants of the Macon Ridge was upon resources available on the ridge itself, though further investigations of the main Poverty Point site are necessary to fully substantiate this. This evidence suggests that there was little or no movement of resources available in the floodplain to these ridge sites and tends to support Gregory, Davis, and Hunter's (1970) hypothesis concerning seasonal movements of the population from the ridge to the floodplain to procure the resources available within the separate ecological zones. Lack of data from the main Poverty Point site prohibits a satisfactory conclusion concerning the nature of the attendant population at that site. There are at least three possible settlement patterns to account for the available data. These include the hypothesis suggested by Gregory, Davis, and Hunter (1970), that the main site could have been occupied by different groups who seasonally moved into the other outlying sites with perhaps a small year-round population at the Poverty Point site. Two other possibilities, offered by Sanders and Price (1968:116) are:

1. Ceremonial centers with a civic precinct and very small residential groups made up of the chiefly lineage, plus perhaps a small group of service personnel. The other lineages would be scattered over the countryside in nuclear family, extended family or lineage settlements.
2. A relatively large population could reside at the center with the balance of the population residing in smaller settlements as in 1.

In these two cases, the population scattered in smaller settlements around the main site would have moved seasonally from the ridge to the floodplain.

The above data and hypotheses on redistribution, subsistence, and settlement patterns concern only the Poverty Point interaction basin of northeast Louisiana. Very little is known of the other Poverty Point centers. In addition to the lack of knowledge concerning the separate centers is a lack of information concerning the manner in which these separate centers might have been integrated into a coherent larger system. Freidel (1979) has discussed the development of civilization in the lowland Maya area of Mesoamerica and formulates a regional interaction sphere model which may be useful in examining the development of the Poverty Point culture within the Lower Mississippi Valley.

> The major premise for the interaction sphere framework is that the transformation from simple to complex society occurred as an adaptive response by localized social groups to regional conditions by way of a cultural construct: information and commodity exchange networks. Thus the interaction sphere paradigm posits that the evolutionary transformation from simple to complex society is the result of an adaptation to a condition which is fundamentally cultural, rather than natural. The 'causes' of this innovation lie less in the natural environment than in the sociocultural institutions which accompany the establishment of sedentary life-ways (Freidel 1979:52).

Freidel views the development of long-distance trade networks from smaller scale local networks as providing the capability for rapid dissemination of social innovations necessary for the evolution of complex society. A class of elites would emerge to coordinate the distribution of scarce and vital materials, both raw materials and finished products, between local areas. Such elite institutions would develop through the interaction of local communities. A moderate degree of sedentarism would be the only necessary background for the development of local networks, and even then important only for the beginnings of economic interdependence. The next shift would then be "a systemic change in the role of non-local materials in the prestige and authority symbol systems...shifting the commodities used in displays of power and wealth from primarily local and consumable ones to non-local and non-consumable ones" (Freidel 1979:51). This shift could affect the institutionalized forms of cooperation between local leaders and develop

monopolies on the availability of such commodities. Freidel cautions that this development, though capable of the great elaboration of the Hopewell interaction sphere, does not necessarily lead to the formation of civilizations. The integration of local economies into a regional economy seems to be the key stage. "The material symbol system structuring relationships of power and authority must somehow be extended to cover basic economic relationships in such a way that the commodities exchanged throughout the region become essential to local economic integration" (Freidel 1979:51). The Poverty Point cultures probably never reached this point of development, but the model developed under the interaction sphere framework can account for the contemporary appearance of regional centers of Poverty Point culture within the Lower Mississippi Valley. Local interaction spheres, long-distance trade, and the appearance of exotic, apparently non-utilitarian products characterize the Poverty Point culture and tend to support this type of model.

POVERTY POINT IN THE YAZOO BASIN

Only a handful of Poverty Point period sites have been systematically investigated in the Yazoo Basin, the most notable of these being the Jaketown site (type site for the Jaketown Phase) in southern Humphreys County, Mississippi. Jaketown was first recorded by Clarence Moore (1908), who surface collected the site but was unable to secure permission to excavate. Phillips, Ford, and Griffin (1951) surface collected some 4,226 sherds, indicating occupation extending from the Tchula period to the Mississippian period, along with a number of Poverty Point objects indicating an earlier cultural component. Ford, Phillips, and Haag (1955) conducted extensive excavations at the site. Their excavations unquestionably revealed that the Jaketown pre-pottery occupation preceded the Tchula-Tchefuncte periods in this region, and further, there was a definite break between the two periods. As a regional center, the Jaketown site is large, occupying approximately 200 acres. Construction of mounds coupled with a high incidence of exotic raw materials indicate the priority of this site in relation to approximately 50+ other Poverty Point sites in the Yazoo Basin. However, the relationships between these sites and the apparent regional center as yet remain to be worked out.

The Teoc Creek site in Carroll County has been systematically investigated on several occasions. The site has been surface collected, test excavated, and subjected to a series of deep borings. A deep Poverty Point component on a levee slope separated from the surface midden by a sterile sand layer was recorded. Geological information coupled with C-14 dates from Teoc Creek (1700-1000 B.C.), supplemented by information gathered through comparison of this site's inventory with those of large centers (Claiborne, Jaketown, Poverty Point), have led Connaway, McGahey, and Webb (1977) to believe Teoc Creek represents an earlier incipient stage of Poverty Point cultural development before the advent of high ceremonialism and extensive esoteric trade.

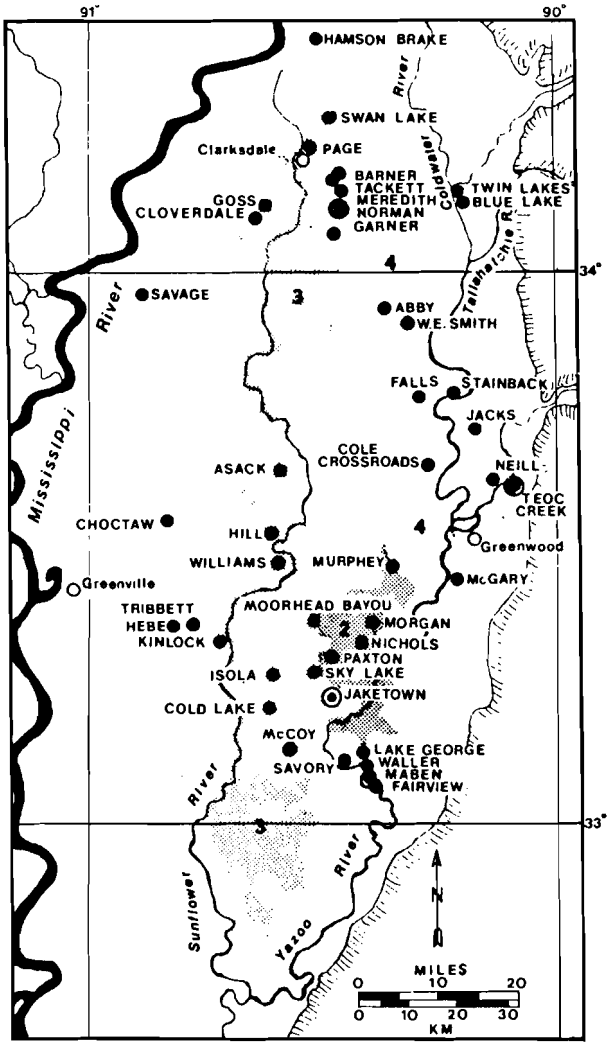


Figure 6. Poverty Point sites in The Yazoo Basin (from Webb 1977).

Finally, the Neill site near Teoc Creek was surface collected and subjected to deep borings indicating a buried Poverty Point midden, located in places 7-8 feet below the highest part of the site. The Slate site in the southeastern portion of the Yazoo Basin is the most recently investigated Poverty Point period site in the basin. At the Slate site, a well developed lapidary industry utilizing non-indigenous materials (slate, quartz crystals, phyllite, bauxite, etc.) was recorded. This special activity site (manufacturing of non-utilitarian objects) is rather large, occupying 32 acres in the neck of a Wolf Lake meander loop.

A rather sketchy picture, to date, of Poverty Point period occupations in the Yazoo Basin has developed. The information gathered from the Jaketown site indicates its special role as a regional center in which non-indigenous raw materials were being utilized on a rather large scale. The construction of eight low mounds thought to be of Poverty Point origin implies a rather organized labor force utilized in carrying out a public works project. However, the relationship of Jaketown with other Poverty Point period sites is uncertain. The Teoc Creek site appears to date early in the Poverty Point period, as indicated by the range of C-14 dates (1700-1000 B.C.) and the limited variety of cultural materials representing non-utilitarian artifacts manufactured from non-indigenous raw materials. If Gibson's (1973:76-78) four phases of cultural development are applicable, the Teoc Creek site belongs to the Nascent Phase (1500-1200 B.C.), characterized by an Archaic seasonal round, limited importation of raw material, and no mound construction.

Problem oriented research concerning the Jaketown Phase has been attempted all too infrequently. Presently the only such topic that has been addressed in print is whether or not a chiefdom level of social organization was ever realized in the Yazoo Basin (Johnson 1980). Gibson (1973) has stressed the importance of a segmented environment in the development of a chiefdom within the Poverty Point interaction basin. Johnson (1980), on the other hand, notes that Poverty Point period sites in the Yazoo Basin are associated with two major meander belts and are not located in the vicinity of two major physiographic provinces (the upland-lowland dichotomy present in the Poverty Point interaction basin). The Jaketown Phase, then, is operating within the ecological context of the lowlands rather than a diversified upland and lowland situation. Noting these clear environmental differences, Johnson (1980) argues that Gibson's (1973) model for the development of a chiefdom level of sociopolitical organization in the Poverty Point interaction basin, dependent as it is upon a dichotomized environment, must be reevaluated before application to the Jaketown Phase. Gibson, as well, emphasizes that the model for the development of the Poverty Point site was not intended for universal application to all Poverty Point regions (1980).

In order to examine whether or not a chiefdom level of sociopolitical organization was developed within the Yazoo Basin, Johnson frames four hypotheses which he tests against data from Jaketown Phase sites (1980:267-274). Johnson proposes that within a chiefdom organ-

ization: (1) access to exotic materials will be dependent upon site ranking and not distance from the source of materials; (2) a relative technological uniformity will exist; (3) hierarchical ranking of sites will result in differences of site size and artifact diversity; and (4) that the site hierarchy will affect the distribution of exotic materials, with higher ranked sites having greater access to exotic materials.

In order to test hypotheses 1 and 4, Johnson examines the incidence of novaculite within artifact assemblages (1980:267-274). In the first test, the percentage of novaculite within assemblages is found to decrease with the distance from the source of novaculite (the Hot Springs area of Arkansas, some 170 air-miles from Jaketown). In testing hypothesis 4, assemblage diversity is used as a measure of the position within a site hierarchy (greater diversity = higher position), and the results suggest that higher percentages of novaculite are found on sites with relatively little assemblage diversity and that, again, frequency of novaculite is better explained by distance from source. These two hypotheses are closely related and upon initial evaluation the results of testing them disfavor the chiefdom model. However, novaculite was most often used in the manufacture of utilitarian items, notably Gary type projectile points, and may have been one of the earliest commodities in which the Poverty Point exchange network trafficked (as suggested by the occurrence of novaculite on middle and late Archaic sites in Mississippi). Novaculite, then, was probably widely dispersed, and it seems likely that it would be a principal foreign material reaching the lesser ranked sites, given its utilitarian value. Further, the maximum discrepancy between the distance from the source of novaculite and the different Jaketown Phase sites is 44 air-miles. Taken for granted that the actual distance to the source area was much greater along the actual trade route, additional distances of 44 air-miles seem relatively minor and unlikely to have greatly affected access to novaculite. (The average distance from site to source is 150.8 air-miles; the greatest discrepancy from this average is only an additional 27.4 air-miles.)

Johnson tests his second hypothesis, that technological uniformity should prevail among sites participating within a chiefdom-level organization, by a technological analysis of blade-cores from the Jaketown and Paxton Brake sites (1980:269-271). The differences between the blade assemblages at the two sites is illustrated by the predominance of multiple-facet cores at Paxton Brake and the predominance of single-facet cores at Jaketown, suggesting a much more intense utilization of raw material at Paxton Brake. The difference between the cores is indeed extreme and does indicate technological differences between the two sites, tending to disconfirm another expectation of the chiefdom model. However, there is also a great difference between the sample size from the two sites, with 29 cores from Jaketown and 133 cores from Paxton Brake. Still, the differences in core facets are extreme, and Johnson indicates that this is only one aspect which differentiates the blade technology at the two sites. This technological difference cannot be downplayed, but might be alternatively

accounted for by differences in site functions or by the duration of occupation at the two sites. Paxton Brake may have been a short-term occupation with intense utilization of readily available materials. Poverty Point objects, a common domestic artifact, are lacking at Paxton Brake and may reinforce the possibility of a short-term occupation. At any rate, a single aberration in terms of technological uniformity is not insurmountable evidence against a chiefdom level organization.

Hypothesis 4 is the expectation that a chiefdom level of organization will result in a hierarchy of sites with differences in site size and artifact diversity. Johnson suggests that the number of variables recorded for each site (1980:table 3) is an indication of site size and assemblage diversity (1980:272). By this reckoning, hypothesis 4 tends to be confirmed as there are few sites with a higher number of variables, with a relative preponderance of low-variable sites. However, Johnson goes on to suggest that non-utilitarian or status-validating goods should be concentrated at the larger sites, which can be tested by comparing the total number of variables with the relative concentration of status goods expressed as a ratio of status traits to utilitarian traits (1980:272-273). In evaluating this test, Johnson agrees that the limited number of high status and diverse assemblages tends to confirm one expectation of the chiefdom model, but in cross-tabulating high status and diverse assemblages he finds that the distribution of status goods seems to be independent of site diversity and possibly of site size as well (1980:272-273). The problem with this argument rests primarily with a poor data base and, perhaps, with some misuse of it. The presence of a jasper bead (for example) on a small site, by means of the presence/absence checklist of non-utilitarian traits, establishes that site on an equal basis with sites such as Jaketown for that particular trait. Also, the inclusion of plummets among non-utilitarian traits is questionable, as plummets are considered utilitarian items in several sources (Ford and Webb 1956, Gibson 1973, Webb 1977); this assignment of plummets to a status trait is compounded by the inclusion of magnetite and hematite plummets as one status trait and plummets of other materials as a separate status trait. Thus, a small site on which a magnetic plummet and a sandstone plummet are found will be scored for two status traits.

In summary, Johnson's (1980) test of a chiefdom level of organization within the Yazoo Basin is handicapped by the data base available for Jaketown Phase sites, a fact which he recognizes, as well as by what may be somewhat inappropriate use of that data in some instances. Nonetheless, his preliminary examination is an important step in approaching the question of Jaketown Phase sociopolitical organization which hopefully can be furthered in the future with the acquisition of a more enlightening data base.

DATA COLLECTION STRATEGY

When the Mississippi Department of Archives and History elected to conduct archaeological investigations at the Slate site beyond the simple recording of the location of the site and making a generalized surface collection, several data requirements were immediately obvious. These data requirements included determining the configuration of the distribution of surface materials and the size of that configuration, the depth of the deposit of archaeological materials, and the cultural affiliation of the component(s) at the site.

In gathering the data we felt would fulfill these requirements, we thought it likely that we could structure our data-gathering techniques so as to answer other questions as well. Thus we incorporated into our strategy methods designed to recognize both differential horizontal distributions of artifact classes and/or raw materials within a single component and between two or more components, and any stratigraphic data which might help explain the formation of the archaeological site and of the natural landform upon which it was located.

The first objective was to construct a topographic map of the site, but it was quickly realized that within the given constraints of time it would be impossible for a two-man team to map over 30 acres of land in this way. Instead, we had to be satisfied with a plan-view map. For our level of research this proved quite acceptable, particularly in view of the fact that other than a rather abrupt drop of approximately 7 meters from the level of the site to the shores of Wolf Lake and the Baytown mound elevation of some 2.3 meters, the surface of the site probably varies less than half a meter in elevation. For purposes of mapping and for the establishment of a grid system, a permanent datum in the form of a small brass plate set in concrete was placed about 1 meter southeast of a telephone pole located approximately 190 meters north of the junction of County Line and Lake City Road. This point is labeled 500 meters north/500 meters east of central datum 0 north/0 east. The grid system is aligned with magnetic north, and the southwest corner is used for denoting the datum of any grid unit.

Having created a plan-view map of the site and established the basis of the grid system, we undertook to determine the configuration and extent of the distribution of surface materials. Again, the constraints of time and personnel in the face of 30 acres of site influenced our solution. The elected procedure was to make controlled surface collections in transects, one down the center of the long north/south axis and two across the shorter east/west axis. We at first intended to collect materials from 2m units, but switched to 5m units as worsening collecting conditions suggested a very low artifact recovery rate from the smaller units. It was felt that this surface collection strategy would provide the data sought.

Subsurface investigations consisted of nine auger holes placed to depths of up to 3.8 meters with a manually operated three-inch bucket

auger, located at intervals along the transects. These auger tests were primarily directed toward the discovery of midden deposits below the existing land surface, such as existed at Teoc Creek and Neil (Connaway et al. 1977). Though no such midden was located, the data produced proved valuable in assessing the geomorphology of the site. In addition to these auger tests, a $1m^2$ test unit was excavated to determine the depth of the archaeological deposit and provide a broader view of any stratigraphic sequences than could be obtained from the auger tests. A single $1m^2$ test unit on a 30 acre site is a small sample indeed, but our time and personnel limitations prevented any more extensive excavations. The apparent restriction of archaeological materials to the plowzone (with the exception of the mound) and the lack of discernible stratigraphy within the cultural deposits, as evidenced by the auger tests and the test pit, helped to rationalize this small subsurface sample.

POINT TYPE	NOVACULITE	LOCAL CHERT	QUARTZ	TALLAHATTA QUARTZITE	QUARTZ CRYSTAL	AGATE	TOTAL
Gary	5 - 26.3%	10 - 52.6%		2 - 10.5%	1 - 5.2%	1 - 5.2%	19
Langtry		2 - 100%					2
Madison		3 - 100%					3
Pontchartrain	4 - 14.3%	24 - 85.7%					28
Lost Lake		1 - 100%					1
Shumla		2 - 100%					2
Swan Lake		1 - 100%					1
Unidentified	4 - 11.1%	29 - 80.6%	1 - 2.8%	2 - 5.6%			36
TOTAL	13	72	1	4	1	1	92

Table 2. Projectile point inventory from Slate site.

II. DATA BASE

LITHICS

Chipped Stone

Projectile Points. The projectile points from the Slate site generally indicate an occupation during the Poverty Point period. Gary points make up 15% of the projectile point assemblage, Pontchartrain points account for 20%, while unidentified points comprise 31%. Several examples of Shumla and Langtry points, along with a single Swan Lake, three Madison points, and one Lost Lake, comprise most of the rest of the collection (Table 2). Two projectile points resemble Middle Archaic forms and four (including the Lost Lake) resemble early Archaic forms. Their presence on the Slate site is interesting since the Stage 4 meander belt upon which the site is situated dates 2600-4800 years before the present.

One interesting feature of the projectile points classified as Pontchartrain is the stem treatment. These are considerably narrower than most Pontchartrain points recovered in the Lower Mississippi Valley and may indicate a late variety of this projectile point type (Sam McGahey, pers. comm.).

Most projectile points were manufactured from local gravel which was heat treated. A considerable number were manufactured from non-indigenous materials, especially novaculite. Present in the surface collection are two projectile points of Tallahatta quartzite, one of quartz crystal, and one of yellowish agate (Table 2).

Debitage. Lithic waste material was light; almost all of the debitage is of local chert. Five catagories were utilized to sort the 234 pieces recovered; these include a) primary decortication flakes (19), b) secondary decortication flakes (77), c) tertiary flakes (70), d) biface thinning flakes (53), e) shatter (18). The frequencies of these categories suggest that the initial process of lithic reduction was not a major activity at the site. It is noted that this class of cultural material is proportionately over-represented in the overall collection as it is not preferred by collectors.

Biface. One small broken biface of local chert was recovered in the surface collection.

Nutting Stones. One small white, friable sandstone nutting stone with a shallow depression was recovered in the surface collection.

Preforms. Nine preforms of local chert were recovered in the surface collection.

Adzes. One steeply beveled chipped adze exhibiting polish on the dorsal surface and one typical late Archaic adze made of local chert were recovered in the surface collection.

Ground Stone

Plummets. Three grooved plummets, two of sandstone and one of quartz diorite, and one perforated fragment of a phyllite plummet were recovered in the surface collection.

Celts. One medium size greenstone celt is in the collection of Tom Rightmer and four are in the collection of Ed Gill. Additionally, two greenstone celts, one phyllite celt, and one celt of unidentified material were recovered in the surface collection.

Cores. Nine small and three medium sized cores (local chert) were recovered.

Poverty Point Blade/Core Industry. Two blade/cores were recovered along with four lamellar blades, one blunt perforator, and one Jaketown Needle.

Boatstone. One fragment of a single holed boatstone and one polished complete flatbottomed boatstone were recovered in the surface collection. Another fragment of a dished boatstone manufactured from hornblende basalt has also been recorded.

LAPIDARY INDUSTRY

One of the characteristics of the Poverty Point culture is a well-developed lapidary industry. The ornamental forms, raw materials, and social implications of the industry have received considerable attention among researchers (Ford 1969, Ford, Phillips, and Haag 1955, Ford and Webb 1956, Gibson 1970, 1973, 1974a, Webb 1968, 1970b, 1977). Webb (1977:48) states:

> The lapidary industry at Poverty Point is characterized by a great variety of objects, excellent workmanship, new techniques, and the use of such exotic materials as red jasper, red and green talc, banded slate, quartz, quartzites, hematite, magnetite, limonite, galena, feldspar, amethyst, fluorite in yellow, green, and purple shades, and many unidentified colored or translucent stones. Together with copper, the sources of materials cover much of the central United States.

While the variety of raw materials at the Slate site is considerably less than the above list, the artifact assemblage indicates a lapidary industry focused upon the production of slate ornaments. The ornamental

forms include barrel-shaped, tubular, and disc beads, effigy forms, and other apparently ornamental artifacts, including some fashioned from quartz and other materials.

The raw materials employed in the lapidary industry at the Slate site include green, maroon, and grey slate, quartz crystals, quartz diorite, phyllite, bauxite, jasper, quartzite, and hornblende basalt. Other materials on the site include nepheline syenite, garnet schist, magnetite, hematite, and opalized shale. The Ouachita Mountains in southwest Arkansas are the likely source area for the slate, quartz crystals (over 600 recorded thus far, more than any other site known to the authors), nepheline syenite, garnet schist, and opalized shale (Dockery and Harrelson, pers. comm.; Johnson, pers. comm.). Magnetite and hematite also occur there, though found in greater quantities in southeast Missouri. Opalized shell has been recorded at the Claiborne site (Gagliano and Webb 1970:63), a coastal Poverty Point site near the mouth of the Pearl River, so if the Slate site specimen identified as opalized shale is actually opalized shell, coastal contact is indicated. Bauxite occurs in central Arkansas. Quartz diorite and phyllite are found in northeast Alabama, though possibly in the Ouachitas as well. Harrelson (pers. comm.) believes that hornblende basalt has a western derivation, possibly within the headwaters of the Arkansas River. Jasper and quartzite occur in local gravel deposits. Ford and Webb (1956) note that many of the materials at the Poverty Point site could have originated either in the Appalachians or in Arkansas.

Stages of Manufacture

The lapidary industry at the Slate site apparently employed a fairly routine procedure for the manufacture of slate ornaments. This process is indicated by the presence of several classes of slate artifacts which seem to be the resulting product of various stages of manufacture, but selection and separation of these artifact classes is part of the analytic procedure and may not accurately reflect the manufacturing process employed at the site. Hence some artifacts cannot be neatly placed within a single category and may represent a variation of the proposed general procedure. However, the sequence outlined below does seem to account for the variability in the artifact forms (Figure 7). The artifact classes will be described and their role in the proposed manufacturing process will be discussed. Table 3 presents the frequencies of these artifacts within general provenience areas.

Raw Material All slate not exhibiting any recognizable intentional alteration is placed in this category. The size of the specimens ranges from tiny fragments to chunks of up to 8 by 5 cm. Although this category is conceived as representing the raw material from which artifacts may be fashioned, the smaller pieces may represent waste or breakage resulting from plowing. Four hundred and seven specimens of slate raw material have been recorded.

Stage 1. All slate exhibiting a single recognizable intentional alteration is placed in this category. The alteration consists of a

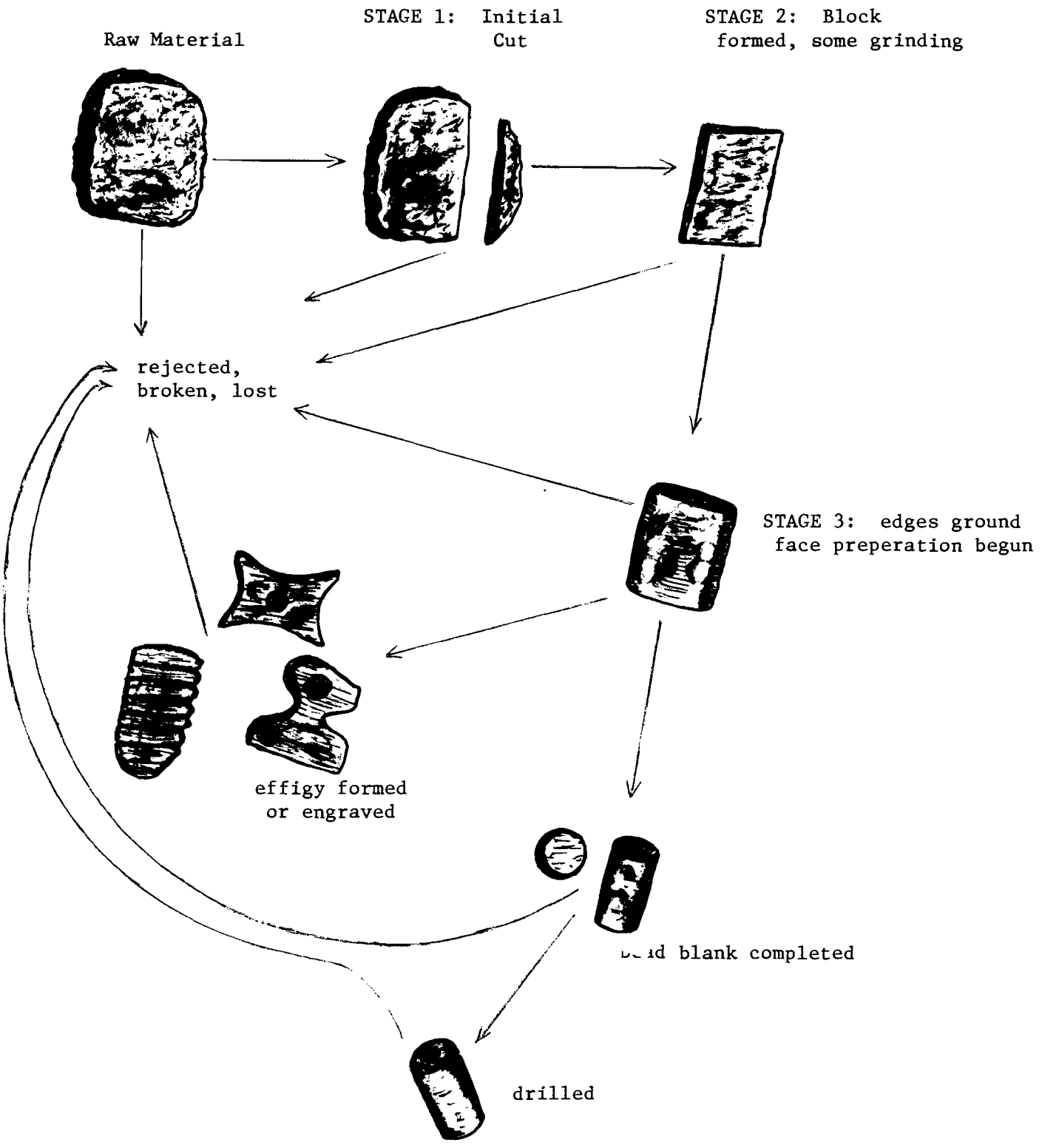


Figure 7. Manufacturing process of the Slate Site lapidary industry.

single cut edge or groove. This category is conceived as representing the edges cut off of a piece of raw material (or grooved in preparation for cutting) to form a block, or the resulting block itself with no further alterations. It will of necessity also include pieces broken off of materials which have been further altered. The separation of intentionally cut edges from pieces of slate which have broken along naturally straight lines is regrettably somewhat arbitrary. Only those artifacts which clearly seem to have been intentionally cut were consistently selected for inclusion in this category. One hundred and thirty-seven stage 1 slate artifacts have been recorded.

Stage 2. All slate exhibiting two or more recognizable intentional alterations is placed into this category. Alterations include cuts, grooves, and infrequently, grinding. This category is conceived as representing the formation of a block of slate which may then be prepared for reduction into bead blanks or into effigy or other forms. It is more exclusive than the preceding ones as it is more easily distinguished, but the problem of selecting only intentionally produced cuts remains. Sixty-two stage 2 artifacts have been recorded.

Stage 3. This category includes those slate artifacts which have been deliberately ground into shape and represent either tablets from which effigy or other forms can be produced or bars from which bead blanks may be cut. This latter process involves the production of a rectangular bar ground smooth on the edges and faces. The bar is then grooved all the way around near one end, and the end piece is then snapped off to form a bead blank, which requires only a little further grinding. A few artifacts placed into this category may be either broken bead blanks or pieces of a larger tablet (finished or unfinished). One hundred and nine stage 3 slate artifacts have been recorded (Plate 2).

Bead Blanks. Bead blanks are artifacts cut and ground into shape and may exhibit the unground edge resulting from being snapped from a stage 3 bar. A few specimens have been recovered which have been drilled prior to shaping, though these may in some instances represent fragments of a finished piece. One hundred and sixteen disc blanks, twenty-six tubular blanks, six barrel-shaped blanks and twenty-one drilled, unformed blanks have been recorded, all slate (Plates 2 and 3). In addition, one partially drilled, unformed jasper bead blank has been recorded.

It should be noted that although non-slate lapidary items and the raw materials from which they could be made are present at the site, almost no artifacts from the intermediate stages of production were found. The small sample of the controlled collections might account for this lack, but at present the absence of these intermediate stages in materials other than slate cannot be explained.

Techniques of Manufacture

Slate being a relatively soft stone, the manufacturing techniques

	GENERAL SURFACE	SOUTHERN E/W TRANSECT	NORTHERN E/W TRANSECT	N/S TRANSECT	TOTAL
Raw Material	62	312	17	16	407
Stage 1	53	74	6	4	137
State 2	39	28	1	4	72
Stage 3	90	7	0	4	101
Disc Blank	115	1	0	0	116
Tubular Blank	22	4	0	0	26
Barrel-shaped Blank	6	0	0	0	6
Drilled, Unformed	21	0	0	0	21
TOTAL	408	426	24	28	886

Table 3. Incomplete products of the slate lapidary manufacturing process by type and provenience.

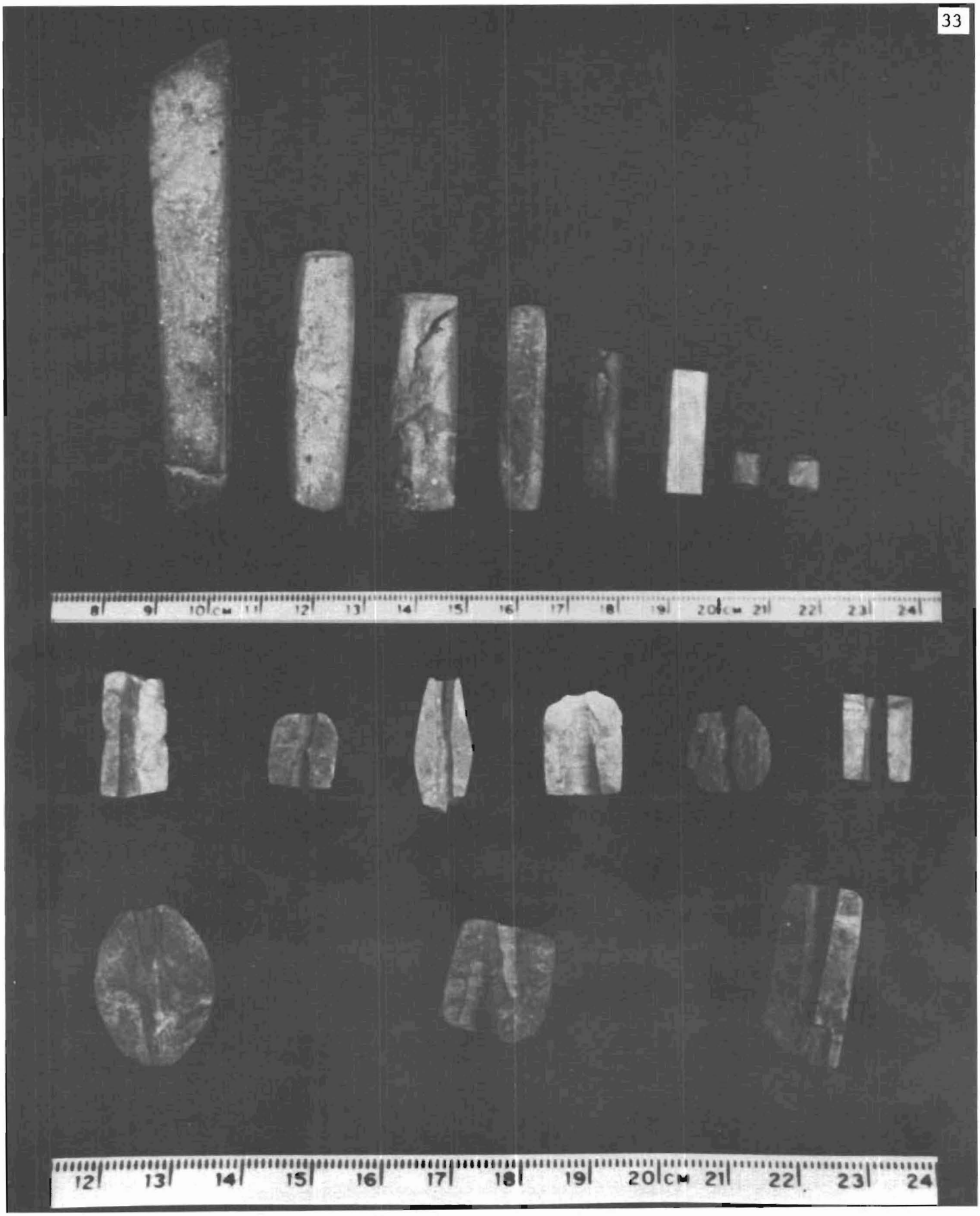


Plate 2. Above: Stage 3 bars and bead blanks. Note groove on lower end of Stage 3 bar at left made in preparation for snapping off a bead blank. Below: Tubular and barrel-shaped slate beads split longitudinally by stress of drilling.

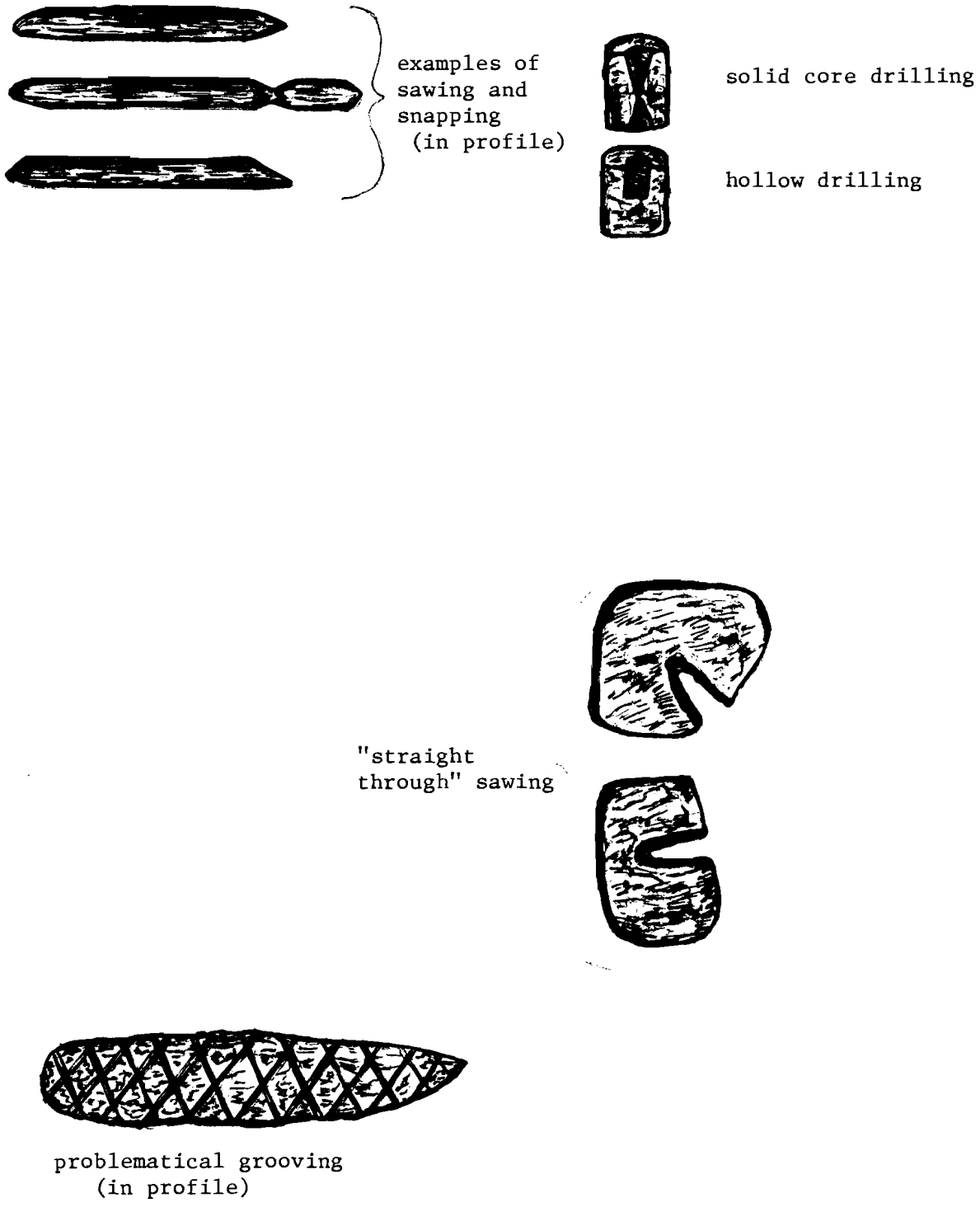


Figure 8. Manufacturing techniques of The Slate Site lapidary industry.

employed in producing slate ornaments apparently were simple and straightforward (Figure 8). The raw material was cut into block form by sawing. Incompletely sawed pieces indicate that a groove would be sawed on one side, the material reversed, and a second groove sawed either completely through or partially through and then snapped. Sandstone saws are reported from other Poverty Point sites (Gagliano and Webb 1970; Connaway et al. 1977; Webb 1977), but none were recovered from the Slate site. The possibility of their use is, however, suggested by the fairly wide groove resulting from cutting. Other grooves are quite narrow; these narrow grooves may have been cut with another tool form, such as a chert blade. Some projectile points recovered from the site do have extremely worn edges. Our own experiments show that a Stage 3 bar can be cut from a piece of raw material with a chert tool in about 20 minutes. The fresh tool showed signs of wear after this single use episode and would likely be well worn after repeated use. Ford and Webb (1956) illustrate two pieces of greenish slate from the Poverty Point site which exhibit saw grooves, one thought to be cut with a sandstone saw as suggested by wide grooves, the other by a chert tool as evidenced by very narrow grooves. Webb (1968) mentions a beadmaker's kit from the Poverty Point site which includes pieces of talc in various stages of manufacture in association with a stemmed chert blade and a drill.

Two pieces of slate show evidence of some other style of cutting. These grooves, approximately 15 mm wide and spaced at 20 mm intervals, appear as cross-hatching applied in two parallel sets at right angles to one another and with the second set cutting through the first. Whether these grooves are evidence of a cutting technique or some other stage of manufacture is unresolved. Several specimens are sawn straight through, but none of these cuts are complete.

Cut edges and faces of the slate were ground smooth, presumably with sandstone. Holes from opposite sides converging in the center to form an hourglass shape were drilled primarily with a solid tool, but one incompletely drilled specimen indicates the use of a hollow drill.

An issue related to the techniques of manufacture of the Slate site lapidary industry is the function of Jaketown Perforators. These microtools were first thought to have been used for perforating or incising despite the fact that typical wear patterns did not indicate this use (Ford, Phillips, and Haag 1955:140-141). Ford and Webb conducted experiments with this tool form and concluded that Jaketown Perforators were probably exhausted blades used for cutting and scraping, though some specimens from the Poverty Point site had unmistakeably been used for drilling (1956:76-82). Ford and Webb also concluded that Jaketown Needles were completely worn blades (1956:81). The paucity of Jaketown Perforators and Needles at the Slate site tends to confirm their conclusions, considering the large number of drilled artifacts at this site; apparently the lapidary items were drilled with some other instrument.

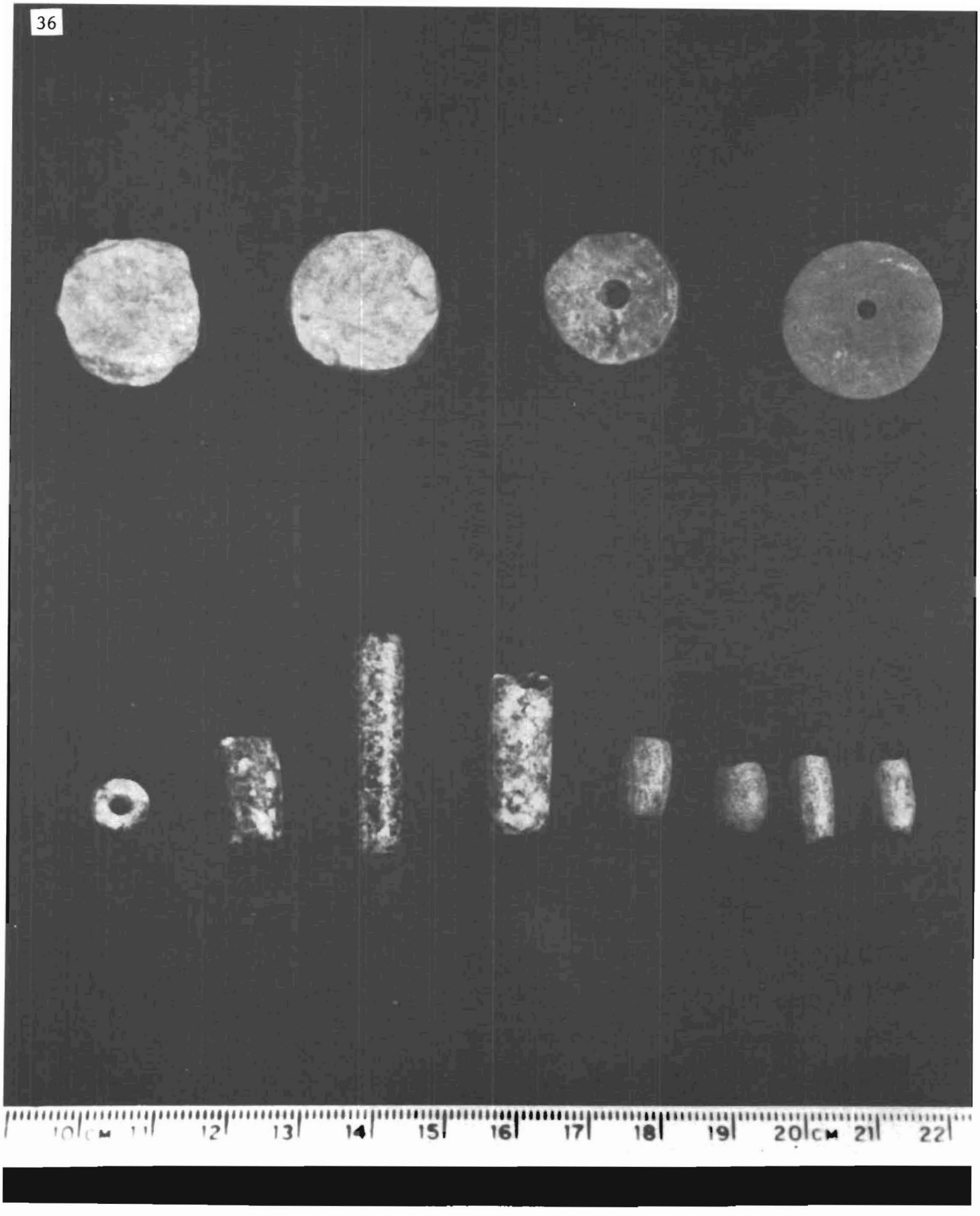


Plate 3. Above: Slate disc beads and blanks. Below: Hard stone tubular and barrel-shaped beads.

Lapidary Forms

The finished products of the Slate site lapidary industry include several varieties of disc beads, tubular beads, barrel-shaped beads, pendants, miniatures, and effigy forms, manufactured primarily from slate but also from other rocks and minerals. The following discussion is a description of the typical forms, based on the examination of Mississippi Department of Archives and History collections and the collections made by the amateurs who allowed us to record their finds. Table 4 presents the frequencies of bead types and the raw materials from which they were manufactured.

Disc beads. One of the most common lapidary forms encountered at the Slate site is the disc bead with a single hole drilled through the short axis. Primarily manufactured from slate (64), this form is also constructed from bauxite (8), quartz diorite (5), jasper (1), quartzite (1) and phyllite (9). The size of these beads ranges primarily between 2.2 cm and 0.5 cm in diameter, with two fragmentary specimens approximately 4.2 cm and 6.0 cm in diameter. Eighty-eight beads of this type have been recorded (Plate 3).

Other forms of disc beads have been recovered. Eleven beads have been drilled through the long axis and two have a pair of holes drilled through the short axis. All twelve specimens are manufactured from slate. Other disc beads include two variants of a "blind-drilled" technique (Ford 1969:64) (Plate 4). One variety is "blind-drilled" by two holes drilled from opposite edges of a bead which are intersected by two holes drilled from the back of the bead. All twenty-three specimens of this type are constructed from slate. The second variety of "blind-drilled" disc bead has two holes drilled into the back at angles so that they converge. The back of the bead is usually mounded rather than flat to allow for the depth of the perforations. All fifteen specimens of this type are manufactured from slate. Ford and Webb (1956) recovered three jasper artifacts of this form from the Poverty Point site which they refer to as "buttons."

Tubular beads. Tubular beads are the other common lapidary form encountered at the Slate site. Eighty-eight tubular beads have been recorded, of which seventy-six are manufactured from slate, one from quartz crystal, four from bauxite, five from quartz diorite, and two from phyllite. Fifty-six of the slate beads are split longitudinally; apparently the cleavage planes of slate are not very resistant to the stress of drilling. The quartz crystal bead is manufactured from a smooth, polished crystal through which can be seen a clear example of the narrow, hourglass-shaped hole resulting from the use of a solid drill on opposite ends (Plate 5).

Barrel-shaped beads. Thirty-eight barrel-shaped beads have been recorded from the Slate site. Twenty-eight of these are made from slate, three from bauxite, five from phyllite, and two from quartz diorite. Eighteen of the slate specimens are split longitudinally as were the tubular beads.

Pendants. Pendants are considered here as an elongated ornamental form having a hole drilled for attachment near one of the ends. Thirteen slate pendants have been recorded, one of which is engraved and one is an effigy, possibly representing a gar or a projectile point.

Tablets. The term "tablet" encompasses a number of forms which have in common a flattened surface. This is the least homogeneous group of lapidary items and includes a drilled tabular fragment (possibly a gorget), two engraved fragments, one spatulate shaped tablet, and several plain forms. A total of eleven slate artifacts have been placed in this category.

Miniatures. Several items from the Slate site are miniature forms of items that are presumed functional when they are found in a larger size. Three miniature plummets have been recorded, one fashioned from phyllite and two from quartz (Plate 5). Though classified as plummets, they may have functioned as pendants. All three specimens have typical plummet bodies with a small "nipple" at one end. In addition to the plummets are a miniature spud and three butterfly bannerstone fragments, all manufactured from slate (Plate 6).

Effigies. Effigies from the Slate site include four bird effigies and one rattle effigy, all made of slate. One of the bird effigies possibly represents a duck, but its broken form prevents a conclusive identification (Plate 6).

Other lapidary items from the site include a slate projectile point, a slate reel-shaped gorget, and another slate item which closely resembles the handle to an outdoor water faucet, possibly a type of bannerstone. In addition, one three-hole bar gorget and three "pick" fragments have been recorded (all of slate) (Plate 6).

Finally, worked quartz at the site, in addition to the two "plummets" and tubular beads, includes a polished quartz crystal, a polished crystal with a groove cut into the end of the crystal, and a quartz pendant grooved around one end.

A collection from the Slate site reported to us but not confirmed supposedly includes a triangular pendant notched on all sides, two bird-head effigies, one with a long beak, and a human-head effigy with facial features in relief. All three artifacts are fashioned from slate. This same collection reportedly includes a hematite plummet, a quartz plummet, a quartz bead blank, and several crude boatstones.

SURFACE COLLECTIONS

As discussed above, the intention of the controlled surface collections was to collect data which would help determine the configuration

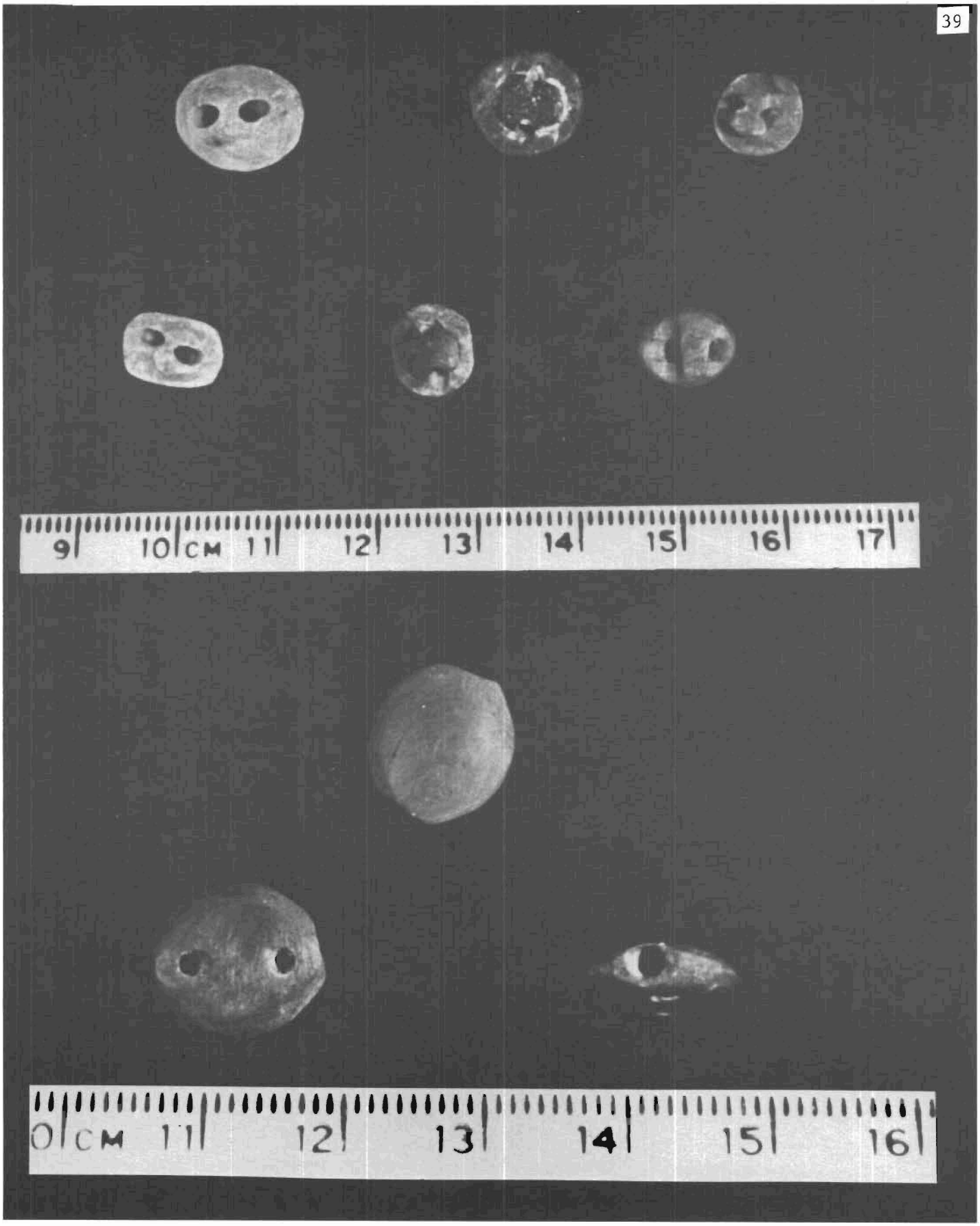


Plate 4. Above: Variants of "blind-drilled" slate beads. Below: Front, back, and end views of another type of "blind-drilled" slate bead.

	SLATE	JASPER	QUARTZ CRYSTAL	QUARTZITE	QUARTZ DIORITE	BAUXITE	PHYLLITE	TOTAL
Single-hole disc	64	1	0	1	5	8	9	88
Double-hole disc	2	0	0	0	0	0	0	2
Long-Axis disc	11	0	0	0	0	0	0	11
Blind-drilled "A"	23	0	0	0	0	0	0	23
Blind-drilled "B"	15	0	0	0	0	0	0	15
Tubular	76	0	1	0	5	4	2	88
Barrel-shaped	28	0	0	0	2	3	5	38
TOTAL	219	1	1	1	12	15	16	265

Table 4. Slate Site beads by type and material.

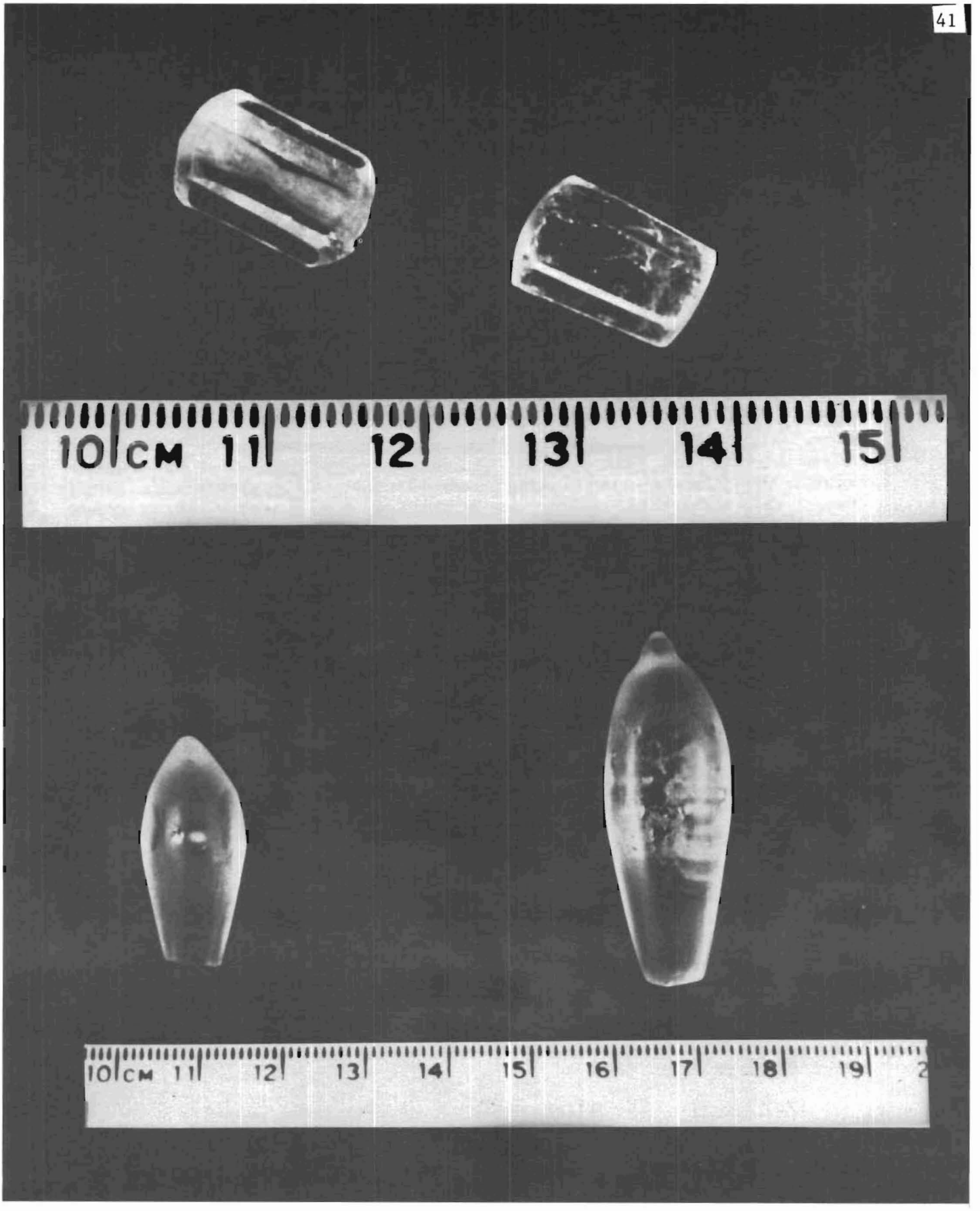


Plate 5. Above: Quartz crystal bead and bead blank. Below: Quartz plummets.

and extent of the distribution of surface materials and identify any differences in the horizontal distribution of archaeological materials in terms of artifact classes and/or raw materials, both within a single component and between two or more components. To facilitate the collection of these data, three transects of $5m^2$ units were placed across the site. Two transects were placed across the shorter east/west axis and one transect was placed across the longer north/south axis. The general extent of the site had been previously determined by general surface collections.

The collecting conditions were only fair. The entire site, with the exception of the slopes to Wolf Lake on the east and west sides, the paved road, the area of an historic cemetery and Baytown mound in the northeast quadrant, and a residence in the extreme southwest quadrant, had been under cultivation for some time. At the time of investigation, the site was cleared of crops and had been plowed some time within the previous two months. Although ground surface visibility was therefore excellent, the extremely dry weather conditions limited the visibility of artifacts. For this reason, collections were made from $5m^2$ units rather than the $2m^2$ units originally planned. Only prehistoric artifacts were collected. There is a considerable quantity of historic material on the site, but this was not the subject of our investigations.

In assessing the surface collections from the Slate site, it is of paramount importance to consider the effect of amateur collecting behavior upon the artifactual inventory. Amateurs have made extensive collections from the site, focusing on chert and novaculite tools, ground stone artifacts, quartz crystals, and semi-finished and complete lapidary items. Thus, these categories will be under-represented in quantity and even lacking entirely in some instances. By the same token, however, those categories not generally subject to amateur collecting behavior, such as flakes and raw materials, will be proportionately over-represented. In other words, controlled, intensive surface collections will not represent an accurate proportional representation of the distribution of items after site abandonment and prior to modern disturbance, no matter what the collecting strategy might be. Amateur collecting behavior, along with agricultural practices, modern erosion, and historic habitation, have produced changes in the archaeological record which should be considered in an attempt to describe the site in its original state. Of course, similar and other processes occurred during the actual formation of the site (Schiffer 1972, 1976), but at this level of investigation the primary emphasis in reviewing site formation processes will focus upon modern collecting behavior.

Distributional Analysis

Analysis #1. The first analysis is designed to deal with the activities involved in the manufacture, revitalization, and use of stone tools. This will involve the distributional analysis of groups of stone artifacts which are assumed to reflect those activities. The groupings

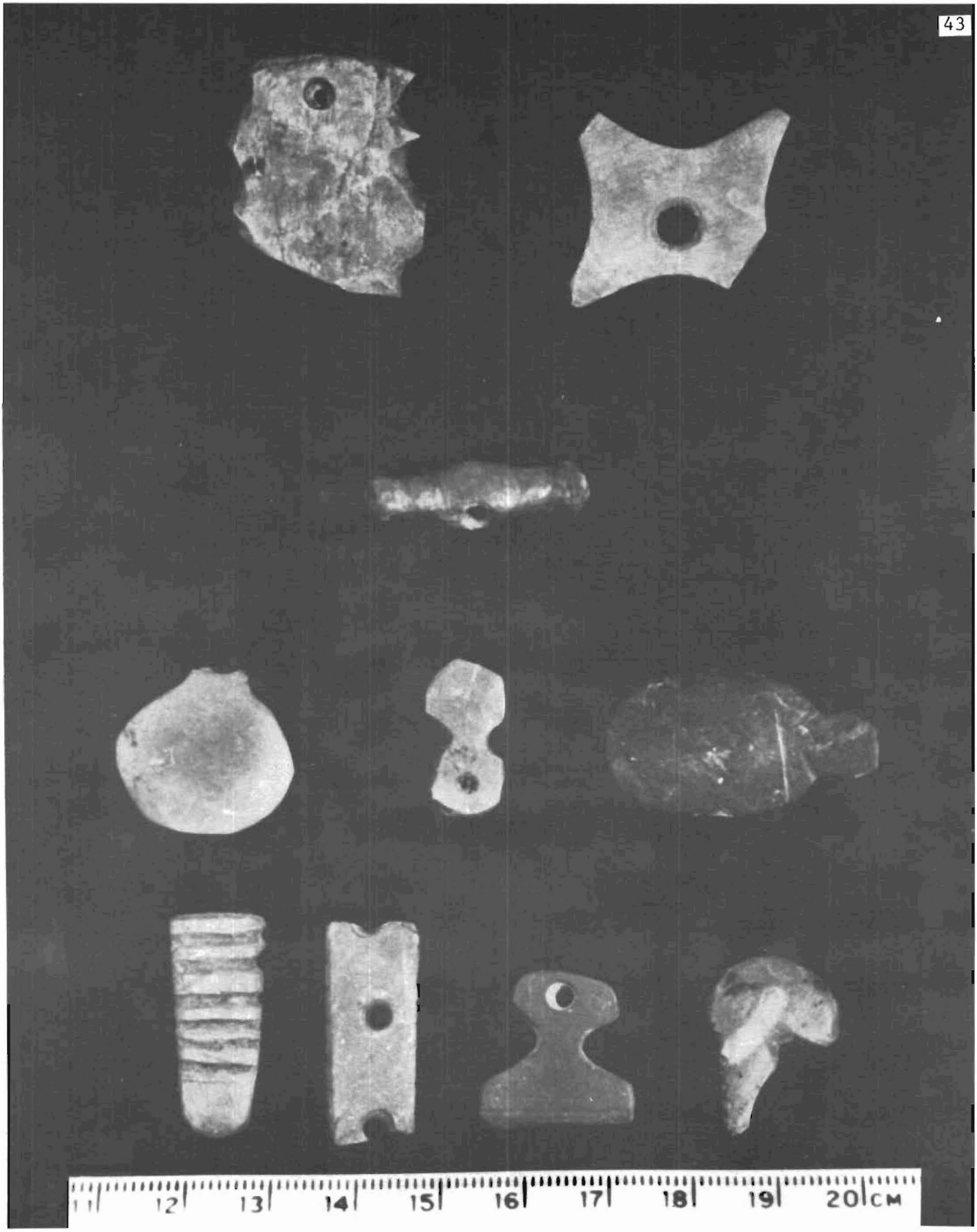


Plate 6. Slate effigies and miniatures.

will consist of artifact types considered to be the result of the various stages of manufacture, revitalization, and use. Manufacturing activities will be represented by tested pebbles, cores, non-utilized primary and secondary decortication flakes, shatter, preforms, and hammerstones. Revitalization activities, as well as the advanced stages of tool manufacture, will be represented by non-utilized tertiary flakes, biface thinning flakes, and lamellar blades. Non-utilized secondary decortication flakes will be grouped into this category when none of the other elements of the primary manufacturing group are recorded for a collection unit. Finally, tool use activities will be represented by broken, complete, and exhausted tools, utilized flakes, and micro-tools. The correlation between activities and these artifact groups is admittedly simplistic. Particularly with reference to tools, this system ignores any variables which may intervene between the actual activities and the ultimate (present day) deposition of the artifacts. However, as the aim here is primarily to describe the distribution, interpretation of the distribution will be limited.

Analysis #2. The second analysis is designed to deal with the lapidary industry at the Slate site. The distribution of three artifact groupings will be examined: 1) quartz and quartz crystals; 2) slate and other raw materials and stage 1 slate artifacts; and 3) stage 2 and 3 slate artifacts, blanks, and broken and complete lapidary items. Groups 2 and 3 are selected to represent the early and advanced stages of the lapidary manufacturing process.

Analysis #3. The third analysis is designed to examine the distribution of ceramics across the site. The low incidence of diagnostic tools in the controlled surface collections prohibits a more detailed examination of the differences in the distribution of materials from different components, so the markers for the Poverty Point and Baytown components will be unfortunately limited to the Baytown ceramics (and mound) and, of course, the lapidary items.

In plotting the distribution of the various artifact groups for the analytical stages above, a simple presence/absence format will be employed. The low density of materials recorded for each collection unit precludes a more detailed statistical examination.

Results: Analysis of Surface Collections

The general configuration of the distribution of surface materials has been determined through controlled and general surface collections. The relative densities of materials were also noted. The major concentration of material exists in a band some 75 to 100 meters wide across the east/west axis at the southern end of the site (see Figure 9). Material continues in a somewhat lighter concentration in a band approximately 50 meters wide running north/south along the western border of the site. The western concentration is probably wider than 50 meters, but unfortunately that area is capped by a paved road and thus not subject to surface collections. A much lighter concentration of material is scattered across the northern end of the site and turns

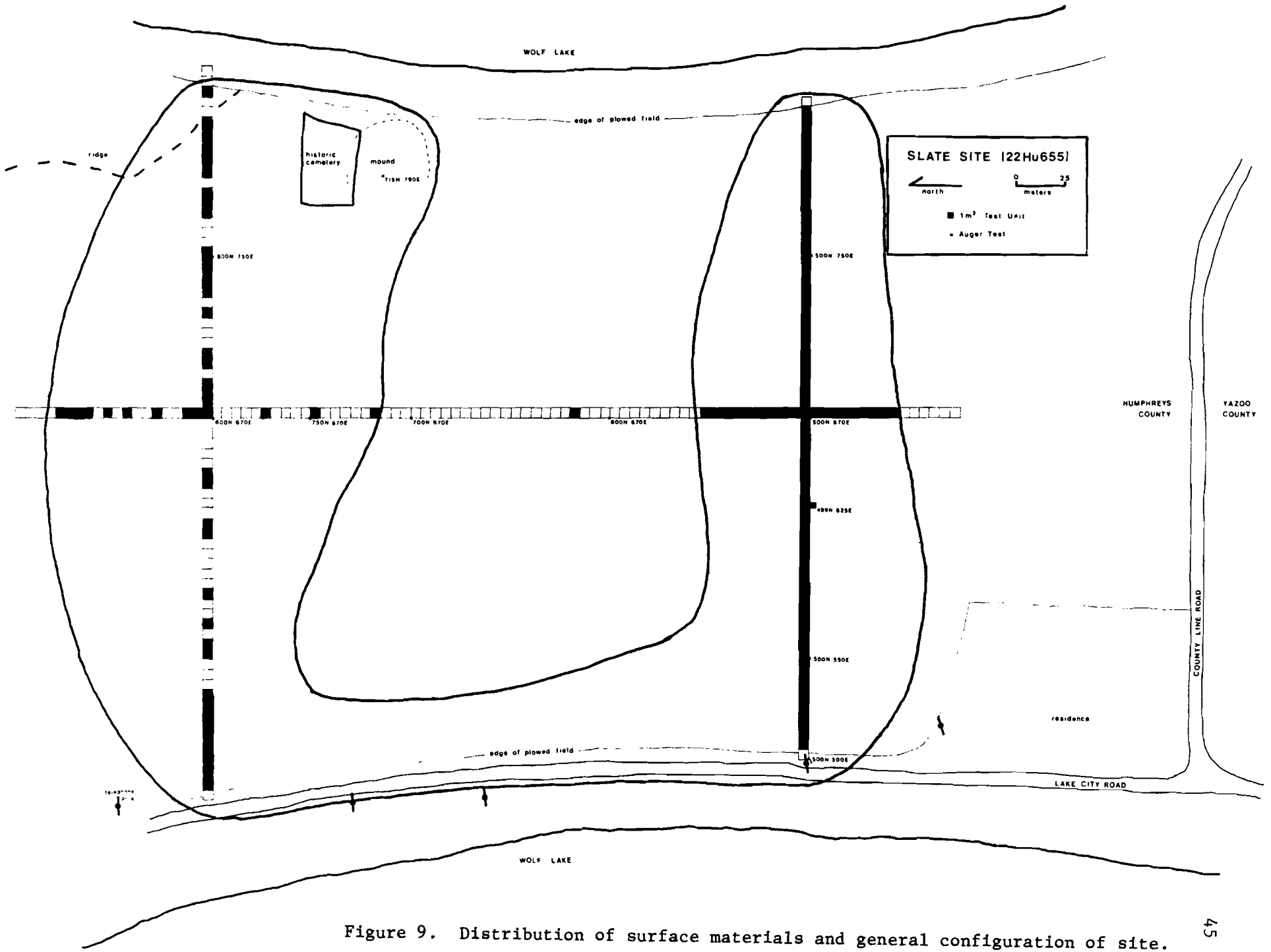


Figure 9. Distribution of surface materials and general configuration of site.

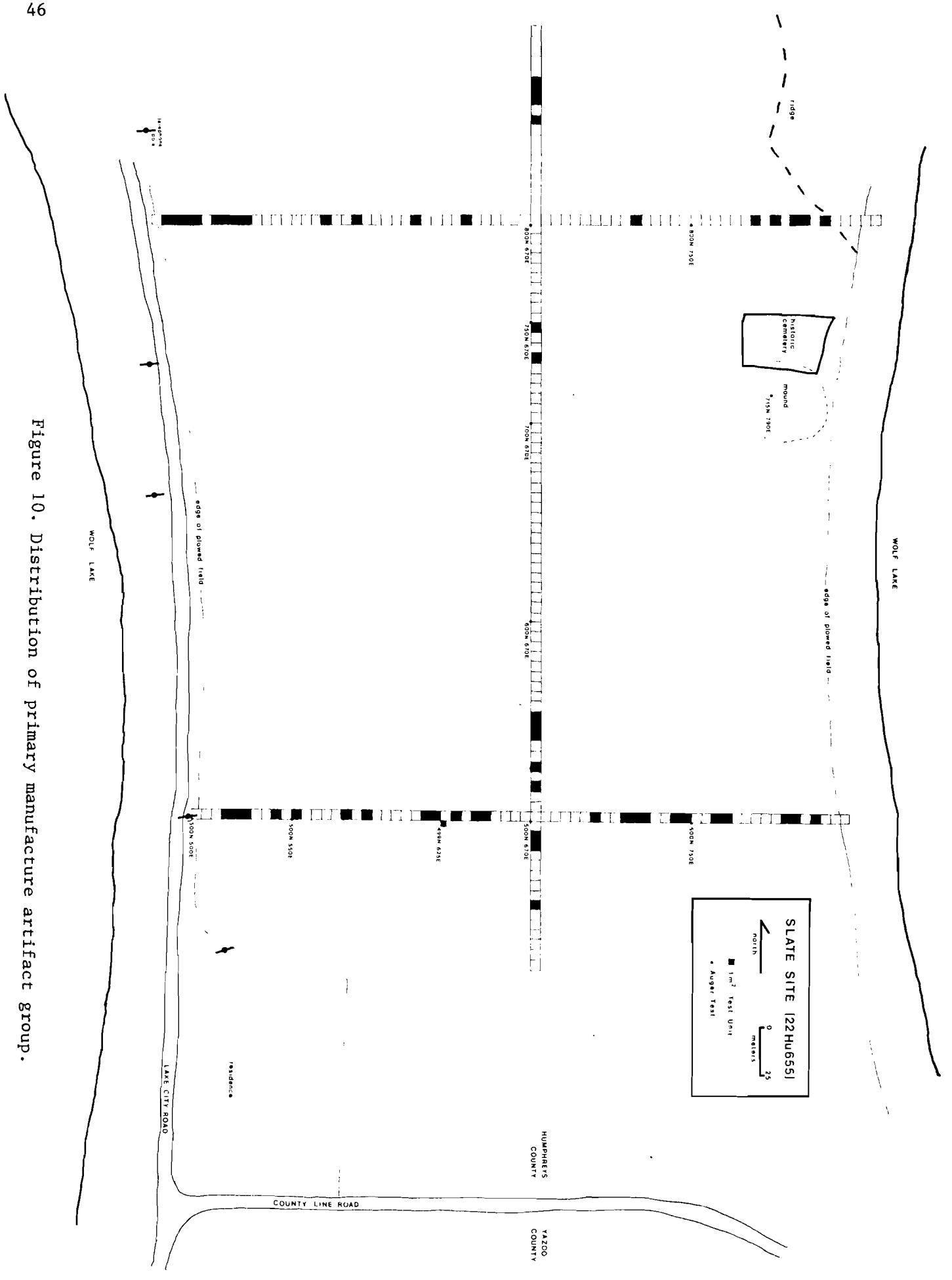


Figure 10. Distribution of primary manufacture artifact group.

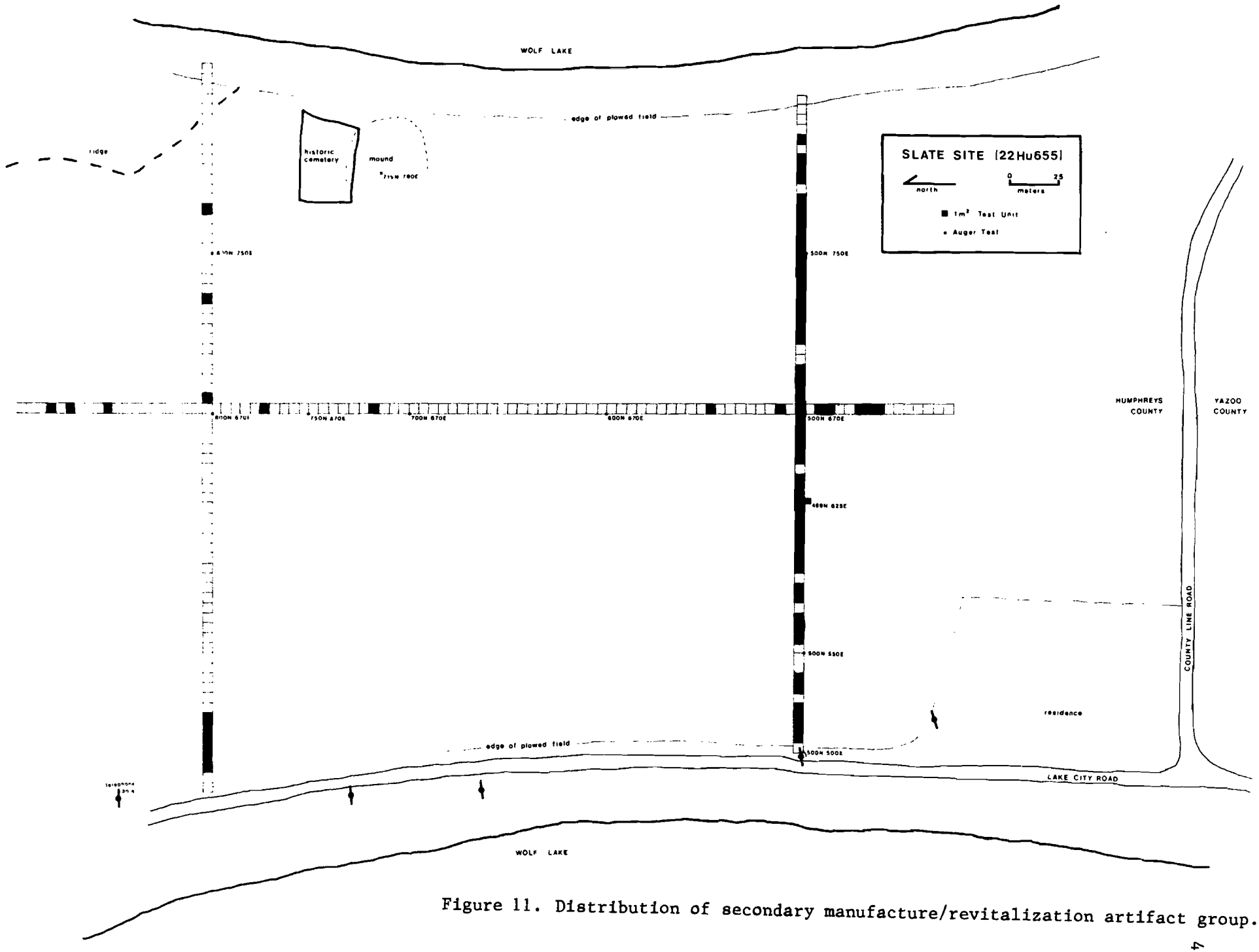


Figure 11. Distribution of secondary manufacture/revitalization artifact group.

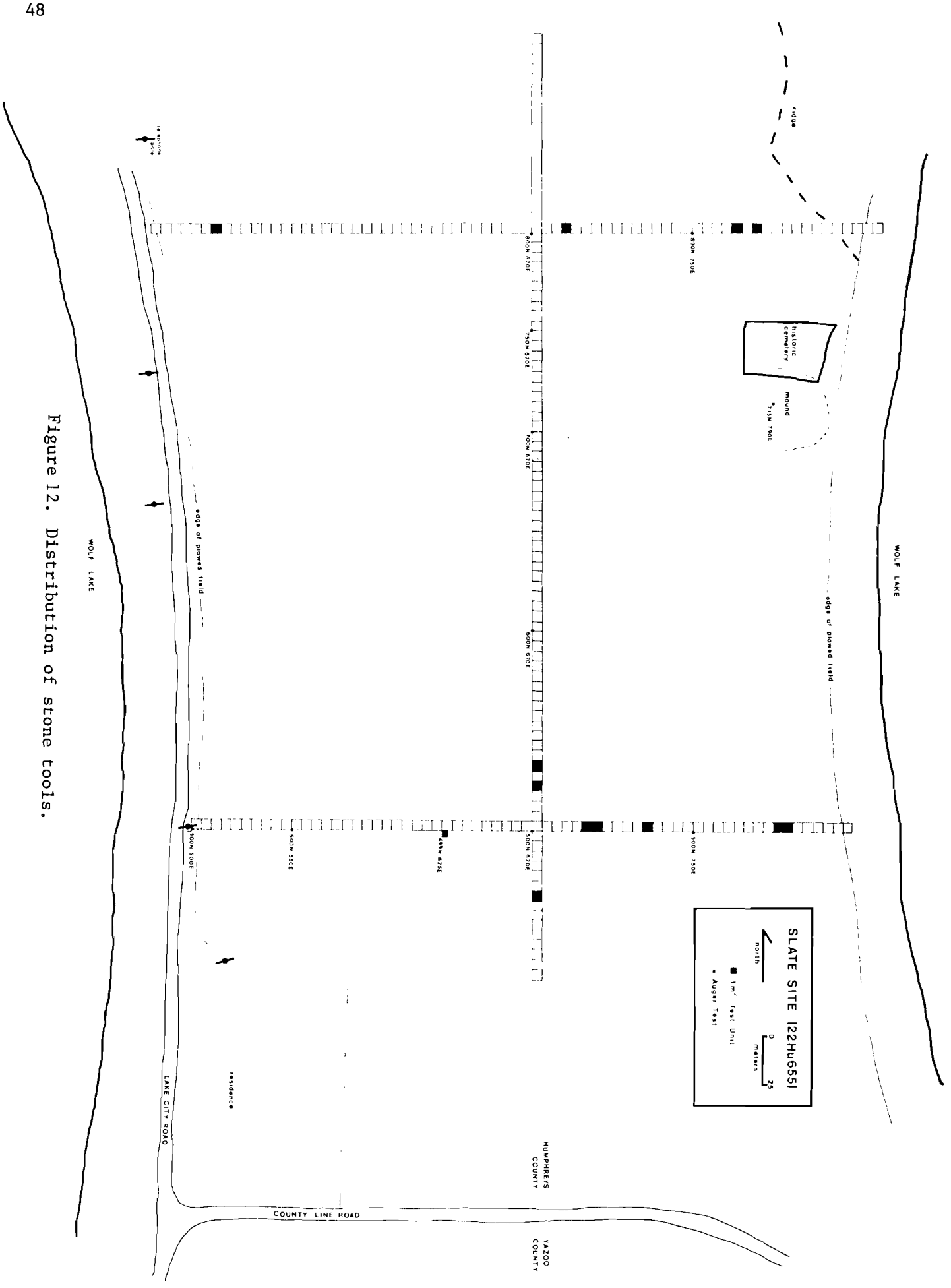


Figure 12. Distribution of stone tools.

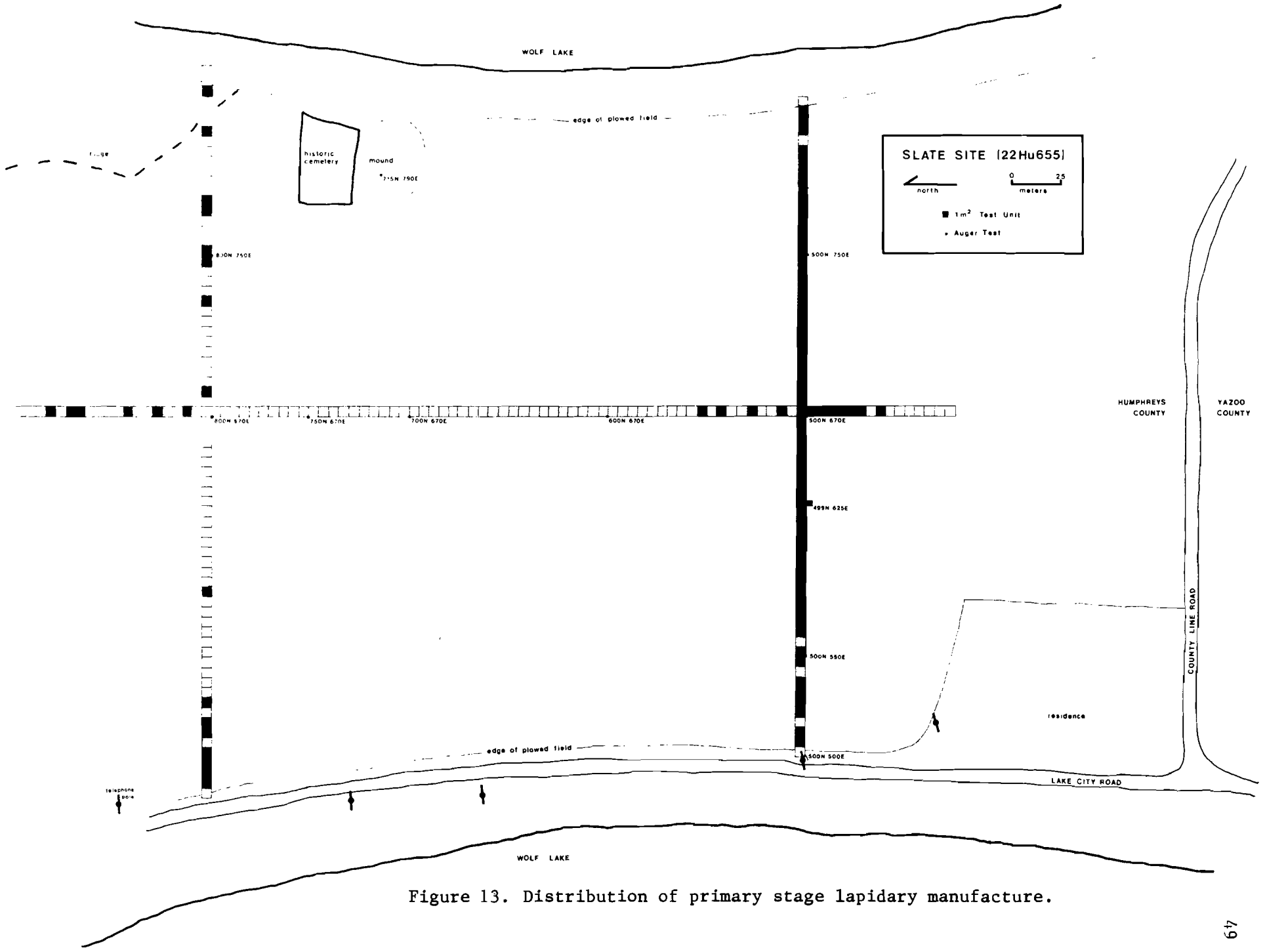


Figure 13. Distribution of primary stage lapidary manufacture.

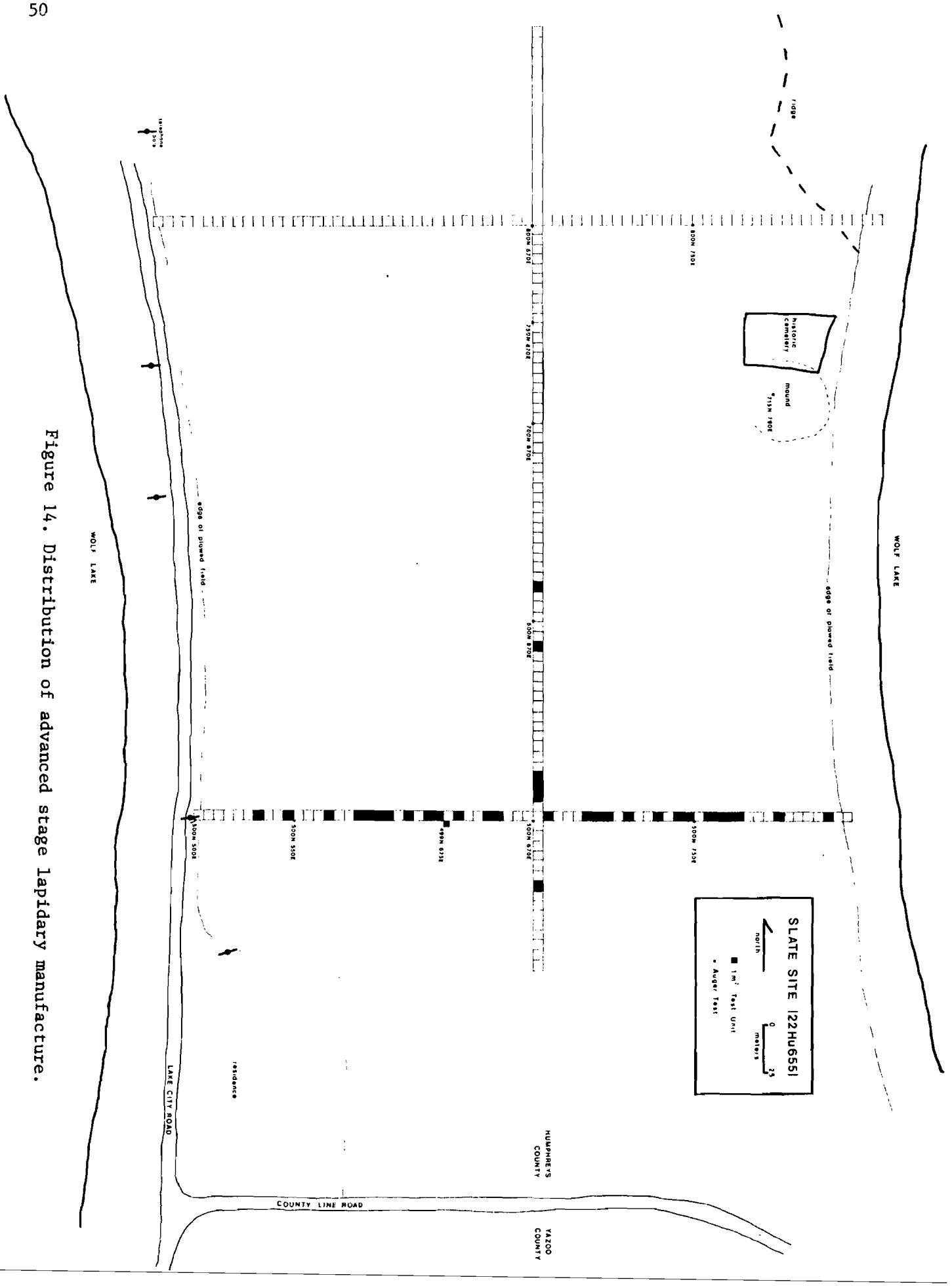


Figure 14. Distribution of advanced stage lapidary manufacture.

south at the eastern border as far as the mound. The center of the site and middle third of the eastern border is virtually devoid of archaeological materials. The critical reader may suspect that the linear configuration of the site as described above is unduly biased by the collection transects, but the opposite is the case. In our early visits to the site, general collections suggested that such a configuration existed and the collection transects were designed to sample the southern and northern concentrations as well as to validate the essentially vacant site interior.

The distributional analysis of archaeological materials is hampered by the very low density of artifacts as well as by the effects of amateur collecting behavior. The low artifact density makes statistical analyses somewhat unreliable and the collections have therefore been subjected to a lower-order examination of the presence or absence of artifact groups representing basic stages of manufacturing sequences of different items. The effects of amateur collecting behavior have been partially offset by the opportunity to examine several private collections, thus pinpointing the types of materials likely to be under-represented in the controlled collections.

Analysis #1. By plotting the presence of artifacts from the three groups representing primary manufacturing stages, secondary manufacturing/revitalization, and tool forms within collection units from the controlled surface collections, the following patterns emerged. The primary stages of tool manufacture are distributed fairly evenly across the southern east/west transect and relatively evenly across the northern east/west transect but with less overall intensity and with some clustering on the extreme east and west boundaries. This group clusters along the southern end of the north/south transect and occurs only sporadically further north (Figure 10). The secondary manufacture/revitalization group occurs with great frequency across the southern east/west transect and only occasionally elsewhere (Figure 11). Tool forms occur primarily in the southwest quadrant with a few specimens in the northern transect, but the total number for this group is very low (Figure 12). The general impression of chert utilization at the site, then, is that artifacts from the primary manufacturing group are distributed fairly evenly within the overall spread of artifacts, with the exception of the north- central portion of the site which has a very low density. Secondary manufacture/revitalization artifacts occur primarily along the southern portion, with a small cluster in the extreme northwest. Tools occur in such low frequencies that a generalization is difficult, though the tendency is toward a concentration in the southwest quadrant. Given the preference of amateurs for stone tools, the low incidence of these forms within the controlled surface collections is not surprising. The frequencies of the artifact groups suggest that tool manufacture was not a major activity. Pre-manufactured tools or preforms were apparently brought to the site and, when compared with the distribution of lapidary forms, secondary manufacture/revitalization activities coincided spatially with the manufacture of lapidary items.

Analysis #2. Slate and other raw materials and stage 1 slate artifacts were distributed almost continuously across the southern east/west transect (Figure 13). Along the north/south transect this artifact group clustered strongly within the 75-100 meter band at the south end of the site and again with much less intensity at the extreme northern end of the site. Another small cluster of this group occurred at the extreme northeast edge of the site and occurred sporadically across the northwest quadrant. Stage 2 and 3 slate artifacts, bead blanks and finished lapidary forms are confined exclusively to the southern east/west transect in moderate density and to the southern 75-100 meter band of the north/south transect (Figure 14). Quartz and quartz crystals were distributed in highest concentrations within the southern 75-100 meter band but occurred sporadically across the rest of the site (Figure 15). The manufacture of lapidary items, particularly in its advanced stages, was primarily confined to the southern end of the site and, as noted above, is well associated with the occurrence of secondary manufacture/revitalization stone artifacts.

Analysis #3. A total of twelve sherds were distributed across the eastern two-thirds of the southern border of the site (Figure 16). A total of twenty-six sherds were distributed fairly evenly across the northern border of the site. This admittedly small ceramic collection, together with the location of the Baytown mound in the northeast quadrant, suggests a Baytown occupation primarily in the northern and eastern portions of the site as opposed to the heaviest concentration of the Poverty Point component, particularly as evidenced by the lapidary items, across the southern border of the site. However, given the lack of diagnostic tools and the inability to distinguish intercomponent differences within the rest of the assemblage, this suggested difference in land-usage cannot be stressed with any great conviction. In addition, further investigations may indicate a Poverty Point stage of mound construction, though the apparent use of the site during that period as a special activity area seems to preclude this.

Controlled Surface Collections: Summary and Conclusions

Archaeological materials occur on the surface in a band 75-100 meters wide across the southern end of the site, in a 50 meter wide band along the western border, and in a diffuse scatter across the northern border and northeastern edge. The greatest density of materials occurs along the southern border. Given the location of the site within the most restricted portion of the neck of a large relict meander loop, affording a prime location with reference to nearness of water, the linear banding of the occupation across the neck in two separate locations and primarily along the western border (though, to a much lesser degree, along the eastern border as well) is somewhat puzzling. Either linear settlements along either shore or an occupation across the entire neck might have been expected. A horseshoe site configuration opened toward a nearby water source is a well-known Poverty Point settlement con- figuration (Webb 1970a, 1977), especially among large sites. In a very general sense, the Slate site may be considered to express such a horseshoe configuration open toward the east, but the

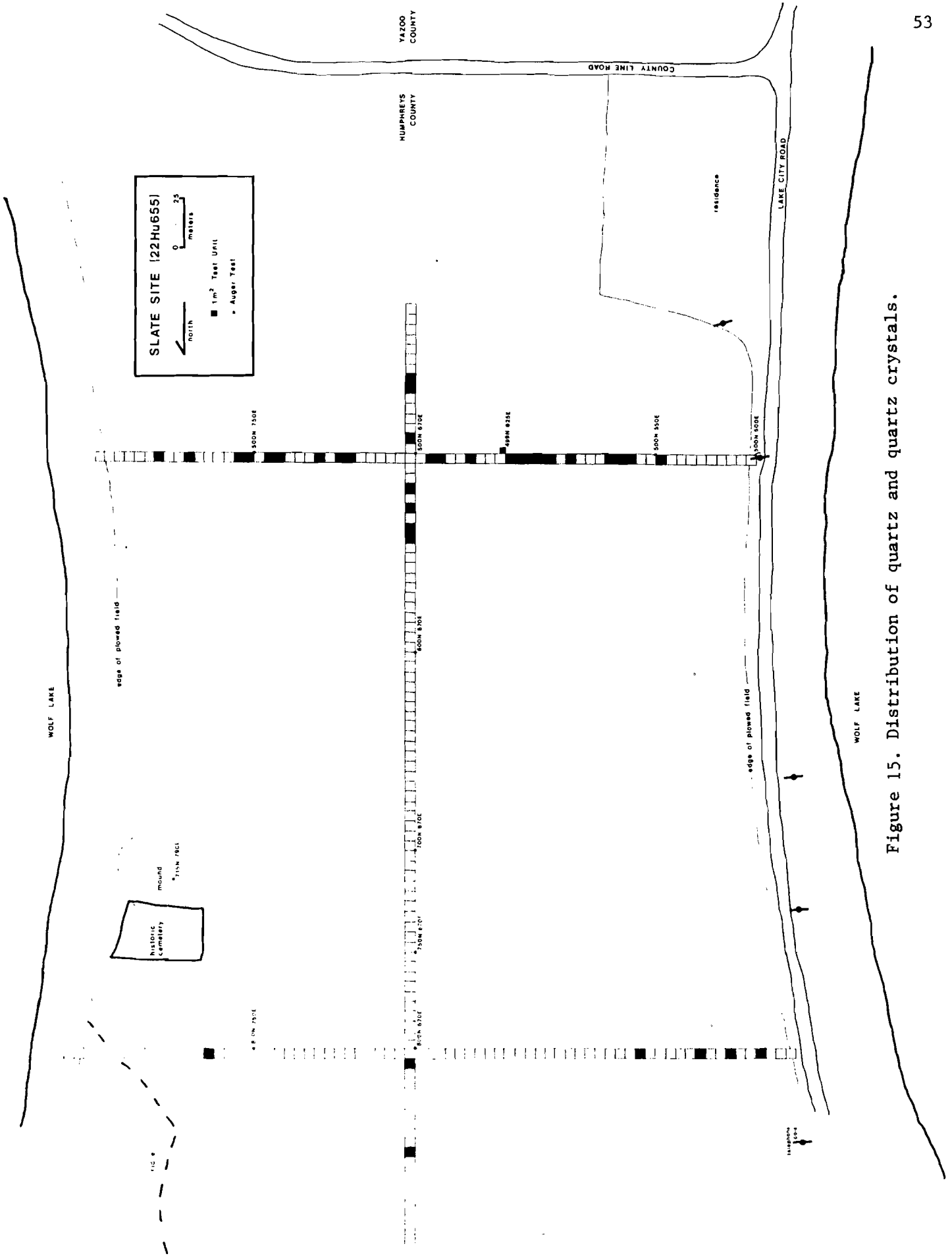


Figure 15. Distribution of quartz and quartz crystals.

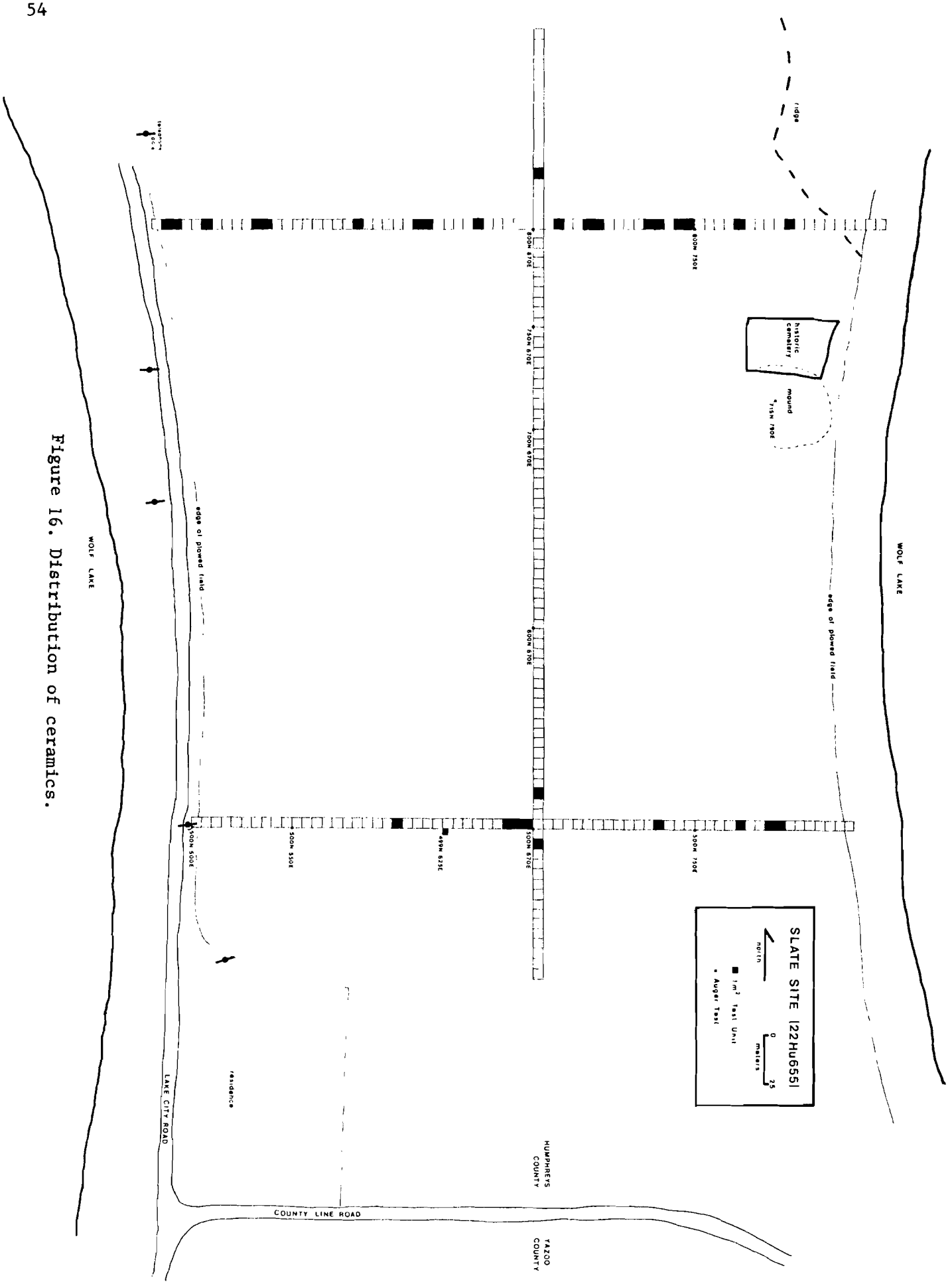


Figure 16. Distribution of ceramics.

differences in artifact density across the site are so marked that assignment to this type of orientation is rather tenuous. Further, the degree to which the distribution of the few Poverty Point associated materials in the northeast quadrant is the result of the Poverty Point occupation, as opposed to the possible reuse of some of the materials during the later Baytown occupation, is at present unknown. Considering the exotic nature of the materials associated with the Poverty Point lapidary industry, it is unfortunate that the Slate site does not exhibit stratigraphic sequences which might make it possible to research the reuse of materials recovered from an archaeological context by later prehistoric occupants.

The association between the secondary manufacture/revitalization artifact group and the advanced stage lapidary manufacture group indicates that the activities involving the advanced stages of tool manufacture, revitalization of those tools, and presumably therefore the use of those tools coincided spatially, at least generally if not congruently, with the manufacture of lapidary items. The relative frequencies between the primary manufacture group and secondary manufacture/revitalization group, particularly along the southern band of the site, suggest that stone tools were usually brought to the site in finished form or as preforms. This evidence, coupled with the lack of Poverty Point objects, fire-cracked rock, daub, and midden staining, lends credence to the assignment of this site as a special activity site focused on the manufacture of lapidary items. Further, the primary manufacture group at the northern end of the site may well be associated with the Baytown occupation and so strengthen the characterization of the Poverty Point component as a special activity site.

The effects of amateur collecting behavior have reduced the total incidence of quartz crystals, stone tools, and lapidary items. It appears unlikely, however, that amateur collecting has greatly affected this distributional analysis, with the exception of stone tools. These items, probably never in great abundance, are now so few in number as to render inconclusive any generalizations based on their present distribution. The other artifact types generally selected for by amateurs still exist in quantities sufficient to support characterizations of their presumed original distribution.

The collection strategy of employing transects of 5m units has proved useful on the Slate site. The most positive results have been in defining the actual extent of the surface materials. This strategy has been useful in the above distributional analysis of materials, but unfortunately the relatively small sample is skewed toward certain areas of the site at the expense of other areas, particularly the band of material along the western border. Yet, given the size of the site and the constraints of time and personnel, the transect collection strategy has enabled us to achieve with at least some success those data requirements we established as our goals.

SUBSURFACE INVESTIGATIONS

Test Unit

A single 1 x 1 meter test unit was excavated at point 499N625E on the southernmost east/west transect. Conditions for digging were extremely poor due to the nature of saturated clayey alluvial soils. Screening through quarter-inch mesh was extremely difficult and oftentimes "pieces" of the clay would have to be set aside, exposed to the wind, and dried before they could be broken apart and eventually screened. It took two man days to excavate the unit to a depth of 60 cm below the surface. At this point, further attempts to dig seemed unwarranted and a decision not to continue was reached.

No discernible stratigraphy was observed and the soil consisted of a relatively homogenous layer of tan to brown clay. No cultural midden was observed. The unit was excavated in arbitrarily established 20 cm levels. Cultural materials were observed in all three of the 20 cm levels excavated, though their occurrence was light.

1) One piece of quartz, one quartz crystal, two decortation flakes, one utilized secondary decortication flake, one tertiary flake, one proximal end of a projectile point, and one piece of quartz diorite. (1-20 cm)

2) Four pieces of slate raw material (20-40 cm)

3) One Jaketown Needle of local chert (40-60 cm)

Deep Borings

A series of nine borings to depths of up to 3.8 meters were taken at the Slate site. As was the case with the test pit, no midden was located with the deep borings. Color in the clays ranged from tans through browns to grey. Several of the borings revealed layers of fine-grained, very light brown sand, perhaps indicative of a point bar development in the immediate area. (See Figure 9 for locations of the borings; see Figures 18 and 19 for the stratigraphic sequences revealed by the borings.)

The borings indicate that the entire site is a natural levee directly atop a point bar. The western portion of the site represents a less well developed natural levee over a point bar that is relatively younger than that in the eastern portion of the site (Roger Saucier 1981, pers. comm.). The homogeneous stratigraphy indicates that the site was occupied at a time when the Mississippi River no longer flowed in the meander belt but probably was occupying a Stage 5 (0-2800 b.p.) meander belt to the west. At the time of occupation the topographic situation of the Slate site was much the same as it is today.

Figure 18. Stratigraphy from deep borings

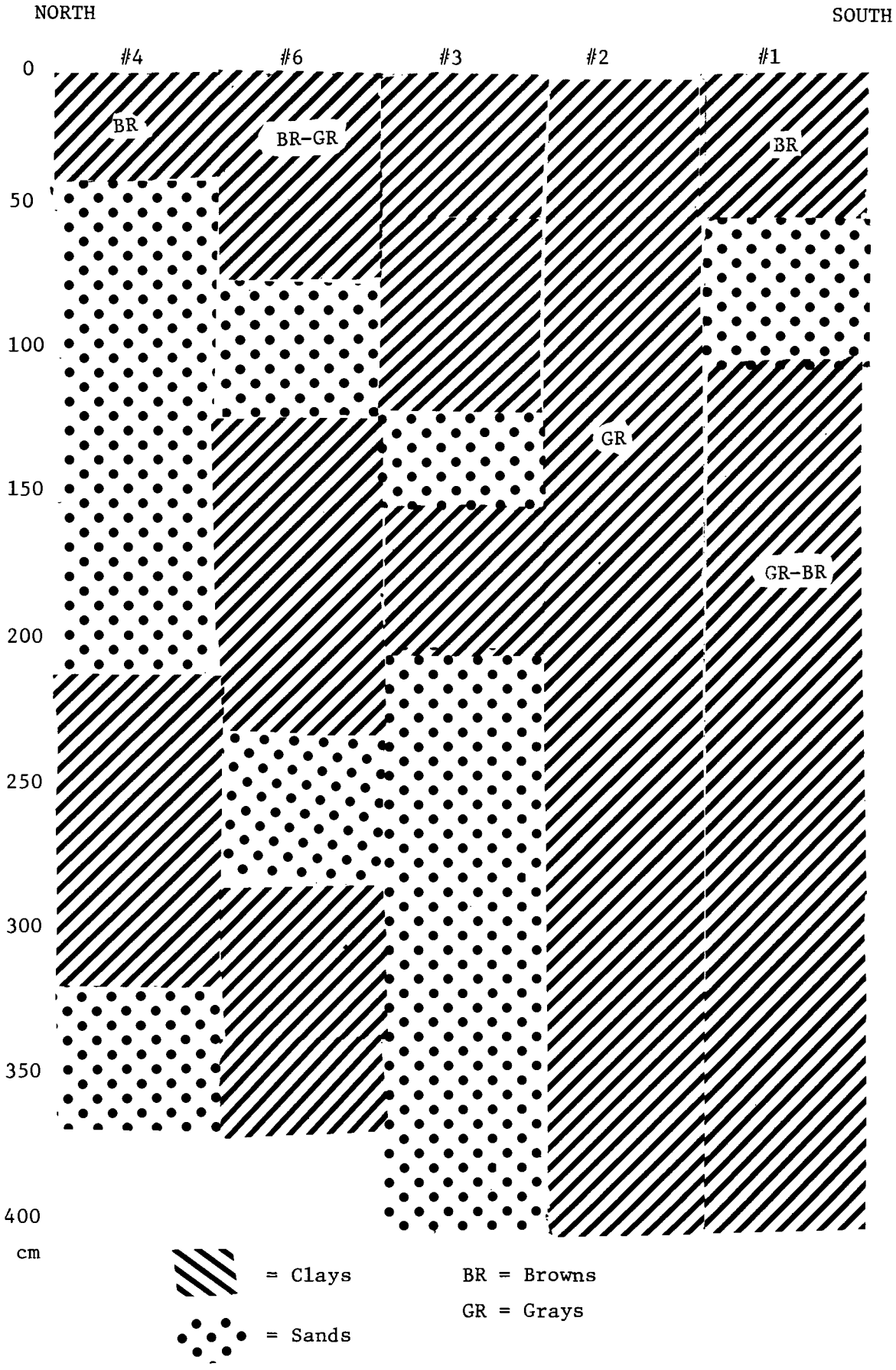
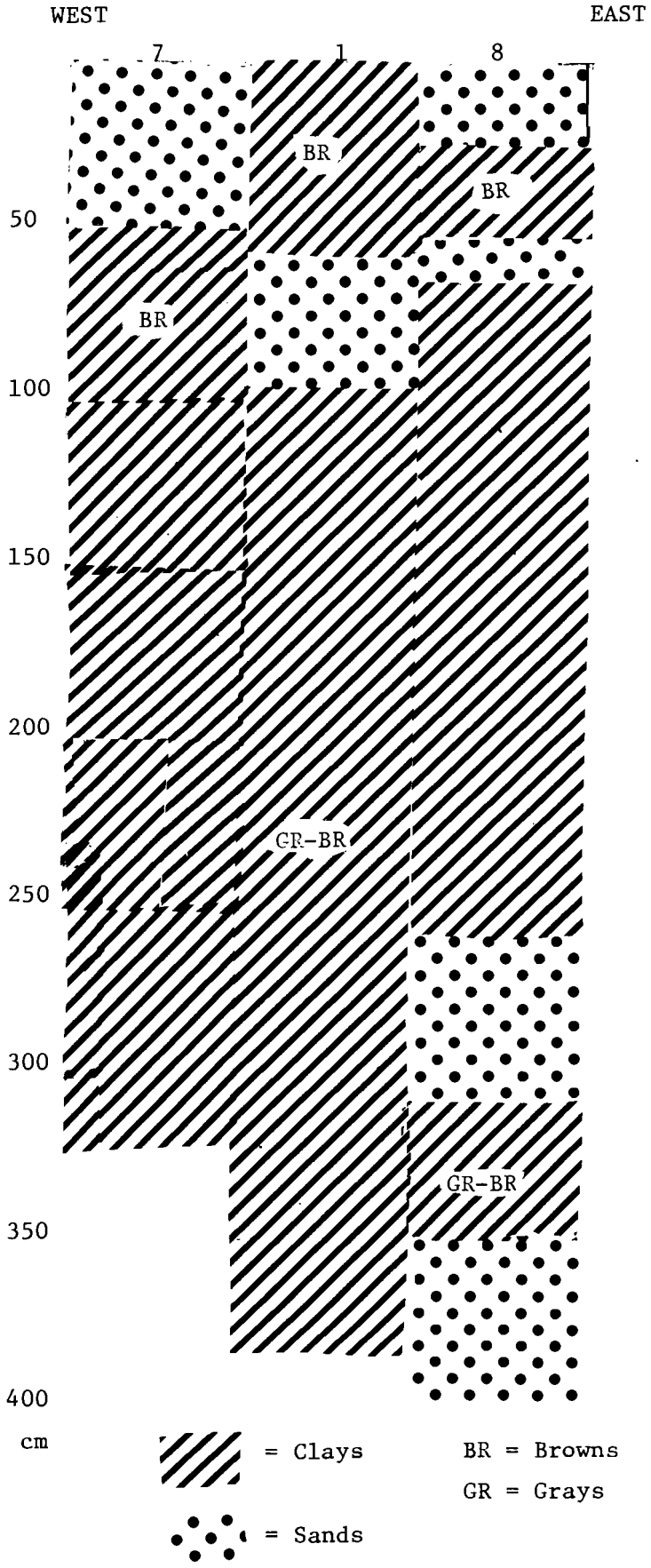


Figure 19. Stratigraphy from deep borings.



III. SUMMARY AND CONCLUSIONS

The Slate site is a multi-component site located in the neck of a large meander loop within a Mississippi River meander belt in Humphreys County, Mississippi. The components include a Poverty Point culture special activity site focused on the production of slate lapidary items, a Baytown Period mound, and a historic cemetery and house debris. The surface materials are spread in the general configuration of a horseshoe open to the east, but the densities of material vary widely from place to place over an area roughly 32 acres (13.2 ha) in size. An examination of the distribution of materials obtained in controlled surface collections suggests that the Poverty Point lapidary industry was well associated with the secondary stages of manufacture and revitalization of stone tools across the southern border of the site. The Baytown occupation may have been primarily limited to the northeast quadrant of the site.

It is difficult to assess the role of a special activity site devoted to the manufacture of lapidary items within the Jaketown Phase of the Poverty Point culture given our present level of knowledge. A principal concern is determining the hierarchical arrangement of sites, as these may reflect the sociopolitical organization of contemporaneous sites. Gibson (1973, 1974a) has argued eloquently for the existence of a chiefdom level of sociopolitical organization within the Poverty Point interaction basin, but the application of his model to the Yazoo Basin is not yet feasible, and preliminary indications suggest that it may not be able to account for the Jaketown Phase (Johnson 1980). As an example of the problems to be encountered, the limited data from the Savory site (Phillips 1970) is insufficient to clearly assign to this site a Poverty Point occupation, much less to class it as a subcenter equivalent to the Norman site (Webb 1977). Gibson (1980) has suggested that the Yazoo Basin may be viewed as two separate clusters of Poverty Point sites, one along the Sunflower meander belt (Savory) and one along the Yazoo-Tallahatchie (Jaketown). Whether or not this clustering reflects important aspects of sociopolitical organization within the Yazoo Basin during the Poverty Point period is important for interpreting the significance of the Slate site, located within the Yazoo-Tallahatchie system yet geographically closer to the Savory site.

Despite these and other problems, the very existence of the Slate site has important implications for understanding the Poverty Point culture as a whole, particularly if we are correct in assessing the Slate site as a special activity site devoted to the production of lapidary items. At least one other site has been recorded which contains the full range of lapidary production stages (other than the Poverty Point site itself). This is the Cad Mound site in the Catahoula Lake Basin of east central Louisiana, recorded by Gibson (1966, 1968). Although a multi-component site, the quartzite and jasper bead industry is attributed to a Catahoula Lake Archaic phase. Phillips, however, assigns the Cad Mound site to the Catahoula phase of Poverty Point on the basis of the lapidary and micro-lithic tool industries (1970:873).

The Poverty Point component at this site, like that of the Slate site, lacks Poverty Point objects and may therefore be a special activity site as well.

How, then, might these sites have been integrated into the Poverty Point culture, both within their respective local areas and within the broader Poverty Point interaction network as a whole? This type of discourse will of necessity lean heavily upon speculation, but is grounded upon the data base and may prove fruitful for future investigations.

Gibson (1980) has characterized the broad scale Poverty Point interaction network as a system of commodity exchange which functioned by the funneling of materials into and out of the Poverty Point site. The Poverty Point site acted as a gateway community which linked dispersed settlements into a system of exchange. The area north of Poverty Point acted primarily as a source area, whereas the Poverty Point regions south of the main site were principally consumers of this material exchange. Gibson illustrates this process with the ratios of preliminary and advanced stages of manufacture of exotic stone tools at the Beau Rivage site in south central Louisiana, suggesting that the Poverty Point site provided this southern neighbor with prefabricated blanks or preforms of exotic materials (1979). Along these lines, the manufacture of lapidary items from locally available quartzites and jasper at the Cad Mound site may represent a form of exchange necessary for the delivery of non-local essential materials from the Poverty Point site. Gibson (1968:15) points out that stone beads would serve well in this capacity and that the ratio of production debris to finished products indicates that the Cad Mound beads were being distributed elsewhere.

If this model may serve to account for the appearance of the lapidary industry as a specialized aspect within the Catahoula Lake Phase, it cannot so easily explain the existence of the Slate site. The Slate site lapidary industry, unlike that at the Cad Mound site, utilizes non-local materials. Thus, a simple direct exchange of goods is not indicated. Rather, the raw materials must first be procured and then transformed into exchangeable goods. The routes of resource procurement and disbursement of finished products, either direct or through the Poverty Point site, are unknown.

The Florescent phase of occupation at the Poverty Point site (1000-800 B.C.) witnessed a tremendous increase in the production of what are apparently non-utilitarian objects, such as beads and bird head profiles (Gibson 1974c:15). This development apparently had vast repercussions. Gibson notes:

> As its outset, the large scale commerce system, perhaps the principal unifying mechanism in the culture, seems to have been largely directed toward the procurement and redistribution of foreign raw materials that were primarily converted into everyday tools, such as projectile points, adzes,

> celts, hoes, plummets, gorgets, and others. However, during and after the cultural climax (Florescent and Post-florescent phases), exotic materials appear to have been increasingly channeled into the hands of special artisans and were transformed more and more into prestige-signaling artifacts for elevated social ranks (e.g., red jasper lapidary, stone pipes, slate gorgets, and Motley points of gray northern flint) (1974c:29).
>
> The historical shift in the Poverty Point redistributive system from an initial state in which exotic raw materials were predominantly used for technomic or "useful" equipment to a late and final phase which concentrated on the restricted distribution of rank and status validating raw materials led to a loss of technological and economic efficiency with disastrous results on the underlying support base. When coupled with population emigration and movement away from the chiefdom's sphere of influence, the results were a decreasing ability to insure a steady inflow of exotic materials, a lessening capacity of redistribution to promulgate societal cohesion and a growing impetus for lower social ranks to break out of the system which they were increasingly supporting with decreasing materialistic rewards (1974b:88-89).

Thus, the individuals responsible for the centralized control of the commerce networks became self-serving, to their ultimate discredit. In this light, the Slate site lapidary industry may be an expression of the degree of autonomy developed within the Jaketown Phase toward the end of the Poverty Point period. Capable of producing the prestige symbols of rank, the Jaketown Phase coordinators must have been less dependent upon the Poverty Point site both for their expressions of authority and perhaps for a link with various resource areas. This consolidation of local autonomy may have contributed to the demise of the preeminence of the Poverty Point site by reducing the need for regular commerce and possibly siphoning off certain resources from the Poverty Point network. The Slate site certainly lends credence to the notion of a relatively complex form of sociopolitical organization within the Yazoo Basin during the Poverty Point period. The ability to subsidize craftsmen devoted to the production of lapidary items suggests a centralized control collecting enough surplus to maintain artisans.

The possibility must be recognized, however, that the Slate site may have been more closely related to the Poverty Point site itself than to the Jaketown site. This possibility is suggested in a small way by the bird-head effigies, miniature bannerstones, and blind-drilled "buttons," all of which have been recorded at the Slate site and Poverty Point site (Ford and Webb 1956) but which have not been reported from the Jaketown site (Ford, Phillips, and Haag 1955). This discrepancy may be accounted for by the fact that both the Slate site and Poverty Point site investigations have made use of extensive private collections. Private collections from the Jaketown site may include types of arti-

facts which have not yet been reported. The Mississippi Department of Archives and History will undertake a project aimed at recording private collections from the Jaketown site, so this may be solved in the near future.

Aside from the important implications of a specialized lapidary manufacturing center, many of the lapidary items themselves are of special interest. First, the quantity of quartz crystals (over 600 recorded thus far) is far greater than reported for any other site known to the authors. Other than the two plummets, bead and bead blank, and a few tools, the use of these crystals is unknown. At the Crooks site, a Marksville period burial mound in Louisiana, Ford and Willey (1940) reported quartz crystals associated with burials, usually placed beneath the mandible. They suggested that the crystals "may have been suspended from the neck as charms or ornaments" (1940:125). Only one of these crystals had been grooved around the top.

Six quartz crystals were recovered at Jaketown, though not definitely attributable to the Poverty Point component (Ford, Phillips, and Haag 1955). Four crystals and a crystal gorget fragment were recorded at the Poverty Point site (Ford and Webb 1956) and grooved quartz crystals and a solid quartz cylinder are reported from the Claiborne site (Gagliano and Webb 1970). Twenty-three crystals in the MDAH collections are from a private collection made at the Waller site, which has a Poverty Point component and is located approximately 14 miles southwest of the Slate site. The Waller site and the Jaketown site are both multi-component sites; the use of quartz crystals in later time periods casts some doubt on the importance of crystals at these sites during the Poverty Point period since the crystals were not found in the undisputed context of those components. The Waller site is part of a cluster of Poverty Point sites which includes the Mabin, Savory, and Fairview sites (Phillips 1970). (The Lake George site is no longer considered to have a Poverty Point component [Jeffrey P. Brain, pers. comm.].) The sociopolitical implications of this relatively isolated cluster of sites aligned with the Sunflower meander belt, rather than the Yazoo-Tallahatchie drainage system as is the case with the majority of Poverty Point sites in the Yazoo Basin (Gibson 1980), is intriguing, but beyond Webb's (1977) portrayal of the Savory site as a possible subcenter little can be said given the present data base. The possibility of a Waller-Slate site affiliation can be noted on the basis of the quantity of quartz crystals recovered at each site, but the multicomponent status of the Waller site plus the private collections available from these two sites but not available from other Yazoo Basin Poverty Point sites somewhat vitiates the importance of this assemblage similarity.

The use of slate during the Poverty Point period was fairly common, but restricted primarily to effigies and gorgets. Slate beads, if they occur at other Poverty Point sites, are not reported. Yet slate beads constitute the majority of lapidary items from the Slate site. If these items were distributed to other sites, they have not yet been located.

Many of the other Slate site lapidary forms, such as hard stone beads and slate effigies, are known from other sites.

Another question that should be raised concerns the longevity of the lapidary manufacturing operation at the Slate site and whether or not the raw materials were acquired on a regular basis, sporadically, or from a single trading episode. The lack of midden accumulation and artifacts suggestive of domestic activities can be construed as evidence of a special activity locus as well as of a limited duration of occupation. At the same time, the quantity of lapidary items implies either an intensive short-term manufacturing sequence or an extended, less intense utilization of the site. Slate, being a relatively easily worked material, would not require an inordinate amount of labor for the production of lapidary items. At this point, however, evidence critical for determining the occupation span of the Slate site during the Poverty Point period is lacking. Similarly, the rate of flow of raw materials is left unanswered.

Compared to the amount of research conducted on the Poverty Point culture outside the Yazoo Basin (Ford and Webb 1956; Gregory, Davis and Hunter 1970; Gibson 1973, 1974a, 1974c, 1979, 1980), especially as it manifests itself within a geographical area labelled the Poverty Point interaction basin (Gibson 1973), less attention has been paid to the Jaketown Phase of Poverty Point culture in the southern Yazoo Basin. Excavations have continued intermittently through the 1970s and into the 1980s at the Poverty Point site itself (Kuttruff 1975; Goad 1980), and with the development of the site by the state of Louisiana as a historic park and research center we can expect new information on the site to be brought to the surface regularly in the future. In the Yazoo Basin, the Teoc Creek site (Connaway, McGahey, and Webb 1977) is the sole Poverty Point site to have been investigated since excavations were carried out at Jaketown (Ford, Phillips, and Haag 1955). It is understandable that the majority of data on the Poverty Point culture in the Lower Mississippi Valley has been accumulated from the Poverty Point site itself, and this has resulted in a more complete and definable picture of Poverty Point culture outside the Yazoo Basin.

New sites have come to the attention of archaeologists working in the Yazoo Basin only infrequently and few new Poverty Point sites have been recorded since the early-middle 20th century. Perhaps more pressing than this is the fact that of the 50 or so sites recorded from the Yazoo Basin, scarcely any have been investigated beyond the level of grab sampling by some hurried archaeologist; oftentimes this was done on multi-component archaeological sites. Controlled surface collecting, test excavations, and deep augerings have been undertaken rarely in the Yazoo Basin, and this lack of attention has resulted in our rather incomplete picture of the Poverty Point period, Jaketown Phase in the Yazoo Basin. This picture is further complicated by the fact that much cultural information is now in private collections and much of this is not available to the professional archaeological community. Relic collecting is done on a large scale in the Mississippi Delta.

The Slate site provides an opportunity to begin to fill in some of these rather large gaps. As a special activity Poverty Point lapidary site, it apparently demonstrates the presence of rather large scale production of non-utilitarian artifacts by groups of craft specialists maintained at a special, separate location. Procurement of raw materials of a non-indigenous nature from diverse sources indicates a rather well developed trade network. These facts seem supportive of the idea that Poverty Point in the Yazoo Basin did develop a relatively complex sociopolitical organization.

REFERENCES CITED

Altschul, Jeffrey H.
1979 Review of archaeological investigations. In the Peripheries of Poverty Point, by P. M. Thomas, Jr. and L. J. Campbell, pp. 5-23. New World Research Report of Investigations 12.

Braun, E. Lucy
1950 Deciduous forests of eastern North America. The Blakiston Co., Philadelphia.

Caldwell, Joseph N.
1958 Trend and tradition in the prehistory of the eastern United States. American Anthropological Association, Memoir 88.

Connaway, John M., Samuel O. McGahey, and Clarence H. Webb
1977 Teoc Creek, a Poverty Point site in Carroll County, Mississippi. Mississippi Department of Archives and History Archaeological Report 3.

Fisk, H. N.
1944 Geological investigation of the alluvial valley of the lower Mississippi River. Mississippi River Commission, Vicksburg, Ms.

Ford, James A.
1969 A comparison of Formative cultures in the Americas: diffusion or the physic unity of mankind. Smithsonian Contributions to Knowledge 11. Smithsonian Institution Press, Washington, D.C.

Ford, James A., Philip Phillips, and William Haag
1955 The Jaketown Site in West Central Mississippi. American Museum of Natural History Anthropological Papers 45, Part 1.

Ford, James A. and Clarence Webb
1956 Poverty Point: a late archaic site in Louisiana. American Museum of Natural History Anthropological Papers 46, Part 1.

Ford, James A. and Gordon Willey
1940 Crooks site, a Marksville period burial mound in LaSalle Parish, Louisiana. Louisiana Geological Survey Anthropological Study 3.

Freidel, David A.
1979 Culture areas and interaction spheres: contrasting approaches to the emergence of civilization in the Maya lowlands. American Antiquity 44 (1):36-54.

Gagliano, Sherwood M. and Clarence H. Webb
1970 Archaic-Poverty Point transition of the Pearl River mouth. Southeastern Archaeological Conference Bulletin 2:47-72.

Gibson, Jon L.
1966 A preliminary survey of Indian occupation in LaSalle Parish, Louisiana. Louisiana Studies 5 (3):193-237.

1968 Cad Mound: a stone bead locus in east central L. .siana. Bulletin of the Texas Archaeological Society 38: -17.

1970 Intersite variability at Poverty Point, preliminary considerations on lapidary. Southeastern Archaeological Conference Bulletin 12:13-20.

1973 Social systems at Poverty Point: an analysis of intersite and intrasite variability. Unpublished Ph.D. dissertation, Southern Methodist University.

1974a Poverty Point: the first North American chiefdom. Archaeology 27(2):96-105.

1974b The Tchefuncte culture in the Bayou Vermilion basin, south central Louisiana: a developmental case study. Bulletin of the Texas Archaeological Society 45:67-95.

1974c The rise and decline of Poverty Point. Louisiana Archaeology 1:8-36.

1979 Poverty Point trade in south central Louisiana: an illustration from Beau Rivage. Louisiana Archaeology 4 for 1979:91-116.

1980 Speculations on the origin and development of Poverty Point culture. In Caddoan and Poverty Point Archaeology: Essays in honor of Clarence Hungerford Webb, edited by J. L. Gibson. Louisiana Archaeology 6 for 1979:326-355.

Goad, Sharon I.
1980 Recent excavations at Poverty Point, Louisiana. Paper presented at the 37th annual Southeastern Archaeological Conference, New Orleans.

Gregory, Hiram F., Jr., L. C. Davis, and D. G. Hunter
1970 The Terral Lewis Site, a Poverty Point facies in Madison Parish, Louisiana. Southeastern Archaeological Conference Bulletin 12:35-46.

Huckabay, A. Kate and James Lauro
1980 South Delta Cultural Resource Survey, Humphreys, Sharkey, and Yazoo Counties, Mississippi. Ms. on file, Mississippi Department of Archives and History.

Hunter, Donald G.
1970 The Catahoula Phase of the Poverty Point complex in east-central Louisiana. Southeastern Archaeological Conference Bulletin 12:73-89.

Johnson, Jay K.
1980 Poverty Point period social organization in the Yazoo Basin, Mississippi: a preliminary examination. In Caddoan and Poverty Point archaeology: essays in honor of Clarence Hungerford Webb, edited by J. L. Gibson. Louisiana Archaeology 6 for 1979.

Kuttruff, Carl
1975 The Poverty Point site: north sector test excavations. Louisiana Archaeology 2:129-151.

Lauro, James
1979 Riverside Black Bayou Cultural Resource Survey, Washington County, Mississippi. Ms. on file, Mississippi Department of Archives and History.

Lehmann, Geoffrey R.
n.d. Redistributive economic systems and the archaeological record. Ms. on file, Mississippi Department of Archives and History, Jackson, Mississippi.

Lowe, E. N.
1919 Mississippi, its geology, geography, soil, and mineral resources. Mississippi State Geological Survey Bulletin 14.

Moore, Clarence B.
1908 Certain mounds of Arkansas and Mississippi. Journal of the Academy of Natural Science, series 2, vol. 23, pt. 4.

Muller, Jon D.
1978 The Southeast. In Ancient Native Americans, edited by J. D. Jennings, pp. 281-325. W. H. Freeman and Co., San Francisco.

Phillips, Philip
1970 Archaeological survey in the Lower Yazoo Basin, Mississippi, 1949-1955. Papers of the Peabody Museum of Archaeology and Ethnology 60. Harvard University.

Phillips, Philip, James A. Ford, and James B. Griffin
1951 Archaeological survey in the lower Mississippi Alluvial Valley, 1940-1947. Papers of the Peabody Museum of American Archaeology and Ethnology 25.

Polanyi, Karl
1968 Anthropology and economic theory. In Readings in Anthropology, Vol. 2, edited by M. H. Fried, pp. 215-238. Thomas Y. Crowell Company, New York.

Rathje, William L.
1972 Praise the gods and pass the metates: a hypothesis of the development of lowland rainforest civilizations in Mesoamerica. In Contemporary Archaeology, edited by M. P. Leone, pp. 365-392. Southern Illinois University Press, Carbondale.

Sanders, William R. and Barbara J. Price
1968 Mesoamerica: The evolution of a civilization. Random House, Inc., New York.

Saucier, Roger T.
1974 Quaternary geology of the Lower Mississippi Valley. Arkansas Archeological Survey Research Series 6.

1981 Current thinking on riverine processes and geologic history as related to human settlement in the southeast. Geoscience and Man 22:7-18.

1981 Personal Communication. Army Corps of Engineers, Vicksburg, Mississippi.

Schiffer, Michael B.
1972 Archaeological context and systemic context. American Antiquity 37 (2):156.

1976 Behavioral archaeology. Academic Press, New York.

Service, Elman R.
1962 Primitive social organization: an evolutionary perspective. Random House, New York.

1975 Origins of the state and civilization. W. W. Norton and Company, Inc., New York.

Shelford, Victor E.
1963 The ecology of North America. University of Illinois Press, Urbana.

Thomas, Prentice M., Jr. and L. Janice Campbell
1979 The peripheries of Poverty Point. New World Research Report of Investigations 12.

Thorne, Robert (editor)
1977 Cultural Resources Survey, Item I, Upper Yazoo Projects, Yazoo River, Mississippi, Between SRM 75.6 and 107.8. University of Mississippi, Oxford.

1979 Cultural Resources Survey, Item II, Upper Yazoo Projects, Yazoo River, Mississippi, Between SRM 107-268 and 131.5. University of Mississippi, Oxford.

U. S. Army Corps of Engineers
1975 Final Environmental Impact Statement: Flood Control Mississippi River and Tributaries, Yazoo River Basin, Mississippi. U. S. Army Engineer District. Vicksburg, Mississippi.

Webb, Clarence H.

1968 The extent and content of Poverty Point culture. American Antiquity 33(3):297-321.

1970a Settlement patterns in the Poverty Point cultural complex. Southeastern Archaeological Conference Bulletin. 12:3-12.

1970b Intrasite distribution of artifacts at the Poverty Point sit with special reference to women's and men's activities. Southeastern Archaeological Conference Bulletin 12:21-36.

1977 The Poverty Point culture. Geoscience and Man 18.

Weinstein, Richard A. et al,

1979 Cultural Resources Survey of the Upper Steele Bayou Basin, West-Central Mississippi, Vol. I. Manuscript prepared by Coastal Environments, Incorporated for the Vicksburg Corps of Engineers.

Woodiel, Deborah K.

1980 Survey and excavation at the Poverty Point site, 1978. Paper presented at the 37th annual Southeastern Archaeological Conference, New Orleans.