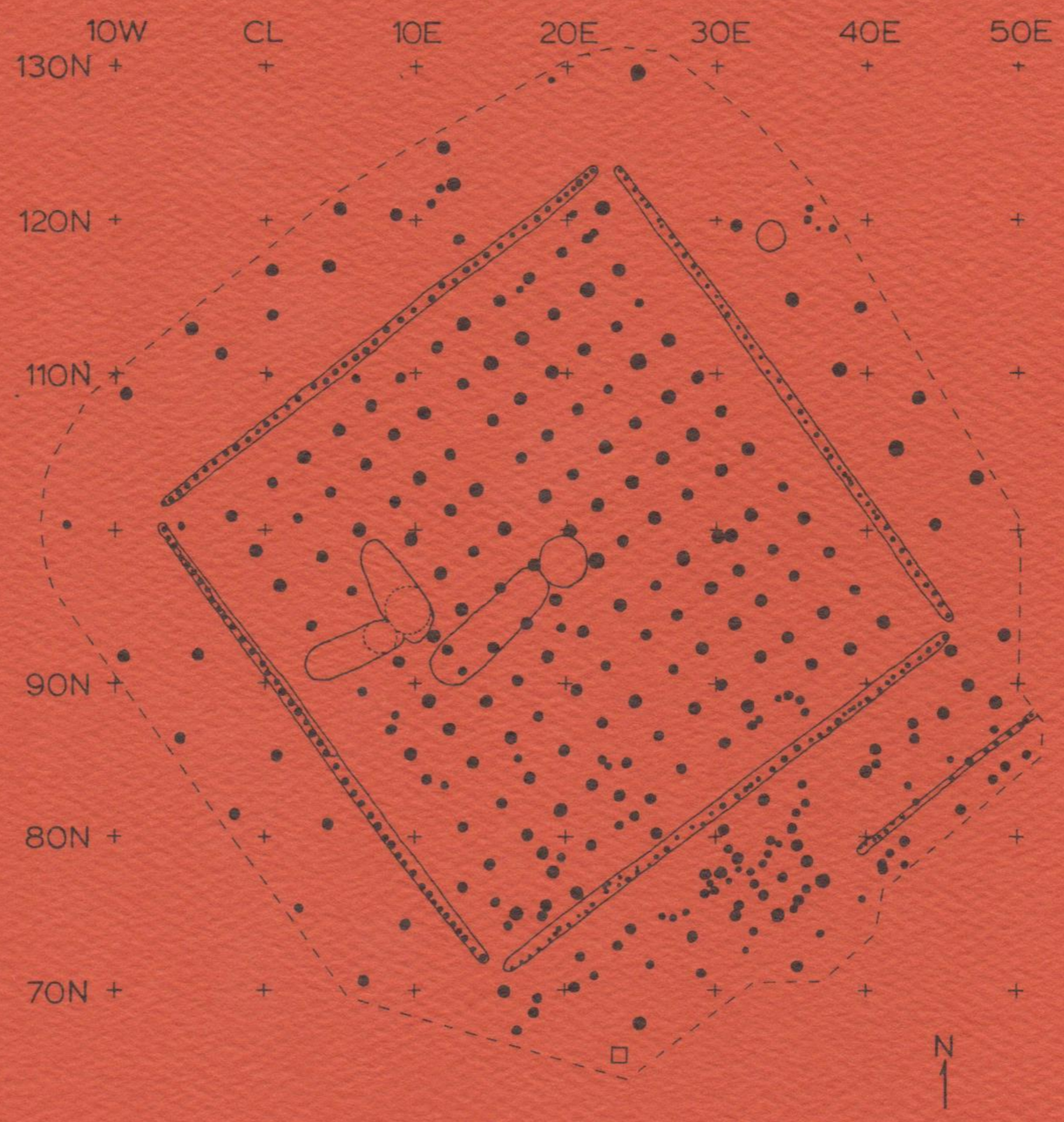
Archaeological Report No. 14

THE WILSFORD SITE (22-Co-516) COAHOMA COUNTY, MISSISSIPPI

A Late Mississippi Period Settlement in the Northern Yazoo Basin of Mississippi

John M. Connaway



Mississippi Department of Archives and History
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Special thanks are due Mr. C. M. Allen for his interest in the project. Not only did he grant permission for excavation, he also generously gave up a portion of his cotton crop on the site and provided mechanized equipment for the removal of the plow zone and for backfilling the excavation.

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This publication is dedicated to the memory of Thomas H. Koehler, assistant professor of anthropology at the University of Mississippi and director of the 1969 summer field school, and John E. Warren, photographer and amateur archaeologist from Clarksdale, Mississippi.

THE WILSFORD SITE (22-Co-516)

Coahoma County, Mississippi

INTRODUCTION

The Wilsford Site was first reported by Phillips, Ford, and Griffin in their Archaeological Survey of the Lower Mississippi Alluvial Valley as "Wilford" (1951:52), misnamed after the Wilsford family upon whose land the site was situated. This error is hereby corrected. The site was located and collected from in November, 1940, by Philip Phillips, who described it on the Peabody Museum site card as

> a small site with one small perfectly preserved rectangular mound and one small area with abundant daub and some pottery. The mound is in astonishing shape in spite of the small size, the corners and ramp can be made out and measured with considerable precision. There is a large stump squarely on the ramp which precludes its being anything in the nature of a recent addition. Small amounts of daub were seen in the cotton field on all sides of the mound for a limited distance but very little pottery. This small collection comes entirely from a small rise north of the mound which judging from the abundance of daub was probably a small house mound (James B. Griffin, personal communication).

In the Phillips, Ford, and Griffin volume (1951:52), the site was given the Peabody Museum number 15-0-10, and was described as a "village site with small rectangular platform mound and small mound." Phillips' sketch map of the site (Figure 1) shows the position and orientation of the larger mound. Plate 1 is a view of the mound taken by Phillips on November 19, 1940. Plate 2 shows the same view (facing north) taken by the author on November 19, 1982, 42 years later, showing essentially little change. The ramp and corners have probably eroded somewhat, since they do not appear as pronounced as Phillips described them. His sketch map depicts a composite split-level mound, the larger portion with ramp being slightly higher than that to its rear. Presently, the mound shows a more gradual change in surface contour and is more ovoid in shape, all due no doubt to gradual erosion. Phillips, Ford, and Griffin give its height as 10 feet and refer to it as a "Type A" mound (square with ramp and apron) oriented northeast (1951:320). Basal dimensions are presently ca. 160 feet long by 120 feet wide, essentially the same length but about 20 feet wider than the dimensions shown on Phillips' map (Figure 1).

The "small mound" referred to on Phillips' site card is shown in Figure 1 as a one-foot high elevation with the caption "collection from here." As will be shown later, this is the location of Houses 1, 5, and 6 (see Figure 2). Phillips' statement on the site card that this rise, which was covered with an abundance of daub, "was probably a small house mound" proved correct in subsequent excavations, though

the rise had been plowed level by then. The area in which Houses 2-4 were excavated (Figure 2) was just to the southeast of where Phillips shows a tenant house (Figure 1), which no longer existed in 1969.

The site was visited in November 1968 by the author and Sam McGahey, both archaeologists with the Mississippi Department of Archives and History, as part of a land-leveling survey and salvage program in the northern Yazoo Basin. As a result of this visit, the survey card for the State of Mississippi site inventory was updated and a small collection of sherds was made. The scarcity of artifacts and abundance of daub in certain areas was noted, as it had been 28 years earlier by Phillips. The platform mound remained in good condition, being overgrown with trees, brush, and cane. Except for a turnrow, all the area surrounding the mound had been plowed and subsoiled, exposing scatters of daub, occasionally in heavy concentrations. Particular note was taken of the mass of daub at the site of the small rise mentioned by Phillips.

In 1969 the University of Mississippi Department of Sociology and Anthropology conducted a summer field school in archaeology, under the direction of Thomas H. Koehler. Sites selected for test excavation in Coahoma County were Wilsford (22-Co-516), Brahan #1 (22-Co-572), and Brahan #4 (22-Co-626). The Brahan sites, which included Baytown and Mississippian components, are ca. three miles north-northeast of Wilsford, but are not presently known to be related to it. The field school was divided into three groups, one at each site under senior student supervision, and six weeks were spent excavating. No reports have been published on the Brahan sites and those excavation results are beyond the scope of this report.

When test excavations at the Wilsford site began in June, the author and Sam McGahey were still involved in land-leveling surveys and were connected with the field school only in a part-time advisory capacity. After about two weeks of testing revealed house wall trenches, it was decided that the Department of Archives and History archaeologists should become involved full-time with complete excavation of the two house areas north of the mound. The author and McGahey then joined the field school crew at the site for about two months, during which time the site was mapped (Figure 2), a new grid was set up for the excavation area (Figure 3), and the house patterns were excavated and recorded (Figures 3-12). Following completion of the field work, a summary of the excavation was published (Connaway and McGahey 1970:11-12, Plates 10-13, 15, Figures II, III).

The primary objective of the field school was to instruct students in archaeological methods for excavating house remains. The objective of the Department of Archives and History's involvement was to investigate what appeared to be a rather large Mississippi Period structure (House 1 area) while otherwise unavailable and unaffordable labor was at hand. Until excavation had progressed to the point of complete plowzone removal, the unusual nature of the structures was not known or suspected. The result proved to be a unique surprise.

1969 EXCAVATION

Datum and Grid Location

The datum point (70S-CL) from which the initial Grid A and the subsequent Grid B were established was located at the base of the north corner of the mound, 11 feet (north 7° east) from a nail in a pignut tree on the mound slope. This point was set arbitrarily at the edge of the mound where it should not be disturbed by cultivation. It also represented ground surface level of 180 feet above sea level, which was indicated on the relatively level site by contour lines on the USGS quadrangle map of the area.

When the field school crew first began testing the site, a grid system was set up (Figure 3: Grid A) with the centerline (CL) running at an angle of north 5° east. Test units in the House 1 and House 2 areas and in the turnrow between them were coordinated with this system (see Figure 3). When complete excavation of the two house areas was initiated, this grid system was changed. The new centerline was laid out on a due north line from the datum point and all other stakes marking the excavation units were placed on the two house sites in a ten-foot grid (Figure 3: Grid B) with reference to this centerline. The east-west 0-line was laid out across the south edge of the House 2 area, 70 feet north of the datum point (see Figure 3).

Methods and Techniques

Before describing the excavation techniques, an apology should be offered to those readers who now resort entirely to the metric system and no longer comprehend the use of feet and inches. When the excavation began, the field school students were instructed to use foot and inch measurements in recording all aspects of the project. Indeed, their rulers were so graduated. Subsequently, when testing ended and excavation of the houses began, measurements were made in feet and tenths of feet by Archives and History archaeologists, since the stadia rod used in surveying, the graph paper used for recording, and the measuring tapes used were all graduated in tenths. As a result, to coordinate the student field notes and charts with those of the archaeologists, inches had to be converted to tenths, and all excavation measurements in this report will thus remain as such. Metric conversion, if preferable, shall remain in the hands of the reader with the author's apology.

As previously stated, the grid system was set up in ten-foot square units. Initial testing was done in ten-foot units and five-foot subunits in the two house areas and along the turnrow between them (see Figure 3). This testing was done to determine if subsurface features, such as burned floors, pits, postmolds, or fallen house walls existed, as well as to what extent such features had been disturbed by plowing. Arbitrary vertical increments of six inch (0.5 foot) levels were used, the units being dug from surface to sterile level. The soil in each level was scraped off in very thin layers with flattened shovels so that few artifacts would be overlooked. At

the outset 1/4 inch or 1/2 inch mesh screens were used to sift the soil, but it was soon discovered that most of the midden had been plowed and subsoiled to such an extent that there was little undisturbed context above the sterile level. The screens were dispensed with when the house wall trenches were discovered. At that time, the plowzone was simply removed by shovel along a trench following these walls. The wall trenches of House 1 were uncovered at the sterile level and recorded with reference to Grid A. Several cross-sections and profiles were also recorded during this process (see Figure 8).

Since testing revealed no undisturbed house floors or features above sterile level, it was decided that the plowzone should be removed in order to reveal whatever interior features or portions thereof remained. Thanks to the generosity of the landowner, Mr. C. M. Allen, a tractor and dirt scraper were used to remove the plowzone from both house areas, the soil (almost 5,000 cubic feet) being piled in a spoil area just west of House 1 for later backfilling. This allowed our limited time to be spent on recording features instead of sifting through and removing tons of earth by hand. Although some amount of data was surely lost in this process, the more important information lay in the pattern of subsurface features.

Following plowzone removal, the house areas were scraped clean and leveled using flattened shovels. The excavated area was restaked into ten-foot grid units (Grid B) from which measurements were taken. For reference, each unit was numbered the same as its southeast corner stake. The surface level of selected stakes in each house area was coordinated with the datum point elevation (180 feet AMSL). Depth measurements of various features were made from these reference stakes using line levels and folding rules or, in some cases, a stadia rod. All features were plotted on graph paper to the scale of one inch = 30 feet. Since all remaining features recorded in this manner were in sterile soil, no deeper excavation was attempted. The wall trenches in House 1, previously recorded with reference to Grid A, were repositioned on the graph paper to fit into the Grid B system. All pits and postmolds were cleaned out to their original dimensions. These pits and a sample of trench postmolds were recorded in profile (see Figures 8 and 11), while only the depths of a sample of interior support posts were measured.

Test Excavations (Grid A)

Test excavations at the site were begun on June 16, 1969, by the field school crew, the Wilsford site unit being under the supervision of graduate student Harold "Bunker" Hill. Placement of five-foot and ten-foot square test units within the initial grid system (A), as previously outlined, is shown in Figure 3 with relation to subsequently recorded house wall trenches. The purpose of this testing was to determine if any features, fallen house walls, or house floors remained intact within or beneath the plowzone.

Very little useful data could be retrieved from this testing, since essentially all of the midden had been disturbed by plowing and

subsoiling. A descriptive summary of the excavation of the test pits in both house areas and in the turnrow between them is presented in Table 1. To summarize the results, in the House 1 area some disturbed burned "floor" sections were recorded. The locations of the three largest of these are shown in Figure 5 as "B," symbolizing "burned floor." All were at a depth of 0.5 foot below surface (see Figure 12 for relative levels of features). Whether these surfaces are remnants of a house floor or of the sub-platform ground surface (the houses, built on platforms, will be discussed presently) is unclear. None of the postmolds found in sterile soil below them were noticed in these surfaces. It is assumed, based on subsequent excavation data, that they represent ground surface upon which one of the houses collapsed when destroyed by fire. Henceforth in this paper, when reference is made to the "burned floor" surfaces, this is what is being discussed.

Another section of disturbed burned "floor" was recorded in unit 80N-CL at a depth of one foot (not shown on Figure 5). This being the deepest feature of its kind found in the test units, it might be assumed to be the ground surface associated with the earliest house construction in the House 1 area. If this is true, there could be an inconsistency to consider. Figure 12 shows the difference in depth of the center postholes of Houses 1 and 4 (Features 5 and 4 respectively) to be 1.5 feet. Assuming that House 1, with the deepest posthole, is the earliest construction, it might be surmised that House 4, with the next deepest center post, was the second construction, and that being of similar structure, it required the same length center post as House 1. Hence, the 1.5 feet difference would also represent the difference in ground surface elevation, the second structure presumably being built on a low, flat mound ca. 1.5 feet higher than the first. However, the two burned "floor" surfaces indicate a variation in elevation of only 0.5 foot. Thus, the test pit data result in an inconclusive hypothesis concerning the burned "floors" and their relationships to the houses constructed above them.

Most of the plowzone in this area consisted of mixed brown loam, brown, black, and yellow clay, yellow sand, charcoal, ash, and burned daub and "floor" fragments. No distinct features other than the surfaces just described were discerned. The midden mixture probably represented what remained of burned house walls, structural elements, and floor or original ground surface, along with more recent topsoil and debris plowed into it. A discussion of soil types on the site is presented in a later section of this paper.

The test unit in the House 2 area yielded essentially the same type of midden mixture, but without burned "floor" sections or fragments. This is also true of the two five-foot units placed in the turnrow area between the two houses. No distinct features were discerned in either case. The ground was packed hard in the upper level of the turnrow units from the passage of heavy equipment, and there was an admixture of recent historic debris in this and portions of the upper level of the House 2 area from the tenant house site shown in Phillips' sketch (Figure 1). In all test areas, the plowzone extended to sterile yellow sand at a depth of 1.25 to 1.5 feet. As

noted in the surface collections, there was minimal prehistoric debitage in the plowzone as well, except for daub.

The overall result of testing was a consensus opinion that the plowzone could yield only minimal relevant data, and the time required to excavate it by hand and record all the fragments of essential remains would not be justified. Time was limited for all concerned and could be spent more productively recording sub-plowzone features that were still intact. Thus, those feature fragments which had already been recorded in the test units, such as sections of burned "floors" or sub-platform surfaces, had to suffice for this phase of the project.

The second phase consisted of exposing and recording the House 1 wall trenches. The burned daub and "floor" sections in the plowzone midden of the House 1 area test units indicated the presence of a house pattern. For the Mississippi Period in the northern Yazoo Basin, the usual house pattern type consists primarily of wall trenches in a square or rectangular shape, with a few interior postmolds or pits. Indications of such houses were present at Wilsford, and thus a strip about eight feet wide and ca. 1.3 feet deep was cut with a tractor and scraper along the west side of the four main test units in order to locate any evidence of such trenches. By this process the west corner of the House 1 wall trench pattern (see Figures 3 and 4) was uncovered. At the time, it was decided to follow out and record only the wall trenches using shovel excavations, leaving the house interior for later if time permitted. It was not suspected then that the house had been of unusual construction, containing large numbers of postmolds inside the wall trench limits. Only the usual house form was suggested. The trenches were then exposed and recorded, and several cross-sections and section profiles were made of them and their inclusive postmolds (Figure 8), which will be discussed in more detail presently. This work was completed in about a week.

Plowzone Removal and House Features (Grid B)

At this point nothing remained but to continue the project by excavating the house interior. The third phase, then, was plowzone removal in the House 1 interior, again using the tractor and scraper. Since a large area was to be removed, it was necessary to remove the excavation unit stakes from the house area. At the same time it became feasible to realign the entire grid system on a true north-south basis (Grid B) and restake the areas to be recorded. The test units were removed with the plowzone midden and were no longer of concern, having yielded little stratigraphic data. In effect, the project was started over with a very different viewpoint, resulting from the discovery of the mass of interior features in House 1.

The plowzone having been removed to a depth of ca. 1.5 feet, the area was scraped clean to sterile sand with shovels, exposing the features shown in Figures 4 and 5. While these were being exposed, excavated, and recorded, the same process was begun in the House 2 area. The plowzone was removed, the site restaked in the Grid B

alignment, and cleaning and recording of features commenced. The month of July, at the end of which the field school was disbanded, was spent in this phase of the project. Work continued during the first part of August under the auspices of the Department of Archives and History, with the assistance of four field school students who volunteered to stay to complete the recording effort. The features of the two house areas are described in the following sections.

HOUSE PATTERNS AND MISCELLANEOUS FEATURES

House 1 Area: Features of Houses 1, 5, and 6

A large number of features were exposed in the House 1 area, as depicted in Figure 4. These included wall trenches with postmolds, large support postmolds in a patterned arrangement, much larger center support postmolds with sloping abutment trenches, and a refuse pit. The locations of these features are shown in Figure 5. These will be described in turn, followed by an attempt at interpretive reconstruction of the house form used at the site.

House 1

When the wall trenches of House 1 were first uncovered, only the presence of a single house was indicated. As it turned out, with the exposure of the area inside and surrounding these trenches, there were remnants of three structures at essentially the same locus, hence the reference to the "House 1 area." Elements of each of the three houses represented here have been tentatively identified and separated. All the House 1 area features are depicted in a horizontal ground plan (Figure 4) as they appeared following the excavation and recording. This plan shows everything at the sterile soil level below the plowzone midden, 1.16 feet below surface. The excavation area was expanded far enough beyond the wall trench pattern to expose the large support postmolds outside the enclosure. Only two rows were found on each side, with the exception of the mass of postmolds outside the southeast wall trench. These posed a problem which will be discussed presently.

The locations of various features of the House 1 area are shown in Figure 5. The alignment of the interior and exterior support postmolds with the wall trenches was used to separate those features thought to be associated with House 1 from the remainder. Except for Features 3 and 4, which are intrusive pits, all the features shown in Figure 6 presumably represent House 1 remains. The rest, most of which are likely associated with House 5 or 6, are depicted in Figure 7.

To be more specific regarding the House 1 elements, the wall trenches, which were the first features encountered below the plowzone, form an almost perfectly aligned 39 foot square (Figures 4-6), enclosing an area of 1,369 square feet. Interior measurements of the area enclosed by the trenches, as shown in Table 3, include an interior length/width average of 37.4 by 37.2 feet.

Several profiles and cross-sections of these trenches, previously mentioned, were cut and are depicted in Figure 8. The depths of the trenches and postmolds in these profiles and of several other trench postmolds are given in Table 2. In this table, trench postmolds preceded by the letter "T" were numbered simply by counting from one end of the trench. In Figure 5, only those measured for depth and not included in a profile section are located by numbers preceded by a "T".

Trench depths from the surface, though not necessarily an indication of original actual depth, were as follows: NW trench, 2.68 feet, SE trench, 3.92 feet; NE trench, 3.08 feet; SW trench, unrecorded. The 1.24 feet difference in this range may have been due to an uneven land surface at the time of original construction, but this or other such variables cannot presently be tested or proved since the upper portions of the trenches were destroyed by plowing. For easy comparison with the other house patterns of the site, trench depths are presented again in Table 4. The depths of the trenches not found in the tables were not recorded.

The dimensions of the wall trenches and the house pattern they form are given in Table 3. It can be seen that variation in their lengths does not exceed 0.9 foot, while their average width does not vary over 0.15 foot. This layout is very uniform and consistent in its alignment with the interior and exterior support postmolds. There is a gap of 1.1 feet between the ends of the trenches at each corner except the one on the south, which is 0.75 foot. Whether or not these represent entranceways is not known, but it is a possibility. If so, the width of each entrance would more likely be determined by the distance between the end postmolds in adjacent trenches. These are: west, 1.3 feet; north, 1.4 feet; east, 1.2 feet; and south, 1.8 feet.

Concerning the postmolds in the trenches, depth measurements for a representative sample have been presented in Table 2. In addition to this, other dimensional data are given in Table 5. Altogether there were 184 small postmolds in the four trenches, apparently accounting for all the trench posts or poles originally utilized. As will be seen, this did not hold true in the House 2 area trenches. The House 1 postmolds, ranging from 0.1 to 1.4 feet apart measured from center to center, were not always evenly spaced in the trenches. The overall average spacing was 0.8 foot. By comparison, the average spacing for House 2 was 0.97; for House 3, 0.49; and for House 4, 0.9 foot (Tables 6-8). Postmold diameters in House 1 trenches ranged from 0.2 to 0.5 foot, with an overall average of 0.33 foot. This compares closely with those of Houses 2, 3, and 4, with average diameters of 0.28, 0.23, and 0.29 foot respectively (Tables 6-8).

From Table 2, it can be seen that the average depth of wall trench postmolds from surface level was 2.94 feet, or 2.3 feet measured from the buried "floor" surface surrounding the 100N-10E unit mark in Figure 5. This surface has been previously discussed as a possible original ground surface. Depths were not recorded for House 2 area trench postmolds, so no comparison can be made. Since the original surface level associated with House 1 is purely speculative, depth measurements have little value other than for intra-site comparisons.

The small size of the trench postmolds indicates the use of long, straight poles, closely spaced for the attachment and support of wattle and daub plaster. Large amounts of burned daub fragments covered the plowed surface of the house site before excavation began, indicating the presence of plastered walls. More detailed data on the daub will be presented in the section on house construction. The majority of trench postmolds were relatively flat on the bottom,

though a few were slightly pointed (Figure 8). However, no statistics are available on this.

Long poles set in wall trenches were commonly used in Mississippi Period house construction in the northern Yazoo Basin and elsewhere. The poles were closely spaced, forming the house walls, and sometimes bent over near the top to form the roof supports, over which thatch or bark was tied for a covering. In the case of the Wilsford example, the exact function of the entrenched wall of poles is somewhat speculative, since it apparently was beneath a platform supported by large posts, both inside and outside the trench wall enclosure. This subject will be pursued further in another section on house reconstruction.

As indicated in Figure 8, the trenches primarily contained a mixture of sandy loam and clay ranging from brown to gray in color. In the upper portions disturbed by plowing, bits of burned daub or other refuse were mixed in, but some parts were still distinguishable form the surrounding soil matrix. These trenches and their postmolds became quite discernible in the sterile level, which consisted of yellowish sandy soil. It is this lower portion of the trenches that is depicted as a pattern in Figures 4-6 and as profiles in Figure 8. A small lens of charcoal was recorded in the interior edge of the southeast trench, about 16 feet from the southwest end. Its significance is undetermined, but it was probably just refuse in the trench fill. An interesting aspect of the southwest trench was a very dark stain, evidently of organic origin, between the postmolds and the interior edge of the trench. This stain, near the bottom of the trench, extended 17.6 feet from near the northwest end and is outlined in the trench in Figures 4 and 5. The best speculation explaining its presence is that it represents the remains of wooden poles laid horizontally in the trench, against which the upright poles butted for added support. The data is meager at best and does not explain why such supporting material was not used in other trenches as well.

The second construction element recorded in House 1 was the group of interior and exterior support postmolds. Thus introduced was the unique aspect of the excavation, that which sets it off from the regular simple wall trench house patterns of the Mississippi Period. Enclosed within the square area of the House 1 trenches was an alignment of 12 rows of 12 large postmolds each, originally 144 posts altogether. Four of these were obliterated by the intrusion of Features 3 and 4 during later reconstructions (see Figures 4-6). As seen in Figure 4, a total of 170 interior support molds was recorded. In Figure 6, the 140 surviving postmolds, aligned with and most likely associated with the House 1 trenches, are depicted. One of these (Figure 5: C-4) contained charcoal which yielded a radiocarbon date (see Table 16), to be discussed in a later section. The remaining postmolds which did not fit this 12 by 12 pattern are separated out in Figure 7. It is thought that the latter were probably remnants of House 5 or 6, although no distinctly recognizable patterns were found. Some may have been repairs or supports added at weak points in House 1.

Depth measurements for eight selected examples in the House 1 pattern are given in Table 2, each preceded by the letter "P." A ninth postmold not in the pattern and four others from outside the southeast wall trench are also included in Table 2. All were located in Figure 5 and were considered representative of the remainder. The average depth below surface of the House 1 interior postmolds (P-1 through P-8) was 4.5 feet (4.0 feet below the burned floor surface), with a range of 4.2 to 4.73 feet (3.7 to 4.23 feet below the burned floor surface). Other dimensional data for the 140 patterned postmolds are furnished in Table 5. The overall average spacing between them, measured from center to center, was 2.8 feet. Their average diameter was 0.73 foot. All these posts were set in the ground vertically, with no slant indicated.

The exterior support postmolds constituted an entirely different aspect. Although they were arranged parallel to the wall trenches, indicating a definite House 1 association, they did not in all cases conform to the alignment of the interior examples. As shown in Figures 4-6, these were arranged in double rows of from 9 to 11 postmolds on each side of the house. They were in a staggered alignment, forming something of a zigzag effect. Those in the rows nearest the wall trenches seem to be more aligned with the interior rows than the remainder. In Figure 6, the exterior postmolds which seemed most likely to be associated with House 1 are set apart from the others, which are depicted in Figure 7.

The mass of postmolds outside the southeast trench (see Figure 4) presented an interpretive enigma. A variety of patterns might be discerned there, none with absolute certainty. It was at first thought that the rectangular arrangement at the center of this mass might indicate support posts for a ramp or stair-like entranceway. This hypothesis has not been discarded, even though Figure 6 shows only a staggered, double-row pattern similar to those on the other three sides. Figure 6 simply depicts a second hypothesis that postmolds were present there in the same general pattern, demonstrating the possibility that this side consisted of essentially the same structural design as the others. If this is true, then the remaining postmolds, shown in Figure 7, could have been associated with Houses 5 and 6, represented by the two large center postmolds with abutment trenches (Features 4 and 3 respectively). Some could also have been associated with other house patterns yet to be exposed. All sorts of alignments can be imagined here, but none seem to fall into a really distinct pattern. The rectangular pattern mentioned above is aligned perpendicular to and oriented toward the exact center of the southeast wall trench, making it difficult not to believe it is an integral part of the House 1 pattern.

The short wall trench segment on the southeast side may represent part of another structure, but its type has not been established. It is narrower than the House 1 trenches and no other trench was found adjoining its southwest end within the excavation limits. Whether it was a house or some other type of enclosure remains undetermined, and the project ran out of time before it could be investigated further.

It, as well as many of the large numbers of postmolds nearby, seems to be aligned parallel with the southeast wall trench of House 1.

Dimensional data for the 42 support postmolds outside the House 1 wall trenches, as depicted in Figure 6, are given in Table 5, including the diameters of postmolds opposite three of the house corners. The spacing between these features, measured from center to center, ranged from 3.9 to 8.4 feet, with an average of 6.3 feet, much greater than that of the interior supports. However, the overall diameter range of 0.5 to 1.0 foot was identical to the interior postmolds, and the average of 0.75 foot was only 0.02 foot greater than the interior one. Since none of the other houses excavated had exterior support postmolds, no intra-site comparisons can be made with the above data.

Only four examples were measured for depth. These are listed in Table 2 as P-10 through P-13, and their locations are shown outside the southeast wall trench in Figure 5. Of these, only P-11 was included in the hypothesized alignment depicted in Figure 6, even though it was 0.51 foot deeper than the average depth of the interior postmolds and 0.28 foot deeper than the upper range limit of 4.73 feet. In fact, all four exterior postmolds measured were from 0.11 to 0.29 foot deeper than the interior post limit. Their average depth from surface of 4.9 feet is 0.4 foot deeper than the average interior support. Although a half foot in depth may be negligible when a house of this size is being constructed, it also may be an indication of associations with separate structures and different periods of building. It could also indicate a deeper setting of taller posts connected in some way with an entranceway to the raised platform.

The third structural element excavated in House 1 was the large central support postmold (Feature 5). This feature was almost in the exact center of the house pattern and measured 3.2 feet in diameter at the sterile surface level. Its depth was 8.66 feet below surface, or 8.16 feet below the burned "floor" level at 100N-10E (see Figure 5 for location). It was flat on the bottom and tapered slightly to a base diameter of 1.7 feet. The soil in the pit was not as compact as the surrounding yellow sandy loam matrix and contained a mixture of midden fill, including fragments of daub, pottery, charcoal, mussel shell, and non-human bones. A radiocarbon sample (Figure 5:C-3) was recovered from this postmold and will be discussed in a later section (see Table 16). A north-south profile of Feature 5 is shown in Figure 11C, and comparative depth measurements are presented in Figure 12.

Adjoining the center postmold was a large trench (Feature 2), 8.8 feet long by 2.5 to 3.0 feet wide, containing sterile yellow sandy loam almost identical to its surrounding matrix. This presented a problem in securing a profile, since the bottom of the trench faded into the sterile matrix and was never clear. As a result, the profile shown in Figure 11C is postulated based on the angles and dimensions of the three other such abutment trenches recorded. The upper portion of the trench contained a slightly darker soil, making its outline distinct from its surroundings (see Figure 5). This and the other such trenches, all of which adjoined and sloped into center postmolds, were apparently used to slide very large posts into the holes.

Feature 2 was dug, utilized, and refilled before the interior support postholes were dug, since there were five such postmolds clearly visible intruding into its confines.

In summary, the House 1 pattern consisted of at least 186 large support postmolds set off in an arrangement coincidental with a square wall trench area, in the center of which was an even larger postmold with an abutment trench sloping into it. Certain postmold configurations adjacent to the southeast wall trench may have been an integral part of the structure. Basically, this pattern is thought to represent the foundation for a house constructed on an elevated platform supported by the 186 or so pilings. The larger center post evidently extended through this platform to become the main central support for the roof. Measured between the farthest edges of the exterior support postmolds, the minimum suggested length (along the northwest-southeast axis) of the platform would be 56.7 feet, while the minimum suggested width (along the southwest-northeast axis) would be 54.5 feet. The subject of construction of such houses and the variables involved will be discussed in more detail presently.

House 5

House 5 is represented primarily by Feature 4 (see Figure 5 for location), a large center postmold with sloping abutment trench. This, like the House 1 center post, was filled with midden debris, including fragments of daub, pottery, mussel shell, and non-human bone. A north-northwest by south-southeast profile is shown in Figure 11B, and comparative depth measurements are given in Figure 12. The flat-bottomed posthole itself, which mostly blended with its abutment trench, was approximately 2.8 to 3.1 feet in diameter at the sterile soil level, the same as its bottom measurement (2.8 feet). The angle of the trench, ca. 52° from the sterile level, was somewhat steeper than the others encountered.

Philip Phillips' site records of 1940, as previously mentioned, noted a small mound about one foot high at the House 1 area location, and he stated on the site card that it may have been a "small house mound." Figure 12 shows a difference of 1.5 feet in the depths of Features 4 and 5 (the House 1 center post). Assuming House 5 was essentially the same size as House 1, the indication here is that after the destruction of House 1, a low mound at least 1.5 feet high was built over the site and House 5 was constructed upon it, accounting for the higher elevation of the bottom of its center posthole. This could also account for the absence of a complete pattern of support postmolds and wall trenches, these having been mostly destroyed when the low mound was plowed away. Some of the support postmolds which do not conform to the House 1 alignment (see Figure 7) may be remnants of this house, although, as previously mentioned, no definite associated pattern has been worked out.

House 6

House 6 is represented by Feature 3, a center postmold and sloping abutment trench (see Figure 5 for location). Like the others, this pit was filled with midden debris. Figure 11A shows a west-southwest by east-northeast profile, and comparative depth measurements are given in Figure 12. The bottom of the postmold was flat to slightly curved and, like Feature 4, mostly blended with the abutment trench. The postmold was from 2.1 to 2.5 feet in diameter at the sterile soil level and about 2.2 feet at the lower end of the abutment trench slope. The trench was incurved, with an angle of 26° measured from sterile level directly to its point of intersection with the posthole.

In Figure 12, its depth of 3.66 feet below the burned "floor" surface may be compared with those of the other features. It is three feet shallower than Feature 4 (House 5). By the same reasoning that leads to the assumption that House 5 was built on a low mound above the House 1 site, House 6 is thought to have been constructed on an even higher (by perhaps 3 feet) elevation above the previous two, though it is not clear why a platform house would be placed on a mound. This would, again, account for the difference in center posthole depths and the absence of an obvious associated support postmold pattern, assuming House 6 was similar in construction to House 1. Some of the extraneous postmolds shown in Figure 7 may be remnants of House 6, but in view of the above hypothesis concerning successive mounds, it seems less likely than in the previous case.

Other Features

Other features with no definite association encountered at the sterile level included the lower portion of a refuse pit (Feature 1) just outside the northeast wall trench of House 1. It was two feet in diameter at the sterile level and was the same depth below the burned "floor" surface (3.66 feet) as Feature 3 (House 6 center postmold). Its location is shown in Figure 5 and comparative depth in Figure 12. How much of the upper portion was lost in the plowzone is undetermined. Contents included fragments of daub, pottery, and charcoal. No profile was recorded. It was assumed to be a refuse pit, but the possibility exists that it was another center posthole which was never used or completed, since there was no sloping abutment trench with it. A refuse pit of the dimensions given above would not be extraordinary, but the fact that its dimensions are almost identical to Feature 3 causes one to wonder.

Aside from the previously discussed wall trench section on the southeast side, the only other extraneous feature was a one-foot square postmold near the south corner. This is believed to have been associated with the recent historic tenant house on the site, perhaps being a fencepost or the like.

House 2 Area: Features of Houses 2, 3, and 4

Excavation of the House 2 area to the southwest of House 1 (see Figure 3) was the third phase of the Wilsford project. The presence of a house pattern there had been indicated by the exposure of a segment of the northwest wall trench of House 4 in one corner of test excavation unit 10N-40W (Figure 3). The excavation of this area proceeded with the plowzone removal using a tractor and scraper. Several burned posts and a small intact area of burned "floor" were recorded just beneath the surface. The remainder of the features were not clearly delineated until the plowzone was completely removed. Figure 9 shows the entire plan of this area at the sterile surface level. Like the first area, it was incorporated into the new grid system (Grid B) and levels were taken on various features using stake 30N-20W as a reference.

All the features of Houses 2-4 are shown in Figure 9, along with the locations of those of specific interest. These house patterns were somewhat smaller than House 1 and, in contrast, lacked support postmolds outside the confines of the wall trenches. Otherwise, each successive structure in the overlaid pattern was essentially like House 1, consisting of four wall trenches forming a square enclosing several rows of large support postmolds and a larger center postmold with sloping abutment trench. Apparently, no low mound was built over the ruins of any of these houses, since the trenches were nearly the same depth and were intrusive into each other. Comparisons of wall trench dimensions are given in Table 3 and trench depths in Table 4. Again, the accuracy of the trench depths is limited by plowzone destruction of their upper portions.

After the house patterns were recorded to scale, an attempt was made not only to determine their order of temporal succession, but the correct association of interior support postmolds with the various wall trenches. All but 33 interior postmolds appeared to fit an alignment pattern with one or another house trench pattern. These were color coded for reference on the master ground plan and resulted in the separation of the three houses seen in Figure 10 (Houses 2, 3, and 4 from top to bottom). Feature 1, the center postmold with sloping abutment trench, apparently was reused and was common to all three. Comparisons of postmold spacing and diameters may be seen in Tables 6, 7, and 8. For comparison with House 1, see Table 5. No postmold depths were recorded in this area, so comparative data in this category are unavailable.

As far as temporal sequence is concerned, mutual intrusion of various trenches, as shown in Figure 9, led to the conclusion that House 4 was the oldest and House 3 the most recent. This is partially substantiated by two radiocarbon dates for Houses 2 and 3 (see Table 16 and section on radiocarbon dates). At the east and south corners, trenches of Houses 2 and 3 intrude into the House 4 trench, while at the north corner the House 3 trench obliterates part of House 4. At the west and south corners, the House 3 trench intrudes into House 2. Thus the rationale for the temporal sequence mentioned above was

formulated. For more detail, these houses will be described individually.

House 2

Figure 9 shows the location of various features within the House 2 area at the sterile soil level, 1.14 feet below surface. The plan of House 2 has been delineated at the top of Figure 10. It consists of a square area formed by four wall trenches enclosing a space of approximately 788 square feet, a little more than half the size of House 1. As shown in Table 3, the wall trenches are unequal in length, ranging from 25.2 to 28.0 feet. The outside length by width average for the house, including the widths of the wall trenches, was 29.5 by 29.3 feet, an almost perfect square. The average interior length (SW x NE) and width (NW x SE) average of 28.15 by 28.0 feet (Table 3) showed an even closer correlation.

No profiles or cross-sections were made of the wall trenches since they were not outlined until after plowzone removal, when less than 1.3 feet of depth remained of the lower portions. They were basically straight-sided with flat to slightly rounded bottoms, not unlike the House 1 trenches though somewhat narrower (see Table 3). The average width was 0.61 foot, as opposed to 0.82 foot in House 1. Depth measurements shown in Table 4 indicate that some portion of the upper part of the trenches may have disappeared, since 1.88 feet would not seem to supply adequate support for poles of any length. On the other hand, this may only have served to anchor the pole bottoms, while the tops were attached securely to the platform above. In a structure where the poles were bent to form the roof supports, the trench would likely have been deeper to support the lateral pressure of the pole bottoms. The House 1 trenches were a good bit deeper, but this may be a result of the larger size of the house and slightly larger average diameter of the poles.

It might be postulated that the west corner was an entranceway to the area beneath the platform, since it has such a large gap (3 feet) between the ends of the trenches. The other such openings were north corner: 0.25 foot; east corner: 0.4 foot; and south corner: 1.1 feet, leaving the west opening the obvious choice for an entrance. This was much larger than any of the gaps in House 1 corners and is exceeded only by the 3.5 feet opening in the west corner of House 3. Comparisons between the houses in area 2 may be seen in Figures 9 and 10. Why this gap is so large is an open question, since most Mississippi period house corner openings encountered by the author in other excavations allowed not much more than sqeeze-through space.

None of the trenches had such a complete set of visible postmolds as was encountered in House 1. Only the southwest and southeast trenches had substantial groupings of adjacent postmolds where spacing measurements could be taken. As shown in Table 6, the range of spacing between adjacent postmolds in the four trenches was 0.6 to 1.5 feet, with an average of 0.97 foot, slightly further apart than the House 1 average (0.8 foot). Of the 49 trench postmolds recorded in House 2, their diameters ranged from 0.2 to 0.45 foot, with an average

of 0.28 foot. This average is nearly the same as for House 4 (0.29 foot), but perceptibly larger than in House 3 (0.23 foot) and smaller than in House 1 (0.33 foot). No trench postmold depths were recorded, so comparative data are not available. As in House 1, the soil in the trenches consisted primarily of a mixture of dark sandy loam and clay, with the addition of some midden refuse in the upper portions nearest to and including the plowzone.

When removal of the plowzone began, six burned posts were uncovered along the outer edge of the northeast trench at a depth of 0.18 foot below surface, which is only 0.1 foot deeper than the burned "floor" surface nearby. These posts are the only features shown in Figure 9 above the sterile soil level. Although they did not continue as charcoal down into the wall trench, their alignment with the House 2 trench shows they were undoubtedly remnants of associated wall posts. They are therefore included in Figures 9 and 10, even though the postmolds were indistinguishable in the underlying sterile soil. Their diameters ranged from 0.2 to 0.25 foot, corresponding to the minimum range of postmold diameters in the House 2 trenches. One radiocarbon date (Table 16, no. 5) came from one of the postmolds just north of these six (Figure 9:C-5) in the same trench (see section on radiocarbon dates).

Speculations regarding the function of the wall trenches are the same as those previously proposed for House 1. The small size of the burned posts and postmolds indicate the use of long poles, closely spaced, for the attachment of cane mats and wattle and daub wall covering. This wall apparently enclosed and protected the area beneath the house platform occupied by the support posts.

As shown in Figure 10, there were 49 interior support postmolds which could be distinguished in a pattern. This originally consisted of eight rows of eight postmolds each, a total of 64, aligned parallel to the wall trenches. The 15 missing from the pattern could not be distinguished from the yellowish sterile sandy loam beneath the plow zone. Those recorded were brown to gray or black and darker than their matrix. Figure 10 shows that more postmolds were delineated in House 2 than in either of the other two superimposed houses. The reason for this is undetermined, since this house was apparently temporally sandwiched between the other two.

Table 6 gives the average and range of spacing between the support postmolds in two directions, measured from center to center. The overall range is 2.8 to 3.7 feet, with an average of 3.2 feet, which incidentally is the average for either direction. This is a slightly wider spacing than was found in House 1 (2.8 feet). The postmolds ranged from 0.35 to 0.95 foot in diameter, with an average of 0.59 foot, 0.14 foot smaller than the average for House 1 supports (0.73 foot), but larger than the averages for Houses 3 and 4. No depths were recorded.

There were two clusters of postmolds, one near the north corner, the other near the east (see Figure 9). Each group appeared to be interconnected within a dark soil area which could have been rodent burrows, tree stumps, or amorphous pits. The postmolds, however, were of a darker color and were discernible within these features. The

westernmost post in the north cluster was determined to be within the House 2 pattern, while the northernmost of the south cluster was in the House 3 pattern. None of the remainder of either group corresponded to any house alignment.

As in House 1, the third structural element of House 2 was an elongate, sloping trench in the center, oriented north northwest by south southeast, the same as the house wall trenches (Figures 9 and 10: Feature 1). Near its northern end and in the direction of slope was a large, very distinct postmold, 1.5 feet in diameter, filled with small daub fragments, charcoal, and ash. A profile with the same lengthwise orientation is shown in Figure 11D, illustrating both the postmold and abutment trench. The angle of the trench slope, measured from the sterile level to its juncture with the postmold, was 33°, steeper than Feature 3 (Figure 11A: 16°) but not as steep as Feature 4 (Figure 11B: 52°) in the House 1 area.

The center postmold was flat-bottomed and extended 7.46 feet below the present surface. Figure 12 shows comparisons between this depth and those of other center post features on the site. The approximate centers of Houses 2 and 3 are almost directly in the middle of this postmold. The center of House 4 is three feet to the south southeast, in the middle of the abutment trench. Since House 4 was supposed to be the initial construction, its center post may have been obliterated by the later trench. If it was congruent, this is the only one of the four houses with visible wall trenches to have its center post off-center.

In the southeast edge of the center postmold, at a depth of 1.39 feet below the surface, was an almost complete Nodena Red and White vessel. Its relative position in Feature 1 is shown in the profile in Figure 11D. The lip portion of the bottle neck was scraped away by the dirt scraper as the plowzone was being removed and was never recovered. A complete description of the vessel is given in the section on ceramic artifacts, and it is depicted full size in Figure 16. The reason for its burial is undetermined, but it may have been placed in the posthole deliberately, perhaps for some ceremonial or religious reason. It would not seem reasonable to bury it as trash, since it was unbroken, although it could have fallen down the posthole accidentally or as part of the rubble which filled it following the destruction of the final structure.

House 3

House 3 was determined to be the final structure among the superimposed patterns, according to the wall trench inter-intrusion previously discussed. It was constructed in an identical manner to House 2, and its configuration is delineated in Figures 9 and 10 (center). The various features, intermingled with those of the other two houses, are located in Figure 9 and shown separated from the rest in Figure 10. In both cases, the house plan is shown at the sterile soil level, 1.14 feet below surface. The house remains consist of four wall trenches, in a square plan, enclosing an area of

approximately 651 square feet, determined from the inside length (SW x NE) by width (NW x SE) averages shown in Table 3. In effect, it is thus slightly less than half the size of the area enclosed within the trenches of House 1. The exterior length by width average for the house, including trench widths, was 26.72 by 26.74 feet, an almost perfect square. The house was from 2.6 to 2.8 feet smaller in outside length and width than House 2.

As in the case of House 2, no cross-sections or profiles were made of the wall trenches. They were straight-sided with flat to slightly rounded bottoms. As shown in Table 3, the overall average width of 0.6 foot was almost identical to the House 2 trenches, with a similar width range of 0.45 to 0.85 foot. The trenches were a little deeper than those of Houses 2 and 4, as indicated in Table 4. The reason for this is unclear, but the fact that House 3 was the last construction in the sequence may have been a contributory cause. This is once again mere speculation, since any stratified data pertaining to this question has been destroyed in the plowzone.

As with the other two houses, the large gap of 3.5 feet at the west corner may have been an entranceway to the area enclosed by the walls and beneath the platform. The other corners had much smaller openings between the ends of the wall trenches. The north corner opening was 1.1 feet, the east was 0.25 foot, and the south was 0.8 foot, hardly wide enough for anyone to squeeze through. The gap at the west corner was the largest encountered in any of the trench patterns at the site, though the house outline itself was next to the smallest. Comparisons with the other houses are shown in Figures 9 and 10. The reason for such a large opening is again unknown.

Except for the southwest trench and one end of the southeast one, very few postmolds were visible in the wall trenches. This is reflected in the data presented in Table 7, where the northeast and northwest trenches are omitted. There were only 27 adjacent postmolds in the two trenches which supplied data on spacing, with a total of 33 altogether. In Table 7, the overall spacing range was 0.3 to 0.65 foot, with an average of 0.49 foot. These were much more closely spaced than in any of the other houses. Of the 33 postmolds recorded in the trenches of House 3, their diameters ranged from 0.2 to 0.55 foot, with an overall average of 0.23 foot, slightly smaller than in any of the other houses. Trench postmold depths are unavailable. The trench soil was like that of House 2, darker than its sterile matrix, with the visible postmolds even darker. This soil contained some mixture of midden debris in the upper levels, but was mostly sandy loam and clay.

Functionally, these wall trenches were not unlike those in the rest of the houses, presumably holding the bases of wall poles to which were attached cane mats and wattle and daub. Why the poles were slightly smaller and more closely spaced is unknown. Perhaps it was merely a result of availability. The walls apparently enclosed the sub-platform area with its support posts.

Figure 10, center, shows the 27 interior support postmolds separated from the rest for the House 3 alignment. Like House 2, this pattern originally consisted of eight rows containing eight posts

each, a total of 64 aligned parallel to the trenches. Those missing were indistinguishable in the sterile matrix, the recorded ones being darker. It would seem that if this were the last house built, with slightly deeper wall trenches, then more support postmolds would have shown up.

The spacing range and average of support postmolds, measured center to center in two directions, are given in Table 7. The overall range is 2.1 to 3.35 feet, with an average of 2.8 feet, somewhat closer together than in House 2 (3.2 feet), but identical to the spacing in House 1. Postmold diameters ranged from 0.4 to 0.9 foot, with an overall average of 0.57 foot. This is almost the same as in House 2 (.059 foot), but smaller than the average for House 1 (0.73 foot) and House 4 (0.63 foot). No depths were recorded. As mentioned previously, one of these support postmolds was in a cluster of three near the east corner of the house pattern. Also, a radiocarbon date was obtained from charcoal in one of these support postmolds (see Figure 9 for location). This is discussed in the section on such dates and is given in Table 16.

The third structural element was the center postmold and sloping abutment trench (Feature 1) shown in Figures 9 and 10. This feature has been described. Since House 3 is apparently the last structure on the spot, the large center postmold was directly related to it. The exact center of the house is in the middle of the south half of this postmold. It is also most likely that this is the house with which the Nodena bottle is associated.

House 4

House 4, which is thought to be the oldest in the House 2 area sequence, was essentially the same type structure as the others, with the same directional orientation. Its pattern and feature locations are shown with Houses 2 and 3 in Figure 9 and separately at the bottom of Figure 10, in both cases at the sterile soil level, 1.14 feet below the surface. The house remains consisted of four wall trenches arranged in a square, enclosing an area of approximately 243 square feet. The average interior length and width are identical (23.3 feet), as shown in Table 3. The exterior length and width averages, which include trench widths, are 24.7 by 24.6 feet, forming another nearly perfect square. This constitutes the smallest structure recorded, about two feet shorter in average length/width than House 3, nearly five feet shorter than House 2, and between 1/5 and 1/6 the size of the House 1 trench pattern.

As with the adjacent house patterns, no profiles or cross-sections were made of the wall trenches. The structure of the House 4 trenches was essentially the same as the others previously described. The overall average trench width of 0.68 foot (Table 3), as well as the width range of 0.5 to 0.85 foot, showed slightly wider trenches than in Houses 2 and 3. Trench depth was identical to that of House 2 and somewhat shallower than House 3 (Table 4).

As in Houses 2 and 3, the gap of 1.5 feet in the west corner constituted the largest opening into the area enclosed by the

trenches, though it was only about half as wide as in the other two houses. Comparisons may be made in Figures 9 and 10. The openings at the other three corners were partially obliterated by intrusive wall trenches of the other houses, but all are estimated to be less than one foot, especially at the south and east corners. The north corner gap could have been as much as 1.5 feet wide, but it appears unlikely.

As in the other two houses, visible postmolds were sparse in most of the trenches. Wall trench postmold data for House 4 are presented in Table 8. Of the total 48 recorded postmolds in the four trenches, only 39 were adjacent, thus supplying data on spacing. The overall spacing range was 0.4 to 1.3 feet, with an average of 0.9 foot. This is nearly the same as in House 2 (Table 6), but greater than in House 3 (Table 7). Taking all 48 recorded postmolds into account, their diameters ranged from 0.2 to 0.5 foot, with an overall average of 0.29 foot. Again, this is almost identical to that of House 2, but with a somewhat larger average diameter than in House 3. Postmold depths are unavailable, but in the case of all these houses the postmolds were probably about the same depth as the trenches (see Table 4).

The House 4 trench soil was darker than its sterile yellowish matrix, with darker postmolds as in the other houses. It was also a sandy loam with some clay, along with a mixture of midden debris in the upper levels. The trenches were functionally identical to those previously described in the other houses, holding up wall poles which enclosed the subplatform area.

At the bottom of Figure 10 is a diagram of the House 4 pattern showing the placement of its associated interior support postmolds. There were only 12 postmolds in the group shown in Figure 9 that were definitely aligned with the House 4 trenches. As in Houses 2 and 3, there were likely eight rows of eight posts each in the original configuration. Spacing ranges and averages are shown in Table 8. The overall spacing range is 2.05 to 2.4 feet, with an average of 2.27 feet, about the same average as in House 3, but about a foot closer together than in House 2. This is a result of placing the same number of posts inside a much smaller house area. Postmold diameters ranged from 0.3 to 0.85 foot, with an average of 0.63 foot. This is larger than in both Houses 2 and 3, and only slightly smaller than in House 1, which seems strange since this is the smallest house.

The third structural element of House 4, the center postmold and abutment trench, is held in common with the other two houses. This is shown as Feature 1 in Figure 9 and has been previously described. The exact center of House 4 is approximately midway between the center postmold and the south end of the abutment trench. This means that its original center post may have been in that location, rather than where the center postmold is now shown, and was obliterated by later trench digging activity. However, no evidence of any previous postmold was found at the bottom of the abutment trench, so it is possible the center post was slightly off-center.

Miscellaneous Features

In the House 2 area (Figure 9) there were several anomalous features, including 33 support-type postmolds which did not conform to the pattern alignments of the three houses. Only one of these postmolds was noted outside the confines of the wall trenches, on the northwest side. There was also one just inside the north corner of House 2, one between the northwest trenches of Houses 2 and 3, three between the northwest trenches of Houses 3 and 4, one at the east end of the northwest trench of House 4 and a small one just outside the south end of its northeast trench, four in the small pit-like feature at the north corner of House 4, two in the oblong pit-like feature inside the east corner, and 19 scattered through the interior. There were several others not counted above which partly intruded into some of the wall trenches and thus could have been either wall poles or intrusive support posts.

The pit-like features in the north and east corners (Figure 9) consisted of soil that was darker than and not as compact as the sterile matrix, but in which postmolds showed up quite clearly. These were somewhat amorphous and may have been the result of resettling of individual posts, along with some possible rodent burrowing. Only one post in each of these two features seemed to fit into a house post alignment. Neither was recorded in profile.

Two other extraneous features were noted just outside the center portion of the House 4 southeast trench. The one on the left in Figure 9 appeared to be the end of another wall trench, with two postmolds inside about the same size as those in the other trenches. This was not traced out any further than about 1.5 feet and there was no apparent trench adjoining it at a right angle to the east or west, as would have been expected. Lack of time prevented additional investigation of this or the second feature.

The second feature, to the right in Figure 9, consisted of three small postmolds, the first half intruding into the House 4 trench, and all interconnected by a narrow, curved trench. This did not appear anything like a wall trench, and the last two postmolds in it were smaller than usual. It also extended into the unexcavated area to the south and was not investigated further. Both features described above remain unexplained.

BURNED DAUB AND CLAY

In the following sections, the processes and techniques of house construction at Wilsford will be discussed. Judging from the large quantity of burned daub and clay fragments on the surface prior to excavation, wattle and daub were integral parts of the structures in question. A heavy surface concentration in the House 1 area practically outlined the confines of the house pattern itself. As previously stated, the plow zone was removed mechanically, without benefit of large-scale daub recovery, resulting in the unfortunate loss of the majority of this mass. In the excavation process, however, samples of various types of burned clay and daub were recovered, primarily from the center postmolds of the two house areas. A relatively detailed analysis of a sample of the daub was carried out in an attempt to shed some light on the mysteries of structural composition of the unusual platform houses. In this study, several distinctly different types of daub were noted, indicating a variety of functions in the construction process.

Samples of burned clay and daub were recovered from certain portions of the House 1 and House 2 areas, as well as from the two small test units in the turnrow in between (see Figure 3). Most consisted of small amounts of daub broken into small pieces, along with a few pieces of burned earth, perhaps floor or hearth fragments. Since these contained essentially the same types as the larger samples, they were recorded, but not considered in the overall daub data analysis. These samples were recovered primarily from the plow zone in the original test units of the two house areas and the turnrow. Other small samples came from portions of the southeast trench of House 2, the northeast and southeast trenches of House 3, the northeast trench of House 4, and an interior support postmold (P-9) in the House 1 area (see Figure 5). In the house areas, daub samples recovered from the plowzone in the test units were primarily in the vicinity of center postmolds and their abutment trenches. Of the 23 samples recorded, only three were of sufficient quantity and contained examples of large enough size to render data analysis useful. These came from the center postmolds (the portion below the plowzone) of House 1 (Feature 5), House 5 (Feature 4), and the House 2 area (Feature 1). All subsequent data presented here were derived from analysis of these three collections.

From this analysis emerged several distinct types of daub, each being subdivided into various subtypes based on repetitively observed characteristics. The types are not only morphologically categorized, but are thought to represent distinctly separate functions or areas of use in structural technology. Table 9 presents an outline of these typological categories, and the following discussions of each will explain the functional theories associated with them. Types A and B were the most prevalent. From the three features, there were 110 specimens of Type A and 118 specimens of Type B used for data analysis, not including the subtypes A-6, B-5, and B-6.

Daub Type A

Type A is the form commonly found associated with Mississippi period houses and is what generally comes to mind when anyone mentions the term "daub." It exhibits impressions on one face of woven, split cane mats, the cane usually having been quartered. In most all cases, the warp elements of the mat were touching or very closely spaced, while the weft elements were few and widely spaced, usually in sets of two or three. Fragments of this daub vary greatly in thickness, which may be a result of its height on a wall. Presumably the lower portions of a daub wall would be thicker for better support of the upper portions. Examples ranged in size from as small as a quarter to as large as two fists.

In the analysis of Type A from the three Wilsford features, several morphological criteria were considered. In practically all cases, the cut grass temper mixed with the daub ran parallel or generally in the same direction through the clay. When the angle of this grass was compared with that of the warp elements, the result was that in the majority of cases (ca. 48% average), the warp was diagonal to the grass. In almost as many cases, the warp was either diagonal and perpendicular (ca. 25% average) or diagonal and parallel (ca. 21% average) to the grass, while in a very few cases it was either perpendicular (ca. 2.5% average) or parallel (ca. 5.5% average). This data criterion was designed to shed some light on the preparation of daub and its application to a house wall. What is shown is that the daub was generally applied in a consistent manner with reference to the direction of grass temper in the clay--that is, most of the time with the cut grass lying diagonally in relation to the elements of the cane mat on the wall. This technique may have added strength to the wall by giving it a laminated effect, but replicative testing would be required to determine if this were true and to what extent. According to Boudreau, in his discussion of adobe preparation (1980:15), the addition of straw or grass does not strengthen the clay, but rather serves to dry it and cause it to shrink as one unit with less cracking. It is thus referred to here as daub temper. The fact that it was cut into short pieces was probably for ease in mixing.

The second criterion for Type A analysis was thickness, which showed fairly consistent results. In Feature 5 (House 1), thickness ranged from 2.89 to 6.6 cm, with an average of 4.68 cm. In Feature 4 (House 5), it ranged from 3.16 to 5.61 cm, with an average of 4.13 cm, while in Feature 1 (House 2 area), the range was 2.1 to 6.52 cm, with an average of 4.07 cm. These results are relatively alike, the overall range of 2.1 to 6.6 cm giving an average of 4.29 cm (0.14 foot).

Another characteristic of this type was thought to support the theory that the daub may have been thicker near the base of the wall. In the examples from the three features, 72.5% exhibited grass imprints, mostly in haphazard arrangement, on the surface opposite that with the cane mat imprints (Table 9, subtypes A-1 and A-2). This could have been the result of roof thatch overhang being pressed against the upper house wall daub, or if only the sub-platform walls

had daub, then thatch overhang from the house walls. If this were the case, however, the imprints should be more uniform and parallel to each other, and the thicker daub on the lower part of the wall should not exhibit any such prints. This, of course, is assuming that Type A daub was applied to the exterior of the wall and that the roof or house walls were thatched with grass bundles.

However, several factors do not seem to correlate here. Getting back to daub thickness, of those examples that were thinner than the average (42.9%), about 70% had the grass imprints on the surface opposite the mats, and of those thicker than average, about 78% had such imprints. Thus there is little difference in these percentages and no evidence that thicker daub was beneath the reach of a thatch overhang. Also, as mentioned previously, the imprint arrangement is too haphazard for neatly bundled thatch. One other factor which leaves doubt about the thatch overhang theory is that in House 1 there was apparently a porch extending out further than the sub-platform walls, and any overhang from above the platform would not even have come close to those walls. All this simply means that the grass imprints on Type A daub apparently originated from a source other than thatch bundles. Daub could still have been thicker at the lower wall areas, but there is no corroborating evidence here to prove it.

Morphologically, this third criterion of analysis consisted of five basic surface categories. Most commonly observed was a relatively smooth, flattened surface with grass leaf imprints randomly criss-crossing (Table 9, subtype A-1b). Occasionally the imprints are parallel, running diagonally to the mat warp opposite (Table 9, subtype A-1a). The next most common surface was rough, uneven, lumpy in texture, and usually had no grass imprints (Table 9, subtype A-3), or in some cases only a very few. There was also a minority group with a rough, yet fairly even surface with deeply impressed grass leaf and stem imprints (Table 9, subtype A-2), and another small group with a smooth, even surface, but no imprints whatever (Table 9, subtype A-4). What exactly these variations mean is not clear. These surfaces are too rough to have been trodden, ruling out the possibility that this daub was part of a prepared floor of clay in the platform. There is no physical evidence to indicate whether they were interior or exterior walls, or if such daub walls were constructed only beneath the platform, where the wall trenches indicate them, or on the actual house walls above the platform as well. Comparative ethnohistorical data will be presented later.

Other morphological criteria for Type A daub consisted of the positioning of cane mat elements and the type of weave indicated. There was much more consistency here. In all cases, the cane used was quartered; the warp elements were close together, even touching most of the time, and their interior surfaces faced down into the clay; and the weft elements were separated into groups of two or three, at varying distances apart, depending on the size and stiffness of the cane being used, and always with the exterior surface facing down into the clay. As for weave, warp elements usually consisted of either two over/two under or three over/three under. One example showed four in a group. Weft elements appear to be either double or triple. The

reason for the interior surfaces of warp and weft elements always facing each other is probably because they are the flatter cut surfaces and adhere to each other by friction better than would the slick exteriors. The mats would thus hold together better during manufacture.

It seems fairly evident that this material was wall daub, that it was at least used on the sub-platform poles-in-wall-trench structures indicated in both house areas, and that a great amount of heat was generated in the house burnings, indicating that a large portion of each house was constructed of wood, cane, grass, or bark. Most examples were brick-hard, and a few were over-fired to the extent that they were like cinders, full of bubbles and light in weight. What is not clear is whether Type A was used on the interior or exterior of the walls; why its presumably outer surface (opposite the mat impressed surface) is imprinted with small pieces of grass, as opposed to the deliberately smoothed Type B; and in which direction the cane mats were oriented, horizontal or vertical. There is one other daub type (Table 9, subtype C-2) with cane imprints that may indicate that the mats were attached to the walls with weft in the horizontal position. This will be discussed later with that daub type. There are also some archaeological and ethnohistorical accounts, to be discussed presently in the following section, which may also help clarify some of these problems.

Daub Type B

The second type of daub (Table 9, Type B), of which there appeared to be about as much as Type A, consisted of essentially the same cut grass and clay mix as in Type A (except subtype B-6), but completely lacked any woven cane mat imprints. Instead, the surface was deliberately smoothed by hand, and in the case of subtypes B-1 and B-2, covered with a thin layer or film of clay with a heavy content of very fine sand. This film was applied by hand, smoothed across the surface like a plaster, leaving a somewhat striated appearance. It is generally about 1 to 1.5 mm thick, but is smoothed onto an uneven surface so that depressions may have a layer up to about 8 mm thick, while raised areas may have a film less than 1 mm thick. The color after firing is generally reddish-orange, although a few examples were black to dark gray.

As with Type A, the clay used in Type B was very wet when applied, ranging from sticky to almost runny in viscosity, and thus leaving small surfaces throughout the fissures and exposed portions of the daub exhibiting a "puddled" effect. The surface opposite the smooth film on Type B specimens was extremely rough and uneven, either broken away (Table 9, subtype B-1) or with an undefined surface showing the "puddled" areas mentioned above (Table 9, subtype B-2). The latter type appears to be large handfuls of clay mashed onto a wall with no interior surface to press it against, leaving the rough face unchanged and the exterior smoothed over. The same is true of those examples with no sandy film applied, but rather just smoothed over by hand after being applied to the wall (Table 9, subtypes B-3

and B-4). These fragments differed from the B-2 fragments only in that they lacked the sandy film.

The general surface appearance of Type B is smooth but somewhat uneven, fluctuating from slightly concave to slightly convex, but quite often flat. Those surfaces with sandy film applied (72%) tend to be quite smooth, but otherwise (28%) may exhibit a bumpy, slightly coarse texture. Thickness, for the most part, was not measurable since the majority of the examples (96.6%) had no clearly defined opposite surface. The four measurable specimens were 10 cm (Feature 5), 4.74 cm (Feature 4), 1.21 and 3.31 cm (Feature 1) thick. These represent the approximate range of thickness of the broken or indeterminate fragments as well, the larger pieces generally falling into the thicker portion of this range. Of the total specimens studied, 95.7% showed no grass imprints whatsoever on the smoothed surface. Those that did had very few, appearing to be accidental, as opposed to the grass impressed exterior face of Type A daub.

Another feature found on subtypes B-1 and B-3 (as well as B-5, which apparently are fragments of the other subtypes) are large, individual cane imprints inside the daub, beneath and parallel to the smooth surface. These are not parts of woven mats, but appear to be either split or whole. The edges of the imprints do not indicate any terminus, since all but one show the interior of the cane facing outward, away from the daub mass. Thus, they could have been mostly whole, or at least half-split canes, with portions of the daub and imprint broken away. No completely enclosed imprint was noted in the sample. The visible imprint samples ranged from quartered to halved. Subtype B-6 also had cane imprints, but will be treated separately.

Specimens with such cane imprints made up 13.5% of all Type B daub (except B-5) from the three features. There were eight specimens each from Features 4 and 5, but none from Feature 1, although there were several examples of subtype B-5 from all features, as well as a few that were questionable as to whether or not they belonged in this category. The analysis sample, excluding subtypes B-5 and B-6, included 16 specimens with 20 imprints on them. In 65% of the imprints, the exterior surface of the cane was facing the smoothed daub surface. In only one case (5%) was this completely reversed, and in only one other did the interior of the cane face the surface at a 45° angle. In two examples (10%) the exterior faced the surface at 45°, and in three specimens (15%) the cane lay at a 90° angle on its side. All 20 imprints were parallel to the smooth surface of the daub.

The depth of these imprints below the surface ranged from 1.15 to 3.23 cm, with an average of 2.13 cm, slightly less than an inch. Outside diameters of the cane ranged from ca. 0.9 to 1.6 cm, with an average of 1.19 cm (about half an inch), somewhat larger than most of the cane used in the mats of Type A. In those specimens containing cut grass temper (70%), most of the cane imprints ran diagonal and/or perpendicular to the grass direction, much as the Type A mat imprints did.

In the three cases where two or three imprints were recorded on a single specimen, the imprints were parallel, with the exception of one

diagonal. It might be suggested that since the wall to which this type of daub was attached had no backing, such as the cane mats on Type A, long cane stringers were tied horizontally to the wall poles at intervals, similar to lath for plaster, to help support the daub; hence the presence of individual imprints on Type B, whereas none are found on Type A with its mats for support. It would seem that if this were the case, there would be a few examples with wall post imprints on the back and perhaps impressions of cane and post attachments. The only specimens approaching this are of subtype C-2, to be discussed presently. However, they are all three-sided, indicating use only at the end of the wall, perhaps at an entranceway, or against a rafter at the top of a wall.

As for subtype B-5, which might more rightfully be called a pseudo-subtype, it consists of those fragments of subtypes B-1 through B-4 which have interior cane imprints, but the smoothed surface is broken away. Only three specimens were recovered from Feature 5 (House 1), two from Feature 1 (House 2 area), and none from Feature 4 (House 5). No morphological features appeared on these that were significantly different from those previously described, and no further comments are thus deemed necessary.

Subtype B-6 was given as a separate category because the daub specimens lacked cut grass temper, the texture of the clay was much softer, and the cane imprints were much closer to the surface. In other respects, these might have been considered subtypes B-1 or B-3. Perhaps they were functionally indistinguishable, but there were noticeable differences as mentioned above. Only five small examples were recovered, all from Feature 1 (House 2 area). Two resemble subtype B-1 in that they have a thin, sandy film applied to the surface, while the remainder lack the film. Surfaces are smooth but uneven. The cane imprints range from 0.22 to 1.17 cm below the smoothed surface, shallower than in the B-1 through B-4 specimens. Each example had two parallel imprints, though two of the ten imprints may have been grass stems. Estimated cane diameters ranged from 0.5 to 1.5 cm, about the same as the B-1 and B-3 specimens. It is uncertain whether all these canes were whole or split, though some appear to have been split.

Comparisons of Types A and B

The suggestion that Type A daub was applied to the exterior walls, against cane mats, is supported both archaeologically and ethnohistorically. One archaeological example can be found in Smith's (1969:61) description of a circular wall trench structure with foot-thick daub at the base of the walls at the Murdock Mounds, Cahokia, Illinois. There, the outer walls were covered with mats, the bottoms of which were tucked into the outer side of the wall trench, whereupon the daub was applied. One other brief description may be found in a report on the Banks Village Site in Arkansas (Perino 1966). Perino (1966:19) suggests two alternative wall covering methods. Wall posts were set about a foot apart, either individually or in trenches. To these were attached horizontal split cane laths four to six inches

apart, through which vertical strips were woven in groups of three, forming a woven wall. The alternative was to prefabricate woven mats and then attach them to the wall posts. Mud was then plastered over this wall, forming the interior mat impressions of Type A daub. This is generally the structural concept imparted by most archaeological reports on Mississippi period houses. Perino also mentions that some daub is covered with grass impressions, suggesting to him that roof thatching took place before plastering. This theory was found inconclusive at Wilsford.

The foregoing are two examples of the more detailed archaeological descriptions of daub use noted by the author. No exhaustive search was made of the literature, but the sources available for this study tend to illustrate the paucity of detailed data on this aspect of house construction in the present literature. Most reports simply mention that daub was found or wattle and daub construction existed at a site and let it go at that, or, for various reasons, fail to mention or describe it at all.

Ethnohistorically, there are several French descriptions given of Natchez house construction, with some particular mentions of wall covering. Charlevoix (Swanton 1911:59) describes some of these "cabins" as being "built of clay mixed with cut straw...and which were covered within and without with very thin mats. That of the great chief is very neatly plastered on the inside." This latter statement seems to coincide with the suggestion that Type B daub, with its smooth sandy film, was restricted to the interior, although the presence of mats on the interior does not fit the Wilsford specimens. Du Pratz (Swanton 1911:59) goes into more detail. To the wall poles, which were not over 15 inches apart, canes were fastened horizontally about 8 inches apart. Then daub ("earth mortar" mixed with Spanish moss) was applied to a thickness of about 4 inches, and these mud walls were then covered with cane mats, both inside and outside. The cabin was then covered with grass bundles held in place by another set of cane mats, cane splints, and vines. This description does not coincide with the archaeological data mentioned previously, where daub was applied to cane mats on the wall. It also would leave cane mat imprints on both opposing faces of the daub, the like of which is not found at Wilsford and is unfamiliar to this author.

Neitzel (1965) does not describe any daub from his 1962 excavation at the Fatherland Site. In his more recent treatise (Neitzel 1983), he does mention recovery of daub in association with house patterns, but never describes the morphology of the specimens. This is surprising, since he spends a great deal of time in both publications detailing other aspects of house arrangement, alignment, and placement of features in comparison to ethnohistorical accounts.

Penicaut's description of the Natchez temple (Swanton 1911:159) essentially coincides with Du Pratz's observations of house construction. Horizontal cane laths were attached about 6 inches apart; mud was used to fill in the spaces and construct a solid wall, which was then covered with straw held in place by more laths, and the entire wall was then covered with 6 x 10 foot split cane mats. However, Du Pratz (Swanton 1911:161-163), in describing the temple,

does not mention the grass and cane mats, stating simply that the "wall is a rough mud wall entirely smooth outside and a little sunken between every (two) posts inside in such a way that it is not more than 9 inches thick in the middle." Dumont (Swanton 1911:161) agrees with Penicaut that the temple was covered with cane mats. Le Petit's description (Swanton 1911:269) mentions that the roof "is covered with three rows of mats, placed one upon the other, to prevent the rain from injuring the masonry," presumably meaning exposed mud walls beneath the roof overhang.

There are apparently a number of discrepancies between the various French accounts of Natchez house construction and the archaeological record, as pointed out in detail by Neitzel (1965:64-78). Regardless of this, all accounts mentioned seem to concur in the general use of cane mats, cane wall lath, daub, and grass thatch in the construction of house walls, though the relative positioning of these four elements may vary, or certain ones may not be used at all. Wattle and daub construction was apparently quite universal throughout the Mississippi Valley from late prehistoric through early historic times. One other ethnohistoric source mentions Tunica houses. Gravier describes their houses as "lathed with canes and plastered with mud from bottom to top, within and without, with a good covering of straw" (Swanton 1911:315). Whether or not this straw was restricted to the roof or extended down the walls is not explained. The foregoing descriptions have been mentioned here for their comparative value in determining the relationship of various daub types to house or platform wall structures at Wilsford.

As for the Wilsford specimens, the exact placement of the two major daub types with relation to the platform houses remains inconclusive. It appears evident from wall trenches that there were subplatform walls in both house areas. It seems reasonable to conclude from the small size and close arrangement of the poles within these trenches that the walls were designed for wattle and daub construction, as apparently occurred on most Mississippi Period houses (without platforms) recorded in the vicinity. Regardless of how the house itself was built above the platform, it is reasonable to assume that much, if not all, of the daub at Wilsford originated on these subplatform walls.

The next problem is the difference between Types A and B. It is suggested that they represent exterior and interior wall daub, one (A) pressed against cane mats attached to the wall, while the other (B) may have been pressed between cane laths and plastered over for smoothness. The French accounts mention pressing daub between laths for support, and Charlevoix's reference to the "neatly plastered" interior of the chief's house (Swanton 1911:59) supports the idea that Type B may have been interior daub. It does not explain, however, why the Wilsford people would have gone to the trouble to smooth over the interior of a subplatform wall where, presumably, nobody would be living among the crowded support posts to take notice of it. On the other hand, Type B could have been an exterior daub, since Boudreau (1980) indicates that plastering adobe walls is commonly practiced to protect them from rain. Perhaps there was not enough roof or platform

overhang above the wall to ward off a blowing rain, hence the exterior application of the sandy film for protection. In either case, Type B daub seems to have been applied to some wall with no backing and perhaps only horizontal cane laths for support.

There is one argument, previously mentioned, against Type B's constituting wall daub at all, at least on a wall consisting of poles. The wall poles of the House 1 trench averaged 0.8 foot apart and were sometimes closer together than that. If cane laths were tied to them and daub pressed between it and around the poles, pole imprints should have been common on Type B daub. Only a handful of anything resembling this was found (Table 9, subtype C-2), suggesting that Type B daub was not actually used with this type wall. This is again hypothetical, and tends to confuse the issue even more, but cannot be overlooked. The entire daub sample was comparatively small, and statistical results would be inconclusive regarding the above hypothesis.

Considering Type A, with mat impressions and a distinct opposite surface, there appear to be several alternatives. This, too, could have been either external or internal, subplatform or house, wall covering. Most likely it was applied, in either case, to cane mats fastened to the wall poles, and left with a relatively even but unsmoothed surface. The incidence of grass imprints on the external surface suggests four possibilities: that handfuls of grass were used in part to pack the daub smoothly onto the wall while keeping it from sticking to the hands, that fragments of grass temper accidentally stuck to it, that portions of the upper wall were impressed before drying by thatch overhang from above, or that the wall was covered with thatch after daub application, much like the Natchez houses. This latter suggestion seems unreasonable, since cane mats for thatch attachment would have left imprints on the exterior, and lacking such mats, the thatch would have imprinted more of the daub than was indicated, and the imprints would have been more parallel. Also the daub would have had to be still quite damp to retain such distinct grass imprints. From this and the fact that these imprints were mostly short and haphazardly arranged, the first two possibilities, or a combination of them, seems more logical.

There remains little indication as to which was exterior and which was interior, or whether one was on the subplatform wall while the other constituted the house wall above. These possibilities can only remain speculative until further excavation perchance reveals more positive data. No such excavations are presently planned.

Daub Type C

Most specimens of daub Type C were heavily tempered with cut grass, their consistency being similar or identical to the previous types. The major differences, and hence the typological distinction, are in their unusual shapes and functional interpretations.

Subtype C-1 (Table 9) consists of fragments of two distinct types of daub objects found in the center post features. The first (a) was recovered from Feature 4 (House 5) and consisted of seven fragments of

a narrow, elongate, rectangular clay object with thin flanges extending from both sides. A lateral view of the central portion, before flange fragments were glued to it, is depicted in Figure 13A. A cross-section, with part of one flange added, is shown in Figure 13B. Both ends are broken away, so neither its original length nor its complete configuration are known. It is 16 cm long, 3.27 cm thick in the center, and its flanges range from 1.36 to 1.39 cm thick. The width of the raised central portion ranges from 3.44 to 3.58 cm. The surface of this central ridge and its adjacent flanges is smoothed and coated with a thin sandy film identical to that of subtypes B-1 and B-2. The opposite side is flattened and rough, with no film, and what appears to be stripped cypress bark or post impressions running lengthwise, leaving a heavily striated surface. If this was the result of the daub's being pressed against a post stripped of bark, then the post must likewise have been flattened naturally on that side.

Three fragments of one flange fit onto one broken edge of the object (Figure 13B, left side of cross-section). The opposite flange is missing. As seen in the cross-section, the left edge of the flange curves slightly upward before being broken off. This indicates a possible attachment point for another thickened, raised part like the one depicted, suggesting a series of parallel ridges separated by grooves ca. 5 cm (about 2 inches) wide. There were three other small flange fragments in the feature that were probably part of the object, but do not fit onto the existing edges. Functional interpretation of this form remains conjectural, with no suggestions being offered at present. Nothing was found anywhere else in the excavation which could be construed as part of such an object.

The second object (b) in the C-1 subtype (Table 9) consisted of five fragments from Feature 4 (House 5) and three from Feature 5 (House 1). Three of these from each feature fit together to form a section of a curved object shown in cross-section in Figure 13C. It is of the same structural consistency as most of the other daub from the site, with heavy tempering of cut grass. The exterior side (Figure 13C, left side), top, and bottom are smoothed and coated with the same sandy film as described for Type B-1. The interior side (Figure 13C, right side) is striated with bark or post impressions running perpendicular to the curvature, similar in appearance to those described for the previous object. The hypothesized original configuration of the object was a large ring of daub, apparently encircling a post approximately 40 cm (1.3 feet) in diameter, judging from the inside curve of the reconstructed fragments.

As depicted in Figure 13C, the top side sloped in a curve away from the post, while the bottom was more flattened. There is no indication of which was actually the top or bottom. This may have depended somewhat on where the object was positioned. Cut grass temper ran horizontally with the curve, around the post. Interior striations suggest cypress, either stripped or unstripped of bark, as the post. Charred wood from Feature 5 and from the Feature 4 abutment trench was identified as cypress (see section on biophysical environment and Table 11). Dimensions of the restored section of this "post collar," as it will henceforth be referred to, are: 12.72 cm

(0.41 foot) wide, top to bottom; 3.47 to 3.57 cm (0.112 to 0.115 foot) thick; and 22 cm (0.7 foot) long. The estimated circumference of the 40 cm diameter post is 125.7 cm (ca. 4 feet).

Interpretation of the function of this object does not seem as difficult as with the previously described object. It has been suggested that it was a daub ring or collar fitting around a large post. Functionally, this might be interpreted to mean the collar was placed around the center post to prevent the ascent of rodents, although this seems pointless unless all the support posts likewise had collars. Perhaps it was used as a plug to close the hole in the platform through which the center post extended into the upper house. Except for the fact that the exterior, exposed area of the object was completely smoothed with sandy film, this hypothesis seems logical, considering the object's morphology and the current interpretation of the house and platform structure. Although no definite conclusion can be reached pertaining to function, it is reasonably certain that the ring fit around a post. The diameters of the bottoms of Features 4 and 5 were 2.8 and 1.7 feet respectively. To fit the smaller of these holes, the center post of House 1 would have been slightly smaller than the posthole. The 1.3 feet diameter suggested for the post with the collar would have fit very well, although the structural adequacy of a center post this small in such a large house construction might be questionable. The largest recorded interior or exterior support postmold in House 1 was only one foot in diameter, so those may be eliminated as possibilities.

The question of which house it was associated with arises when the proveniences of the six fragments which fit together are considered. Since House 5 is postulated as being later than House 1, it is possible that when House 1 burned, the collar fell to the ground and broke. Some fragments remained in the hole where the upper part of the center post burned away, while other fragments scattered and were used for rubble fill around the center post of the succeeding House 5. If, on the other hand, the collar were part of the later House 5, it is doubtful that any of the object fragments would have been in the House 1 posthole, since it was already covered by a low mantle of earth before construction of House 5 was completed.

There was also one other fragment of such a daub collar found in Feature 1, the center postmold of the House 2 area. It is morphologically and structurally identical to those from Features 4 and 5, although the interior surface is broken away, preventing an estimation of post diameter. It is 4 cm thick, slightly more than the others. It does not fit onto any of the other fragments, suggesting, along with its provenience, that a similar collar was applied to at least one of the center posts in the House 2 area succession as well. Since there was apparently no mound built there to cover the remains of each preceding house, and the center posthole and trench were used over again at each rebuilding, it is difficult to say with which house this object was associated.

Subtype C-2 (Table 9) consists of daub fragments that are roughly three-sided in horizontal cross-section. One side is always distinguished by its concave, striated surface, the result of being

pressed against a post that was either stripped of its bark or had bark with a vertically fibrous appearance. The second side is generally mashed by hand, leaving small concave prints in it, or it may have a rough, puddled appearance, as mentioned previously in the case of Type B daub. In one specimen, the only one from Feature 4 (House 6), this side had a smoothed sandy film applied, similar to that of subtypes B-1 and B-2. The third side is always broken, where it detached from the rest of the daub wall. An example from Feature 1 (House 2 area) is sketched in Figure 13D, with the post-impressed side facing the viewer.

The total sample from the site consisted of one from Feature 5 (House 1), one from Feature 4 (House 5), and six from Feature 1 (House 2 area). Half of these (the one from Feature 5 and three of those from Feature 1) exhibited quarter-split cane imprints on the post-impressed surface. These imprints always showed the interior surface of the cane facing the post and were always perpendicular to the post. The single example from Feature 5 had two such imprints separated by a space of 5.13 cm (0.17 foot). This suggests that the cane imprints represent the ends of weft elements of split-cane mats where they were wrapped around wall posts at the end of a wall to secure the mats, which suggests that weft elements of the mats ran horizontally, or parallel to the ground. The imprints were also of the same general size as the weft imprints of daub Type A, and on two of the examples from Feature 1 there were triple imprints (see Figure 13D), likewise often seen on Type A weft impressions. The hypothesis that this daub was placed at the end of the wall, perhaps at a doorway, covering part of the weft ties, is supported by the three-sided shape, with only one side broken away from the major portion of the wall.

The second side, which is generally uneven and shows imprints of parts of hands or fingers from mashing the daub, usually joins the post-impressed side at about a 30° to 45° angle, indicating the post was not completely covered with daub. This side also may show areas with a puddled surface, lacking any imprints at all. Except for the example from Feature 4, with the smooth sandy film, all exhibit uneven, relatively rough surfaces.

Cut grass temper is present in all examples, but in very small to moderate quantity. Only the sample from Feature 5 showed heavy tempering. In most cases, this material crosses through the daub at various angles, but occasionally runs parallel to the post impression (vertical). This may indicate some difference with the general direction tempering material runs in Type A daub, but the small sample size of subtype C-2 and small amount of tempering in it is of little consequence and adds no substantive structural data to the overall picture.

Regarding the posts against which this daub was impressed, their estimated diameters ranged from 12 cm (0.39 foot) to 24 cm (0.78 foot) on the samples from Features 5 and 1. The example from Feature 4 had an uneven surface and could not be measured accurately. It has been surmised that this daub was applied to wall posts. However, in the case of the single specimen from Feature 5, the post diameter of ca.

16 cm (0.52 foot), estimated from the imprint curvature, is 0.02 foot larger than the largest wall trench postmold in House 1, but barely falls into the lower range of diameters for interior and exterior support postmolds (see Table 5). This is so close to the terminus of each range that it does not necessarily negate its use on wall poles. No ideas have been conceived as to how it could have been used on support posts.

As for the six examples from Feature 1 (House 2 area), three of them fall only within the interior support postmold diameter ranges for the various house patterns, while the other three fall within both wall postmold and support postmold ranges (see Tables 6-8). Again, most are borderline, since the wall post and support post ranges overlap somewhat. As a result, it is difficult to use estimated post diameters as reliable data for determining exactly where this type of daub was used. It could have been placed at the top of a wall, attached to horizontal cross-members, and could have had no contact with wall poles at all. A larger sample with larger fragments might have been useful in solving some of these problems, as is also the case with the other types of daub previously described.

Miscellaneous Daub

The final daub grouping (Table 9, D), which cannot really be considered a type, consists of miscellaneous fragments that do not quite fit into any larger category, many of them being unique in the Wilsford collection. They will therefore be described briefly on an individual basis. The functional relationship of some examples to construction processes may be unclear, but they may be interpreted in the light of some future study.

One daub fragment was found in Feature 5 (House 1) that had on one flat surface the imprint of three broad, parallel-veined leaves, similar in appearance to the leaf of a cat-tail (Typhaceae) or possibly a sedge (Cyperaceae). Their widths are 1.68 cm, 0.86 cm, and 0.95 cm. All are parallel, with one sloping slightly downward from the others, a possible indication of weaving, although no weft element was present on the small visible surface. They also ran perpendicular to the cut grass temper in the daub. A very small opposite surface shows a grass leaf imprint 0.66 cm wide, but it may be tempering material since it runs parallel to the rest of the temper. No functional hypothesis can be offered since the morphological data is inconclusive.

In the House 2 area, Feature 1 yielded six fragments which were grouped in this category. There were two amorphous pieces that were simply hand-wadded chunks of clay with no tempering, probably unmixed daub that was never applied to a wall, and one large fragment containing a small amount of grass temper and having a very rough surface on one side. Also in this feature were three fragments that closely resemble subtype B-3, with interior cane imprints. These were not included in the B-3 description because in two of them the cane was lying perpendicular to the flattened surface, and the third had a finger or hand mashed, lumpy, very uneven surface, somewhat like subtype C-2.

The first fragment had an unfilmed, uneven, bumpy surface. There were four parallel quarter-split cane imprints at a 45° angle to and intersecting with the surface. They were perpendicular to the grass temper inside and measured ca. 1.0 and .08 cm in diameter. The second fragment was similar, with a rough, uneven, unfilmed surface. It had one large quartered cane imprint ca. 1.5 cm in diameter and, parallel but separated from it, a triple imprint that appeared to be a half-split cane that had been crushed. As before, the cane imprints were lying at a 45° angle to the surface and intersected it. They were also perpendicular to the grass temper. The third object differed in that the surface was hand mashed and very uneven, and the three parallel split cane imprints were parallel to it. The imprints were a minimum of 0.6 cm below this surface. These may have been functionally similar to the Type B specimens with interior cane imprints.

Finally, in this category were all the amorphous daub fragments with all surfaces broken away and therefore nondescript. The sample included 60 pieces from Feature 5, 36 from Feature 4, and 91 from Feature 1.

One other category might be termed non-daub (Table 9), that is burned clay with a smooth surface, but lacking temper and evidence of preparation. This consists primarily of burned chunks of dirt floor or hearth areas, probably natural soil surfaces underneath or around the houses. The sample contained 12 pieces from Feature 5, 8 from Feature 4, and 9 from Feature 1. No puddling or clay preparation was evident, all appearing as natural chunks of soil. Also included here, from Feature 1, is one dirt dauber nest fragment, but there is no imprint to indicate to what it was attached.

Daub Temper

The analysis of the various daub types showed that most of it consisted of clay mixed with cut grass, herein referred to as "temper" or "tempering material" for lack of a better term. As previously mentioned, according to Boudreau (1980:15), the addition of straw or grass serves to make clay dry and shrink as one unit with less cracking, rather than to strengthen it. This material must be cut in about four-inch or shorter lengths for ease in mixing, which appears to be generally the case with Wilsford daub. It would seem logical, however, that such fibers would indeed add some undetermined amount of strength to the daub, at least until they decomposed.

The Wilsford daub temper consisted primarily of grass leaves, apparently cut rather than pulled by the roots, since no roots were noticed. This also appears to have been done at a time when no inflorescence had formed, since neither these nor seeds were observed. Whether the grass was dry or green at the time is not known, although on the one hand, green grass would not have helped much to dry the clay, while on the other hand, dry grass should have included the remains of at least some inflorescence or seed-bearing part. The lack of these parts makes identification of the grass quite difficult, and it was not attempted in this analysis.

Aside from the primary grass temper, there were occasional inclusions of small fragments of sticks or small cane and tree leaves, which also could not be identified due to fragmentation. Rarely, there were parts of acorn shells and, in one case, the imprint of a cocklebur, all of which were noted in daub Type B. It is suggested that certain environmental data could be obtained through analysis of such imprints by a plant taxonomist. Since some types of grasses flower in the spring and early summer, it might be surmised, for instance, that the dry grass, devoid of any remnants of inflorescence, was cut in the fall or winter. This would account also for the presence of dry leaf fragments, acorns, and ripe cockleburs on the ground which became mixed with the grass, perhaps inadvertently.

All the grass stems were rounded or oval in cross-section, ranging up to 7.6 mm in diameter, with most appearing to be around the 0.5 to 4.0 mm range. Some were as tiny as a hair and were probably fibers rather than stems. No three-cornered sedge stems were observed in any of the samples. Grass leaves ranged up to 10.1 mm wide, with most in the 1 to 3 mm range. In most cases, the cut grass leaves and stems run generally parallel to each other. This material may run parallel, diagonal, or perpendicular to the cane mat warp elements, as indicated previously in daub Type A. This indicates that the grass was mixed in handfuls with the clay, rather than being mixed in large quantities. This probably kept the clay from drying too rapidly before it was applied to the walls.

Observations

In conclusion, several ideas come to mind concerning the daub. First, a total daub recovery, which was impossible at the time Wilsford was excavated, might have afforded some idea as to the amount of wall area covered and thus a conclusion as to whether the subplatform walls were the only ones plastered with daub. It also might have hinted at the actual height of the walls according to the area covered. As it now stands, all this is somewhat conjectural.

Second, even with a total recovery of burned daub, there would have been the possibility that some daub may not have been fired and that it subsequently disintegrated in the soil or was pulverized in the plow zone.

Third, the excess weight of clay daub may have prevented its use on house walls above the platform, causing too much structural stress for safety. In looking back at the house patterns, especially House 1 in Figure 4, it will be noted that there is a relatively large gap between the interior and exterior support posts where the wall trenches are situated. This leaves little support for the weight of a daub house wall above the subplatform walls, unless the house walls were directly above a row of interior support posts. This will be discussed more in the following section on house reconstruction.

As it stands, from the foregoing daub analysis few substantial conclusions can be made. Most of the data, as has been pointed out, is suggestive of one thing or another, hence the various alternative construction plans to be discussed presently.

HOUSE RECONSTRUCTION

From the foregoing descriptions of excavated house patterns and features and from the analysis of daub, several deductions can be made regarding the construction of houses at Wilsford. The most obvious are that the subsurface features indicate platforms supported by numerous large posts, this area being surrounded on four sides by walls of closely spaced poles set in trenches, and that in the center of each house pattern is a very large, deep pit with a wide trench sloping into one side. From this data, several reasonable assumptions can be made.

Platform

First, considering the platform, the large, evenly and geometrically spaced postmolds, especially in House 1, show that the platform was designed to support an undetermined but quite large amount of weight. It is surmised that this weight consisted of a house of some type. In House 1 there were support posts both inside and outside the confines of the wall trenches, indicating an extension of the platform beyond the subplatform wall, a feature not present in the Houses 2-4 sequence. However, as was alluded to in the daub discussion, the gap between the interior and exterior posts, where the wall trench lies, offers little support for any great weight above it. Thus it cannot be assumed that house walls were constructed directly above the subplatform walls, and there is no conclusive evidence of the actual size of the house itself.

There is the possibility that the subplatform wall poles extended through and above the platform to form the house walls. It is known from various archaeological and ethnohistorical reports that houses were occasionally constructed by setting poles in the ground and bending them together at the top to form the walls and roof. One argument against the use of this practice at Wilsford might lie in the height of the platform and the possible great length required for such poles (only ranging from 0.2 to 0.5 foot in diameter in House 1) to reach from the ground, through the platform, and to the center peak of the roof. The height of the Wilsford platforms has not been determined, though this might be possible, given enough data on subsurface features and the remains of structural components.

In all the literature searched, there is only one source in which the construction of such houses and the height of the platform is alluded to. In the Varner translation of Garcilaso's description of the DeSoto expedition (Varner and Varner 1951:554-555), the village of Aminoya was inundated in 1543 by flooding of the Mississippi River. Garcilaso states:

> Because of similar inundations of the Great River and other rivers we have mentioned in this history, the Indians attempt to settle where there are hills;

> and where there are no hills, they build them by hand, especially for the dwelling places of their lords, both to give grandeur to the houses and to prevent their being submerged. The individual structures are placed eighteen to twenty-four feet off the ground on thick beams which serve as pillars. From one of these pillars to another, they cross additional beams, on which they build a wooden floor, and then above this floor they raise a dwelling with corridors on each of its four sides. Here they store their food and other valuables, and seek refuge from the great floods (Varner and Varner 1951).

Several small inconsistencies present themselves in the above statement. First, it is not really clear whether the indicated elevation of "eighteen to twenty-four feet" is the height of the platform upon which the house rests or that of the hand-built hill (mound) erected for the structure. In the latter case, the platform height is still unknown and the passage is of little value in determining the height of the Wilsford houses. In other respects, the above brief description of the structure itself fits the Wilsford patterns quite closely. The fact that Garcilaso's narrative as translated by Shipp (1881:457-458) and quoted in Phillips, Ford, and Griffin (1951) does not mention the elevation can be dismissed, since Shipp was translating from the condensed French version of Garcilaso by Richelet. In the Biedma and Ranjel translations by Buckingham Smith (Bourne 1904:189), the house structures are not described, but there is the mention that during the flood, "rafts were made of trees, upon which were placed many boughs, whereon the horses stood; and in the houses were like arrangements; yet, even this not proving sufficient, the people ascended into the lofts; and when they went out of the houses it was in canoes...." This does not sound like platform houses unless this is implied by the term "lofts", and is even less helpful than Garcilaso.

The postmolds found in the excavation give little evidence of platform height. The exact depth of these features is not known, although the House 1 trenches are estimated to have been at least between 1.8 and 3.42 feet deep (see Table 4). House 1 support postmolds are estimated to have been from 3.7 to 4.52 feet deep (see Table 2). Assuming the support posts were buried from 1/4 to 1/3 their length, the platform could have been anywhere between ca. 7.4 and 13.6 feet high. Garcilaso's testimony might lead one to believe that this height range was almost doubled at Aminoya. His minimal height of 18 feet is used, with some reluctance, in the reconstruction diagrams of Figures 14 and 15, to be discussed presently.

Whatever the height, it is assumed that the platform was constructed essentially as Garcilaso describes. The support posts or "pillars" are raised, and cross-beams are attached, upon which a floor of some type is laid, probably long poles, perhaps even hewn flat or covered with mats. If this superstructure were securely fastened and

braced, then the platform could have been 18 to 24 feet high, even without setting the support posts more deeply in the ground.

Subplatform Walls

The greatest problem in reconstruction theory here is the structural inter-relationship between the platform, the subplatform walls, and the assumed house above it. Concerning the wall, its position beneath the platform is assured, but its construction is another matter. It was obviously built of poles set closely spaced in trenches. The questions arise: how and to what extent was it covered; did it reach all the way up to the platform or was it merely a semi-enclosure; did the poles reach through the platform to form the house walls or its walls and roof skeleton; and what was its function if the living or activity area was above in the house?

Its covering has been discussed to some extent in the section on daub analysis. Somewhere on these houses there was daub plaster. Since the subplatform walls consist of closely-spaced poles, a design commonly encountered in other Mississippi Period house sites with obvious wall daub, it has been assumed that at least a portion of this wall was covered with daub. Whether there was daub both inside and outside, or if the daub was covered with grass held in place by cane mats, as suggested previously for some Natchez houses, remains conjectural. To what extent daub was used is also conjectural. It seems unlikely that such a wall could be successfully plastered with mud, no more than 0.3 foot thick, to a height of 18 to 24 feet, and be expected to remain intact beyond the time it takes the daub to dry and crack, unless it were held up by another layer of grass and mats. The alternative may be a lower platform, and thus less wall to cover, or only a partially daub-covered wall.

Since there were no other support posts near enough for the wall poles to be attached to, it seems logical that they would at least extend up to, if not through, the platform for support, especially if they were expected to hold up the weight of the daub. The trenches of House 1 were nearly 37 feet long, meaning an 18 foot high wall would have been covered by around 660 square feet of daub, grass, and cane on each side of the structure. Judging from the dry weight of a typical piece of burned daub of average thickness (ca. 0.14 foot), this covering for one side of one wall would have weighed in the neighborhood 2/5 ton (ca. 1.1 pounds per square foot), even more in the case of wet daub. This weight would essentially double if both the interior and exterior were covered (ca. 3.2 tons for the entire subplatform wall). This might have been possible with enough bracing, but it seems more likely, again, that either the daub was not applied to such a height, or the platform was lower.

It also seems unlikely that if the subplatform poles supported a plastering of daub, they would continue far enough through the platform to be used for house roof rafters. The bending of the poles above the platform would possibly have exerted enough lateral pressure below the platform to bow the poles outward somewhat, cracking the daub in the process or making it difficult to apply it to the wall.

Also, there was no indication in the trenches of any such lateral pressure of the poles. Regardless of the daub, had the platform been at least 18 feet high, as suggested by Garcilaso, the House 1 wall poles would have had to have been nearly 47 feet long, allowing for a four foot house wall and 25 foot rafters, or no house wall and 27 foot rafters, just to reach to the top of a center post 20 feet above the platform. The 20 foot height is arbitrary, but allows for a pitch steep enough for a thatch or bark covering to shed water properly.

Thus it seems unlikely that the trench poles extended above the platform to form any part of the house, because hickory, oak, or elm (see Table 11) poles averaging only 0.3 foot in diameter probably would not have grown to sufficient length (45 feet minimum). It also appears that the house roof extends over the exterior support posts, beyond the limits of the subplatform walls. Whatever their height or however they were covered, it is hypothesized that the subplatform walls were separate and distinct from the supra-platform house.

Their function is also conjectural. Perhaps they were built for various reasons, such as to enclose the subplatform area for storage, similar to a root cellar; for defensive purposes; to help insulate the house floor above; or, in the case of religious or ceremonial use, to afford a secluded area for participant preparations. It does not seem likely that the area was used for dwelling because of the closely spaced support posts and cramped conditions.

Supra-platform House

Regarding the supra-platform house, it is only assumed that there was in fact a house there. This assumption is based on the description of similar houses by Garcilaso (Varner and Varner 1951:554-555), the lack of ethnohistoric accounts of such platforms without any structures atop them, and the presence of a large center postmold, thought to have held the central roof support for the house. The postmold patterns indicated square platforms, suggesting square houses as well. Garcilaso stated that the Aminoya houses had "four sides" (Varner and Varner 1951:554-555). The presence of a large center post suggests that the rafters converged at the center and were attached to this main roof support, forming a four-sided, pyramidal roof. From this data, the remaining details of construction and form can only be surmised.

There are a number of variations which could be considered, some of which are presented in Figures 14 and 15. Those styles depicted only represent the major variations possible, although such things as platform elevation, angle and height of roof, and wall covering material could have been different, and any combination of the various construction elements shown could have been employed. In this respect, the variables of House 2, such as thatched walls, shown in Figure 15, could also have applied to House 1, in Figure 14. In both figures, the platform height is 18 feet, conforming to the minimum elevation reported by Garcilaso (Varner and Varner 1951) and assumed to refer to the platform heights at the Aminoya village. Support posts and wall trench poles are positioned according to the excavated

house patterns of House 1 (Figures 4-6) and House 2 (Figures 9-10). The entranceway is hypothesized in House 1 from postmold patterns outside the southeast wall trench (Figure 4), but is indefinite and will be discussed in more detail presently. The center post height is shown as 28 feet above the platform, the minimum for the intersecting rafters to form a 45° angle with the platform in House 1 (Figure 14A and B). According to Reynolds (1979:33), 45° is the minimal functional pitch for a thatched roof, and as such, affords the minimum roof area to be covered.

The height of the platform, probably not as much as 18 feet at Wilsford, has been discussed with regard to the construction of subplatform daub walls. The greatest remaining enigma is the supra-platform house structure. Considering the large size of the house, the evident requirements for large and heavy framework materials, and the apparent great weight of the finished product, the house structure shown in Figure 14A and B appears to be the simplest and most lightweight. Only House 1 will be utilized in the following comparisons and will be regarded as that depicted in Figure 14A and B, regardless of the platform height and subplatform wall structure. The platform, according to postmold patterns, would have had a minimum width of 54.5 feet and minimum length of 56.7 feet. The latter larger figure will be used in estimating lengths and heights of structural elements and surface areas in the following comparisons.

In an attempt to reconstruct graphically the house style just mentioned, a number of comparative inferences have been drawn from a replicative Iron Age house reconstruction in Hampshire, England. This in no way implies any cultural connection or inter-relationship of any kind. It is simply one of the few such studies of similar thatched-roof houses from which comparative data can be extracted. In the Butser experiment (Reynolds 1979), a variety of Iron Age house styles were constructed, based on excavated postmold patterns at several sites. The one selected here for comparative purposes was a circular house (all were circular) with cone-shaped roof representative of a house pattern excavated at Pimperne, in Dorset. Although the surmised Wilsford house was square, the comparative data of significance lay not in the shape, but in the construction techniques and structural elements employed. Data for the following comparisons were all derived from Reynolds' report (1979).

The circular Pimperne house, which was constructed on the ground (no platform), had an outside diameter of 42 feet. As previously discussed, the presence of a supra-platform house wall at Wilsford is debatable, and this comparison assumes no such wall existed. Thus, the Pimperne house wall construction techniques will be omitted here. The House 1 platform measured a minimum length of 56.7 feet and, as stated above, this is the figure used in the following reconstruction. The construction of the Pimperne house roof is of basic concern here. There was an outer ring of short, small posts which formed the wall and an inner ring of larger posts, spaced further apart, "surmounted by a continuous lintel" about 9.8 feet high, upon which the roof rafters rested (Reynolds 1979:97). The roof was conical, but there was no center support post like those at Wilsford, although another

similarly constructed round house, nearly 20 feet in diameter, patterned after excavations at Maiden Castle in Dorset, did have a central post, but only a single outer ring of wall posts (Reynolds 1979:30).

The six major rafters of the Pimperne house, each about 36 feet long and weighing ca. 330 pounds, were raised and supported in position by leaning them against the lintels of the inner post circle, with their ends butted into shallow pits outside the house wall. The "critical point of stress" at which the poles rested on the lintels was about 1/3 their length from the basal end (Reynolds 1979:99). They were then secured together at the roof peak in the center, and other minor rafters and bracing were added in the superstructure. The length (ca. 36 feet) and slant height (ca. 33.6 feet) of the rafters afforded the minimal functional roof pitch (45°) for a thatched roof. The apex of the roof was slightly over 26 feet high.

With the foregoing description in mind, the interpretation of Wilsford House 1, as depicted in Figure 14A and B, is inferred. Assuming the platform to have been 56.7 feet across and that the pyramidal roof intersected the edge of the platform, the center post would have to have been 28 feet high above the platform to create the minimal roof pitch of 45°. This is the height shown in Figure 14. In this case, the corner rafters would have to be slightly over 48 feet long, while one at the center edge of the platform would be about 40 feet long. The total length of the center post, assuming that the platform was 18 feet high, would have been slightly over 54 feet, with nearly 1/6 of its length in the ground.

Presumably, there would have been a minimum of eight major rafters, one at each corner and one on each side, as depicted in Figure 14B, plus an undetermined number of minor ones. As with the rafters in the Pimperne house, these would have required interior support. It is suggested that some of the first row of interior support posts, just inside the wall trench (see Figure 6), extended through the platform to serve in this capacity, as shown in Figure 14B. Lintels atop these posts would have supported the rafters at essentially a "critical point of stress." The average distance between the assumed platform edge and the first line of interior support posts is 12.3 feet (11.7 to 13.2 feet). Thus a rafter at the center of one side would have rested on the supporting lintel about 3/7 of the rafter's length from the platform edge. At the corners, the average distance from the center of the center postmold to each corner interior support postmold is 21.97 feet (20.8 to 23.2 feet). If these corner posts also extended through the platform, they would intersect the corner rafters about 21.2 feet up the rafter from the corner, or ca. 4/9 the length of the rafter. In both cases above, the interior support posts and their lintels would act as a fulcrum placed at a sufficient position along the rafter length to make it well balanced and more easily raised into position. This is similar in effect to the Pimperne construction technique, except for the added presence of the extra center support post, a feature possibly employed in the Maiden Castle house previously mentioned. This fulcrum, or stress point, is closer to the midpoint of the Wilsford rafters than

that of the Pimperne rafters (1/3 their length), which probably can be explained by their great length, size, and weight dispersal. The center post was likely very necessary because of the greater size and weight of the roof. Considering the positioning of rafters on support posts, lintels, and their further attachment to a center post, it appears that the roof weight would have been fairly evenly distributed upon its supports, and the roof would thus be quite substantial.

Following the raising and bracing of the rafters, closely spaced sheathing, probably of cane, to which the roof covering was attached, was secured atop the rafters. In the Pimperne house split hazel rods were used for sheathing and were lashed to the rafters at 25 cm (ca. 0.8 foot) intervals (Reynolds 1979:99). Although cypress bark was possible, it seems most likely that grass thatch was used at Wilsford. It is mentioned often in ethnohistorical reports, and evidences of it have been found in some Mississippi Period archaeological sites in the northern Yazoo Basin. One example was the house remains at the Bobo site (Potts and Brookes 1981:3). Thatch may have been tied directly to the sheathing in overlapping bundles, as well as having been held down with cane matting, as suggested by Du Pratz (Swanton 1911:59) for the Natchez houses. The basic result is depicted in Figure 14A and B.

Considering the dimensions of this roof, a general estimate of weight can be made by comparing it to the thatched Pimperne house roof. The minimum area covered by the Wilsford House 1 roof, as shown, is 1,129.7 square feet per face, or 4,518.99 square feet for the entire roof. The Pimperne roof area totaled 1,309 square feet, and its dry weight was estimated at over 10 metric tons (11.023 tons equivalent) (Reynolds 1979:101). Two thirds of this weight was thatch, the rest being rafters and other framework. This averages 16.8 pounds per square foot. Applied to Wilsford House 1, and assuming essentially the same proportions and weights of structural elements used, the roof would have weighed nearly 38 tons. This weight perhaps was reduced somewhat by the use of cane for sheathing, rather than wooden splints, as was the case with the Pimperne house. The addition of house walls, as in Figure 14C and D, may have reduced the roof area and thus a portion of its weight, but if these walls were covered with daub, the weight on the platform would have been significantly increased (over 650 pounds for a four foot wall). Wet daub would have weighed considerably more than the dry weight of burned daub of average thickness previously given (ca. 1.1 pounds per square foot).

The great weight of such a roof, plus the weight of the platform timbers, could have exerted a pressure of as much as 50 tons (an arbitrary estimate), perhaps more, on the supporting posts. This weight, generally distributed among the 186 support posts indicated in Figure 6, would have exerted a pressure of ca. 538 pounds per post (or ca. 73 pounds per square foot of platform floor space). Considering their size (0.73 foot diameter average), the fact that they were set well into the ground vertically, and that they were probably sturdy cypress, there would have been no problem with this relatively small weight. Another indication of the strength and sturdiness of the house is the resistance-strength index of the posts. In an

engineering study of Hopewell house remains, Marshall (1969:168) utilized this index to determine the resistance of house wall posts to horizontal forces. He considered an index (the product of a post diameter squared times its depth in the ground, all in inches) of 1,000 or more of sufficient strength to withstand horizontal wind forces. In Wilsford House 1, the index for the center post is 40,750, while that for the interior support posts (average) is 3,683, indicating a quite substantial structure.

This, again, indicates that the most expedient structural style, at least for the supra-platform house, is something on the order of Figure 14A and B, with no house walls. This seems to agree in some respects with Garcilaso's description of the Aminoya dwelling built on a platform "with corridors on each of its four sides" for food storage and refuge from floods (Varner and Varner 1951:555). The "corridors" could well have been the low areas near the platform edge where the roof was too low for walking upright. Of course, "corridors" could also have been shed-like additions along each side of a walled house, or an enclosed porch like the open ones in Figure 14C and D. This does not explain, however, the lack of exterior support posts associated with Houses 2-4.

Entranceway

At first appearance, the dense formation of postmolds just outside the center of the southeast wall trench of House 1 (see Figure 4) seems to indicate supports for some kind of entranceway, perhaps an ascending ramp or stairway leading up to the platform. Such a formation was not evident in the House 2 area, although there were some small postmolds and the apparent end of a wall trench outside the southeast trenches (see Figure 9). A ladder-like stairway is depicted in this position in Figure 14A-D, with three different versions of access interpretation. However, this does not necessarily indicate a preference for such a stairway. Besides the squared pattern of postmolds, there were other extraneous postmolds adjacent, and many do not seem to fall into any definite pattern (see Figure 7). Depending on how these are viewed, a variety of patterns and interpretations can be observed.

It might also be noted that the squared pattern, which is in alignment with the other House 1 posts and trenches, falls within the confines of the exterior support postmolds, lending credence to the version of recessed entranceways depicted in Figure 14B and C. Beyond this, the postmold pattern remains another enigma. It could have supported a ramp, perhaps styled to resemble the one leading up the nearby pyramidal mound. Or it could represent some portion of another structure, completely separate from House 1. There is even one suggestion which cannot be overlooked, that is, some of the posts in this position might have been taller and flanked both sides of the entranceway, supporting some type of ceremonial insignia. Some of these were, in fact, set slightly deeper than the interior support postmolds (see Table 2, support posts P-10 through P-13). The above suggestion is not unreasonable, considering that the Natchez temple,

as described by Du Pratz (Swanton 1911:161-163), had three great carved wooden birds on its roof. Du Pratz also mentions that such temples often had two wooden posts at the doorway which supported a swinging door and were adorned with human heads or representations thereof (Swanton 1911:167). Some similar form of door posts may have been present at Wilsford.

One fact that adds weight to the argument that this was an entranceway to House 1 and perhaps the side of the house encountering the most activity is that it faces directly onto the plaza in front of the mound (see Figure 2). If the structure were ceremonial in nature, or the dwelling of a priest or the like, this seems like the logical direction for it to face. This might also explain the lack of evidence for such an entranceway in the House 2 area, these houses being perhaps non-ceremonial in function or, for some other reason, of less importance. This may also account for their smaller size.

Summary

In summary, from the foregoing data and interpretations, the suggested type of construction thought most likely for Wilsford House 1 (and probably the subsequent Houses 5 and 6) is somewhat like that shown in Figure 14A and B. The platform may have been much lower to accommodate a fully covered daub wall. In any case, the subplatform wall seems the most likely to have been the one upon which the excavated daub originated. This wall was recessed beneath the platform "porch", supported by the exterior posts. Inside the wall confines were 144 support posts upon which the platform rested and a large central support post which terminated at the apex of the roof and supported the rafters. There was probably no supra-platform house wall, the thatched roof extending all the way to the platform edge. The entranceway, of whatever construction, was likely midway along the southeastern side of the house, facing the plaza.

It also seems likely that the houses in the House 2 area were of similar construction, but lacked the extended "porch" outside the confines of the subplatform wall position. Though Figure 15 suggests two alternate styles, both with daub on the house walls, it remains clear that the Figure 14A and B style appears safer, simpler, and perhaps sturdier. It is thus suggested that Houses 2-4 were also constructed with the roof style of Figure 14A and B.

An architectural engineer might disagree on some points of this analysis, but such would be welcome since this author pretends no expertise in that field. Much of the foregoing has been intuitive at best, considering the data available. As indicated before, there are a number of structural interpretations which might in reality apply to these houses other than those discussed or shown in Figures 14 and 15. On the evidence at hand, none can be completely discounted. Admittedly, the Figure 14A and B style supported by the author may not have been entirely the true form, but is believed to be at least a close approximation.

From this approximation and the presence of daub concentrations and land topography, as indicated in Figure 2, the suggested

intra-site structural pattern shown in Figure 16 has been derived by the author. Of course there may have been, and probably were, other structures, and the site may even have been palisaded, but no excavations have been done to substantiate this. What is shown is simply an artist's concept of the minimal village layout suggested by surface and excavated features. The structure atop the mound is purely conjectural, and those depicted in front of and to the left of the plaza are merely inferred from those excavated, their positions being indicated by surface daub scatters. All are shown with daub only on house walls because the drawing was completed before the decision to support the Figure 14A and B style was made and before the foregoing analysis was completed.

BIOPHYSICAL ENVIRONMENT

It is not the intent of this discussion to delve into the intricacies of ecological or biosocial interaction theory, but rather to attempt a basic description of at least a part of the prehistoric biophysical environment of the local area, based on the meager physical evidence acquired from the site excavation and from the limited references available on the subject. Most of the data is neither definitive nor conclusive, and such conclusions as may derive from it will necessarily be partially conjectural. Following a perusal of Lewis' (1974) in-depth discussion of ecological concepts and theoretical approaches to the subject, it seemed appropriate in the case of the Wilsford Site at least to assemble the available data to see what useful interpretations, if any, might result.

Lewis, following Clarke (1968: Figure 16), recognizes five components making up the biophysical environment: "flora, fauna, climate, geology, and the force exerted by other sociocultural systems" (1974:2). All this, added to the cultural environment, makes up the "total environment of a cultural system" (1974:2). The five elements listed above constitute the descriptive content of the following discussion, but are necessarily limited to the data at hand. No pretense at reconstructing the "total environment" is offered, since the data base is limited both areally and quantitatively, and since the local "cultural system" is not completely known. Also, any study of such a "total environment," to include both "natural elements and other cultures" (Trigger 1971:329), could easily mushroom into a dissertation encompassing the entire sphere of influence and intercultural relationships connected with the local sociopolitical unit (Parchman Phase sites and Wilsford?), and is quite beyond the scope of this paper. What follows must be considered as only an initial step in that eventual direction, pertaining only to the Wilsford site and its immediate environs as a unit of the greater cultural universe to which it belongs.

It should be pointed out that relatively thorough synopses of Yazoo Basin geomorphology, physiography, floral and faunal ecology, and climate have been presented in recent years by G.S.R.I. (1973), Thorne et al. (1977), Thorne et al. (1979), and Weinstein et al. (1979). A more comprehensive study of the above aspects of the Yazoo Basin environment was prepared in a paleoenvironmental model by Thorne and Curry (1983). Unfortunately, the abovementioned studies are only partially applicable to the Wilsford site area, and at that only in a broad sense, because they are involved with cultural resource surveys that are restricted to areas of the central and southern Basin. Only the upper portion of the G.S.R.I. (1973) study area extends into environs adjacent to the Wilsford vicinity (Quitman County, to the east of Coahoma County), but that study concerns itself more with the modern environment and is of limited use in reconstructing that of five centuries ago.

There are generalities about the biophysical environment that are consistent throughout the Delta, but certain specific aspects, such as the presence or prevalence of certain floral and faunal species, appear quite different or variable when comparing the northern with the southern portions of this area. It thus becomes difficult to attempt an environmental model of the northern area, or even a small part of it, when most of the published data deals with either the Delta in general or the central and southern portions specifically.

As Lewis (1971:3) points out, "a more or less explicit model of the biophysical environment is essential to the pursuit of..." Binford's (1968:8) archaeological goals of the "reconstruction of cultural history, reconstruction of lifeways, and the archaeological delineation of cultural processes." The "complexity and descriptive fullness" of such environmental descriptions, Lewis adds, are quite variable. For example, in areas such as the northern Yazoo Basin, dealt with herein to some extent, modern-day land-forming and clearing practices, along with certain naturally created changes in drainage, make interpretation or reconstruction of the prehistoric environment difficult. Aside from the data limitations of the Wilsford excavation itself, this is another reason why the following discussion will not attempt more than basic observations and limited research gleanings, reserving the more complex details for future research. In this case, "descriptive fullness" is entirely limited by available data, and the resulting representativeness might thus be somewhat debatable.

Geology and Physiography

The first component of a model of the biophysical environment of the Wilsford site area includes its geology and physiography. Many of the generalities of the following description of the Yazoo Basin will be seen to apply quite readily to the Wilsford site vicinity. The Yazoo Basin, or "Delta," as it is referred to locally, is the alluvial plain and drainage system of the Yazoo River, lying between the present channel of the Mississippi River on the west and the loess or "bluff" hills on the east. The northern portion of the Basin, in which the Wilsford site is situated, is drained by the Sunflower and Coldwater rivers, and is covered with old Mississippi River meander scars. The "Delta" is in fact part of a "broad depositional plain" of the Mississippi River and is "characteristic of flood plains along the lower and middle courses of large rivers" (Brown 1947:11). According to Brown (1947:9, 11), it covers an area of about 6,600 square miles, is up to 60 miles wide at its approximate mid-point, and is "underlain with an average thickness of 140 feet of river-dropped alluvium."

Brown goes on to describe this alluvial plain as

> a nearly flat expanse of farm land crossed by natural levees along old stream channels. The pattern of numerous creeks, bayous, lakes, swamps, and drainage ditches is controlled by the natural levees. The lower swampy land, considerable portions of which are uncultivated,

> is of two kinds: swamps in partly filled bayous or lakes, generally known as brakes, and more extensive flats farthest from the natural levees--characteristic backwater areas. The brakes generally contain water in some part throughout the year except, perhaps, in late summer or fall; they are usually the last parts of the plain to be cleared. The second type of swampy land, that farthest from natural levees, is flooded at less frequent intervals. Formerly such areas were partly drained through natural channels into the Yazoo River system. In recent years much of this type of land has been cleared and is drained by means of ditches.
>
> The Mississippi alluvial plain slopes uniformly from an altitude of 210 feet above the sea at the Tennessee State line to 85 feet near Vicksburg, in contrast to the nearly level east-west profiles...whose direction of slope depends on the natural levees or on the alluvial fans near the foot of the Loess Hills. Wherever a stream debouches onto the plain from the hills, alluvial fans have been built and, along the larger streams, extensive terraces. The rate of growth of the fans and terraces seems to be exceedingly rapid...(1947:15).

Although such alluvial fans as just described lie some 19 to 23 miles to the northeast and east of Wilsford, they undoubtedly formed ecological zones intermediate to those of the flood plain and those of the hills and thus probably supplied the local inhabitants with an exploitable source of certain floral species not commonly found in the lower swampy areas. The immediate vicinity of Wilsford, however, falls into the pattern first described by Brown, with creeks, lakes, swamps, and other aquatic features, their drainage controlled by natural levees.

The drainage system of the Yazoo Basin is described by Brown as follows, with certain data extracted from the U.S. Army Engineers Report on Yazoo River, Mississippi (1934).

> Although the alluvial plain was frequently flooded by the Mississippi River before artificial levees were built, the Yazoo "delta" is now nearly all drained by the Yazoo River and its tributaries. The trunk stream, which flows at the eastern edge of the alluvial plain, is known from north to south as the Coldwater River, the Tallahatchie

> River, and the Yazoo River. This system drains the North Central Hills, the Bluff or Loess Hills, and the Yazoo "delta". The major tributaries draining the plain between the Yazoo-Tallahatchie-Coldwater channel and the Mississippi are the Sunflower River, whose largest tributary is Deer Creek, and the Steele Bayou channel. These natural drainageways originate near the Mississippi River, with which they were formerly connected at elevations 10 to 15 feet below the banks of the river. They flow south and into the Yazoo River near its confluence with the Mississippi at Vicksburg; and the areas which they drain have been extended westward to the system of levees along the Mississippi River, thus artificially capturing numerous short streams that formerly flowed west into the Mississippi (1947:20).

The area under study here is in extreme northwest Mississippi, primarily around the headwaters of the Sunflower River, but is also influenced by part of the Coldwater drainage. The Wilsford site is in the present Sunflower drainage, but was probably more closely related to the Mississippi River during the site's occupation.

Aside from the rivers, the floodplain includes many lakes and bayous which have provided the former inhabitants with aquatic subsistence resources and means of transportation. The higher elevations of the natural levees along the banks of these waterways have afforded better drained land favorable for cultivation, but have also influenced the location of settlements which are less likely to be inundated during flood times (Brown 1947:20-21). The larger oxbow lakes are abandoned Mississippi River channels, such as Moon Lake, 1.35 miles (2.17 km) northwest of Wilsford, and Hull Brake, about 0.2 mile (0.32 km) to the east and curving to the south of Wilsford (see Figure 17 and Plate 4).

Figure 17 is a copy of the U.S. General Land Office survey plat for part of the township in which the Wilsford Site is situated. Hull Brake is referred to as "Cypress Brake" in the lower right portion, and Moon Lake is shown at upper left. The approximate location of the site is shown between the two, pointing out its relative position in the physiographic environment of the year 1842, when the plat was made, as well as at the present time. Between Wilsford and Moon Lake are two smaller brakes paralleling the curve of Hull Brake and representing other meander scars in this related series.

This physiographic arrangement is quite clear in Plate 4, an aerial view of the site vicinity. In this photo, as in Figure 17, the edge of Moon Lake can be seen at the upper left; Hull Brake with large tracts of trees curving along the right and bottom portions of the picture; the two smaller brakes in between; and the Wilsford mound

covered with trees appearing in almost the center. Some old meander scars are still evident in the photo, conforming to the curves of Hull Brake and Moon Lake. A number of smaller natural drainage channels are also apparent in the area. The geophysical relationship between the site and the meander scars and old channels will be discussed presently.

The Coahoma County area is typical of the northern Yazoo Basin physiographically. According to Wynn et al. (1959:45) and Hutton et al. (1916:5-6), the terrain is nearly level, but contains numerous low natural levees, relict river channels or brakes, and bayous or creeks. The highest elevations are along old stream banks in the northwestern part of the county, where Wilsford is located. The land slopes toward the southeast, from 182 feet AMSL in this area to an elevation of 145 feet in the south part of the county. Drainage is generally southeast, away from the Mississippi River, through "a network of sluggish streams that have their origin within the county" (Wynn et al. 1959:45). Natural levee buildup and stream obstruction by logs and brush cause much of the land to be poorly drained of floodwaters. The result has been that most of the Indian settlements, like Wilsford, are found on the higher and drier natural levees along the banks of abandoned channels.

Such terrain as previously described is especially exemplified by the Wilsford site locality. As seen in Plate 4, the site is situated on a natural levee running southwest by northeast between two swales, all part of an expanding series of abandoned river channels apparently culminating in Hull Brake. This levee also happens to be an old point bar ridge. To digress briefly for clarification, Kolb et al. (1968: Figure 4) give the following definitions.

> Natural levees are broad, low ridges which flank both sides of streams that periodically overflow their banks. Since the coarsest and greatest quantities of sediment are deposited closest to the stream channels, the natural levees are highest and thickest in these areas and gradually thin away from the channels.
>
> Abandoned channels are partially or wholly filled segments of meandering streams formed when the stream shortens its course. Soon after formation, they are usually characterized by open water or "oxbow lakes" [such as Moon Lake]. Subsequently, they may become essentially filled [such as Hull Brake] and occasionally completely obscured by various meander belt deposits. The abandoned segment may represent an entire meander loop formed by the stream cutting directly across a narrow neck of two converging arms of a loop (a neck cutoff), or it may represent a portion of a loop formed when a stream occupied a

> large point bar swale during flood stage and abandoned the outer portion of the loop (a chute cutoff).
>
> Point bar deposits consist of sediments laid down on the insides of river bends as a result of meandering of the stream.
>
> Within the point bar topstratum, there are two types of deposits: silty and sandy, elongate bar deposits or "ridges" which are laid down during high stages on the stream, and silty and clayey deposits in arcuate depressions or "swales" which are laid down during falling river stages. Characteristically, the ridges and swales form an alternating series, the configuration of which conforms to the curvature of the migrating channel and indicates the direction and extent of meandering.

The relationship between the Wilsford site location and its physiographic surroundings (see Figure 17 and Plate 4) is explained further by Dr. Roger Saucier, who offers the following opinion (personal communication 1983):

> The abandoned channel of the Mississippi River that gave rise to both Carr Brake and Hull Brake is a large and complex feature. It extended as far north as the south edge of Lula [town 4 miles north of Wilsford] and as far east as the west edge of Rich [town 3 miles northeast of Wilsford]. Apparently, before it was cut off, the river channel developed several bars that became mid-channel islands separated by chutes. Each bar or island was a series of sandy point bar ridges and swales, some smaller and some larger depending on how fast the river channel meandered. By definition, as soon as the river moved slightly away from an active bar and it became vegetated (probably willows, sycamores, cottonwoods), it continued to build up by the addition of clays and silts rather than sands and gravels. This marks the beginning of natural levee growth on top of point bar deposits. With time, the developing natural levee slowly masks the point bar ridges and swales and produces a more level terrain. It appears to me that the Wilsford Site locale has young natural levee on a well developed point

> bar ridge which originated as an island between two channels that became Carr Brake and Hull Brake after the whole channel complex was cut off. In this scenario, it is really not primarily associated with either brake.
>
> There is nothing quite definitive that I can say about the age of the ridge. I can only make a crude guess that it dates from about 0 to 500 A.D.--possibly later but not too probable as being earlier. I would not expect to find sites much older than Mississippian in this area.
>
> Moon Lake, of course, is a result of a 19th century cutoff of the river. Prior to the development of this bend and its cutoff, the river channel was a number of miles farther to the west. In all likelihood, the river channel in late Mississippian times was equally as far away. However, it still would have been a very favorable location for habitation--a high, sandy ridge overlooking a swampy depression or lake a few miles from the Mississippi River. At that time, there might have been a water connection between the brakes and the river, but I doubt. Yazoo Pass [in Plate 4, to the right of Hull Brake at right side of photo] probably does not predate the formation of Moon Lake. But because of its presence, both Carr Brake and Hull Brake are considerably more filled than they were previously. In late Mississippian times, they both may have been part of a large oxbow lake that also extended to include the swale (brake) east of Haynes Lakes [in Plate 4, at extreme right inside the bend of Yazoo Pass, a large bayou].

Except for the presence of open water in the nearby brakes, the absence of Moon Lake, and more forested conditions, it appears that the topography of the general vicinity of the site at the time of its occupation was basically similar to that of the present day. Such an environment would undoubtedly have provided the subsistence and construction necessities required by the inhabitants of Wilsford, whether it was a village or only a ceremonial center with a small permanent population.

Soils found at the Wilsford location tend to support Saucier's opinion of the physiography. The major portion of the site, on the highest elevation of the ridge, is situated on Dubbs very fine sandy loam, nearly level phase (Dd). According to Wynn et al. (1959:37), Dubbs soils "are moderately well drained to well drained. They have

developed from medium-textured Mississippi River sediments. These nearly level to gently sloping soils generally occur at the highest elevations on old natural levees." This area is bordered along the ridge to the northeast and southwest by Bosket very fine sandy loam, nearly level phase (Bd), and along the ridge slopes to the northwest and southeast (see Figure 2) by Dundee very fine sandy loam, nearly level phase (Do). Wynn et al. (1959:34, 37-38) describe the Bosket soils as "well drained and...nearly level to gently sloping," and Dundee soils as "somewhat poorly drained to moderately well drained....They have developed from medium to moderately fine textured sediments deposited by the Mississippi River." Both occur on old natural levees. These soil types are intimately related to the types of drainage in the area and thus with the floral and faunal communities which they support within the ecological system.

Flora

In this attempt at gaining some insight into the prehistoric environment of the Wilsford site area, it is expedient that one of the most important aspects, the floral environment, be examined. This is the second component of the model to be discussed. A study of the local flora must utilize comparisons between more complete historical records and rather limited archaeological data. Any attempted reconstruction of this prehistoric floral environment, however fragmentary, should shed at least some light not only on what trees were available for house construction or tools and weapons, but also on certain types of food, as well as other associated resources that make up the local biotic community. For clarification, in Lewis' (1974:5) discussion of ecological concepts, a biotic community is defined as

> any assemblage of populations living in a prescribed area or physical habitat; it is an organized unit to the extent that it has characteristics additional to its individual and population components...and functions as a unit through coupled metabolic transformations (Odum 1971:140).

In other words, it forms "the living part of the ecosystem" (Odum 1971:140).

The floral community, then, as Lewis (1974:7) points out, should be examined "from the vantage point of the exploitative and/or extractive technology of a specific cultural system," in this case, that system into which the Wilsford occupation falls. A portion of that cultural system has been examined in the previous sections on archaeological features and architecture. Other portions will surface in the following discussions. The tentative uniqueness of the site within its system, however, may severely limit an examination of the cultural system from this vantage point, restricting it to a more localized view of Wilsford and its immediate environment.

The soil types described above and their associated types, being part of the specific bottomland physiography previously discussed, support certain floral communities. For the three specific soils at Wilsford, Wynn et al. (1959:37-38) associate "cherrybark oak, sweetgum, water oak, and a dense undergrowth of vines and cane" with Dubbs; "water oak, bitter pecan, sassafras, sycamore, sweetgum, winged elm, and an undergrowth of vines and cane" with Bosket; and "winged elm, sweetgum, hickory, red maple, and cherrybark and water oaks" with Dundee. The lower swales bordering the ridge location of Wilsford contain mostly Dowling soils and clay, which support "cypress, Nuttal oak, tupelo-gum, and willow" (Wynn et al. 1959:36).

These soil types, being located at varying elevations and slopes, represent a variety of swale and natural levee deposits and thus reflect different types of drainage. Wynn et al. (1959:45) point out that "in general, differences in the native vegetation are associated with differences in drainage." Gunn et al. (1980:6) agree that prior to the 19th century, Delta vegetation "was controlled by edaphic and climatic factors, especially the periodic flooding." This is reflective of Putnam and Bull's (1932) and Shelford's (1963) models of floral communities (forest types) and their relationship with depositional surfaces used by Thorne and Curry (1983:19-32) in their paleoenvironmental model of the lower Yazoo Basin. The Wilsford site vicinity reflects almost any small area in the county with respect to biotic communities and ecosystems. The diversity of such communities in the area, even though they may be separated by only a few feet of elevation, is indicated in the following statement:

> When the first settlements were made, the county was covered entirely by forests and canebrakes. Except for the swampy areas that had dense stands of cypress, most of the trees were hardwoods. At the higher elevations were hickory, pecan, blackgum, winged elm, post oak, and water oak. At the lower elevations, where water remained most of the year, were tupelo-gum, soft elm, maple, green ash, hackberry, cottonwood, sweetgum, overcup oak, and willow oak. Tall and luxuriant stands of cane grew in the broad flats between the bayous and sloughs" (Wynn et al. 1959:44).

The dependency of this diversity of vegetation on drainage features is pointed out in slightly different terms by Hutton et al. (1916:6), who also add other varieties of trees to the list:

> Formerly a large part of the county was forested. On the "front lands" there was a heavy growth of cottonwood, sycamore, box elder, ash, mulberry, pecan, and honey

> locust; on the interstream areas of heavier soils, white oak, overcup oak, red oak, water oak, willow oak, and red and sweet gum; and along the sloughs and in the lower lying swampy areas, cypress and willow. On the forested front lands there was an undergrowth of vines, cane, and Bermuda grass [not native according to Gunn et al. 1980:102]. The forested heavier soils had very little undergrowth, except blue cane growing along the margins of the lower soils and on a few of the more elevated ridges in these wet areas.

Vestiges of such topographic features indicated in the preceding descriptions can be seen in the Wilsford vicinity in Plate 4. The Wilsford locale, previously described as alternating natural levees or point bars and swales, as well as abandoned channels, provided all the drainage variations and their associated biotic communities to be found in the county within a short distance from the site. Thus, most all forms of local plant and animal life should have been available and easily accessible to the Wilsford inhabitants.

Some of the earliest, though very incomplete, accounts of floral species specifically in the Coahoma County area are the field notes of the U.S. General Land Office surveys of 1836-1842, obtained from the Mississippi Department of Archives and History and from the office of the Secretary of State of Mississippi, Division of Public Lands. These have provided some insight into the forest conditions of the Wilsford area before extensive logging, land clearing, and farming changed it. The varieties of trees reported on three types of drainage-related land are summarized in Table 10. This summary was drawn from a sample of portions of three township surveys in and near the Wilsford location in the northern part of the county, and a comparison is made with those reported from one survey in the extreme south end of the county. The few notable differences may reflect subtle changes in soil types, drainage, and elevation, but also may be due to the small sample of notes used and incomplete reporting by the surveyor. The dubious value of this comparison may be mitigated by the reporting of some varieties of trees in the southern area which were also likely to be present somewhere in the northern area around Wilsford.

Other factors which may decrease the credibility of the early land survey notes are pointed out by Thorne and Curry (1983:46). One involves flood tolerance of various trees. Certain intolerant or somewhat tolerant species may have been missing from the surveyor's observations simply because earlier flood conditions decimated them and not enough time had passed for their regeneration in the area. Another factor could have been that some species were not differentiated at times, but referred to simply as elm, ash, oak, or gum, for instance, as pointed out in Table 10. Otherwise, only two species of elm, one species of ash, four species of oak (though two

are called red or white oak), and two species of gum are mentioned in the 1836-1842 Coahoma County surveys used for reference. Red elm and slippery elm are mentioned separately, but tree manuals indicate they are the same, a discrepancy that remains unresolved. Some of the common names used may not coincide with present-day generic terminology, and therefore, species designations have not been assigned in Table 10.

At this point in the construction of a model of the local environment, it will be useful to interject certain botanical data from the Wilsford site excavation. One aspect of how the local floral communities fit into the "exploitative and/or extractive technology" of at least the Wilsford portion of the cultural system is manifest in archaeologically recovered charred wood remains from house structures.

Samples of charred wood from Wilsford site postmolds, center post abutment trenches, and burned post remnants were submitted to the U.S. Forest Products Laboratory in Madison, Wisconsin, for identification. An outline of sample proveniences and analysis results is presented in Table 11. In the cases of white oaks, red oaks, and hickory, species identification was speculative. As a result, the author prepared a table of all species of these groups which have been reported in the Yazoo Basin and checked each against 20 references (Brown 1966; Collingwood and Brush 1964; Gunn et al. 1980; Harrar and Harrar 1946; Hutton et al. 1916; Lauderburn 1933; Little 1971 and 1977; Lowe 1913 and 1925; Monaghan 1914; Neelands n.d.; Newling 1981; Powell 1958; Rogers 1958; Sargent 1922; Small 1933; Watson 1968; Wharton et al. 1982; Wynn et al. 1959) to determine which were present in the northern part of the Basin. A preliminary analysis of these trees, presented in Mississippi Archaeology (Connaway 1982a:17-22) was expanded and revised with the addition of 16 of the above references, as well as several trees not previously listed.

First, introduced species were eliminated from the list. The number of native species for each group was then narrowed to those most likely to have been available to the site inhabitants for house construction. The resulting species included one hickory (out of four possible), one white oak (out of four possible), and four red oaks (out of eight possible). These species, suggested in Table 11, consist of those native trees most commonly found in the area, as reported by the aforementioned references. Other tree species that were possibly available in the area, according to the references given, are listed in Table 12. Since the aforementioned accounts of local trees by Wynn, Hutton, and the early Land Office surveys were incomplete, non-scientifically recorded listings, Table 12 has been added to lend extra supporting data to the Wilsford area floral study and to present a more general overview of northern Yazoo Basin tree communities. The presence of two of those species listed (Honey locust and Persimmon) is confirmed in Table 13, and certain others (pecan, ash, elm, red and white oak) were in evidence among remains from other sites in the general vicinity (Connaway 1982a:17-22). There are three elm species native to the area (Ulmus americana, Ulmus crassifolia, and Ulmus alata), but the Forest Products Lab report

suggests Winged elm (U. alata) specifically for the single occurrence in House 2 (Table 11, sample 9) at Wilsford.

It would appear from this and the previous analysis (Connaway 1982a:17-22) that Baldcypress was commonly used for large center posts and interior support posts. In the earlier analysis, which included samples from six other sites and several species not found at Wilsford, it was concluded that

> Baldcypress has been positively identified only as roof or raised floor supports. The nature of the tree itself probably explains this. It grows very tall, straight, and sturdy and often has very few limbs along the major portion of the trunk. It is therefore ideally suited for large support posts capable of bearing a large amount of weight, as must have been the case in the houses built on platforms at the Wilsford and Hays sites (Connaway 1982a:19).

In the local sloughs and swampy areas around Wilsford, cypress was undoubtedly abundant and readily available for use.

At Wilsford, wall posts were primarily hickory and white oak. These, along with ash, pecan, and red oak species, were commonly used in house wall and probably roof construction at other sites in the area (Connaway 1982a:19). One wall post at Wilsford was elm, probably Winged elm, but was apparently a species not often used. Likewise, red oak species appear to have been utilized, but less often than white oak. The strength and flexibility of the oaks and hickories, as well as their tall, slender stature generated by heavy forest conditions, make them well suited for wall supports. These would also have been ideal for use as rafters and floor joists in platform house construction. There is always the possibility that some of the carbonized wood samples listed in Table 11 (samples 3, 4, 5, 11,12) could have been discarded firewood, but since there is abundant evidence that the houses burned, and other samples were clearly posts, it seems more likely that these remains were in fact structural elements.

Other indications of trees and understory plants utilized by the Wilsford inhabitants came from the excavation in the form of carbonized seed and nut remains, and in some cases, imprints of these and leaves in daub. An outline of such remains is given in Table 13. These, like other such evidence, were meager in number. Four types of trees are indicated, two of which (Honey locust and Persimmon) are additions to the previous Table 11 list of species identified from the site. Unfortunately, only small portions of tree leaf imprints remained in the daub fragments recovered, and positive identification of these was not possible. In the case of trees and most plants listed in Table 13, however, utilization of edible parts is suggested,

rather than the structural connotations of the charred wood in the Table 11 list.

This is true of the Honey locust, as will be seen presently, but there is an interesting cultural sidelight connected with this tree, as pointed out by Swanton (1911:173), which may or may not be of some consequence at Wilsford. Swanton quotes Du Pratz (1758(II):47), who states that "the honey locust ('passion thorn') was considered of much power and consequence by the Natchez, and under a tree of this kind standing near the great temple the firewood for the eternal fire was always laid." If Wilsford was a ceremonial center, it might be speculated that some similar veneration was attached to such trees there as well (not to imply any Natchez connections), rather than as merely a source of edible seed pods. Such a socio-religious connotation of the Honey locust introduces a concept of cultural forces interacting with environmental elements which may not have been included in Lewis' (1974) model, but which should be pursued given sufficient data in future studies.

Also relative to the Table 13 list, in the discussion on daub in a previous section of this report, there was mentioned the addition of large amounts of cut grass leaves as a tempering material or drying agent. No identifications were made since there were no inflorescences present and the leaves were cut in relatively short lengths. For this reason, this material was omitted from Table 13. There is the possibility that some of the leaves were sedges (Cyperaceae), rather than grass (Poaceae). According to Gunn et al. (1980), there are thirty native species of sedges in the southern part of the Delta. Of these, one was listed as common, one frequent, and 28 infrequent. Presumably, as with grass species, most of these would also be present in the northern Delta. Grasses tend to have rounded, hollow stems, while stems of sedges are mostly solid and angular in cross-section. Stem impressions in Wilsford daub samples often contained linear intrusions of clay indicating hollow stems, and all were round to oval in cross-section, suggesting the use of grass rather than sedge as temper. As for grass, Gunn et al. (1980) report 51 native species, of which three are common (Water-foxtail, Alopecurus carolinianus; Broadleaf signalgrass, Brachiaria platyphylla; and Browntop-millet, Brachiaria ramosa), two are frequent (Floating mannagrass, Glyceria septentrionalis var. arkansana and Fall panicum, Panicum dichotomiflorum), 32 are infrequent, and 14 are rare. A complete listing here would serve little purpose without more identifiable remains.

Perhaps future studies of large daub fragments might afford better results from more complete remains where representation of various species might be confirmed. For the present, the types of grass or sedge leaves used, the floral communities they represent, and the topographic surfaces from which they were obtained must remain speculative. Suffice it to say that this material represents a structural element of building construction other than wood which was part of the environmental exploitative strategy of the Wilsford inhabitants. Since most grass requires open, sunlit areas, its procurement would have required trips to specific areas of abundance

which may or may not have been near the village. Special techniques and implements might be implied.

Various hickories and oaks are represented in Table 13 by nutshell fragments, acorn fragments, and imprints in daub. These apparently represent food or medicine sources and, secondarily, represent trees of the local community which supplied structural and tool-making material, food, and firewood. The imprints were probably the result of accidental inclusion in daub temper, as was also likely the case of the cocklebur, indicating the presence of oak trees (probably red oak) in the immediate vicinity, either where clay was extracted or where it was mixed with grass for daub. A number of fragmentary tree leaf imprints may have been such accidental inclusions, but could also have been useful drying agents like the grass.

As for the cane imprints in daub, the two species present in the area were not distinguished since most were split and in a fragmentary condition. Their functions in connection with the daub have been discussed previously. No doubt cane was quite common in the area and abundantly available to the Wilsford people for structural elements and myriad other uses, which will be discussed presently.

The cocklebur (Table 13) evidenced by an imprint in daub from the House 5 center postmold (Figure 5, Feature 4) was probably an accidental inclusion in the clay being mixed. The apparent species candidate is Xanthium pensylvanicum, which grows, according to Fernald (1950:1473), in "bottomlands, low grounds, cultivated or waste places." This might be an indication of some relatively open, sunlit space, perhaps a corn field, the fringes of the village clearing, or along stream banks, apparently where the grass for daub temper was being harvested and probably adjacent to or near the village. This suggests a possibility that corn was being raised by the villagers themselves and that dry grass was being cut in the garden plots after the corn harvest, probably in the fall and winter, hence the presence of ripe or ripening cockleburs in these overgrown openings. This, of course, is assuming that the gardeners allowed grass to grow in the corn fields after the corn matured.

Peppervine (Table 13) occurs in the area in abundance today, forming a grape-like berry with no reported edible qualities. It may have had some use to the Indians that is unknown today (they may have eaten them), or the single seed which represents it at Wilsford may have been a natural or accidental inclusion in the House 5 center post hole. Again, this is mere speculation and no additional data is present from other sites to support further conclusions, though its remains have been found elsewhere on Mississippian and earlier sites, some in association with house or temple mound-top structures. Peppervine is also very similar to wild grapes (Vitis spp.) and the seeds can be mistaken for those of edible grapes.

With regard to cultivated plant remains from Wilsford, Table 13 lists corn, beans, and sunflowers, all apparently cultigens which were likely a part of the staple diet at the site. Certainly at that period of time great emphasis was being placed on the cultivation of such plants, since all three types, especially corn and beans, have been

regularly recovered from other Mississippi Period sites in the northern Delta. Floral remains from Wilsford and these other sites reflect the use of both wild and cultivated plants, but in all cases so far, especially at Wilsford, are too sparse to indicate in what proportions they were depended upon. Had Wilsford been undisturbed by the plow, undoubtedly a much larger amount of such remains would have been recovered and a better understanding of relative percentages of incidence gained. As it stands, once again, more excavation is needed, especially in deeply buried, undisturbed occupational sites. As for other cultigens, specifically gourd and squash, the author is unaware of any such remains having been recovered archaeologically in the Yazoo Basin. However, these are generally recovered as small fragments of rind and could easily have been missed during the identification of remains (Leonard Blake, personal communication 1984).

The three cultigens represented at Wilsford were primarily cultivated resources indicative of an as yet undetermined reliance upon horticulture. As such, they have been given some degree of extra scrutiny, resulting (in the cases of corn and sunflower) in Table 14. Corn remains were sent to Leonard Blake, then with the Missouri Botanical Garden, for analysis. The first three sections of Table 14, dealing with corn cob and grain analysis data, were supplied by Blake. The five corn cobs represented were of 8, 10, 12, and 14 rows. The 14-rowed cob is probably popcorn, and the 10- and 12-rowed cobs are small enough to be the same. As for corn grains, sample 3 is popcorn, but samples 1 and 5 are all too large for popcorn (Leonard Blake, personal communication). Much of the total sample is popcorn, represented from both house areas, while the remainder is probably Tropical Flint, now called North American Pop (Cutler and Blake 1976:5). Some of the corn from Wilsford may also be Midwest Twelve-Row, the most common type on both sides of the Mississippi River in this area (Leonard Blake, personal communication 1984).

The small size of the corn sample precludes extensive conclusions and may or may not be representative. A detailed discussion of Flint corn and its implications in the Wilsford area horticultural scheme would be somewhat speculative. Cutler and Blake (1970:2) indicate that samples of corn from northern Yazoo Basin sites show "a pattern of slightly declining mean row number through time, although the samples are small...." However, the corn from Wilsford "should not be considered a part of this sequence, because most of the sample...is popcorn." They add that popcorn was nowhere the main crop and that most of the corn from the northern Delta was "closer to Tropical than to Northern Flint" (1970:2). They also state that corn observed from late sites in west Tennessee and northeast Arkansas "appear to indicate a conservative preference for the old kinds of corn" by the inhabitants and "the same preference also appears to have persisted, though to a lesser degree, in the Yazoo Delta" (1970:2).

With respect to the implications of cultural factors in the cultivation of Tropical Flint in the northern Yazoo Basin, Potts (Potts and Brookes 1981:8-10) has presented a brief dissertation on the subject as it relates to corn found at the Bobo Site (22-Co-535),

which is ca. 15 miles south-southwest of Wilsford and was occupied about 200 years earlier in time. Comparative remarks might be made in the future with additional data from these other sites to work from. Potts' primary concern was with the northern limits of Coles Creek culture and its relationship to cultural preference for Tropical Flint corn, as opposed to environmental limitations on the geographical range of such corn. Wilsford, being later in time, has little to do with this problem other than producing examples of Tropical Flint being grown in a locality beyond the northern boundary of the earlier Coles Creek culture. As far as this area is concerned, the point is moot since Leonard Blake (personal communication 1984) has pointed out that this variety of corn has been recorded as far north as Wisconsin.

Of more concern at Wilsford is the question of whether the corn and other cultigens were being grown by the inhabitants or were being grown on nearby farmsteads by individual families and brought to market at the site. The answer to this, which at present is unattainable, would help to answer the related question of whether or not Wilsford was strictly a sparsely populated ceremonial center. If this were the case, cultivation and supply of food items by inhabitants may have been limited and supplemented by outsiders who brought their produce to the site for trade, gifts, or some form of religious propitiation.

The second cultigen listed in Table 13 was the common bean (Phaseolus vulgaris), of which two specimens were recovered from the House 1 area at Wilsford. Estimated measurements and proveniences for these are given in Table 13. As with the corn, these remains were identified by Leonard Blake. With reference to these, Cutler and Blake (1970:2) state that their sizes are within the measured range of the few others they have seen from the Mississippi Valley. Such specimens have been recovered from other Mississippi period sites in the northern Delta, but are always few in number. According to Cutler and Blake, two of the "reasons why beans are not more frequently recovered from archaeological sites in the Mississippi Valley, where carbonized perishables are usually the only ones found," are that they were "a valuable source of protein and probably were not wasted," and "they became very fragile when carbonized" (1970:2-3). More importantly, it now seems apparent that beans "did not get to the east until about A.D. 1000 and did not reach some sites until somewhat later. They are common on historic sites such as Kickapoo, Osage and Missouri" (Leonard Blake, personal communication 1984).

Byrd and Neuman (1978:16-17) suggest that beans were important in late prehistoric times for two reasons. They are high in amino acids essential for protein synthesis, which corn lacks. Beans combined with corn provide "an increase in readily available protein and this, in part, may explain the increase in population size that is so characteristic..." of this period (Byrd and Neuman 1978:16-17). The other reason is that beans, being legumes, return to the soil nitrogen that is depleted by corn cultivation. "By growing beans with corn, the soil nitrogen content is replenished, crop yields remain sufficient, and individual fields may be cultivated for longer spans of time" (Byrd and Neuman 1978:17). The effects were probably

apparent to the Indians, but the causes may have eluded them, especially in the first case. Propitiated spirits, however, can work wonders and eliminate the need for scientific inquiry into such causative factors as amino acids and nitrogen deficiency. With such things in mind, one might wonder why there was no "green bean dance" to go along with the corn!

The third cultigen, or assumed cultigen, was sunflower, represented by 17 identifiable seeds from the interior area of the House 1 trench outline (Table 13). These were first recognized by Leonard Blake, who suggested that they "may well represent an accidental inclusion of plants growing on the site" (Cutler and Blake 1970:4). But considering their provenience inside the House 1 area, the fact that they are known to have been cultivated in early historic times, and that examples have been found in a number of archaeological sites, it is suggested that these were likely cultigens being utilized at Wilsford. The 17 seeds may represent a sunflower head that was hanging up to dry or was being stored when the house burned.

This sample was later studied by Richard Yarnell, who recorded 16 lengths and widths from the 17 seeds. A summary of these measurements is given in the last section of Table 14. Yarnell (personal communication 1977) states that the original achene conversions are "rather small for Mississippian achenes." He would "expect them to date ca. A.D. 800-1000." The only explanation for this is that they may have been introduced into the site midden during an earlier Late Baytown occupation, of which there is some small evidence, including Baytown Plain and Mulberry Creek Cordmarked potsherds. These are not abundant on the site, however, and no extensive occupation is suggested. The circumstances would seem to indicate a Mississippian association, although such a conclusion remains indefinite. One other seed in the sample may have been Iva sp. (Sumpweed or Marsh elder), but was apparently distorted and not accurately identifiable (Richard Yarnell, personal communication 1977). These are also thought to have been cultivated to some extent in prehistoric times (Yarnell 1970, 1972, 1976).

Because of the limited size of the floral sample and the disturbed nature of most of the Wilsford midden, very little can be concluded from an analysis of the proveniences of cultigen remains (Table 13). Corn, beans, and sunflower seeds were recovered from the central part of the north quarter of the House 1 interior (within the wall trench confines). This area had been disturbed somewhat by subsoiling beneath the regular plowzone level, and its exact nature is unknown. Parts of the area exhibited fire discoloration where the house had burned, and where the seed remains were located could have been an old sub-floor ground surface. No distinct features, such as pits, were outlined until sterile soil was reached, and most of this area just above the sterile level was removed by heavy machinery. Presumably this floral material was stored in the house when it burned.

Corn and beans (Table 13, sample 1) were found in the House 5 center postmold (Figure 5, Feature 4), along with fragments of daub and other debris. This material was apparently either used as fill

from a previously burned house placed around the center post of House 5, or was swept into the hole after House 5 itself burned, along with most of its center post. Only corn (Table 13, sample 5) was recovered from the adjacent House 6 center postmold (Figure 5, Feature 3). The previous speculative statement would also apply in this case.

The only cultigen recovered from the House 2 area was corn. This carbonized material (Table 13, samples 4, 6, and 7) was located at the bottom of the plowzone, but in no apparent feature, just outside the southeast trenches in square 0-20W (Figure 9). Perhaps it was among trash that was swept out of the house, or it had fallen to the ground when the house burned. Again, no definite conclusions can be reached from this data.

With regard to the apparent food, medicinal, and utilitarian values of some of the plants whose remains were recovered from Wilsford (Table 13), an examination of possible uses for these plants seems in order. In this respect, Table 15 presents a summary of such uses drawn from numerous ethnographic sources, some of which were not necessarily in reference to Yazoo Basin Indians. Many of these suggested uses will be recognized as basically universal, while others are merely speculative in their application to the Wilsford and other local groups. Corn appears to lead the list in practical applications. Of interest is Swanton's (1946:358) statement that 42 styles of preparing corn in the Mississippi region, most apparently mixed with various other ingredients, were reported by Dumont de Montigny (1753(I):32-34). Of course, since most of the corn recovered at Wilsford was popcorn, many of these preparations would not be likely on the basis of this evidence alone.

Since only a small number of plant species are represented in excavated remains, it seems expedient to supplement this data with other examples of the floral community which might have served as food resources. Table 16 presents a list of such possibilities. It should be kept in mind, however, that this list was compiled after Thorne and Curry's (1983) Table 10, which they composed with regard to the southern portion of the Yazoo Basin. In this respect, some of the 82 understory plants they listed were eliminated from Table 16 because they do not grow in the northern area or because they were listed as "introduced" species by Gunn et al. (1980) or by the Agricultural Research Service, USDA (1971). Others still in the list may not be local, but there were no references available at the time of this writing against which they could be checked. Most probably were available somewhere in the Wilsford area.

The only entries in Table 16 that were in evidence at Wilsford were Giant or Switch cane, possibly Marsh elder, and possibly Sawtooth sunflower or Jerusalem artichoke, although Blake's and Yarnell's sunflower identification (Tables 13, 14) did not suggest any particular species represented by the Wilsford sample. According to Gunn et al. (1980:54), Common sunflower (H. annuus) is an introduced species and was probably not available at Wilsford. Of 19 sunflower species listed by Small (1933:1434-1441) and two more listed by Fernald (1950:1490-1494), only two are listed by Gunn et al. (1980:54) as native species observed in the southern Delta area: Sawtooth

sunflower and Jerusalem artichoke. No doubt there were others in the Wilsford area as well, but which were being cultivated and which were growing wild is not presently known.

Thorne and Curry (1983: Table 10) only list selected edible plants available for harvest in their study area, as has been attempted here for the Wilsford area. Numerous other understory and aquatic plants, some undoubtedly edible or useful as medicines, are not included here, nor have various forms of fungi or mushrooms, simply because of a lack of adequate reference material, the time to locate it, and archaeological data. For the purposes of both Thorne and Curry's model and this report, "potential contributions to the subsistence regime from the adjacent loess bluff region have not been considered. A fully developed model...should also take this into account" for any region of the Yazoo Basin (Thorne and Curry 1983:50). Such endeavors must await future research and a more detailed northern Delta area ecological study. Table 16 is offered only as supplemental data to that provided by the Wilsford excavation and does not imply any conclusions on the part of the author.

Several things are suggested by these data, however, as pointed out by Thorne and Curry (1983:49-72). They discovered that there is "an almost unbroken continuum of foods becoming available and continuing to be present throughout the year," with the elements of cultivation (in the later period) and storage on the part of the human population aiding in their survival during slack months in the natural food production system (1983:58). They also recognized two "contrasting production/gathering spheres" (1983:58). The first, a "ground surface sphere," occurred year-round and produced "leafy forms, stems and shoots, and the root-tuber-rhizome group," while the second involved arboreal production of nuts and fruits, with harvesting from late summer to early winter (Thorne and Curry 1983:58). In some cases the latter might have involved seasonal trips to areas away from Wilsford to temporary gathering sites. At Wilsford, the presence of Honey locust seed, Persimmon seed, hickory nutshells, and acorns suggests fall gathering of local wild plant fruits and nuts for food or medicine. Also, the presence of wild plant foods along with cultigens in the remains suggests a mixed reliance on gathering and horticulture that apparently continued throughout the Mississippi period.

In the preparation of a subsistence resource model, care should be taken with regard to certain contributing factors, as well as with drawing inferences from them. Thorne and Curry (1983:49-51) have recognized several of these potential problems. One, briefly mentioned previously, concerns reference limitations. The true capacity of the floral community to sustain "a relatively stable population" cannot be accurately determined from current data (1983:49). Only by comparisons between ethnographic and archaeological sources and recent floral lists can a limited potential floral resource base be described. Even this can lead to misconceptions about the original floral community structure since contemporary references rely on data compiled after this structure was initially disturbed or destroyed (1983:51). There is, on top of this,

a deficiency of organized reference material available on Mississippi flora and the frequency of occurrence of its various species, especially understory and aquatic plants, in the northern Yazoo Basin (1983:50).

Regarding frequency of occurrence, Thorne and Curry (1983:59-71) rank their edible plant tables (9 and 10) accordingly, but this is more difficult for the northern Delta area because of the generalized nature of most of the available references, or their restriction to the southern area. Such ranking is thus not attempted in this report.

Before moving on to the faunal discussion, a few speculative comments might be made concerning the carbonized nature of floral remains from Wilsford, the probable time of year the houses burned, and certain religious implications thereof. Charred plant remains indicate that the plant parts burned along with the houses or were carbonized in cooking fires and became refuse. If nutshells and seeds of Honey locust and Persimmon, representing fall-gathered species, were burned with a house, there is the suggestion that the house burned during the fall or winter, soon after gathering and processing of these foods. It seems unlikely, though possible, that inedible seeds and nutshells would have been stored for later use. All of the wild food plant remains, except cane, came from House area features, indicating at least that one or more of the structures there burned during the fall or winter. This, along with other data, may further indicate that the site was occupied year-round. Since the grains or seeds of the three cultigens present could have been stored for long periods, they probably burned whenever the houses did and thus do not add any support to the above premise. If the houses were burned intentionally, plant foods may have been left inside as religious propitiation, perhaps a subtle indication of more profound socio-religious activities and beliefs than has been revealed in the Wilsford archaeological record. Otherwise, if the burning was accidental, there simply may not have been time for the occupants to remove from the house its contents of stored food items.

The flora of the area did not constitute for the human population a natural resource in and of itself. A number of examples of how it fit into the exploitative system of the Wilsford people have been given, but it must be kept in mind that it affected and was affected by other aspects of both the cultural and natural environments. One system with which it was intimately connected was the faunal community, which will be discussed next. So as not to leave the previously discussed elements of the biophysical environment hanging, along with the impression that each is separate and self-perpetuating, a brief discussion of the area climate will be followed by a summary statement pointing out some aspects of how this all fits together with the Mississippian cultural system at Wilsford, or the fifth element of Lewis' (1974) suggested model outline.

Fauna

An analysis of the faunal community of the area is the third element to be considered in the biophysical environment model

suggested by Lewis (1974:2). Like the floral remains previously discussed, the total sample of faunal remains recovered from the Wilsford excavation was very meager. Even so, a wide variety of faunal species is represented, all commonly found in the area either seasonally or year-round and available for exploitation. These may be considered representative only of the spectrum of general faunal resources of the area which formed that part of the local subsistence base that supplemented the harvests of both wild and cultivated floral elements and supplied much of the protein necessary to the diet of the Wilsford people. The sample is not, however, sufficiently representative of the numerous species directly associated with the local floral communities and their related depositional surfaces previously mentioned. This shortcoming will be discussed presently.

The preliminary steps in this analysis involved the identification and quantification of recovered bone and shell samples. This was carried out by Robert C. Wilson of the University of Florida. Table 17 gives a listing of the provenience of each sample and identification of its contents, along with a summary of the general types of fauna found in each sample. It should be noted that the proveniences are given just as they were labeled on the excavation sample bags by field school students, and several are somewhat inadequate. Samples 1 and 7 were probably recovered from the plowzone or the undisturbed surface just beneath it. It is uncertain where sample 2 came from other than the surface of the general area around the excavations. The dark area from which sample 9 came was probably a refuse pit remnant within the House 1 trench confines, though not necessarily associated with House 1. The only samples definitely associated with House 1 features are numbers 6, 8, and 10, while sample 3 is the only one associated with a House 5 feature, the center postmold. Sample 5 came from a large support postmold inside the House 1 trench confines, but this feature (see Figure 5, feature P-9) is not in line with the support postmold pattern for House 1. Unfortunately, no good debris-filled refuse pits were found where larger samples could be recovered.

On a somewhat more technical level and probably of more interest to faunal taxonomists is the species list presented in Table 18. Six analytical elements are listed: the bone or shell count, the calculated minimum number of individuals (MNI) represented by these remains, the percent of total individuals each species represents, bone weight in grams, the estimated biomass (quantity of meat) per species in kilograms, and the percent of total meat represented. As for methodology, Robert C. Wilson (personal communication 1983) explains that

> The estimated biomass provides an estimate of the quantity of meat represented by the bone recovered from the site. This is a conservative estimate of biomass based upon the allometric principle using archaeological bone weight in grams to determine kilograms of meat. The allometric

> principle [holds] that the proportions of skeletal dimensions, mass and body mass change with an increase in size. Thus, the relationship between skeletal weight and body weight can be expressed in the following formula: $Y=aX^b$ (Simpson et al. 1960, and Prange et al. 1979). By taking the log of both sides of this equation you get: log Y = log a+(b)log X, where Y is the amount of meat, a is the Y-intercept for a log-log plot using least squares regression, X is the skeletal weight, and b is the constant of allometry or the slope of the line (Casteel 1978, and Wing and Brown 1979). Values for a and b have been calculated with reliability coefficients above .80 from the Florida State Museum collections (Wing and Brown 1979).

Table 19 is a list of the allometric constants used to determine the biomass figures given in Table 18.

Such problems as the small size of the sample and the limited number of species identified minimize the usefulness of the above analysis. Of importance here is the measurement of the significance of each species as a food source to the Wilsford people, which is best expressed as approximate pounds of usable meat per individual represented in the sample times the minimum number of individuals present (Lewis 1974:46). However, as Lewis (1974:47) points out, such an estimate does not provide exact figures of overall species value to the human community, but rather "an index to the amount of meat realized from each species" (Parmalee 1965:3). In the Wilsford case, it can be assumed that most, if not all, of the animals whose remains were recovered were actually eaten, although some, such as the turtle, the snail, and the crawfish, could have crawled under a house and perished there naturally or in a fire. The remainder of the listed species were likely to have been caught or trapped for food, as well as for bone tools, hides, feathers for ornamentation, etc. In the entire sample, only about nine pounds of meat are represented, in itself hardly enough to sustain very many people for any length of time, and most of this amount is deer and turtle.

The data provides only a glimpse at the inventory of faunal species which were available in the Wilsford area or which were probably used for food and other things. It therefore also provides only a distorted or partial view of subsistence activities, as did the floral data base. Lewis points out that "both ecological and cultural variables affect exploitation of a resource; ecological variables determining the abundance and spatial distribution of a resource, and cultural variables structuring the accessibility and relative significance of a resource to a particular social group" (1974:46). In the Wilsford site case, data limitations mentioned previously preclude many determinations along these lines.

With regard to Wilsford area ecological variables, it was mentioned earlier that faunal resources were closely associated with floral communities and their related depositional surfaces. Thorne and Curry (1983) have treated this subject to some extent in their paleoenvironmental model of the Lower Yazoo Basin, and their basic premise would be applicable as well to other areas of the Delta, such as the Wilsford vicinity. In order to correlate faunal distributions with other aspects of this environment, Thorne and Curry first developed a model relating forest patterns to "the paradigmatic intersection of topography and species dominance" (1983:19), utilizing the Putnam and Bull (1932) approach of subdividing forest types according to topographic feature and then correlating this with depositional surfaces as described by Fisk (1944), Kolb et al. (1968), and Saucier (1974, 1981). A faunal distributional model would then follow this correlation, relating various available species to depositional surfaces and forest types.

As far as the Wilsford analysis is concerned, as in the floral discussion, a list of faunal species possibly available in the area has been prepared (Table 20). However, because of limited excavation data and the resultant speculative nature of any conclusions drawn from it, an environmental model as detailed as Thorne and Curry's (1983) will not be attempted here. Rather, it can be assumed that because of similarities in the geophysical environment and related biotic communities throughout the Delta, a nearly identical faunal model would also prevail in the Northern Yazoo Basin. Correlations between faunal species mentioned in certain ethnographic and archaeological references and various depositional surfaces (rivers or streams, natural levees, point bars, backswamps, swamps or lakes, prairies, and battures) are given by Thorne and Curry (1983: Table 11). As they point out, practically all except waterfowl would be available year-round (1983:72). The species listed in Table 20 include the above, as well as others reported in more recent times.

Thorne and Curry (1983:72), however, warn that with regard to the potential abundance of various faunal resources in an area, a long list such as Wilsford Table 20 might be misleading, since many bird species, especially waterfowl, are migratory and only seasonally available. Fish may have presented similar problems. Though available year-round, more abundant harvests were likely during the spring spawning season. Other aquatic resources, such as crawfish and mussels, would have been seasonally harvested and may have only complemented other meat sources, such as deer, in the diet. Reptiles and amphibians would also have been difficult to find during the cold winter months.

Thorne and Curry (1983:79) and Lewis (1974:40) both maintain that deer was the most commonly hunted animal during the Mississippi Period. According to Thorne and Curry (1983:79), "deer appear to have constituted the single largest source of animal protein--at least with respect to the return for effort expended." This certainly seems the case at Wilsford, with reference to Table 18, where deer represents nearly 57% of the meat. However, the small size of the sample must again be kept in mind. Large quantities of fish bones have been

observed at a number of other Mississippian sites, indicating that with studies of larger and more inclusive collections of faunal remains, such biomass percentages could change.

It also seems apparent from the Wilsford faunal sample that at least two major biotic communities were being utilized, the aquatic community in particular, and one or more of the terrestrial communities, almost any of which would have supported deer, squirrel, and raccoon populations. Evidently, as Lewis (1974:40) noted in his southeast Missouri model for a similar floodplain area, the "Mississippian peoples sought game from all biotic communities in the research universe," in this case, the northern Yazoo Basin.

Lewis (1974:38) makes one observation concerning fishing that warrants comment here. He states that though fish traps and weirs were known in southeast Missouri in historic times, there is no archaeological evidence for their use or the use of handlines or poisons during Mississippian times. As for the northern Yazoo Basin, as indicated previously, large quantities of fish remains found on these late sites suggest more than just catches "peripheral to the main business of deer hunting" (Lewis 1974:40). Use of handlines is directly evidenced by the presence of bone fishhooks on several sites, while the masses of fish remains themselves suggest the use of traps, nets, or poisons. Though not located in the Delta, there is one instance of a late prehistoric or protohistoric fishweir, reported by Connaway (1982b), in the Homochitto River south of Natchez, Mississippi. This structure proves that such devices were in use at about the period of time that Wilsford was occupied. Similar traps may well have been commonly used in the Delta, especially in some of the smaller rivers and streams. This is further suggested by the fact that there were no large stones in the area with which to make rock dams, such as are found in Georgia, Virginia, and other areas.

If Saucier's geophysical analysis of the Wilsford area is correct, there would have been various sized bodies of still, open water nearby, suitable for net and handline fishing, water-fowl hunting, and procurement of shellfish and other aquatic fauna. Small streams in the area would also have provided aquatic resources and may have been suitable for fish traps or weirs. The Mississippi River and the upper reaches of the Sunflower River, not too far distant, would also have yielded a variety of aquatic, riverine, avian, and associated bankline terrestrial and arboreal fauna. Most of the terrestrial forms listed in Table 20 would have been available in one or more of the local biotic communities, all easily accessible to the Wilsford area inhabitants.

The faunal community, like other aspects of the biophysical environment, was affected in part by climatic conditions. For example, some species of migratory waterfowl might have been induced to remain in the area for the better part of the winter because of relatively mild temperatures. For this same reason, other forms of wildlife that generally disappear during the colder months could have remained active and thus available for hunting for longer periods of time than possible in more northern climes. Fairly high amounts of annual rainfall undoubtedly supplied aquatic communities with

necessary fresh water, especially in landlocked pools and lakes. This also caused seasonal inundations from time to time which had a variety of effects on all elements of the biophysical environment. With regard to this, it seems pertinent at this time to describe briefly the element of climate in the northern Yazoo Basin.

Climate

There is, of course, no way to know the exact details of climatic conditions of the Wilsford area during the time of its occupation. However, there are some factors of the archaeological record which reveal hints of these conditions. For example, no particular environmental changes are indicated in the area by floral or faunal species since those represented among the Wilsford remains exist in the area at the present time. This in turn suggests no major climatic fluctuations since late Mississippian times. Only natural river-caused topographic changes and those alterations brought about by historic period land clearing, agriculture, industry, settlement expansion, and levee and drainage construction, some of which are quite profound, have taken place since that time. Had the situation continued as it was at Wilsford until the present day, it is likely that the only changes made would have been due to natural occurrences in local biotic habitats or culturally inspired alterations in settlement location.

Since present-day climate is basically similar to that of late Mississippian times, a description of such would be reliable to some degree as an element of the Wilsford era biophysical environment. Wynn et al. (1959:44) describe the climate of Coahoma County as the "humid, warm-temperate, and continental type. Winters are mild and generally have short periods of freezing weather. Summers are fairly hot, and occasionally the temperatures are more than 100° F." Hutton et al. (1916:8) add that "as a rule the rainfall in the spring and summer is local in character, coming mainly in the form of thunderstorms."

There seem to be some minor discrepancies in reports on mean annual temperature and rainfall. The earliest of these reports available to this author is Hutton et al. (1916), whose report is based on records from Helena, Arkansas, about nine miles northwest of Wilsford. For this area, they give a mean annual temperature of 62.2° and a mean annual rainfall of 54.33 inches (1916:8). At a later date, figures are given by Wynn et al. (1959) based on 49 and 51 year records, respectively, through 1955 for Coahoma County. They give the normal average annual temperature as 63.7°, slightly higher than Hutton's, and the average annual rainfall as 49.04 inches (1959:44), slightly lower than Hutton's. By comparison, for an overlapping and somewhat later period from 1931 through 1960, McWhorter (1962) gives similar figures for Clarksdale, ca. 16 miles south of Wilsford. His mean annual temperature is 64.8°, slightly higher than those given by both preceding references, and his mean annual rainfall is 50.36 inches, higher than Wynn's figure, but lower than Hutton's.

It would appear from these data that temperatures were rising somewhat during the first half of the 20th century, while rainfall was fluctuating back and forth. Whatever the case, it makes comparisons with the lower part of the Delta more difficult. One would expect some slight differences in weather patterns between the northern and southern ends of the Delta, considering the presence of certain flora in the south (such as Spanish moss and Palmetto) which does not grow in the northern part, and vice versa (such as Pin oak and Kentucky coffeetree). In the McWhorter study (1962) there appears to be only a 1-2° difference in mean annual temperature between the upper and lower portions of the Delta, and no significant difference in either annual or growing season rainfall amounts. McWhorter's comparison, as far as temperature range is concerned, coincides with temperature figures given by the other two references, indicating slightly warmer temperatures for the southern area and possibly a slightly longer growing season.

The average growing season in the Coahoma County (Wilsford) area is 231 days, according to Hutton et al. (1916:8). This is given as only 217 days by Wynn et al. (1959:44), representing one more discrepancy, a two-weeks' difference which, if the latter is true, may account for certain effects on the floral community. Thorne and Curry (1983:5) give a comparative growing season range of 220 days at the northern end of the Delta to 240 days at the southern end, primarily due to the slightly later advent of killing frost in the southern area. An average 20 days' difference is worthy of note, especially with regard to variations in floral communities in the opposite areas.

Aside from the above, there is what might be called a distinct side-effect of the climate which profoundly relates to all elements of the biophysical environment in the Yazoo Basin. This is the seasonal flooding which, before the historic period of construction of control devices, nurtured the alluvial soils with rich sediments, gave rivers the power to change landscapes, indirectly determined human land-use strategies, and helped to produce the variables upon which biotic communities depend for their structures and existence. This is one seemingly simple, but manifestly complex way in which the climate interacts with all other aspects of the environment, because it in itself has been one of the major determining forces which shaped the Yazoo Basin.

The manner in which seasonal flooding affected each element alone could easily become the basis for a thesis. Such effects have been mentioned, either directly or indirectly, in this paper and further elaboration is beyond its intended scope. Suffice it to say, as Lewis (1974:15) points out in his southeast Missouri model, that flooding in earlier times was unrestrained and much more widespread. As a result, devastation as is known in modern times was minimal, and the effects on the environment were perhaps more subtle, depending on the extent and duration of the inundation. Although environmental destruction was present, such as in topographic alterations and, in some cases, depletion or alteration of various elements of the biotic communities, in the long run, the natural environment survived its own rampages and was ultimately enhanced by this phenomenon. Only man's intervention

has changed the course of this ecological symbiosis and has ultimately affected all the elements under discussion here, in some respects quite negatively.

In summary, it is difficult to assess prehistoric climatic conditions from present-day meteorological data. When such data contain discrepancies as shown above, it is difficult even to assess recent climates with accuracy, much less those of the distant past that leave only secondary indications. Thus, this section is brief and leaves a lot to be desired, but with the Wilsford data at hand and the references available, little else can be expected. Perhaps future excavations will yield more satisfying information, and conditions during earlier times can be pinpointed and detailed more accurately.

Cultural Ecology

Elements of the biophysical environment have been described and various aspects approached in the foregoing discussions, as Lewis (1974:7) suggested, with the "exploitative and/or extractive technology" of the local Mississippian inhabitants in mind. This has been especially the case with regard to the biotic communities of the Wilsford area. A number of instances of the environment's affecting or being affected by the local socio-cultural system have been exemplified or alluded to in the preceding sections. The following is an attempt to summarize and put into a more cohesive perspective the manner in which certain human activities (elements of the cultural system) are influenced by environmental circumstances, as well as how the local ecosystem is influenced by human activities.

Lewis' (1974:2) fifth aspect of the biophysical environment, referred to previously, is "the force exerted by other socio-cultural systems." At present, little is known of the system of which Wilsford was a part (Parchman phase); certain aspects of this subject will be examined in the appendix of this report. However, the particular impact of other related cultures or cultural systems in the Wilsford area, or even in the northern Delta, on the environment is a complex subject with very little supporting data at hand. As a result, aside from being beyond the scope of this paper, the subject cannot be adequately addressed for Wilsford and its environs. In lieu of this, certain implications of cultural ecology conceived from the Wilsford data will be discussed. This is not to imply that Wilsford constituted a closed culture system, but simply that lack of data permits little further pursuit beyond the bounds of this local population.

Lewis' model presents a framework of "several generalizations and a hypothesis, all relevant to the study of Mississippian Period subsistence-settlement patterns" (1974:3), many aspects of which have been applicable to and utilized in this study. His concern is with "several of the articulatory loci" between the environment and a cultural system "as they are reflected in the distribution of human settlements and the procurement of raw materials" (1974:3). These subjects have been attested to previously and will reappear in the ensuing discussion.

The paleoenvironmental model prepared by Thorne and Curry (1983) has been indispensable, and will be drawn upon further. Its emphasis has been to "ultimately serve as the background from which subsistence and settlement pattern models might be drawn" (1983:135). Its accompanying cultural resources survey is not subsequently carried to the extent of acting upon this model in any detail, thereby losing to some degree the added benefit of exemplary support. Rather, a project synthesis points to the general conclusion that each can benefit the other in future studies, as suggested in the statement that "a greater understanding of the prehistoric utilization of the lower [or upper] Yazoo Basin is dependent on a full understanding of the geomorphic development of the Mississippi Valley and the concomitant development of the biotic community" (Thorne and Curry 1983:135). Such is the basis of their model, as well as the basis of much of the foregoing discussion.

Before continuing, it seems expedient that a definition of the terms "ecosystem" and "cultural ecology" be interjected here for clarity. An "ecosystem" refers to the unit of interaction between biotic community and habitat (Shelford 1963:3), or the system of dynamic interchange of energy between a biotic community and its "nonliving environment", resulting in a "clearly defined trophic structure, biotic diversity, and material cycles" (Odum 1974:5, 8). In this respect, it is clear that some such ecosystems are delicately structured, and unnatural interference by man can sometimes lead to drastic consequences. When man alters his environment, the term "cultural ecology" comes into focus. This might be simply defined as the pattern of relations or interaction between human culture and its natural environment.

With regard to the Wilsford area floral community and its relationship with what Lewis (1974:40) refers to as the "exploitative strategy of the Mississippian economic subsystem," a number of elements of such an interrelationship have been pointed out in this section. The presence of wild and cultivated plant remains at the site implies certain interactions between the site's inhabitants, the people of the surrounding areas, and the entire ecosystem in which they reside, with all its myriad subsystems, each reacting to pressures or stimuli from the others in both culturally and naturally derived patterns.

This is most pronounced in the so-called "subsistence strategy" of the local Mississippian residents. The manner in which they exploited their floral resources, the effects of this exploitation on the floral community, the resulting effects on the faunal community and other ecological systems, and how these results in turn affected the original exploiters is a vast subject to research, even with regard to a single site, much less an entire cultural system (such as the Parchman phase in the northern Yazoo Basin). Yarnell (1970:215) warns wryly that "we are dealing here with feedback systems which are somewhat more complex than the simple cause and effect models with which we are likely to feel more secure." Even Lewis' (1974) carefully thought out and executed monograph merely touched on the concepts and presented selected examples from which "broad guidelines

for future research" might be established. With the meager data at hand from Wilsford, it must suffice for this volume to utilize such guidelines only in the broad sense and within the Wilsford data limitations.

Uses of natural materials for food, medicine, tools, weapons, utensils, building material, etc., imply a diversity of activities which would affect the ecosystem in various ways. Land clearing for cultivation and settlement sites, cutting of trees for construction and tool-making, and collection of wild plant food in quantities sufficient to feed many people but also to deplete certain sources of food for wildlife, are but a few examples of activities with possibly profound after-effects. At the same time, such activities were necessary for the survival of the community within its culturally derived and defined sphere of existence.

In this respect, Yarnell (1982:5) points out the need for "better knowledge of the nature of the degraded biotic communities that were profitably exploited because of their high productivity." The extent to which the Wilsford area ecosystem had been disturbed by human interests in late Mississippian times would be difficult to determine, considering the extent of such disturbance in historic times when reference material on local biota was being written. The introduction of horticulture and the domestication of certain plants no doubt was a boon to subsistence efforts in prehistoric times and helped bring about a number of cultural changes in the late prehistoric period, although this was not the only factor of change. The fact remains that certain ecological stresses were brought about as well, though certainly on a smaller scale than those of today.

The presence of corn, beans, and possibly sunflower and sumpweed at Wilsford indicates cultivation in the area, which required opening of forest land. This implies clearing of trees and probably burning of vegetation, leading to increases in production of nuts, fruits, and grain seeds that thrive in more open habitats, which in turn promotes increased availability of food for wildlife (Yarnell 1982:5). Persimmon, for instance, does well in second-growth or partly opened forest (Yarnell 1982:5), and blackberry, dewberry, and grasses could take over abandoned cornfields until reforestation takes place. Thus, both detrimental and advantageous effects can be created by this type of disturbance and change in the floral community and its habitat.

Yarnell (1970:215) states that "the higher the level of technological development and the more extensive the archaeological remains, the more intensive is the disturbance likely to have been." The apparently scant accumulations of cultural debris at the Wilsford site suggests either a short-term occupation or intermittent maximum utilization, perhaps as a ceremonial center. In either case, a large permanent population is not indicated, and therefore the settlement and its inhabitants are not thought to have contributed greatly to destabilization or disruption of the local ecosystem. This could also be true of outlying farmstead operations by small family groups. Also, the floral sample from the site is quantitatively meager and the extent to which it is representative of floral utilization and exploitation in the area is undetermined. Considering a hypothesis

that the local Mississippian community consisted of ceremonial centers and small outlying villages and farmsteads, the extent of environmental disturbance might depend more on the cumulative effects of scattered punitive damage than on extensive, concentrated, large-scale activities.

Aside from the effects of clearing and construction of houses, villages, etc., another aspect of cultural ecology which is indirectly related to the previous discussion is site selection. Thorne and Curry (1983:50) point out that habitation site locations are affected to some degree by spatial occurrence and accessibility of food resources. In the case of Mississippian sites, it also stands to reason that they should be located in areas with soil and topography suitable for cultivation. Lewis (1974:39) adds that selection of a site location depends in part on the type of activities to be performed there.

With reference to a site selection strategy for Mississippian villages, as well as for horticultural fields, Lewis (1974:39) opts for the easiest to implement and the only one that "can be inferred from available data" in his research area, that is, "(a) to select site locations on the highest, least frequently inundated portions of the floodplain." The alternative strategies are "(b) to incorporate floodproof features into the design of dwellings" or "(c) to construct drainage canals and levee systems to change the local flood pattern of the Mississippi River" (1974:39), both requiring greater expenditures of energy. It seems quite apparent that strategy "b" was selected at Wilsford and evidently at other late period sites as well, as evidenced by a single platform structure excavated at the Hays Site (22-Co-612), 22 miles south of Wilsford, as well as the previously discussed report of such houses at the village of Aminoya by Garcilaso (Varner and Varner 1951:554-555).

Lewis hypothesizes that "strategy changes of horticulturalists in this region will be a function of economic and/or demographic stress" (1974:39). Judging from the close proximity of other "ceremonial centers," such as Salomon (22-Co-504), only a mile south of Wilsford on the opposite side of Hull Brake, and Parchman (22-Co-511), only four miles southwest of Wilsford (see Figure 20), both of which are larger, more extensively occupied sites with large mounds, such stresses as Lewis describes may be suggested. Assuming the Wilsford platforms were "floodproof features", as suggested by Garcilaso's Aminoya description, then the site was evidently subject to occasional flooding. At first, one might infer that economic/demographic stress was the causative factor for locating the village in such a precarious position. However, the problem arises that both Salomon and Parchman, as well as several other local sites, were precisely situated at the exact same elevation (180 feet AMSL) as Wilsford and thus equally subject to flooding. Unfortunately, none of the extensive house remains have been excavated at these sites for comparison. The Hays site, farther south, is at 155 feet, but this corresponds to the general land elevations surrounding it and does not necessarily imply that it was more flood prone than Wilsford, considering the general southward slope of the Yazoo Basin.

As it stands, site selection at Wilsford incorporated both strategies "a" and "b," with "floodproof" measures built into houses that were also built on the highest elevations, apparently without regard to the "greater investment of labor" (Lewis 1974:39) required for platform house and mound construction. Contemporaneity of the various ceremonial centers of the area (see Figure 20) has yet to be proven, and some may have succeeded others. Therefore, there is some question as to the validity of Lewis' (1974:39-40) hypothesis that occupation of flood-prone areas at this time was "a function of economic and/or demographic stress," at least as it applies to the northern Yazoo Basin. Further research is needed here before this problem can be solved.

Strategy "c" is not indicated among any of the local sites, but may be implied further north among the so-called "St. Francis" type sites, such as Parkin (Morse 1981), which has a moat surrounding the village area and connected with the St. Francis River. Whether this was purely a defensive effort or served as well to relieve some flooding effects is conjectural. A similar type village with moat is referred to by Garcilasco (Varner and Varner 1951:436) in his description of Capaha or Pacaha, on the Mississippi River and apparently closer to the Wilsford area. Since it is not apparent in the Wilsford area, strategy "c" shall receive no further consideration here.

Thorne and Curry (1983:72) mention one other factor, that of "competition between man and the other animals for specific resources," which may affect the resource base itself. Gathering of nuts, for instance, may have involved beating the other animals to them at harvest time, thereby diminishing their source of nourishment and driving them away to other areas. This, of course, depends on the extent to which such items were harvested and how dependent the wildlife was on this particular resource. On the other hand, animals seasonally concentrated in an area to feed on such resources might thus have been more accessible for harvest by humans than at other times of the year when they were more scattered. This is somewhat theoretical, since it is known that some animals live most of their lives within a limited territory. For example, most whitetail bucks "live out their lives within an approximate 640-acre, elliptical-shaped area that usually is 1½ miles long and half a mile wide" (Weiss 1983:36). Within this range is a core area averaging less than 40 acres in size which possesses "the right combination of food, water and security cover that a mature whitetail prefers," with numerous deer often congregating and spending up to 90% of their time there (Weiss 1983:36). As previously noted, Thorne and Curry (1983) and Lewis (1974) both feel that whitetail deer were primary food resources for Mississippian people. Such congregating as mentioned above probably contributed to intensive exploitation of these animals without benefit of seasonal concentration for a particular food ripening.

In sum, several aspects of cultural ecology, as it applies to Mississippian settlement in the northern Yazoo Basin, have been mentioned. As applied to the Wilsford site, only insufficient or

circumstantial data is available, and only a few inferences can be made. Certain exploitative activities obviously took place, particularly in the floral community where areas were cleared of vegetation for the village, for cornfields, and probably for nearby farmsteads. Along with this was cutting of timber, cane, and grass for house construction, with resultant effects on their habitats. Data is lacking on the extent of such exploitation and what reverse effects such activities might have had on the human population. Very little comparative data is available from other local sites and thus, at present, an area-wide overview of Mississippian cultural ecology is infeasible.

Conclusive Comments

Thorne and Curry (1983:80) point out that the dynamics of geophysical changes in the environment caused by rivers and streams continually affected elements of the biological community through habitat alteration, and thus may have contributed to variations in subsistence strategies and settlement location. Regardless of what types of trees are present in an area, in the Yazoo Basin "the development of forestation patterns is a result of edaphic rather than climatic conditions" (Thorne and Curry 1983:80). Climate affects the presence or absence of plant species in an area with regard to plant tolerance of such conditions. Topography and soil types which support certain floral communities are results of depositional surfaces "determined by periodic flooding, sedimentation patterns, and slow drainage," along with actual aggradation and degradation processes of the rivers themselves (Thorne and Curry 1983:80). As Thorne and Curry (1983) point out, the interaction of all the elements of the biophysical environment cannot be overstressed in model preparation, since such a model, as Lewis (1974) has suggested, is in effect a clue to cultural processes. The biggest problem has been data limitations, which can only be overcome by further research, not only at Wilsford, but at other Parchman phase sites as well. As a result, the foregoing section on biophysical environment can only be considered a preliminary step toward the greater goal of understanding the cultural-environmental dynamics of the Parchman phase in the Northern Yazoo Basin.

PARCHMAN PHASE SITE PLANS AND SETTLEMENT PATTERN

Phillips (1970) has included a number of Mississippian sites in what he calls the Parchman Phase (see Figure 20). The manner in which this phase has been defined, along with its validity, will be discussed in some detail in the Appendix. For the ensuing discussion, Wilsford will be compared in some aspects primarily with two nearby "ceremonial centers", Parchman and Salomon, both previously mentioned.

A basic research assumption in comparing Wilsford with the Salomon and Parchman sites is that these settlements "were expressions of the same cultural tradition and would reflect the parameters of closely related or similar cultural systems" (Chapman 1976:123). As Chapman shows for similar sites in southeastern Missouri, these had "larger ceremonial mounds and an open space (courtyard or plaza), dwellings, and other structures.... Therefore, they were assumed to be ceremonial centers and perhaps redistribution centers for nearby extractive sites, hamlets, and villages, and possibly market exchange centers..." (1976:123). A formal village plan, "reflected by the relationships of mounds to each other and to other features...including plazas, domiciles, and other structures" (Chapman 1976:123), seems apparent at Wilsford, Parchman, and Salomon, each of which had several mounds. At Wilsford, the town plan suggested in Figure 16 is based entirely on the two excavated house areas and by observation of surface features consisting of burned daub concentrations (see Figure 2). No other testing for town plan has been done and much of that suggested for the site, such as all houses being on platforms, is conjectural.

Other possible features of such "ceremonial centers" include fortifications and stockades, but the presence of such features at any of the Parchman phase sites has not been determined, with the possible exception of an earth enclosure at the Carson site (22-Co-505). Testing for house patterns, stockades, and other features at these sites by plowzone removal in transect strips might be helpful. Of course, numerous house and refuse pit locations have been revealed on the plowed surface of several sites, most notably at Parchman and Salomon where there are extremely heavy concentrations of daub. In many cases, especially at these two sites, individual house sites can be observed from the outlines of daub concentrations. This is the basis for the two extra house sites shown in Figure 2, to the east and northeast of the Wilsford mound. Large areas of scattered daub, also shown in Figure 2, indicate numerous other houses not depicted in Figure 16, many probably being built successively like those in the House 2 area. With the exceptions of the platform structures at Wilsford and Hays, one posthole type without a wall trench at Hays, and a circular wall trench house at Flowers #3 (22-Tu-518), all other Mississippi period house patterns excavated in the northern Delta have been square to rectangular wall trench types built directly on the ground (Connaway and McGahey 1970; Connaway 1981). Based on the Wilsford data and the identical elevations of the three sites (Wilsford, Parchman, Salomon), it can be hypothesized that platform

structures also existed at Salomon and Parchman, a problem yet to be tested.

With regard to cemetery areas, none have been located at Wilsford or Parchman, although two individual skeletons were plowed up recently at Parchman, each on opposite sides of the plaza in burned house areas not far from the large mound. Oddly, Salomon Mound B, now completely destroyed, reportedly contained numerous burials. Its size, shape, and most of its contents would indicate Mississippian construction. There is thus very little data on burial practices or their relationship with site plans or structures, associated objects indicating social status or differentiation, or age, sex, and pathology of individuals in burial groups. Perhaps the dead were not generally buried at Parchman Phase ceremonial centers, or only higher status individuals were interred in the mounds. Large platform mounds at these late sites are not generally known to contain burials in any great quantity.

A consideration of Parchman Phase settlement patterning would necessarily include spatial distribution of various types of sites. In conformity with Mississippian site patterning in other areas of the Yazoo Basin (see Brain 1978), it might be assumed that Parchman Phase sites include primary, secondary, and tertiary centers, as well as smaller villages, hamlets, farmsteads, and temporary or seasonal campsites associated with special activities. Brain (1978:340-341), in his study of lower Yazoo Basin settlement patterning, bases the division of centers on the number and size of mounds present. Primary centers are "multimound sites with one dominant mound more than 15 m in height; secondary centers are "multimound sites with one mound about 10 m in height;" and tertiary centers are "mound sites with one or more mounds ca. 5 m in height" (Brain 1978:341). In this respect, and with regard to the sites shown in Figure 20, some would fit into the tertiary category, but only one would measure up to the secondary type. That one is Carson (22-Co-505), at which the height of Mound B is ca. 10.97 m (36 feet). Because the rest of the mounds in the phase area are under 10 m high, none fit into Brain's category of primary centers.

It should be kept in mind that the only sites shown in Figure 20 are those listed by Phillips (1970) as belonging to the Parchman Phase. Most of these were recorded during the 1940-1947 survey by Phillips, Ford, and Griffin (1951), which was basically restricted to sites with mounds. Thus, the smaller villages and farmsteads were omitted and the resultant Parchman Phase defined by Phillips (1970) consists primarily of small "ceremonial centers" with platform mounds. Without the inclusion of the smaller communities, any attempt at formulation of a settlement pattern for the phase would be moot. A number of such sites have been recorded in the area, but pottery analyses are too incomplete to determine their positions in Mississippian chronology, and little other data is available from most of them for site function interpretations. Some of these problems will be considered further in the Appendix.

Whatever the case, it appears that Brain's (1978:340-341) criteria for various types of centers do not necessarily hold true in

this area of the northern Yazoo Basin, especially as regards mound height. It would seem that Carson, which had five large mounds and dozens of smaller ones (over 85 in the site complex, according to Thomas 1894:253-255), could be considered a primary center, except that it is on the southern end of the supposed phase area. Perhaps Parchman and Salomon could at least be elevated to the status of secondary centers based upon the size of the village area and presence of relatively large mounds. This should also be considered with regard to the West (22-Tu-510) and Dundee (22-Tu-501) sites, both of which have large mounds.

Two other aspects to be considered in an approach to settlement patterns are the establishment of contemporaneity or sequence of temporal context of the various sites included in the phase, as well as their spatial distribution. These, again, would require additional data not presently available. A glance at the Parchman Phase site distribution in Figure 20 suggests two separate lineal distribution patterns for the larger sites. One follows more or less close to and parallel with the present Mississippi meander belt, while the other, farther east, tends to follow the Coldwater River. This raises some questions about the validity of the phase as currently defined. Do these, in fact, represent two distinctly separate and, therefore, perhaps unrelated clusters? If so, two phases may be suggested, rather than one. Or, are there connecting links of villages in between that are presently unrecognized? If so, analysis of these might bring the whole area together into a cohesive unit, as Phillips' Parchman Phase implies.

As for temporal context, data is likewise insufficient. This will be explored somewhat in the Appendix, but will remain unresolved until additional information is gathered on the smaller related sites. Assuming that Parchman, Salomon, and Wilsford were all ceremonial centers of some significance, with small satellite settlements within their spheres of influence, their close spatial proximity suggests that they were not all contemporary. It seems more likely that Wilsford, being the smaller site, was occupied until, perhaps, some type of stress, such as population or ecological pressures, required a location change and a larger site area. Salomon, being the closest larger center, is the likely candidate for this succession. On the other hand, it could be possible as well that Wilsford was a satellite addition to an overcrowded Salomon, but this does not explain why the nearby Parchman site could not have handled an overload, unless it too needed some relief or was not contemporary with either of the other two sites. This all hints of Lewis (1974:39-40) economic/demographic stress theory discussed in the previous section.

This is, of course, a tenuous theory as yet unproven by substantial facts, but it could fall within the bounds of Phillips' (1970) definition of a phase. He states that a phase is "a geographically coherent group of site locations that one can...cautiously assume to have been occupied simultaneously or nearly so by local units of a specific socio-political group," or an "archaeological expression" of "an alleged demographic reality," based on various ceramic, non-ceramic, and settlement traits which make up

the "cultural context of this historical unit" (1970:524). It is thus a spatially and temporally cohesive unit which is basically static, but in which growth and limited movement cannot be disallowed.

At present, with respect to Parchman Phase settlement patterning, a generalized hypothesis must suffice. Such a pattern would be basically similar to Brain's (1978) suggestion for the lower Yazoo Basin, as well as other Mississippian culture areas in Arkansas, such as the Nodena phase, which Morse (1973:72-76) has tentatively outlined. Briefly, the latter consists of large villages with at least one major pyramidal mound (Type III sites), smaller villages of ca. 2-7 acres with no mounds (Type II sites), and single to multiple house sites or farmsteads up to ca. ¼ acre in size (Morse 1973:74). Temporary, special-use campsites are also surmised. Morse's (1981:56-59) model of the Parkin Phase settlement system in northeast Arkansas is based on relative site sizes rather than size and presence of mounds. This model includes a major ceremonial center, smaller centers spaced at regular intervals, and interspersed small villages. All were fortified and contained mounds. No farmsteads were apparent in the defined phase area.

A somewhat intuitive, generalized settlement model for the Parchman Phase would include large ceremonial centers with one or more large pyramidal mounds (Carson:Co-505, Parchman:Co-511, Salomon:Co-504, Dundee:Tu-501, West:Tu-520); smaller centers with at least one smaller primary mound (Wilsford:Co-516, Canon:Tu-523, Posey:Qu-500, Allison:Qu-514, Lula:Co-517); villages with no mounds or possibly with one or more very small mounds (some of these mounds may have originated at earlier periods); farmsteads; and perhaps small special-purpose campsites (some of these may have been mistaken for farmsteads). Examples of all but the last have been identified in the phase area, although their phase associations have not been completely worked out. Further discussion of this and the relationship between the Parchman and Kent phases may be found in the Appendix.

The temporal and spatial context problems discussed above are but an example of the many issues in question that must remain for future research. As Brain points out,

> since settlement pattern studies are one of the more direct ways to assess such matters as subsistence strategies, social organizations, and political structures, it is necessary to detail the great variety in such patterning through time and space. Only then can the search for common denominators leading to explanatory mechanisms truly begin (1978:365).

Like the interaction of elements of the biophysical environment, previously discussed, settlement patterning cannot be overstressed in its importance to the construction of a viable model for any phase of Mississippian cultural development.

ARTIFACTS

Artifacts found on the plowed surface of the Wilsford site include both ceramics and lithics, but are scattered and rather sparse. Nowhere on the site or in the excavated areas were such items found in any abundance, even in the various pits which contained mostly daub fragments. Artifact-feature associations in the excavation are primarily negligible, and most of this material from the site will be treated as a scattered surface collection. Some of the more noteworthy items will be described individually. All the Mississippian ceramics will be dealt with in the Appendix, so the following section will only touch on some of the highlights.

Ceramics

There were two ceramic objects of note recovered from the center postmold of the House 2 area. One nearly complete Nodena Red and White var. Nodena bottle (Figure 18 and Plate 5) was found sitting upright in Feature 1. It was located at the southeast edge of the center postmold in square 10N-20W. The rim of the bottle neck had been broken off by the dirt buggy and hauled away in the plowzone spoil. Provenience data and dimensions are given in Tables 21 and 22.

Brown describes this vessel as

> ...a small carinated Nodena Red and White, var. unspecified bottle. It has a flattened rounded base and a long neck. The design consists of alternating lanceolate-shaped red and white zones arranged vertically on both hemispheres of the body. The coloring is rather strange. The red is almost orange...(1977:32).

Apparently, the only reason Brown did not specify the variety as Nodena was because of the "red" color, which seems to be more orange than normal. Although this may eventually give cause to establish a separate variety, at present it appears to fit within the established sorting criteria for var. Nodena presented by Phillips (1970:142) and originally by Phillips, Ford, and Griffin (1951:133-134). Phillips makes no reference to various shades of red. Phillips, Ford, and Griffin describe the color as being the same as Carson Red on Buff, which is the same as Old Town Red, which is the same as Larto Red Filmed (1951:129-133), for which "the most common colors are warm, rich orange-reds and oranges" (1951:102). The shade of red color used on the Wilsford vessel may have been intentional, but it may also have been a result of the shade of pigment available at the time for use in slip preparation.

There are five red and five white panels, alternating around the body, separated by zones of unslipped buff. Each panel tapers to a blunt point at the upper and lower ends. Portions of these painted

surfaces appear eroded or sloppily applied, leaving uneven edges. According to Phillips, on var. Nodena,

> Paints are laid on in a characteristic broad manner necessitated perhaps by their heavy, slip-like consistency. Polishing over the painting produces a certain amount of blurring of the edges and sometimes even transfers particles of one pigment onto the field occupied by the other. Any refinement of design or delicacy of line is apparently ruled out by the methods employed (1970:142).

In this case, polishing is not evident. The vessel has a red filmed neck, while the bottom is unslipped buff. According to the Munsell Soil Color Charts (1954), the colors, hue, and value/chroma utilized are as follows: red 2.5YR 5/6; white 10YR 8/1; and reddish-yellow (buff areas) 5YR 7/6, varying to a lighter shade of very pale brown 10YR 7/3, apparently due to fire clouding. The color of the paste and interior surface of the neck is the same as the darker shade of the unslipped "buff" 5YR 7/6.

The vessel has a fine textured paste containing small crushed shell particles, not unlike the texture of Bell Plain, thus conforming to Phillips' criteria for var. Nodena (1970:142). There is no sand or other foreign matter in the paste. Though Phillips (1970:142) says the paste color is not comparable to that of Bell Plain, Phillips, Ford, and Griffin (1951:122) state that Bell sherds "on the reddish side are fairly common" and they proceed to list several such colors in common with Larto Red Filmed, with which they equated the red Nodena color. Generally, however, Bell paste tends more toward the grays and blacks, unlike Nodena. The exterior surface of the Wilsford vessel is smooth, but is unpolished and lacks the lustre so prevalent on Bell Plain.

The reason for the bottle's placement in the centerpost pit, whether intentional or accidental, can only be surmised. Its relative position is depicted in Figure 11D, a profile of Feature 1. The surface upon which it rested was 1.31 feet below the remnant of burned floor in square 20N-20W (see Figure 9). This floor surface was in the plow zone and thus could not be stratigraphically linked with any particular one of the three houses that were present. However, it can be assumed to be the level of the original ground surface over which at least one of the houses was constructed, and is the only such indication available for comparative measurements in the House 2-4 area.

The bottle would appear to have been buried after the last of the three houses had burned, since it overlapped the edge of the postmold, perhaps becoming part of the pit fill covering the hole left by the burned out centerpost. On the other hand, the centerpost may not have been as large in diameter as the posthole and the vessel may have been part of the fill surrounding it, most likely following construction of House 4, since any subsequent posthole excavation would have disturbed

its position. In summary, the evidence suggests that the vessel was one of the last additions to Feature 1 and was associated with the terminal occupation of this particuular house site, sometime around or following 1425 A.D. (see discussion of radiocarbon dates).

The second object was a portion of a small, shallow, carinated bowl about 18 cm in outside diameter at the rim and 5.4 cm deep. A reconstruction based on this sherd is shown in Figure 19B. The body thickness ranges from 4.1 mm near the bottom to 5.7 mm just below the lip. The bowl was rounded, but apparently had a flattened bottom, as indicated by a small portion of the sherd near the base. The rim is plain.

This object was 0.3 foot below the level of the bottom of the Nodena bottle and 1.3 feet west, horizontally, placing it at the southwest edge of the center postmold (House 2 area, Feature 1: see Figure 9). The relative position of the Nodena bottle is shown in Figure 11D, and this object would have been just below it. Speculations concerning the placement of the Nodena vessel, previously discussed, would apply in this case as well, except for the fact that the bowl was fragmentary and the bottle was complete, implying that the bowl fragment may have merely been refuse included in the pit fill.

The ceramic type of the bowl is Addis Plain var. Holly Bluff, formerly Bell Plain var. Holly Bluff (Phillips 1970:60). This change was made by Steponaitis (1974:118-119) to avoid confusion in separating it from Addis Plan and Greenville Plain (Brain 1969:158-162), making the three all varieties of Addis Plain. In the Lower Yazoo Basin, Holly Bluff appears in the Lake George and Wasp Lake phases, according to Brown (1979:600). Phillips (1970:60) lists it as a "marker variety for the Deer Creek and Lake George phases, late Mississippi period," and refers to this open carinated vessel form as the "Yazoo" bowl, the most common shape for var. Holly Bluff found in the Lake George and Deer Creek phases (1970:564). He illustrates several reconstructed bowls (1970:Figure 101, a-f) which appear quite similar to the Wilsford example. At present, var. Holly Bluff and its "Yazoo" bowl form appear to be a minority type in the Parchman Phase, possibly even representing trade items from farther south. Phillips (1970:60) gives the distribution as the "southern part of the Yazoo Basin," but it seems this view may have to be modified somewhat to at least include Parchman Phase sites in the fringe area.

Phillips (1970:60) describes the paste as close "to the borderline between 'clay' and shell tempering," with it being "normally tempered with finely pulverized shell," though "other inclusions (?) may also be present." A high polish is assumed by Phillips to be characteristic, but in the case of the Wilsford example this has either eroded away or it was never polished to begin with. The exterior has a smooth, but dull surface both inside and out. The paste contains numerous fine particles of shell and cells from leached shell, but is otherwise a rather homogeneous, smooth clay paste with few other inclusions.

The Barton Incised var. Barton vessel reconstructed in Figure 19A, is based on a rim sherd found on the plowed surface of the site. It is illustrated because it was one of the few decorated sherds large enough to be used for vessel shape determination and may serve as a

comparative example for future reference. The body wall is 4.2 mm thick and the vessel, a globular jar form, is estimated to be 10 cm wide at the mouth, ca. 13.5 cm in diameter at the shoulder, and around 11.3 cm deep. It has the coarse, shell-tempered paste typical of the type, as described by Phillips, Ford, and Griffin (1951) and Phillips (1970). It is included in the surface collection discussed in the Appendix.

The miniature vessel, shown full-size in Plate 6 and Figure 19C, was recovered from the House 1 area spoilbank, which consisted of the plowzone removed by machinery. The provenience and feature associations are unknown. For its size, the vessel design and motifs are very well executed, as shown in the three views in Plate 6. It might be surmised that this was a child's toy, but such a view could also be a modernistic interpretation, accommodating the small size and "cuteness" to contemporary thought regarding a child's "tea set." With regard to the suspected ceremonial nature of the Wilsford settlement, this object could just as easily have been of ceremonial utility. Unfortunately, this may never be known.

The vessel has a subglobular jar shape with thick walls and flared rim, to which were attached two opposing strap handles. One handle is missing, but the other reflects its appearance. Each had two nodes at the upper and lower ends. On the body shoulder, midway between the handles, are two pairs of opposing nodes. The rim is plain, but just below it is an incised line encircling the vessel even with the lower ends of the handles. Another such line encircles the base, and both encircling lines are connected by numerous vertical, parallel, incised lines. Except for the encircling lines, the design appears to be a miniature version of Barton Incised var. Kent. The incised lines are narrow and made with a small, pointed tool. The appliqued base is nearly square with extruded corners. The paste is very smooth, very fine sandy clay with few inclusions. Very few small flecks of shell were present, and all have been leached out. Dimensions are given in Table 23.

The remainder of the potsherds recovered from the Wilsford excavation are listed in Table 24a. Because of their small number, the relative insignificance of their feature associations, and the fact that none are extraordinary types for this particular site, these artifacts will not be described individually, but rather may be considered just a part of the general assemblage of Mississippian pottery types from the site. It may be seen from this and from the Appendix that pottery remains are sparse at Wilsford, a possible indication of intermittent or short-term occupation.

Lithics

Lithic materials seem to be even more sparse at Wilsford than ceramics. One small, stemmed arrowpoint, illustrated in Figure 19D, was found on the surface to the northeast of the mound. It measures 30 mm long, 4.4 mm thick, 15 mm wide at the shoulder, and the stem is 10.3 mm wide. It is made of local yellowish-tan chert and is apparently not heat-treated. The flaking is well executed, and the

edges are almost serrated, with fine retouch scars on both faces. Other lithic objects from both the surface and excavated areas are listed in Table 24b.

Like the ceramics, very little can be said of relevance concerning feature associations. As for lithic tool utilization, some uses are implied by particular artifacts in the assemblage (Table 24b), but it must be kept in mind that there was a minor Baytown component at the site to which some of this material may have belonged. Thus, even those few artifacts listed in the table may not all be indicative of Mississippian activities, and any conclusions made concerning such relationships would be tenuous.

RADIOCARBON DATES

Five wood charcoal samples were submitted to the University of Georgia Geochronology Laboratory for radiocarbon dating. Of these, three were from House 1 features and one each from features of Houses 2 and 3. An outline of these uncorrected dates, along with proveniences and references, is presented in Table 22. All were secured from areas below the plow zone in original context, that is, undisturbed by modern day activity. All except sample 5, which was the lower portion of an intact, burned wall pole, were fragments from trenches and postmolds and are presumed to have been part of the posts filling these holes. There is the possibility that some, such as Sample 3 from the large centerpost of House 1, were burned house debris used to fill part of the postholes following the conflagration. At any rate, they should still constitute parts of the same house and thus produce similar dates.

Considering the House 1 dates (Samples 1, 3, and 4), there is a standard deviation range overlap of 60 years between numbers 1 and 4, while number 3 fails by 30 to 120 years to overlap either. This may not present a major problem of interpretation, however, since the earlier date of Sample 3 might be explained in terms of its provenience. It is presumed to be a portion of the large centerpost of House 1 which was situated in Feature 5, and as such, its earlier date might be the result of what Michael and Ralph refer to as the "pre-sample-growth error," which for most larger trees could be on "the order of 100 to 200 years" (1971:4). This could explain the date if Sample 3 were from the heart of a large cypress trunk, which was apparently what was used for the House 1 centerpost (see Table 11). Thus, an estimated correction of this factor by the addition of 100 to 200 years to the date range would bring it into closer agreement with the other dates, which are from smaller posts and may be more nearly correct for construction time.

Regarding the abovementioned "pre-sample-growth error," Michels (1973:160) explains that the "more central, nonfunctioning, portion of the tree stem," called heartwood, ceases metabolism and no longer absorbs carbon 14, "while the more external part of the stem," known as sapwood, continues this process. Thus, "the age of wood decreases from the center of the stem to the periphery" and is reflected in radiocarbon dating. He continues,

> It thus can happen that if various sections of a tree are radiocarbon dated, they could give off different dates--each corresponding to the cessation of metabolic activity in that particular section. Furthermore, if many growth rings are included in the sample, the age obtained will not be that of any particular ring but will present the average for the rings included (1973:160).

The implications are as follows:

> The dating of construction timbers involves an additional error factor that must be taken into consideration. This is especially true for timbers or beams that have been burned. The burning removes the outer rings, which disperse in the form of ash. Only the carbonized central part remains compact. Dating this central part or heartwood will consistently yield dates that are older than dates obtained by other means, and cannot possibly indicate the time when the tree was cut for use in construction (1973:160).

This may or may not apply to the Wilsford dates, since most were smaller scraps of charcoal and the size of the wood from which they came was undetermined. Sample 5 (House 2) came from a section of small trench pole, ca. 0.25 foot in diameter, remaining in the ground, and its date would thus represent an average for the post rather than the actual date it was cut. Even so, the date conforms rather closely with most of the others, probably because of the small diameter and relatively few growth years of the sample.

As for House 1, if the maximum 200 years "pre-sample-growth error" suggested by Michael and Ralph (1971:4) is added to the sample 3 date, it becomes A.D. 1430, closely conforming to the other two dates and giving the house an approximate average date of A.D. 1428. By comparison, this is almost identical to the A.D. 1425 date for House 2, rendering the conformity more striking. As shown previously in the descriptions of the House 2 area trenches (see Figure 9), trench overlaps indicate House 3 to be later than House 2. This is corroborated by the A.D. 1575 date of Sample 7 (House 3), the standard deviation range of which overlaps that of Sample 5 (House 2) by five years.

All things considered, the series of dates shown in Table 22 forms a relatively tight cluster situating the site's occupation primarily within the fifteenth century A.D., slightly prior to and perhaps terminating around the advent of the De Soto entrada into the area.

CONCLUSIONS

The most striking and certainly one of the most important aspects of the Wilsford site excavation is that it opens up an apparently unprecedented element of Mississippian settlement and architectural design. Only one other site, not far from Wilsford, is presently known to have yielded the pattern of a platform type house similar to the ones described herein. Whether such structures were commonly built in the Lower Mississippi Valley or were merely local adaptations to flood-prone areas, possibly resulting from population or other stresses, is presently undetermined. The construction of such houses seems most logically the result of attempts at flood protection, whereby a village would not have to be abandoned annually for weeks or months, but could be permanently inhabited regardless of inundations.

On the other hand, such structures could have been of a ceremonial nature, a sort of "moundless temple" of secondary or subordinate importance to the structure atop the actual mound, perhaps even the home of an important personage such as a chief or priest. The elevation of "temples" and chief's houses on mounds in order to give them prominence above the lowlier elements of a settlement and its inhabitants has been alluded to in numerous publications. If Wilsford was a ceremonial center, this could easily be a possible reason for elevating particular houses adjacent to the mound and could explain why most houses in local Mississippian villages and farmsteads were apparently built directly on the ground. It does not, however, explain why there was a platform house at Hays (22-Co-612), which was apparently a small farmstead with no mound or supposed ceremonial function.

In Figure 16, it was inferred that all the Wilsford houses were elevated for flood protection, but the excavation of only two house sites does not prove that others were not built on the ground. Ground-level, wall-trench type houses are the general rule on Mississippian sites excavated in the northern Yazoo Basin and in other areas of the Lower Mississippi Valley. Most are square or slightly rectangular, with a few circular shapes appearing occasionally. Such house styles have been recorded in excavations at Clover Hill (22-Co-625), Flowers #3 (22-Tu-518), Powell Bayou (22-Su-516), Bonds (22-Tu-530), John Jones (223-Ta-500), Bobo (22-Co-535), Barner (22-Co-542), Gates (22-Pa-521), and Hays (22-Co-612) (Connaway and McGahey 1970; Connaway 1981). Thus, the question of platform house function remains unanswered until further excavations reveal more conclusive data.

The architectural construction of the Wilsford houses, especially House 1, appears to fit closely the general description of such structures at the village of Aminoya, as related by Garcilaso (Varner and Varner 1951:555). Several possible variations in style and structural content have been discussed and illustrated in Figures 14 and 15, but certain conclusions regarding which is correct remain elusive because of data limitations resulting from agricultural

practices on the site. Basic structural components are demonstrated by the conformity of subsurface features, but the details of house wall and roof coverings are speculative.

Essentially, the platform was constructed atop a squared arrangement of pilings placed in equally numbered rows. In the center of this arrangement was a larger support post which is thought to have extended up through the platform to support the center of a steeply pitched roof. The central post was raised by sliding it down a trench sloping into the central posthole, then standing it erect and filling in the trench. Surrounding this structure on all four sides was some type of wall, evidenced by wall trenches containing small postmolds. The exact nature of this wall and its relationship to the platform is somewhat speculative and has been discussed at length. Finally, there was supposedly a house structure atop the platform, again of somewhat speculative construction.

Also inconclusive are the aspects of site function; duration of occupation, both annually and cumulatively; number of inhabitants; the site's relationship to surrounding communities; and the details of cultural ecology in the immediate environment. It has been suggested that because of the presence of a ceremonial mound and the relative scarcity of artifacts, the site was primarily of ceremonial utility, occupied by a small core population or perhaps for a rather brief period of time. Radiocarbon dates indicate a possible time range of occupation, in the literal sense, of up to 495 years, but other factors, such as artifact scarcity, suggest a much shorter duration.

With regard to surrounding communities, the site's relative position in the social milieu is as yet unknown. Attempts are now being made to redefine the Parchman Phase, the Appendix herein being an initial step. The possibilities exist that Wilsford was a small, intermediate ceremonial center handling an overload of the population from the larger centers, or that it was utilized only for a time before expansion of a larger, nearby center. Hopefully, a solution to this problem can be found with further research at other Parchman Phase sites.

With respect to cultural ecology and the local environment at Wilsford, this subject has been discussed at length in a preceding section and specifics have been inferred. However, with the relatively small amount of data at hand, only limited details are known. It is thought that in general, the Wilsford site occupants and the inhabitants of surrounding communities and farmsteads were dependent as much on hunting, fishing, and gathering as they were upon horticulture. The complexities of this subsistence system, however, remain to be worked out.

In general, the importance of the Wilsford site research lies in its data contributions to the more comprehensive study of the Parchman Phase and its further relationship to the other phases surrounding it. Substantial research will be necessary to define the position of Wilsford and other Parchman Phase sites in the greater universe of Mississippian culture in the Lower Mississippi Valley. Many questions concerning local settlements can now be answered, but many more have been raised for future inquiry. Wilsford must stand, almost alone in some respects, as only one small contribution to this ongoing endeavor.

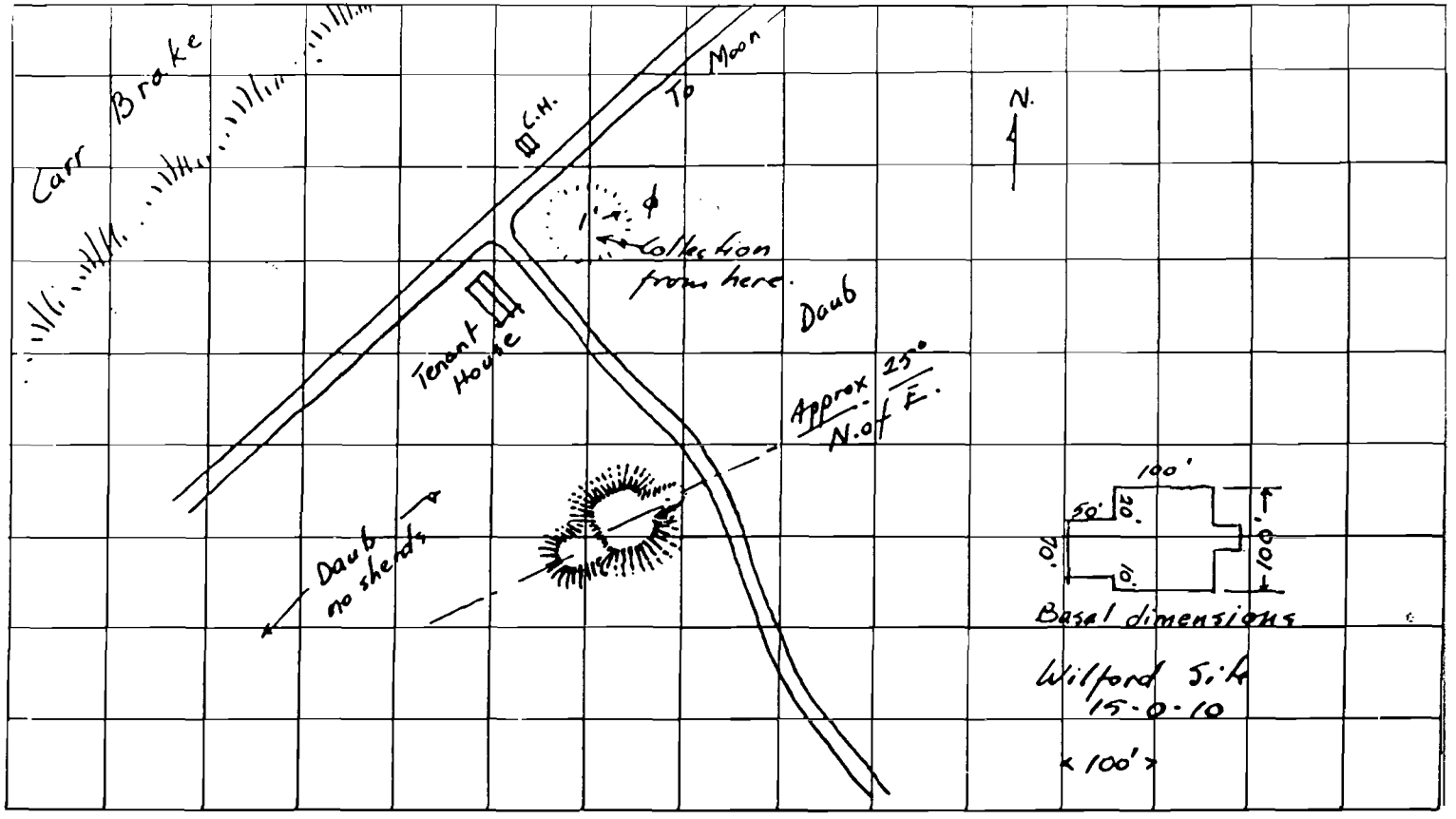


Figure 1. Wil(s)ford site sketch map made by Philip Phillips, November 19, 1940 (courtesy of Peabody Museum).

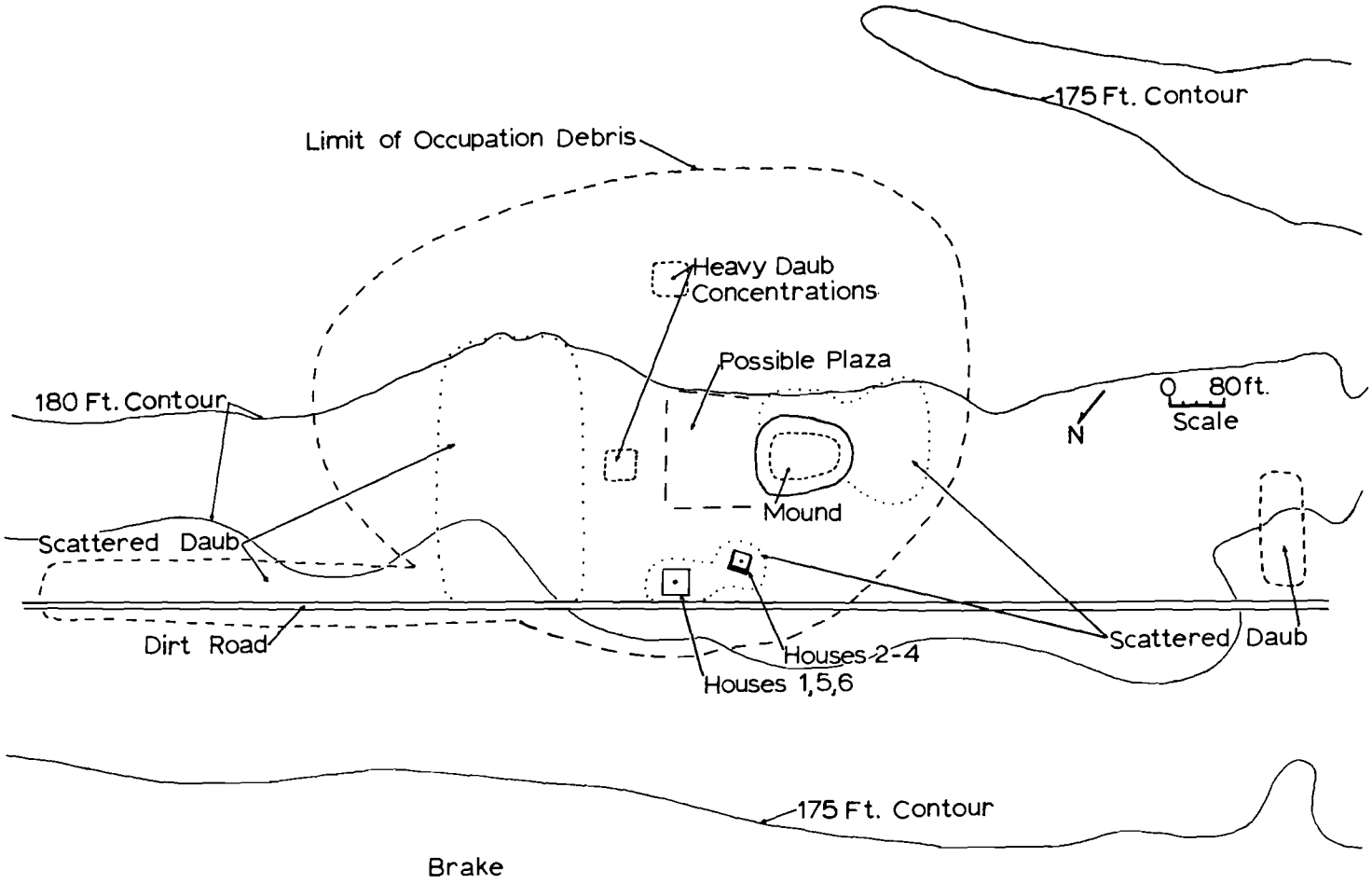


Figure 2. Wilsford site surface features and house locations. Dotted lines represent daub scatters recorded in 1982.

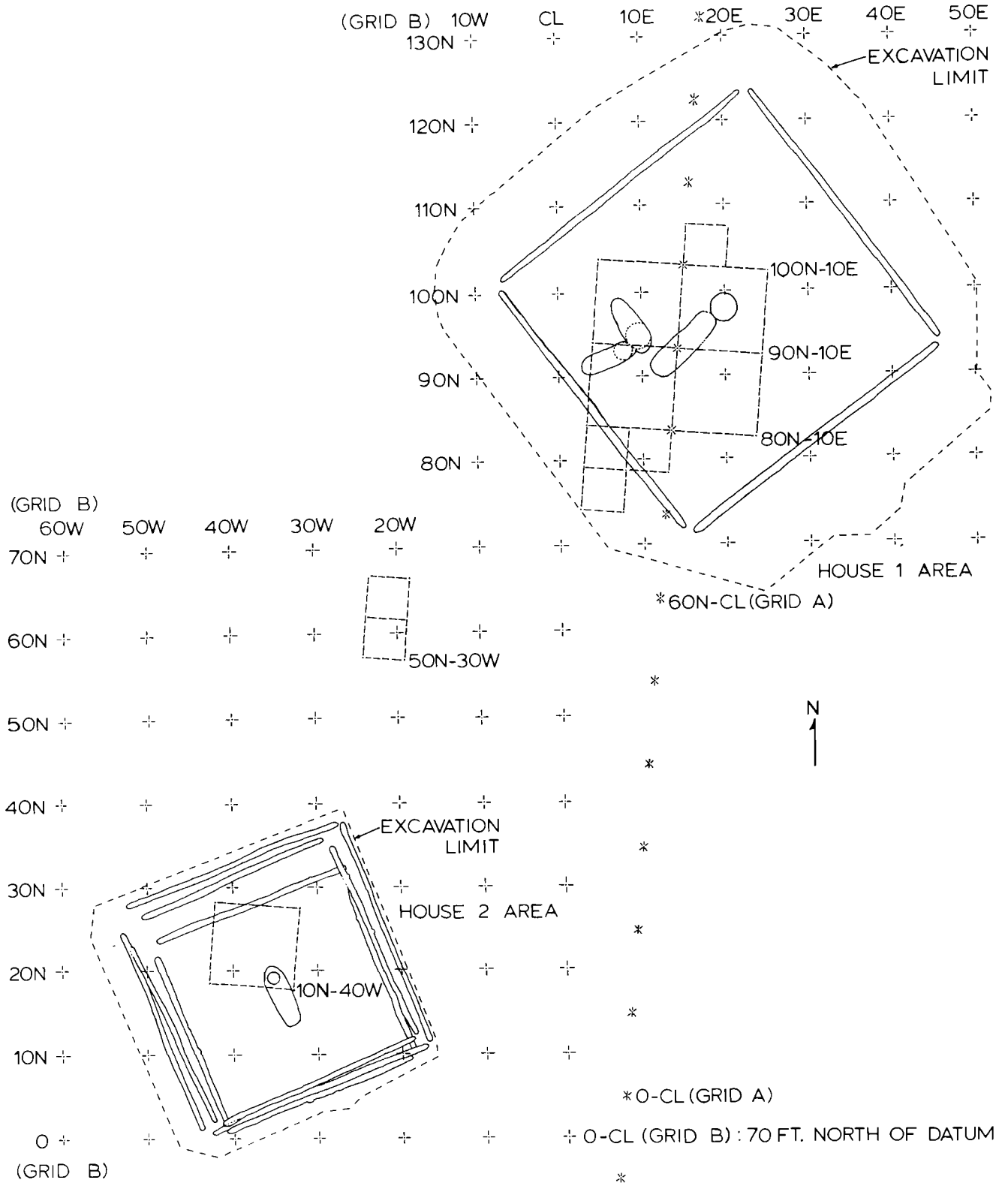


Figure 3. Plan of excavated areas showing relationship between test units (based on grid A) and house features (based on grid B). Both grids at ten-foot intervals.

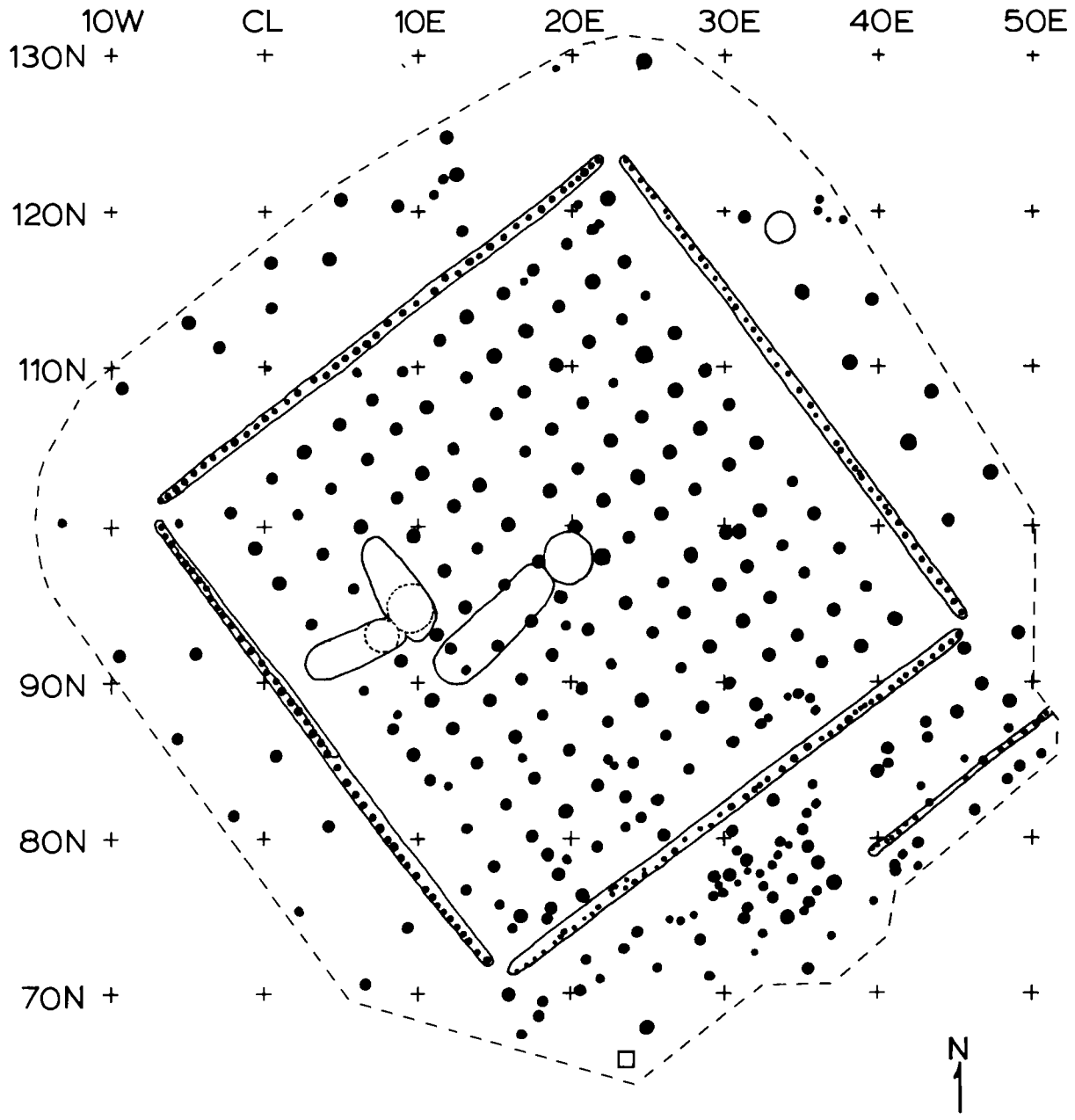


Figure 4. Plan of House 1 area showing ten-foot excavation grid and postmold pattern.

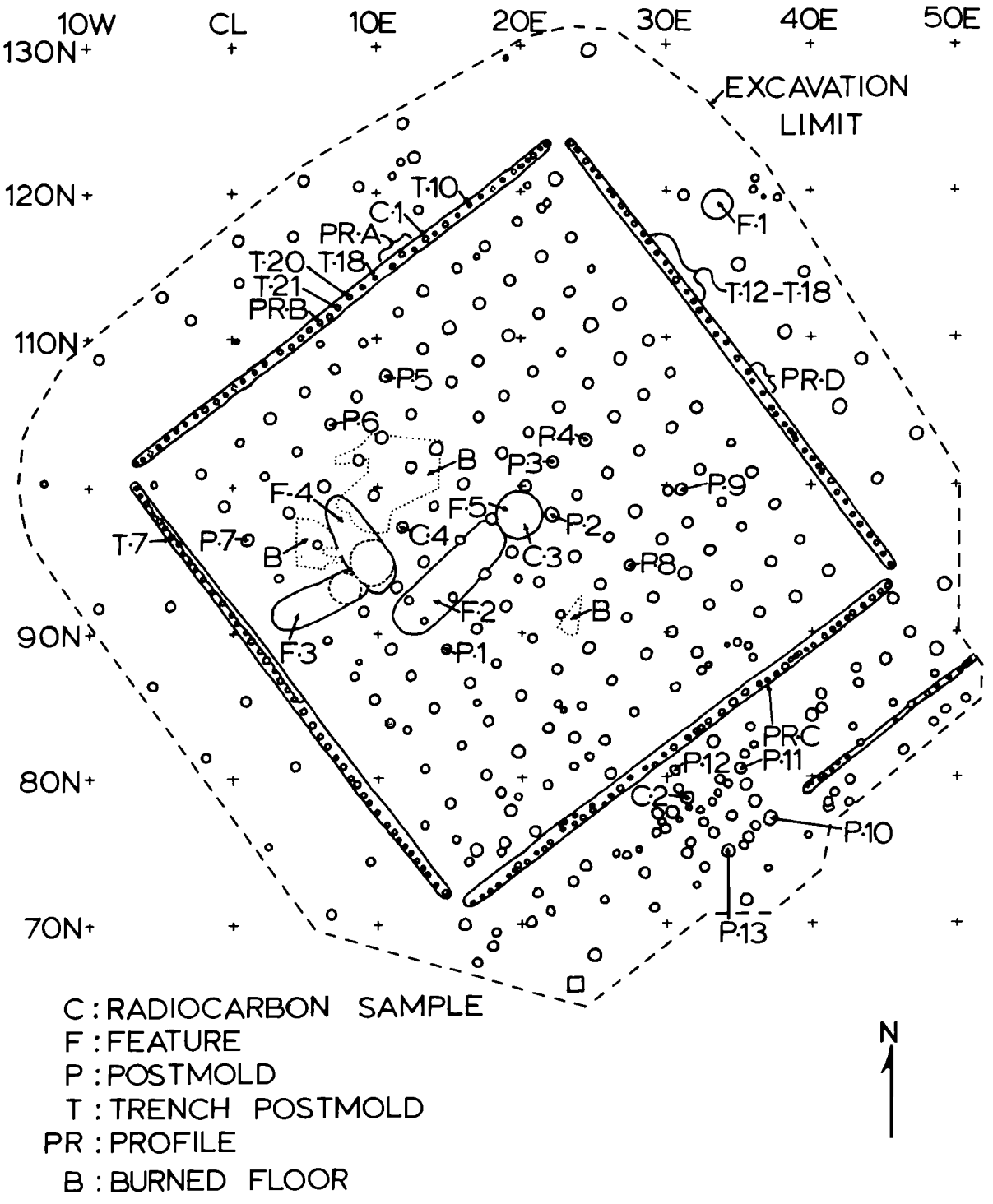


Figure 5. Plan of House 1 area showing ten-foot excavation grid and various feature locations.

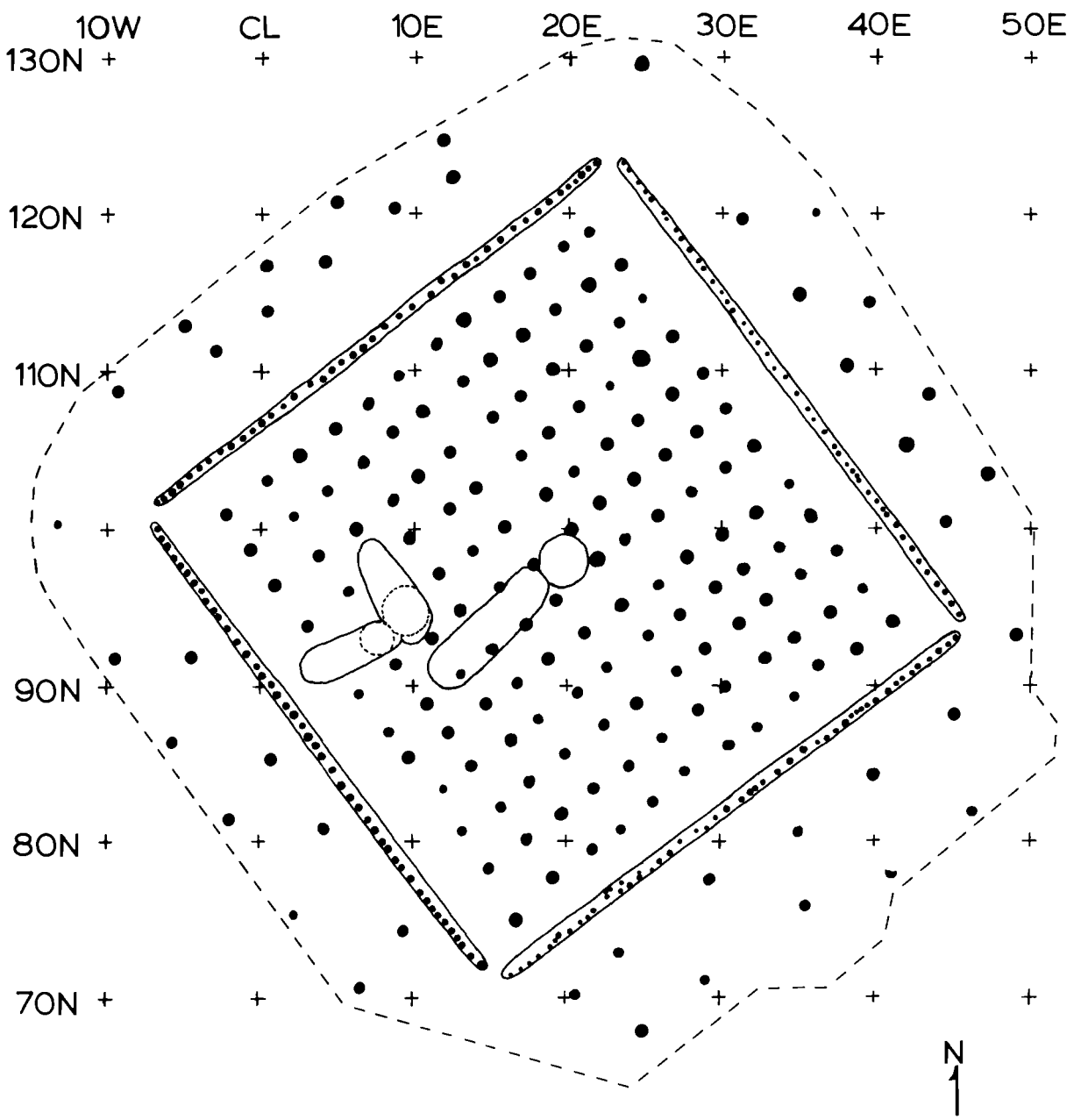


Figure 6. Plan of House 1 area showing postmolds most likely associated with House 1 wall trench pattern.

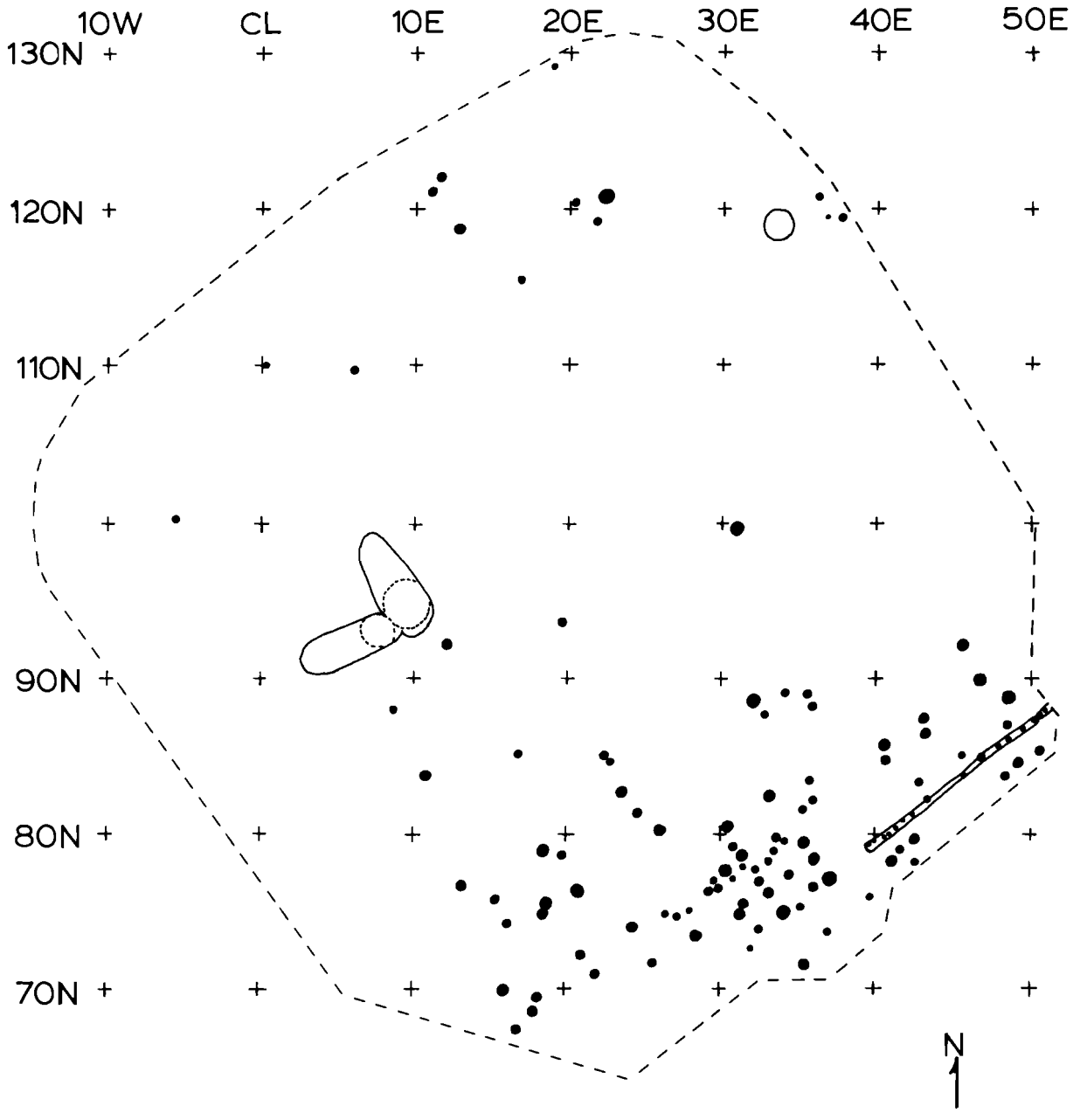


Figure 7. Plan of House 1 area showing postmolds least likely associated with House 1 wall trench pattern. Some outside southeast trench may have been associated with entranceway.

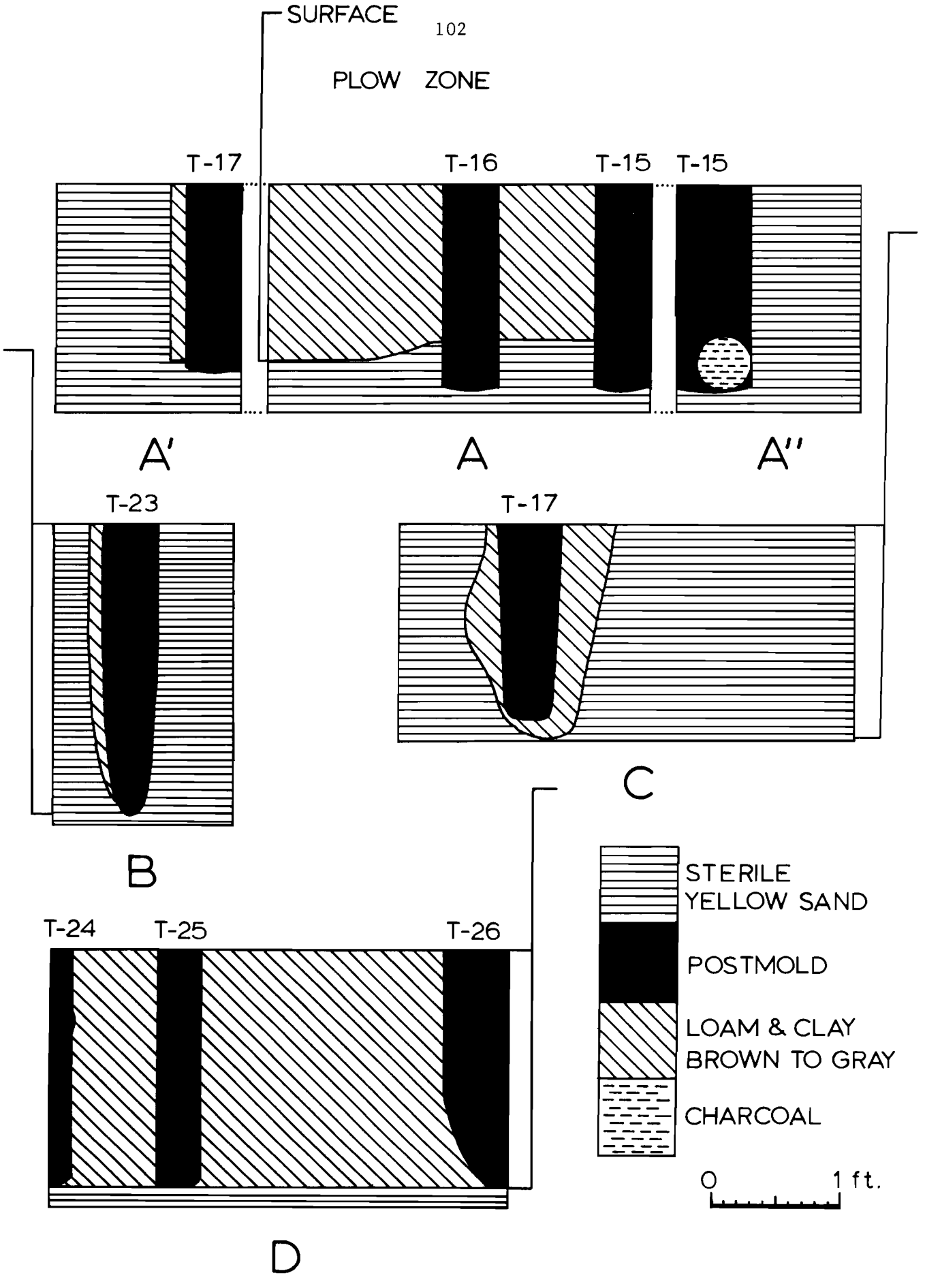

SURFACE
PLOW ZONE
T-17
T-16
T-15
T-15
A'
A
A''
T-23
T-17
B
C
T-24
T-25
T-26
D
STERILE YELLOW SAND
POSTMOLD
LOAM & CLAY BROWN TO GRAY
CHARCOAL
0
1 ft.

Figure 8. Vertical profiles and cross-sections of House 1 wall trenches and postmolds. (All are shown beneath plow zone, 15 to 27 inches below surface. See Table 2 for depth measurements.)

Explanatory notes:

A. Square 110N-20E, House 1; profile of northwest wall of northwest trench, postmolds 15 and 16 (see Figure 5 for location).

A'. Cross-section of postmold 17 at southwest end of above profile section.

A". Cross-section of postmold 15 at northeast end of above profile section. Charred log fragment indicated at bottom edge of postmold. Postmold here seems to include trench as well.

B. Square 110N-10E, House 1; cross-section of northwest trench and postmold 23 (see Figure 5 for location). Trench is dark brown clay loam.

C. Square 80N-40E, House 1; cross-section of southeast trench and postmold 17 (see Figure 5 for location). Trench to left of post was light gray sandy loam; to right was darker gray. Postmold soil was dark gray, but looser than surrounding soil.

D. Square 100N-40E, House 1; profile of section of northeast trench and postmolds 24, 25, and 26 (see Figure 5 for location). Trench was dark gray clay loam.

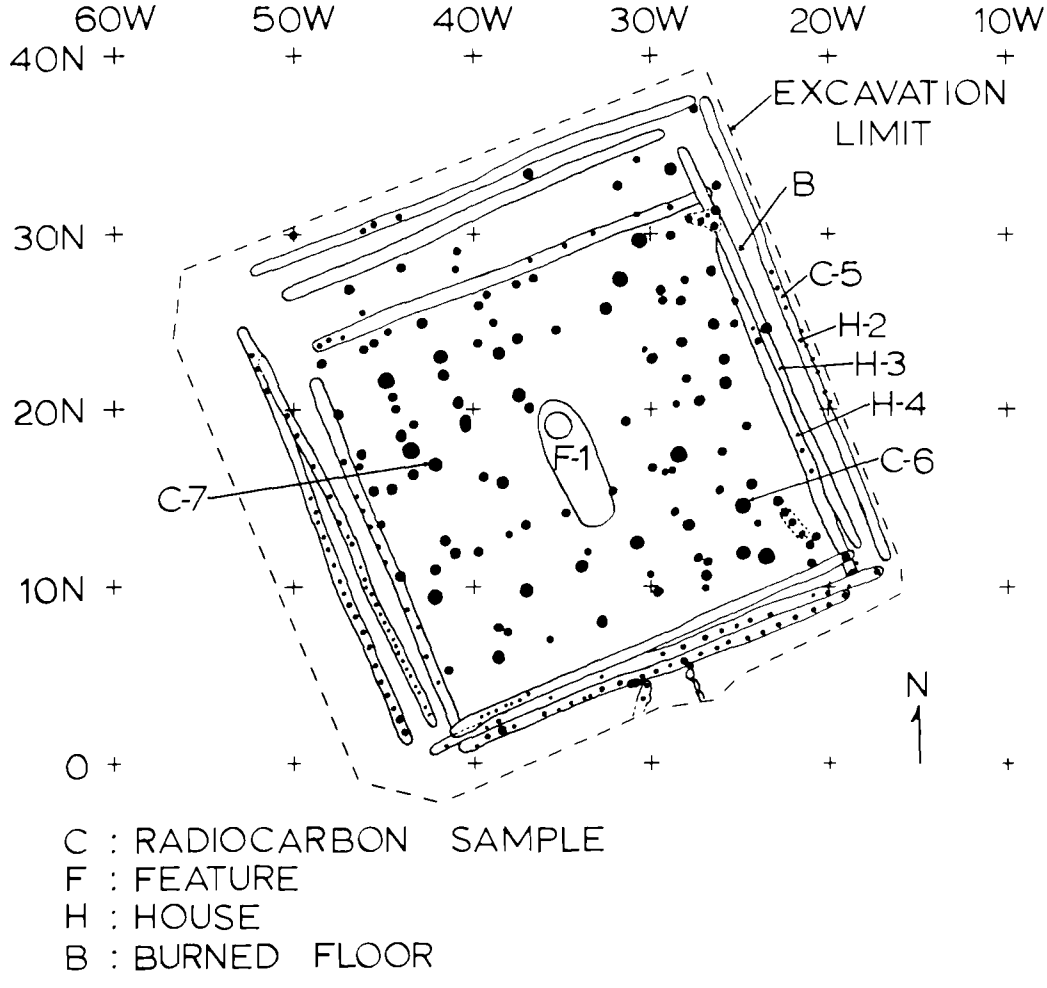


Figure 9. Plan of House 2 area showing ten-foot excavation grid, postmold pattern, and wall trenches of Houses 2, 3, and 4.

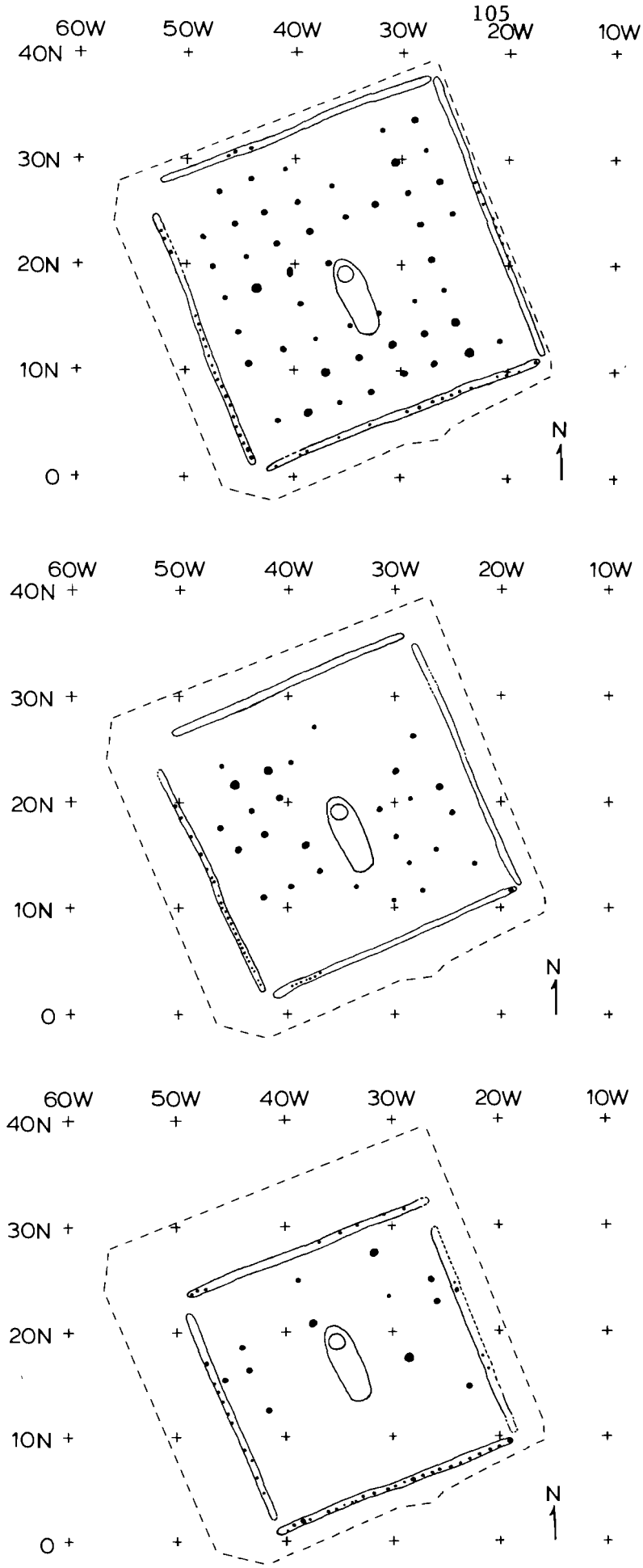
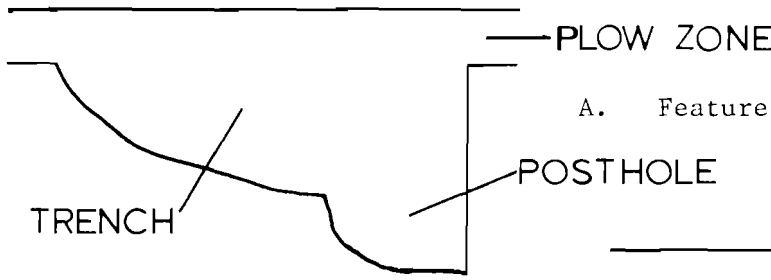
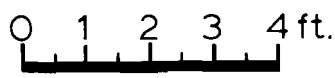
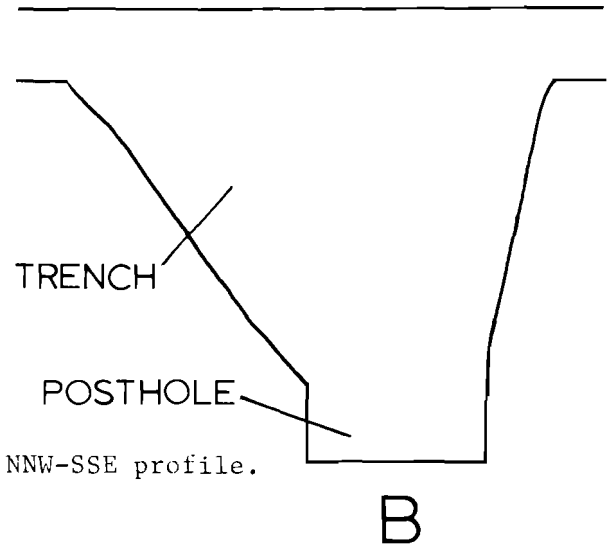


Figure 10. Plans of Houses 2, 3, and 4 (top to bottom), showing probable existing associated postholes.

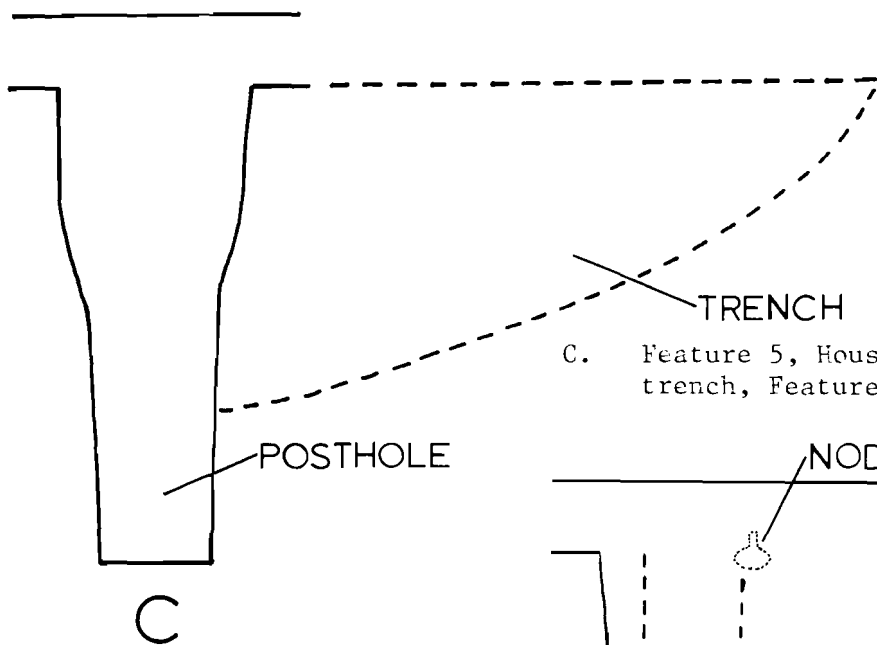


A. Feature 3, House 6, WSW-ENE profile.

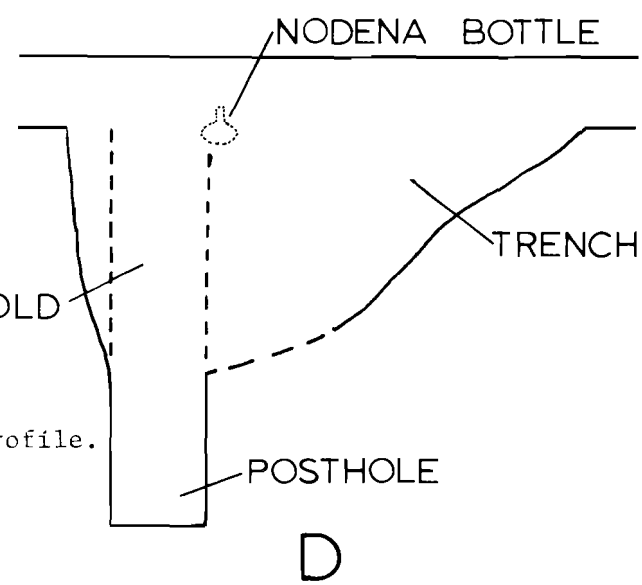




B. Feature 4, House 5, NNW-SSE profile.



C. Feature 5, House 1, N-S profile (adjoining trench, Feature 2, not profiled).



D. Feature 1, Houses 2-4, NNW-SSE profile.

Figure 11. Cross-sections of house center postmolds and posthole abutment trenches.

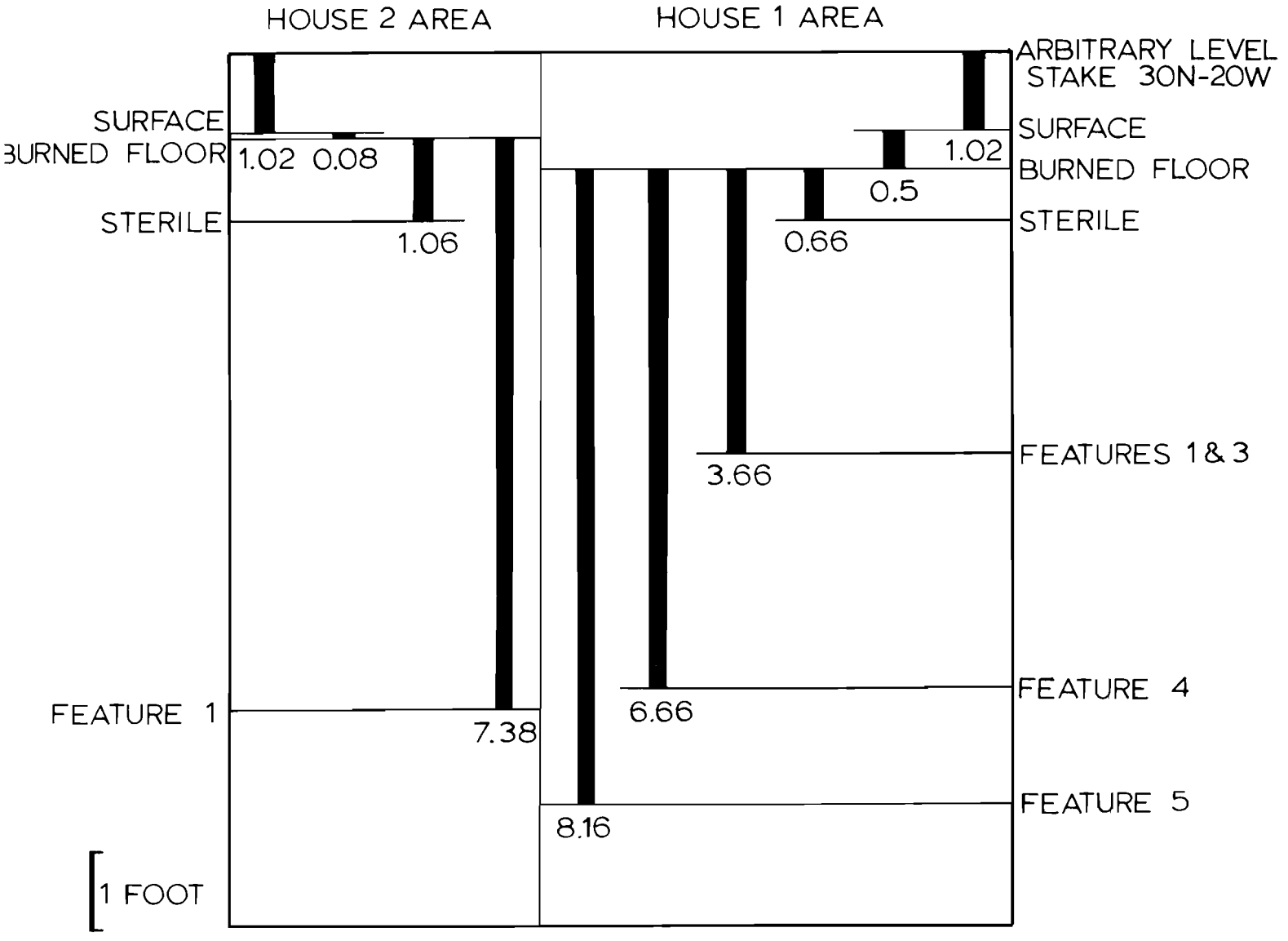
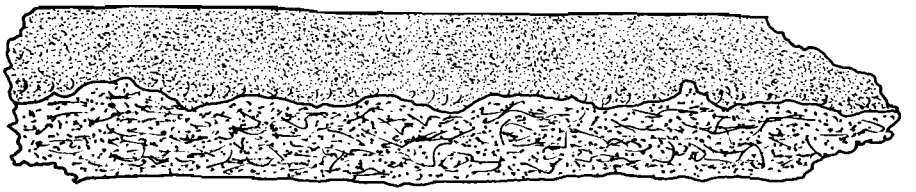
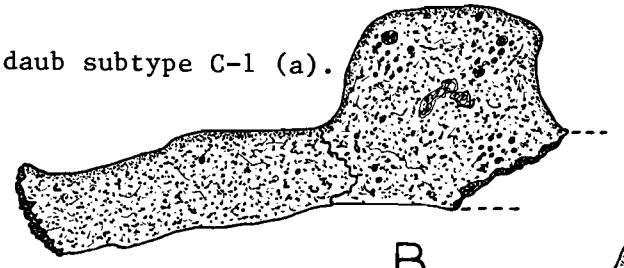


Figure 12. Relative levels of features. (Burned floor in House 2 area is in unit 20N-20W; burned floor in House 1 area is in unit 90N-30E. Sterile levels are those to which the house areas were excavated.)

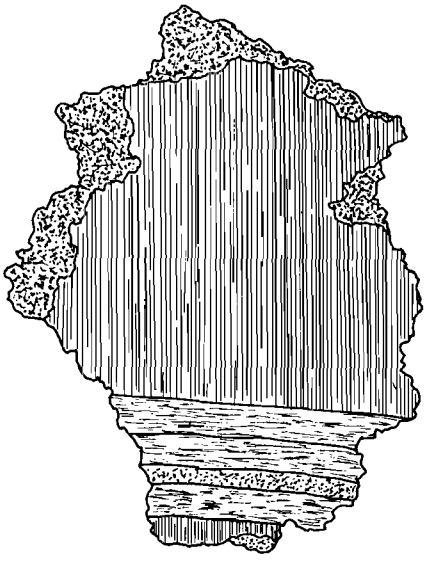


A Lateral view, daub subtype C-1 (a).

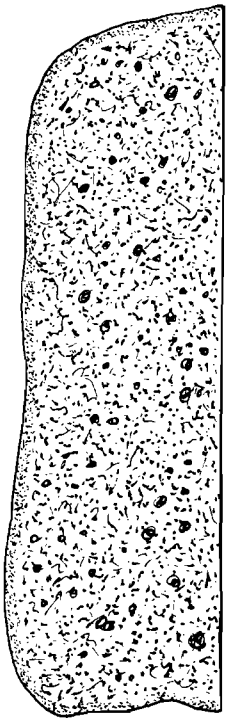
Cross-section, daub subtype C-1 (a).



B

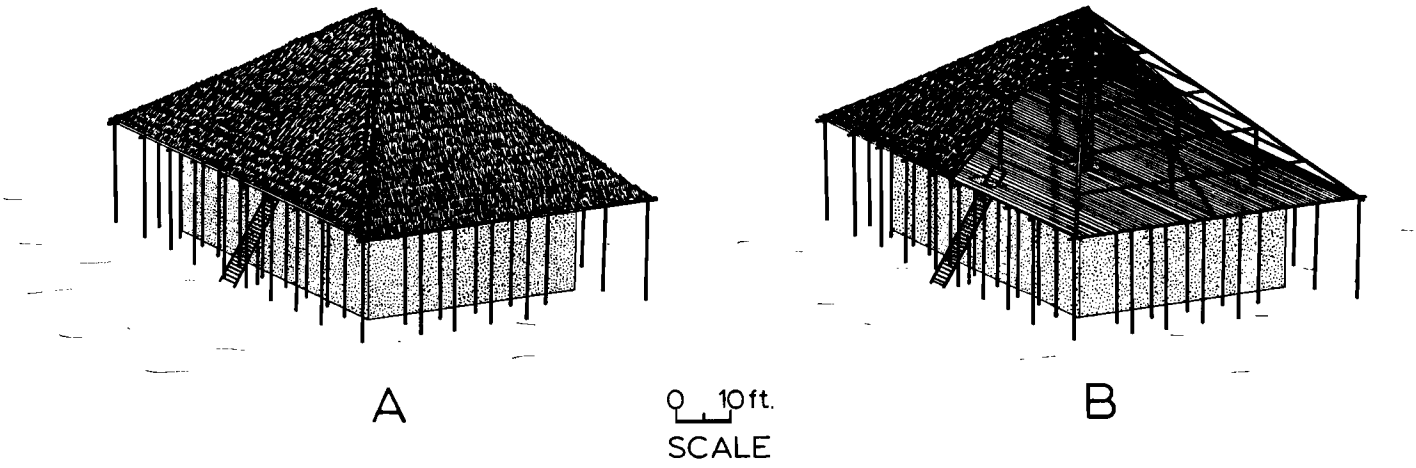


D View of post-impressed side, daub subtype C-2.



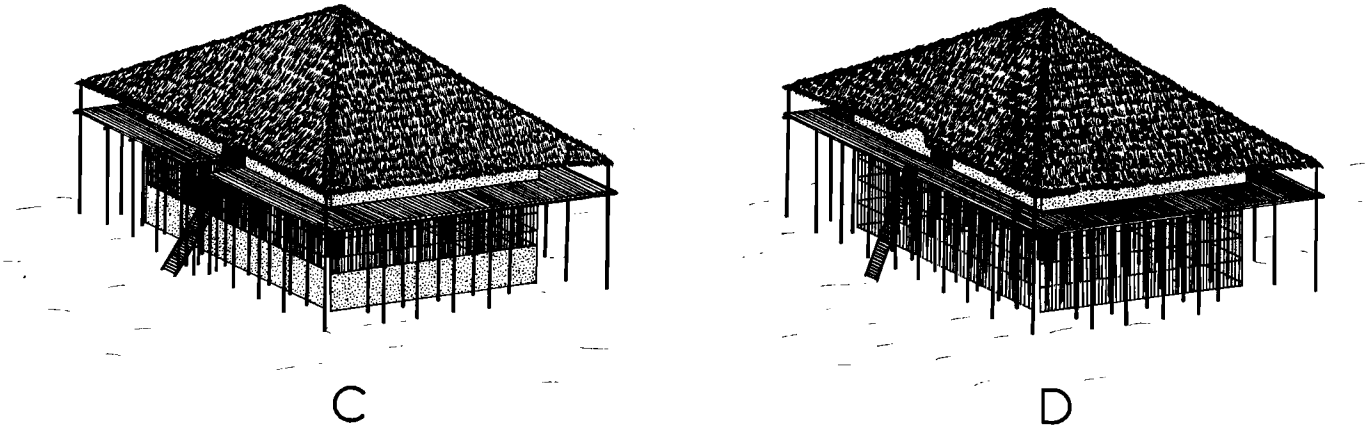
C Cross-section, daub subtype C-1 (b), post collar.

Figure 13. Unusual daub types.



Thatched roof intersecting platform; daub covered wall recessed beneath; entrance through floor at edge of platform.

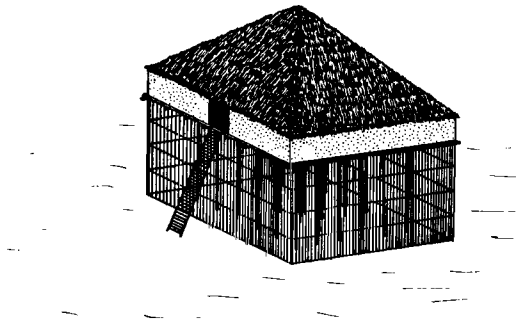
Cutaway showing interior of Plan A; ladder extending through floor opening.



Thatched roof covering open porch; partially dark covered wall recessed beneath; ladder extending through porch opening.

Same as Plan C, except no daub on sub-platform wall, and ladder propped against open porch.

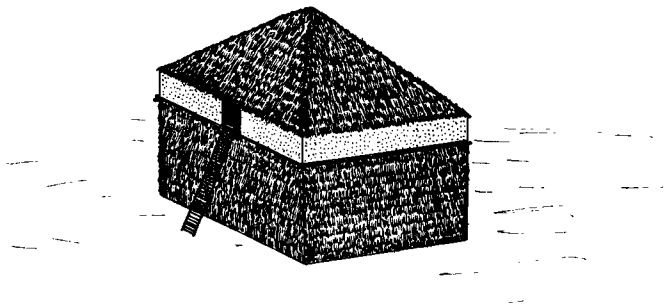
Figure 14. Possible architectural styles of House 1.



E

Same as Plan D, except no porch extending beyond sub-platform wall.

0 10 ft.
SCALE



F

Same as Plan E, except sub-platform wall is covered with thatch (may also apply to House 1).

Figure 15. Possible architectural styles of House 2.

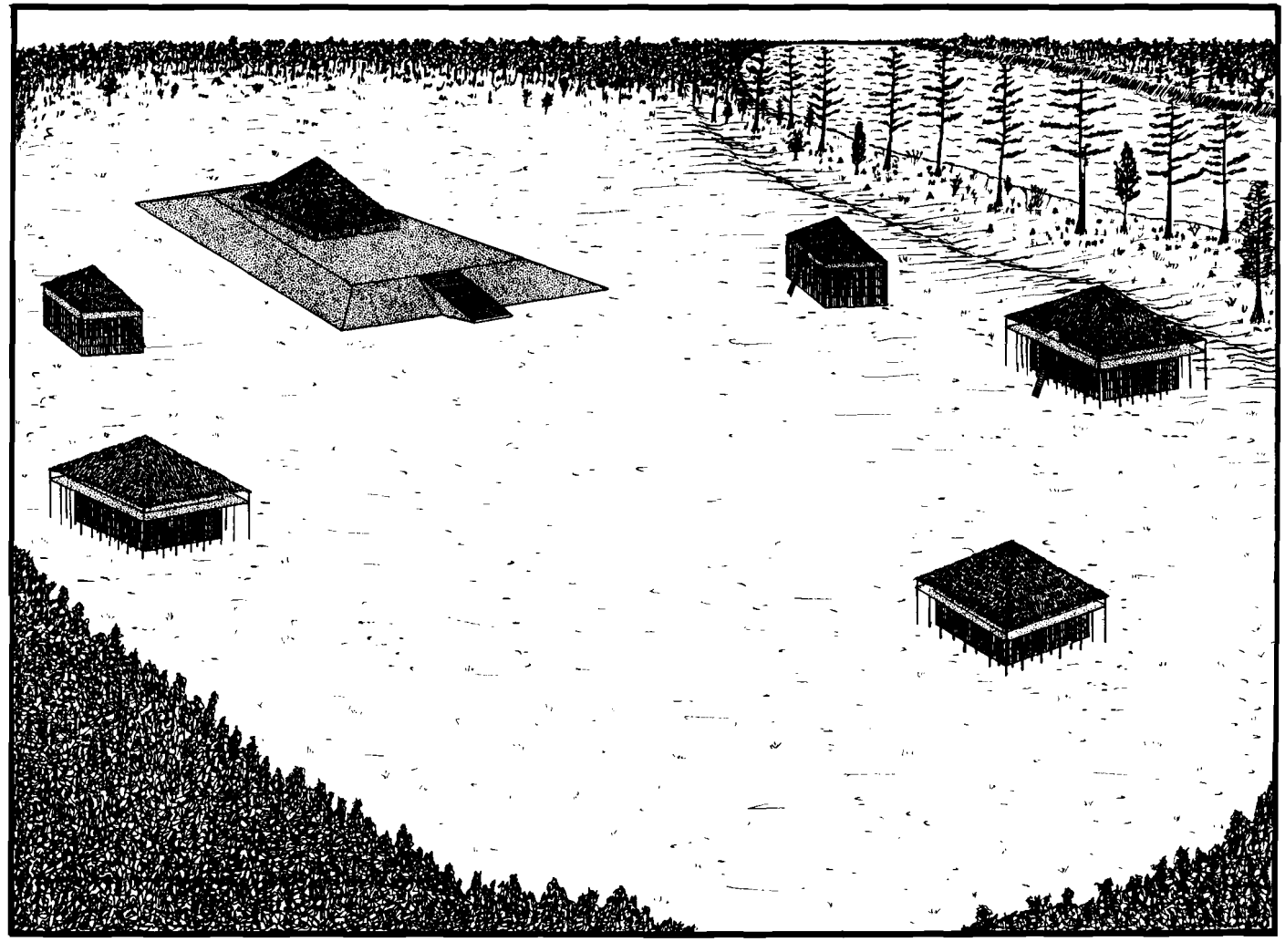


Figure 16. Artist's concept of the Wilsford site showing platform houses surrounding a plaza and pyramidal mound.

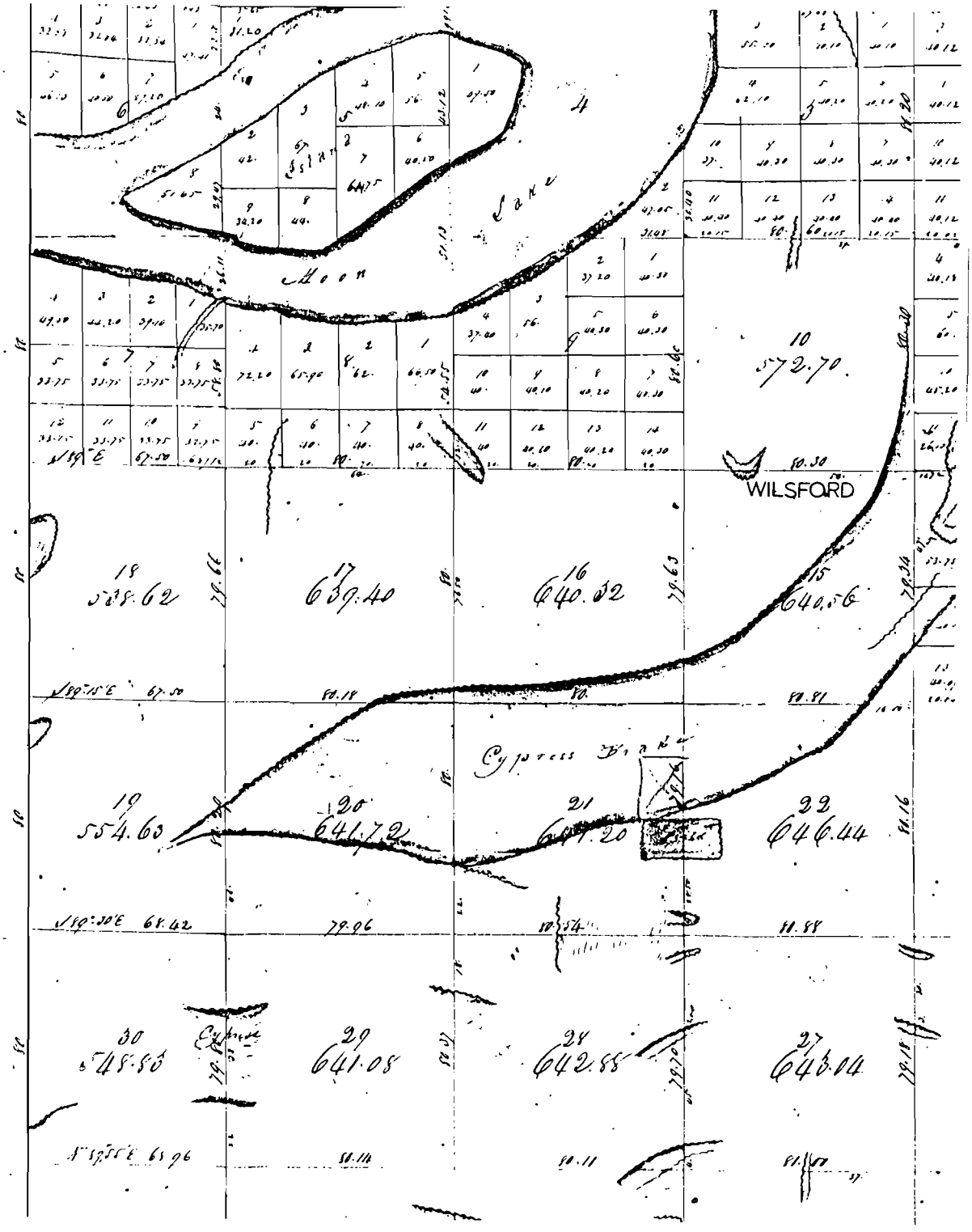


Figure 17. U.S. General Land Office 1842 survey plat of the Wilsford site locality (courtesy of Office of the Mississippi Secretary of State).

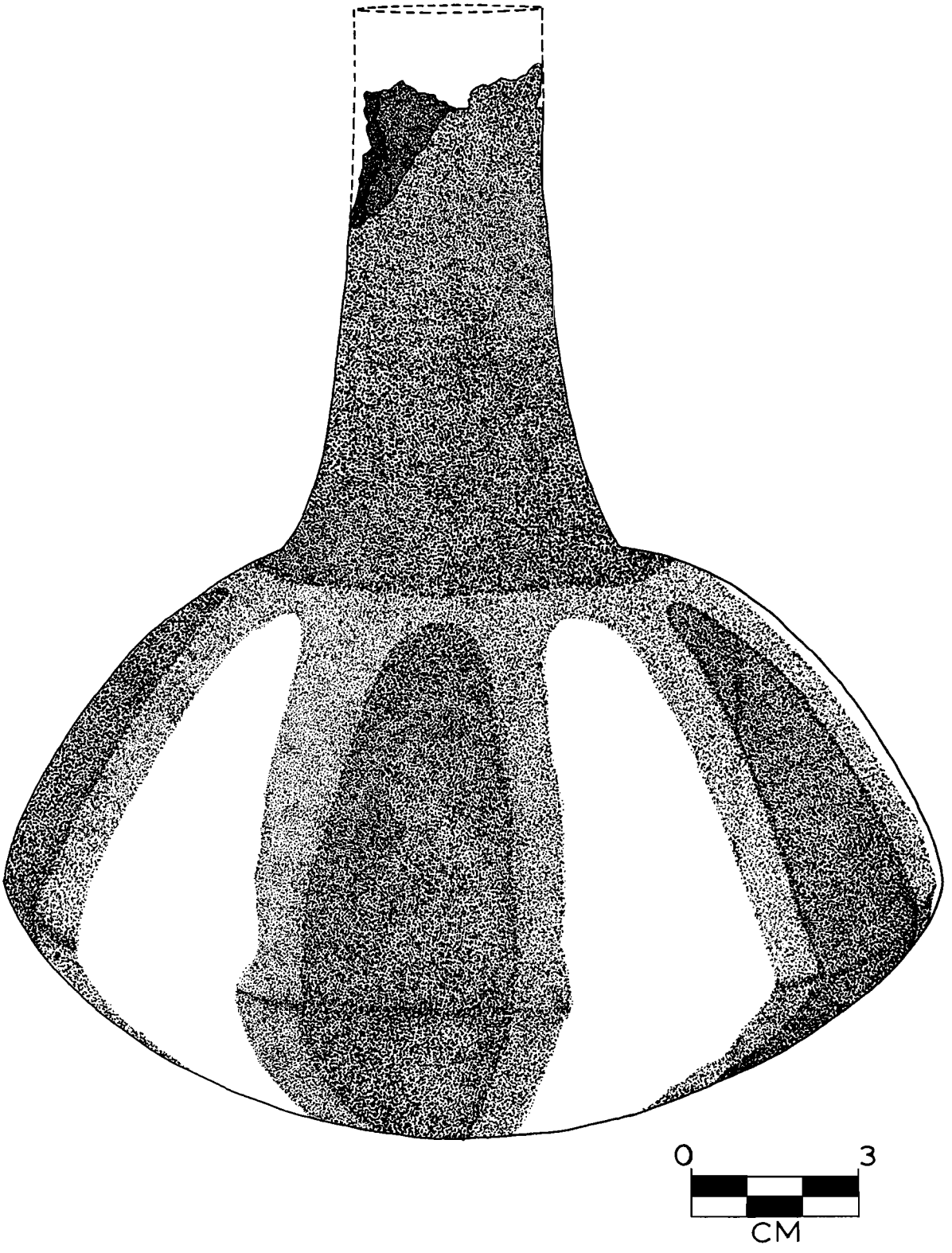


Figure 18. Nodena Red and White var. Nodena bottle from House 2 area, Feature 1.

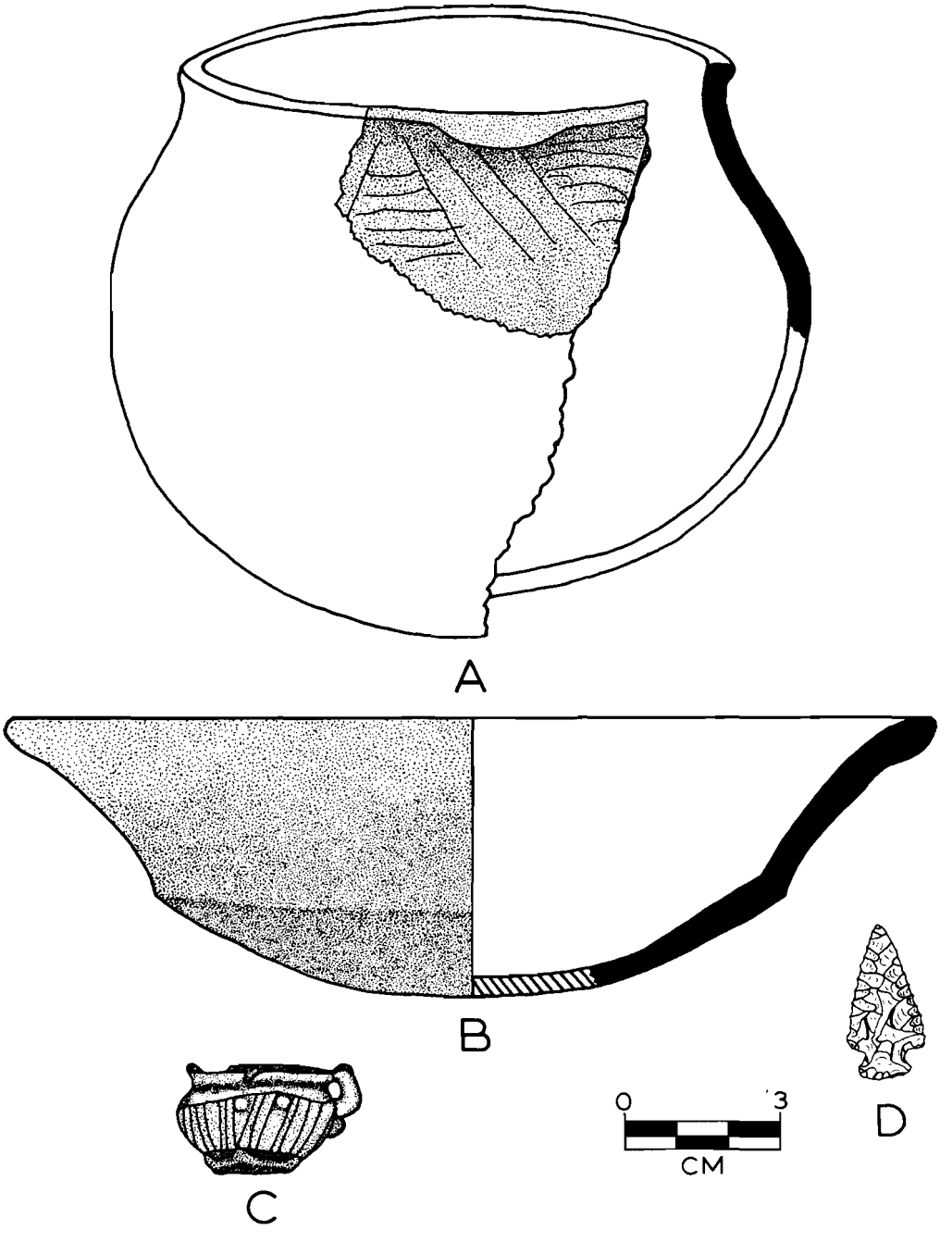


Figure 19. Artifacts from Wilsford. A. Barton Incised var. Barton jar reconstructed from sherd; surface. B. Addis Plain var. Holly Bluff, small carinated bowl reconstructed from sherds; House 2 area, Feature 1. C. Barton Incised var. unspecified, miniature jar with two strap handles, four nodes, and applique base; House 1 backfill (plowzone). D. Projectile point from surface northeast of mound.

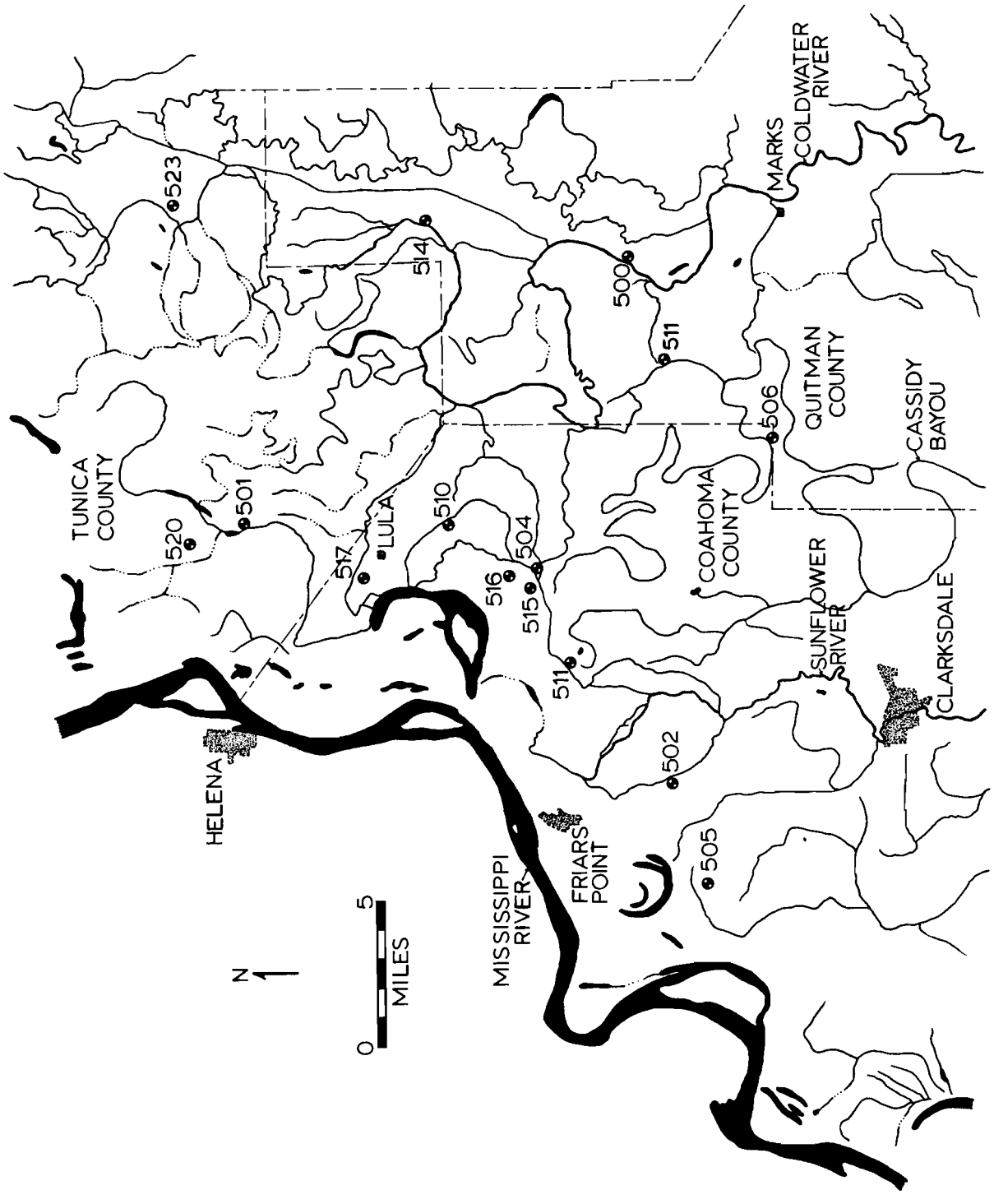


Figure 20. Distribution of Parchman Phase sites in the Upper Sunflower - Coldwater River area (after Phillips 1970: Figure 447, and U.S.G.S. Transverse Mercator Projection: Helena, Ark.; Miss.; Tenn.; 1955).

Plate 1. View of Wilsford mound on November 19, 1940, facing north (courtesy of Peabody Museum, LMS negative #40f/5-11).

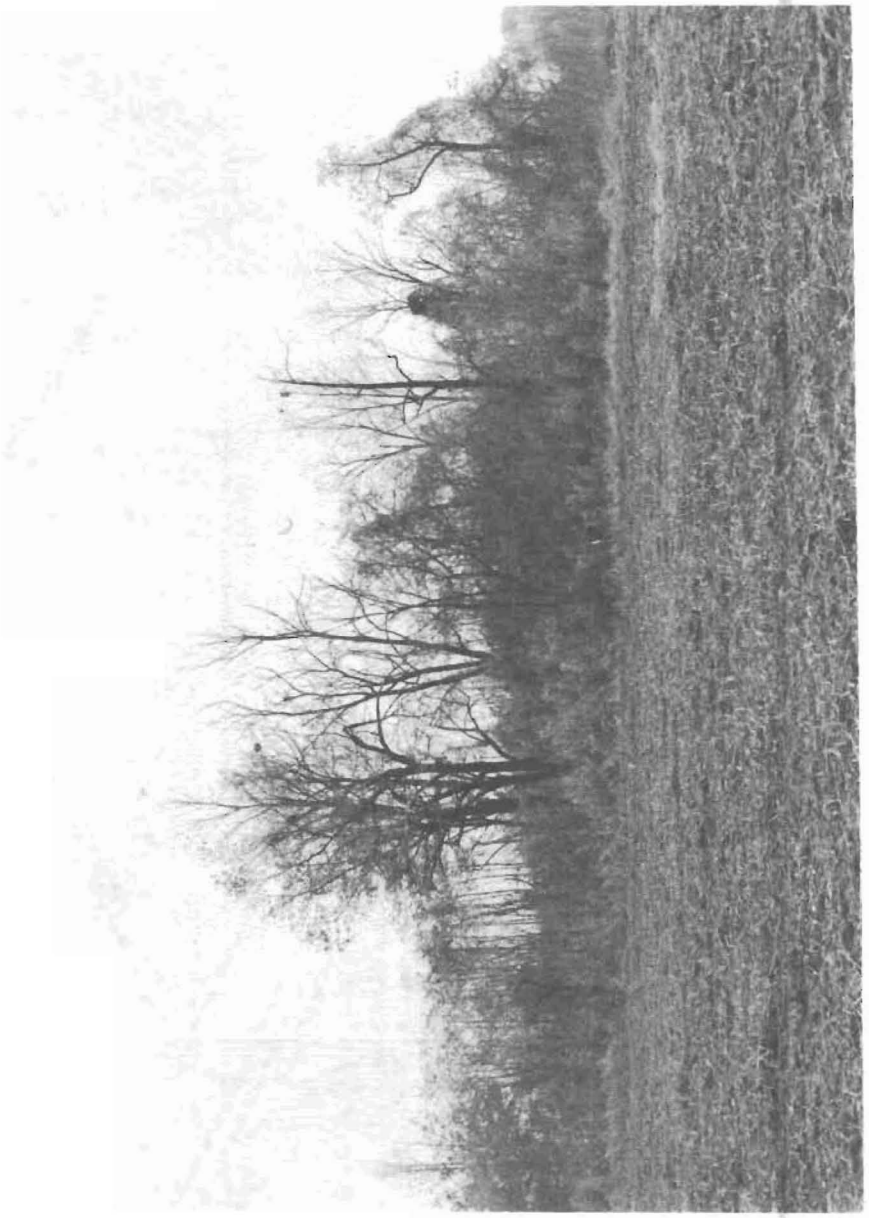


Plate 2. View of Wilsford mound on November 19, 1982, facing north.

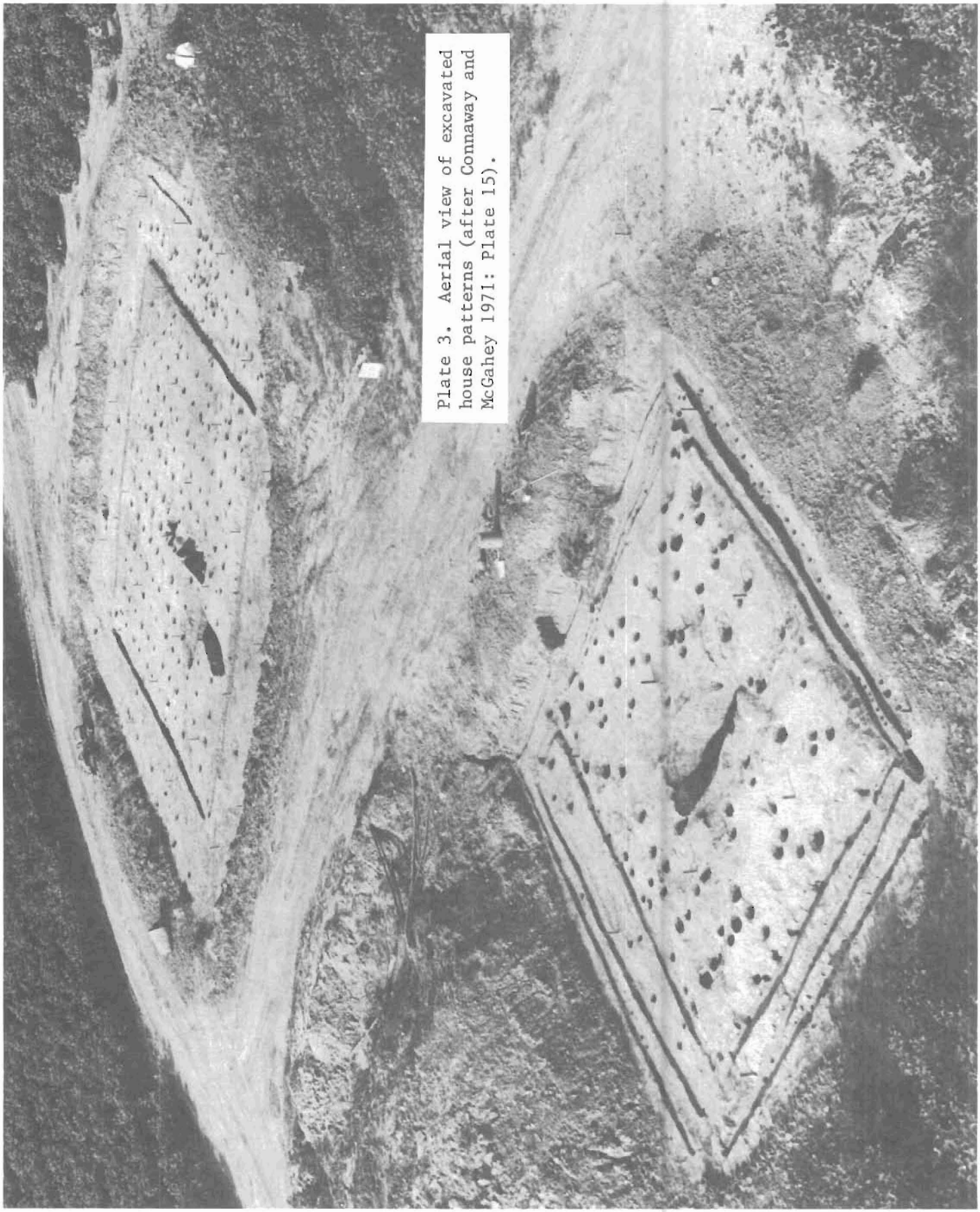


Plate 3. Aerial view of excavated house patterns (after Connaway and McGahey 1971: Plate 15).

Plate 4. Aerial photograph of the Wilsford site locality (U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service).

Table 1. Summary of test excavations

Based on combination of student field notes and recorded horizontal plans of test units. All units disturbed to ca. 1.5 ft. depth. Units 75N-CL, 75N-5W, and 70N-5W were dug to follow disturbed house floor sections from unit 80N-CL.

A. House 1 Area Test Units:

Unit	Level (ft.)	Description
90N-10E (10 ft.)	0.0.5	dark soil; daub fragments.
	0.5-1	daub fragments; small areas sand and clay, ash, black clay; areas black clay and yellow sand at 1 ft.
	1-1.4	mixed daub and brown loam; small area ash and charcoal at 1.4 ft.; sterile sand area at 1.4 ft. No further excavation.
90N-CL	0-0.5	disturbed floor sections; daub; dark clay area between floor sections; small areas ash and charcoal.
	0.5-1	4.5 x 1.75 ft. sq. test to 1 ft. depth in SE corner. No record of sterile depth or further excavation.
100N-5E (5 ft.)	0-0.5	dark soil area; separate overburden area at 0.3 ft. depth. No record of sterile depth or further excavation.
80N-10E (10 ft.)	0-0.5	house floor section at 0.5 ft. depth; brown loam; yellow clay area; dark soil mixed in. No record of sterile or further excavation.
80N-CL (10 ft.)	0.05	unrecorded.
	0.5-1	floor section at 1 ft. depth; floor fragments mixed with dark and brown clay; brown clay area. No record of sterile depth or further excavation.
75N-CL (5 ft.)	0.0.5	two small floor sections at 0.42 ft. depth; daub; charcoal.
	0.5-1	mixed daub, brown loam, and floor fragments; three floor sections at 0.5 ft. depth. No record of sterile depth or further excavation.

Table 1. Summary of test excavations (continued)

A. House 1 Area Test Units (continued)

75N-5W (5 ft.)	0.05	hard black clay at 0.5 ft. depth; scarce daub; floor section in NE corner.
	0.5-1	brown clay; scattered daub; small area ash and charcoal; floor section in NE corner. No record of sterile depth or further excavation.
70N-5W (5 ft.)	0-0.5	mixed clay, daub, charcoal.
	0.5-1	mixed daub and black clay. No record of sterile depth or further excavation.

B. House 2 Area Test Unit:

Unit	Level (ft.)	Description
10N-40W (10 ft.)	0-0.5	brown loam; black and brown clay; brown sandy loam with daub; daub area in SW¼.
	0.5-1	daub concentrations at 0.75-1 ft. depth.
	1-1.5	daub concentrations at 1-1.33 ft. depth; sterile yellow sand at 1.42 ft. depth.

C. Turnrow Test Units Between House Areas:

Unit	Level (ft.)	Description
50N-30W (5 ft.)	0-0.5	soil hard packed; daub mixed with brown loam.
	0.5-1	brown loam; daub and black clay; some charcoal.
	1-1.5	some daub; sterile yellow sand at 1.5 ft. depth.
55N-30W (5 ft.)	0-0.5	soil hard packed; daub mixed with brown loam.
	0.5-1	yellow sand mixed with brown loam and daub in W2/3; brown loam, daub, and pieces of charcoal in E2/3.
	1.15	sterile yellow sand at 1.5 ft. depth.
6 Auger Holes		In turnrow between two house areas; not recorded on site excavation chart (Figure 3).
	0-0.75	brown soil and daub.
	0.75-1.25	black clay and daub.
	1.25	sterile yellow sand.

Table 2. Postmold and trench depths in House 1 (see Figure 5 for locations)

Trench or Postmold Reference		Depth: Surface to Bottom of Feature*	Depth: Bottom of Plowzone to Bottom of Feature	Depth: Burned Floor to Bottom of Feature**
NW Trench				
Profile A:	T-15	3.0 ft.	1.59 ft.	2.50 ft.
	T-16	2.93 ft.	1.52 ft.	2.43 ft.
	T-17	2.83 ft.	1.42 ft.	2.33 ft.
	Trench	2.685 ft.	1.275 ft.	2.185 ft.
Profile B:	T-23	unrecorded***	ca. 2.25 ft.	ca. 3.085 ft.
	Trench	ca. same as A	1.275 ft.	2.185 ft.
NW Trench:	T-10	3.08 ft.	1.67 ft.	2.58 ft.
	T-18	2.99 ft.	1.58 ft.	2.49 ft.
	T-20	3.08 ft.	1.67 ft.	2.58 ft.
	T-21	3.16 ft.	1.75 ft.	2.66 ft.
SE Trench				
Profile C:	T-17	3.75 ft.	1.50 ft.	3.25 ft.
	Trench	3.92 ft.	1.67 ft.	3.42 ft.
NE Trench				
Profile D:	T-24	3.08 ft.	1.83 ft.	2.58 ft.
	T-25	3.08 ft.	1.83 ft.	2.58 ft.
	T-26	3.08 ft.	1.83 ft.	2.58 ft.
	Trench	3.08 ft.	1.83 ft.	2.58 ft.
NE Trench:	T-12	2.25 ft.	1.0 ft.	1.75 ft.
	T-13	2.33 ft.	1.08 ft.	1.83 ft.
	T-14	2.25 ft.	1.0 ft.	1.75 ft.
	T-16	1.83 ft.	0.58 ft.	1.33 ft.
	T-17	2.08 ft.	0.83 ft.	1.58 ft.
	T-18	2.17 ft.	0.92 ft.	1.67 ft.
SW Trench:	T-7	unrecorded	1.25 ft.	

Table 2. Postmold and trench depths in House 1 (see Figure 5 for locations) (continued)

Trench or Postmold Reference		Depth: Surface to Bottom of Feature*	Depth: Bottom of Plowzone to Bottom of Feature	Depth: Burned Floor to Bottom of Feature**
Support Posts:	P-1	4.23 ft.		3.73 ft.
	P-2	4.69 ft		4.19 ft.
	P-3	4.73 ft.		4.23 ft.
	P-4	4.68 ft.		4.18 ft.
	P-5	4.30 ft.		3.80 ft.
	P-6	4.33 ft.		3.83 ft.
	P-7	4.59 ft.		4.09 ft.
	P-8	4.20 ft.		3.70 ft.
	P-9	4.63 ft.		4.13 ft.
	P-10	5.02 ft.		4.52 ft.
	P-11	5.01 ft.		4.51 ft.
	P-12	4.91 ft.		4.41 ft.
	P-13	4.84 ft.		4.34 ft.

* Measurements do not necessarily indicate that present or original surfaces were level or that trenches varied that much in depth, but are for general comparative purposes. Plowzone disturbance and leveling of House 1 area prevented determination of upper limit of trenches.

** Disturbed burned floor surface appears at ca. 0.5 foot level in test squares 80N-10E and 90N-CL, indicating possible original surface level.

*** Depth of 3.585 ft. estimated from Profile A.

Table 3. Wilsford site: wall trench and house dimensions

House	Trench	Length	Width range-average*	Width of house**	House width averages
1***	NW	36.1 ft.	.60-.95 ft.(.78 ft.)	NW side: 37.5 ft. (between SW & NE walls)	37.4 ft. (SW x NE)
1	NE	36.7 ft.	.50-.85 ft.(.75 ft.)	NE side: 37.4 ft. (between NW & SE walls)	
1	SW	35.8 ft.	.55-1.0 ft.(.85 ft.)	SW side: 37.0 ft. (between NW & SE walls)	37.2 ft. (NW x SE)
1	SE	36.6 ft.	.70-.95 ft.(.90 ft.)	SE side: 37.3 ft. (between SW & NE walls)	
2	NW	26.7 ft.	.60-.70 ft.(.64 ft.)	NW side: 28.1 ft. (between SW & NE walls)	28.15 ft. (SW x NE)
2	NE	28.0 ft.	.45-.70 ft.(.58 ft.)	NE side: 27.9 ft. (between NW & SE walls)	
2	SW	25.2 ft.	.50-.65 ft.(.58 ft.)	SW side: 28.1 ft. (between NW & SE walls)	28.0 ft. (NW x SE)
2	SE	27.5 ft.	.50-.80 ft.(.65 ft.)	SE side: 28.2 ft. (between SW & NE walls)	
3	NW	23.2 ft.	.55-.85 ft.(.71 ft.)	NW side: 25.8 ft. (between SW & NE walls)	25.6 ft. (SW x NE)
3	NE	24.6 ft.	.50-.75 ft.(.58 ft.)	NE side: 25.5 ft. (between NW & SE walls)	
3	SW	22.9 ft.	.45-.65 ft.(.54 ft.)	SW side: 25.4 ft. (between NW & SE walls)	25.45 ft. (NW x SE)
3	SE	24.9 ft.	.50-.80 ft.).58 ft.)	SE side: 25.4 ft. (between SW & NE walls)	
4	NW	24.0 ft.	.65-.85 ft.(.74 ft.)	NW side: 23.3 ft. (between SW & NE walls)	23.3 ft. (SW x NE)
4	NE	21.2 ft.	.60-.75 ft.(.67 ft.)	NE side: 23.3 ft. (between NW & SE walls)	
4	SW	22.0 ft.	.55-.75 ft.(.64 ft.)	SW side: 23.3 ft. (between NW & SE walls)	23.3 ft. (NW x SE)
4	SE	23.6 ft.	.50-.85 ft.(.67 ft.)	SE side: 23.3 ft. (between SW & NE walls)	

* Averaged from ca. 20-22 width measurements taken at intervals along trench.

** Measured between interior edges of trenches.

*** House 1 platform support posts extended outside the wall trenches. Postulated dimensions of House 1 platform, measured between farthest edges of support posts, are: 56.7 ft. (NW x SE) and 54.4 ft. (SW x NE).

Table 4. Wall trench depths

House	Trench	Depth below surface	Depth below burned floor surface*
1	NE	3.1 ft.	2.6 ft.
1	SE	3.92 ft.	3.42 ft.
1	NW	2.68 ft.	2.18 ft.
2	NE	1.88 ft.	1.80 ft.
3	NE	2.43 ft.	2.35 ft.
4	NE	1.88 ft.	1.80 ft.

* In House 1 the first burned floor surface encountered was at the 0.5 ft. level. In houses 2-4 the first burned floor surface encountered was at the 0.08 ft. level. Since both floor remnants were in the plowzone and the surface had been plowed level, accurate wall trench depths are not available.

Table 5. House 1 postmold data*

(trench postmolds)

Trench	Number of Postmolds	Space Range**	Space Average	Diameter Range	Diameter Average
NW	42	0.5-1.4	0.87	0.3-0.4	0.34
NE	45	0.3-1.3	0.82	0.2-0.4	0.32
SW	45	0.55-1.15	0.80	0.3-0.5	0.35
SE	52	0.1-1.2	0.71	0.2-0.5	0.33

(interior support postmolds)

Number of Postmolds	SW-NE Space Average	SW-NE Space Range	NW-SE Space Average	NW-SE Space Range	Diameter Range	Diameter Average
140	1.9-3.8	2.71	2.1-3.6	2.89	0.5-1.0	0.73

(exterior support postmolds)

Side	Row	Number of Postmolds	Space Range	Space Average	Diameter Range	Diameter Average
NW	outer	5	6.1-8.0	6.7	0.7-0.8	0.77
NW	inner	5	4.2-5.7	4.8	0.7-0.8	0.73
NE	outer	4	6.3-7.1	6.7	0.5-0.85	0.72
NE	inner	4	5.5-6.3	5.9	0.75-1.0	0.86
SW	outer	5	6.1-7.4	6.6	0.55-0.7	0.64
SW	inner	4	5.6-8.4	7.4	0.65-0.75	0.7
SE	outer	5	5.2-8.0	6.3	0.6-0.9	0.7
SE	inner	6	3.9-7.5	6.1	0.7-0.85	0.76
W	corner	1				0.55
N	corner					1.0
E	corner					0.85

* Refers only to those postmolds shown in Figure 6.
** Measured from center to center of postmolds.
Note: all measurements are given in feet and tenths of a foot.

Table 6. House 2 postmold data*

(trench postmolds)

Trench	Number of Postmolds	Space Range**	Space Average	Diameter Range	Diameter Average
NW	3	0.6-1.5	1.05	0.3	0.3
NE	9	0.7-1.2	0.94	0.2-0.3	0.25
SW	21	0.6-1.3	0.87	0.25-0.45	0.3
SE	16	0.75-1.35	1.03	0.2-0.35	0.27

Note: only portions of above trenches with adjacent postmolds are included in spacing range and average. Gaps within trenches in Figure 10 indicate postmolds could not be recognized here.

(interior support postmolds)

Number of Postmolds	SW-NE Space Range	SW-NE Space Average	NW-SE Space Range	NW-SE Space Average	Diameter Range	Diameter Average
49	2.8-3.7	3.2	2.95-3.5	3.2	0.35-0.95	0.59

* Refers only to those postmolds shown in Figure 10a.
** Measured from center to center of postmolds.
Note: all measurements are given in feet and tenths of a foot.

Table 7. House 3 postmold data*

(trench postmolds)

Trench	Number of Postmolds	Space Range**	Space Average	Diameter Range	Diameter Average
SW	25	0.4-0.65	0.5	0.2-0.3	0.22
SE	8	0.3-0.6	0.48	0.2-0.55	0.24

Note: NW and NE trenches omitted due to lack of postmolds. Only adjacent postmolds included in spacing range and average.

(interior support postmolds)

Number of Postmolds	SW-NE Space Range	SW-NE Space Average	NW-SE Space Range	NW-SE Space Average	Diameter Range	Diameter Average
27	2.25-3.35	2.9	2.1-3.0	2.7	0.4-0.9	0.57

* Refers only to those postmolds shown in Figure 10.
** Measured from center to center of postmolds.
Note: all measurements are given in feet and tenths of a foot.

Table 8. House 4 postmold data*

(trench postmolds)

Trench	Number of Postmolds	Space Range	Space Average	Diameter Range	Diameter Average
NW	8	0.6-0.75	0.67	0.2-0.35	0.27
NE	5	0.75-1.25	1.0	0.25-0.4	0.31
SW	10	0.9-1.2	1.05	0.25-0.4	0.27
SE	25	0.4-1.3	0.9	0.2-0.5	0.32

Note: Only adjacent postmolds included in spacing range and average.

(interior support postmolds)

Number of Postmolds	SW-NE Space Range	SW-NE Space Average	NW-SE Space Range	NW-SE Space Average	Diameter Range	Diameter Average
12	2.4	2.4	2.05-2.25	2.15	0.3-0.85	0.63

* Refers only to those postmolds shown in Figure 10.
** Measured from center to center of postmolds.
Note: all measurements are given in feet and tenths of a foot.

Table 9. Daub Types

A. Woven, split-cane mats on one side.
   1. Opposite side flattened, with grass imprints.
      a. grass imprints parallel to each other, diagonal to cane mat warp.
      b. grass imprints crisscross at various haphazard angles.
   2. Opposite side rough, with deep grass imprints.
      a. grass imprints many, at crisscrossing angles.
      b. grass imprints few, at various angles, some crossing.
   3. Opposite side rough, with no grass imprints.
   4. Opposite side smooth, uneven, no grass imprint.
   5. Opposite side broken away (could be any of above).
   6. Occasional fragment of opposite side only, mat side broken away.

B. One side smoothed, no cane mat imprints.
   1. Smooth side has sandy film applied, opposite side broken away.
   2. Smooth side has sandy film applied, opposite side rough, undefined.
   3. Smooth side without film, opposite side broken away.
   4. Smooth side without film, opposite side rough, undefined.
   5. Broken surface with cane imprint only, no smooth surface opposite (fragments of above subtypes).
   6. Smooth, uneven surface, filmed & unfilmed, no grass temper, single split cane imprints beneath surface, opposite surface broken away.

C. Smoothed on two opposite or adjacent sides.
   1. One side smoothed with sandy film, opposite with wood or bark imprints.
   2. Three-sided, one with sandy film or hand-mashed without film, one with wood grain or bark (post) imprint, third side broken; some examples with split cane imprints on side with post impression.

D. Miscellaneous.
   Non-daub Burned earth with smooth surface, probably floor, hearth fragments, or ground surface hard packed; also one dirt dauber nest.

Note: All but subtypes B-6, C-2, and the non-daub contain some amount of cut grass temper imprints.

Note: In Type B, all subtypes may have occasional single cane imprints opposite the smooth surface, inside the daub mass.

Table 10. Trees reported on three types of drainage-related land in the 1836-1942 Coahoma County land surveys.

Tree Type (only common name given)	Land Subject To Overflow		Land Subject To Partial Overflow		Land Above Overflow	
	N.area	S.area	N.area	S.area	N.area	S.area
cypress	X	X				X
cottonwood	X	X		X	X	
sycamore	X				X	
willow	X					
hackberry	X	X	X	X	X	
*gum	X	X	X	X	X	X
sweetgum	X	X	X	X	X	
blackgum		X				
*oak	X	X	X	X	X	X
red oak		X	X			X
post oak		X			X	
pin oak		X				
white oak		X				
*ash	X		X		X	X
black ash		X		X		
*elm	X	X	X		X	
red elm		X		X	X	X
slippery elm				X		X
box elder	X	X	X	X		
redbud		X		X	X	
persimmon		X			X	
hickory		X		X		X
maple		X				
swamp dogwood		X		X		
dogwood				X		
red haw		X				X
black haw				X		
mulberry	X					
black locust		X				
thorn (honey locust?)		X				
sassafras		X		X		
plum bush		X				
pawpaw					X	
cane	X	X	X	X	X	X
vines	X	X		X	X	X
briars	X	X		X		X
brush	X	X		X	X	X

* specific tree type not given
X listed as present in survey area

Table 11. Charred wood samples from excavated houses.

Sample Number	Provenience	Wood Identification*	Species Likely Utilized
1.	House 2, charred post (provenience unrecorded).	Baldcypress (*Taxodium distichum* (L.) Rich.)	same
2.	House 3 or 4 (probably 3) N.E. trench, charred post.	White Oak group (*Quercus* sp.)	Cow Oak or Swamp Chestnut Oak (*Quercus Michauxii* Nuttall)
3.	House 1, Feature 5, center-postmold, S. side of pit, charred wood (C-14 sample 3).	Baldcypress (*Taxodium distichum*)	same
4.	House 2 area, backfill, probably N.E.trenches, possible post, charred wood, found near C-14 sample 5.	Baldcypress (*Taxodium distichum*)	same
5.	House 2 area, Feature 1, centerpost abutment trench, charred wood.	Baldcypress (*Taxodium distinchum*)	same
6.	House 2, N.E. trench, charred post.	Hickory group (*Carya* sp.)	Bitter Pecan or Water Hickory (*Carya aquatica* (Michaux f.) Nuttall)
7.	House 2, N.E. trench, charred post.	Hickory group (*Carya* sp.)	Bitter Pecan or Water Hickory (*Carya aquatica*)
8.	House 2, N.E. trench, charred post	White Oak group (*Quercus* sp.)	Cow Oak or Swamp Chestnut Oak (*Quercus Michauxii*)
9.	House 2, N.E. trench, charred post.	Elm (*Ulmus* sp.) (probably Winged Elm: *Ulmus alata* Mich.)	same
10.	House 2, N.E. trench, charred post.	Hickory group (*Carya* sp.)	Bitter Pecan or Water Hickory (*Carya aquatica*)
11.	Outside House 2 N.E. trench, charred wood & bark parallel to line of burned posts.	(probably) Baldcypress (*Taxodium distichum*)	same
12.	House 5, Feature 4, centerpost abutment trench, charred wood.	Baldcypress (*T. distichum*) and Red Oak group (*Quercus* sp.)	same Water Oak (*Quercus nigra* L.) Willow Oak (*Q. phellos* L.) Nuttall Oak (*Q. Nuttallii* Palmer) Cherrybark Oak (*Q. pagoda* Raf.)

*According to U.S.D.A. Forest Products Lab.

Table 12a. Other trees possibly available in the Wilsford area.

American elm	Ulmus americana
Bigleaf shagbark	Carya lacinoisa
Black willow	Salix nigra
Boxelder	Acer negundo
Burr oak	Quercus macrocarpa (white oak group)
Cedar elm	Ulmus crassifolia
Cottonwood	Populus deltoides
Green ash	Fraxinus pennsylvanica (lanceolata)
Hackberry**	Celtis occidentalis
Hackberry (sugarberry)	Celtis laevigata
Honey locust	Gleditsia triacanthos
Nutmeg hickory	Carya myristicaeformis
Pawpaw	Asimina triloba
Pecan	Carya illinoensis
Persimmon	Diospyrus virginiana
Pin oak	Quercus palustris (red oak group)
Post oak***	Quercus stellata (mississippiensis)(white oak)
Red ash	Fraxinus pennsylvanica
Red maple	Acer rubrum
Sassafras	Sassafras variifolium
Scarlett oak	Quercus coccinea (red oak group)
Shingle oak	Quercus imbricaria (red oak group)
Silver maple	Acer saccharinum
Swamp dogwood	Cornus stricta
Swamp blackgum*	Nyssa biflora
Swamp chestnut oak	Quercus prinus (white oak group)
Swamp cottonwood	Populus heterophylla
Swamp red oak	Quercus falcata (red oak group)
Sweetgum	Liquidambar styraciflua
Sycamore	Platanus occidentalis
Tupelo gum	Nyssa aquatica
Water ash*	Fraxinus caroliniana

* few specimens found in Delta (Putnam & Bull 1932)
** probably in Delta, but unreliable reports (Putnam & Bull 1932)
*** species known only in the Delta (Watson 1968)

References:

Gunn et al.	1980
Harrar and Harrar	1946
Little	1977
Putnam and Bull	1932
Watson	1968

Table 12b. Less common trees and shrubs possibly available in the Wilsford area.

American elder	Sambucus canadensis
American snowball	Styrax americana
Bitter pecan**	Carya texana
Common buttonbush	Cephalanthus occidentalis
Coyote willow	Salix exiqua
Devil's walking stick	Aralia spinosa
Hawthorn	Crataegus sp.
Hercules club	Zanthoxylum clava-herculis
Holly	Ilex opaca
Kentucky coffeetree***/*	Gymnocladus dioicus
Loblolly pine	Pinus taeda
Planertree (water elm)	Planera aquatica
Possum haw (winterberry)	Ilex decidua
Pumpkin ash**	Fraxinus profunda
Redbud	Cercis canadensis
Red mulberry	Morus rubra
River birch	Betula nigra
Roughleaf dogwood	Cornus asperifolia
Roughleaf dogwood	Cornus drummondii
Smooth sumac	Rhus glabra
Swamp privet	Forestiera acuminata
Water locust	Gleditsia aquatica

* few specimens found in Delta (Putnam and Bull 1932)
** probably in Delta, but unreliable reports (Putnam and Bull 1932)
*** species known only in the Delta (Watson 1968)

References:

Gunn et al.	1980
Harrar and Harrar	1946
Little	1977
Putnam and Bull	1932
Watson	1968

Table 13. Plants and trees indicated by other carbonized floral remains from the Wilsford excavation.*

Plant Name	Sample	Plant Part	Measurements	Provenience
(trees)				
Honey locust	5	1 seed fragment		House 6, F-3
Gleditsia triacanthos L.				
Persimmon				
Diospyrus virginiana L.	1	25 seeds, fragments		House 5, F-4
	2	1 seed		House 1, F-1
	3	1 seed		House 1, center of N¼ interior
Hickory				
Carya sp. (see Table 12)	1	2 nutshell frags.		House 5, F-4
Oak	5	1 acorn fragment		House 6, F-3
Quercus sp. (see Table 12)	daub	1 acorn imprint	L:6.6 mm Diam: 9.4 mm	
(daub imprints probably red oak)	daub	1 acorn imprint	L: 6.5 mm Diam: 11.0 mm	House 1, F-5
(cultigens)				
Corn	1	1 8-row cupule		
Zea mays L.		1 8-row grain	(see Table 14)	
		1 10-row? grain distorted grains		House 5, F-4
	3	2 tbs. distorted grains (mostly popcorn)	(see Table 14)	House 1, center N¼ interior
		1 12-row cupule		
	4	cob fragments	(see Table 14)	House 2 area, outside SE trench Sq.0-20W
	5	1 distorted grain	(see Table 14)	House 6, F-3
	6	cob fragments (mostly popcorn)	(see Table 14)	House 2 area, same as sample 4
	7	cob fragments	(see Table 14)	House 2 area, same as sample 4

Table 13. (continued)

Plant Name	Sample	Plant Part	Measurements	Provenience
Common bean *Phaseolus vulgaris* L.	1	½ seed	L: 10.8 mm W: 6.0 mm Th: 4.8 mm	House 5, F-4
	3	1 seed fragment	L: 8-10 mm W: 4-5 mm	House 1, center of N¼ interior
Sunflower *Helianthus* sp.	3	17 seeds 1 possible *Iva* sp.	(see Table 14)	House 1, center of N¼ interior
(other plants)				
Peppervine *Ampelopsis* sp. (probably *A. arborea*)	1	1 seed	L: 3.7 mm W: 3.2 mm Th: 2.3 mm	House 5, F-4
Giant cane *Arundinaria gigantea* (Walt.) Muhl. or Switch cane *Arundinaria tecta* (Walt.) Muhl.	daub	split stems imprints carbonized split stems		both house areas House 2, NE trench
Cocklebur *Xanthium* sp. (probably *X. pennsylvanicum* Wallr.)	daub	1 split imprint of seed	L: *ca.* 15.5 mm Diam. at center:5.75 mm	House 5, F-4

*Plant identifications (except sunflower, cane, and cocklebur) courtesy of Leonard W. Blake, Missouri Botanical Garden. Sunflower identification courtesy of Richard A Yarnell, University of North Carolina; cane and cocklebur identification by the author.

Table 14. Measurements of certain carbonized cultigen remains from Wilsford (from Table 13).

Corn Cob Data (carbonized, not adjusted for shrinkage)*					
Sample number	1	3	4	6	7
Rows***	8	12	10	14?	12
Grain thickness	3.4 mm?	2.8 mm	3.1 mm	3.0 mm	3.2 mm
Cupule width****	5.9 mm	5.0 mm	4.5 mm	3.9 mm	4.0 mm

Corn Grain Data (carbonized, not adjusted for shrinkage)*					
Sample number	1	1	1	3	5
Rows***	8	10?	?distorted	?distorted	?
Grain width	7.8 mm	8.3 mm	6.3-8.8 mm	?	9.0 mm

Corn Data Summary*				
Number of cobs in sample	5			
Median cupule width	4.5 mm (some popcorn)			
Mean row number	11.2			
Rows	8	10	12	14
% of total	20%	40%	20%	20%

Sunflower Seed Data**	
Sample number	3
Measurable specimens in sample	16
Mean length x width (carbonized)	7.5 x 2.8 mm
Mean length x width (converted to original achene size)	9.8 x 4.2 mm
Length range (converted)	8.5 - 11.3 mm
Width range (converted)	3.3 - 5.3 mm

* Corn data courtesy of Leonard W. Blake, Missouri Botanical Garden.

** Sunflower data courtesy of Richard A. Yarnell, University of North Carolina.

*** Row number can be determined by measuring the angle of the sides of a grain or the sides of a cupule (Blake and Cutler 1982:89).

**** "Cupule width, the distance across the entire pocket in which a pair of grains and their spikelets are borne, is a measure of the size of the cob. It is more reliable than measurements of cob diameter, because points of measurement can be determined accurately and because it is less affected by the number of rows of grains" (Blake and Cutler 1982:89).

Table 15. Uses* of certain plants recovered from the Wilsford excavation (from Table 13).

Plant Name	Parts Utilized	Season Available	Uses	References
Honey locust (sweet-bean) (honey-shuck) *Gleditsia triacanthos* L.	seedpod pulp wood	fall, early winter all year	sugar extracted from pulp. pulp chewed. dried, ground pulp for sweetener. pulp soaked in water, strained for sweet drink. pods fermented for beer. wood for bows	Fernald & Kinsey 1958:243 Henshaw 1890:349 Hudson 1976:287,309 Lindley & Moore 1870:534 Peattie 1966:505 Porcher 1869:229 Yanovsky 1936
Persimmon *Diospyros virginiana* L.	fruit seeds roots bark leaves	fall fall all year all year spring-fall	fruit edible after frost. bread:fruit mixed with flour or pounded corn. fruit fermented for wine or beer. root for "narrow tooth comb". seeds roasted for coffee substitute. leaves for tea. fruit for jelly, syrup. (medicine) green fruit infusion: diarrhea, dysentery,uterine hemorrhage, sore throat gargle. boiled fruit: bloody stool. strained powdered seeds in water: kidney stones. boiled root tea: dysentery, bowel flux. boiled bark infusion: mouthwash for mouth,lip,throat sores. boiled leaves tea: scurvy	Fernald & Kinsey 1958:320-322 Harrar & Harrar 1946:609 Hedrick 1972:244 Krochmal & Krochmal 1973:89 Peattie 1966:537, 539 Romans 1775:83-85 Swanton 1946:272, 288,292,363,373,564 Vogel 1970:92,345-346 Weiner 1972:49,118, 129
Hickory *Carya* sp. (see Tables 11 & 12)	nuts sap bark wood	fall spring all year all year	nuts: eaten fresh or dried; powdered for bread;boiled in water,oil skimmed for gravies, soups,butter;meats skimmed,mixed with meal for cakes; soup of powdered nuts & broth. sap: boiled for syrup or sugar. bark: house coverings;fire for pottery. wood: house construction;bows;fire-	Fernald & Kinsey 1958:147-149 Lawson 1714 Swanton 1946:245

Table 15. (continued)

Plant Name	Parts Utilized	Season Available	Uses	References
Oak *Quercus* sp. (see Tables 11 & 12)	nuts (acorns) wood bark	 fall all year all year	nuts: eaten after tannin leached out in wood ashes & water;ground for meal & bread; boiled & eaten with meat; oil. wood: firewood,mortars,withes for wattle walls,fish traps,bed tops, leather boat frames,bows. bark: house coverings(white oak); dye, infusion for hide tanning (red oak);boiled root bark for bowel trouble.	Fernald & Kinsey 1958:159-160 Gilmore 1977:23 Hariot 1893:29 Hudson 1976:308 Swanton 1946:245,273 Yanovsky 1936
Corn,Maize *Zea mays* L.	grains silk cobs stalks shucks	summer & fall	green corn: roasted on cob;kernals boiled with meat & lye;mashed for cakes;juice to erase tattoo marks corn grains: dry ground meal for cakes & bread;parched,pounded for cold flour;boiled,dried,parched, pulverized for cold flour;hominy of pounded cracked grains,slowly boiled,lye added,until grains swollen,soft,cooled;boiled,fermented meal;water from boiled corn for drink;boiled,pounded, meal boiled in shucks;chewed corn meal batter on husks cooked;bread from meal baked on hearth;boiled bread mixed with beans or sunflower seeds;beaten pulp for dressing skins;fermented for liquor;oil rubbed into scalp;popcorn popped;powdered popped corn & water for drink. cobs: burned for smoke in tanning skins;rubbed over pots before firing;burned to powder,mixed with meal. stalks: sucked for sugar. medicine (continued next page)	Brickell 1737:344, 395-396 Campbell 1959:17-18 Colden 1918-1923:143 Emmart 1940:252,257, 264,320-321 Loskiel 1794:112-113 Roys 1931:249 Sahagún 1963(XI):150, 173,185 Scully 1970:149-150 Speck 1944:46 Speck et.al.1942:33, 36 Stevenson 1915:61-62 Strachey 1849:72 Swanton 1928a:665 Swanton 1928b:268 Swanton 1946:244, 296,351-359 Weiner 1972:45,168

Table 15. (continued)

Plant Name	Parts Utilized	Season Available	Uses	References
Corn (continued)			(medicine) ground corn & water: dysentery; heartburn;produce lactation in women;poultice for swelling, sores,infant inflammation;blood in urine;dysuria;myriad ills. water & meal poured over head and rubbed on body: slow fever. hominy water: fever. warm corn flour poultice: boils, impostumes. rotted powdered corn: dry leg sores. bathe newborn babies in powdered puffballs & scorched cornmeal. diaphoretic of crushed dry corn & coals under knees under blanket: pneumonia. cornmeal steeped in lye: intestinal spasms. black corn with red streaks: menstrual periods. sympathetic magic with corn grains: wart removal. smoke of burning cobs: scratched sore on itchy skin. corn smut(fungus)powder & water: parturient;post-parturient hemorrhage;abnormal lochial discharge;compress for sore throat. boiled silk: diuretic. corn pollen: heart palpitation.	

Table 15. (continued)

Plant Name	Parts Utilized	Season Available	Uses	References
Common Bean *Phaseolus vulgaris* L.	seeds pods	summer	eaten green,cooked,dried. seeds or whole pods boiled. mixed with corn. pounded for bread.	Hariot 1893:22 Swanton 1946:269 Weiner 1972:154
Sunflower *Helianthus* sp. (*H.tuberosus*)	seeds roots stems flowers tubers	summer & fall summer & fall fall-spring	seeds: eaten roasted or raw;dried or parched,pounded for flour; flour mixed with corn flour; breads,cakes,gruel,soups,broth; oil skimmed from boiled crushed seeds;water added to meal for drink;coffee-like drink from crushed,roasted seeds;dough from meal mixed with marrow grease. flower heads: young boiled,eaten. tubers(H.tuberosus): eaten raw, boiled,baked, roasted,in salad, pickled,cooked puree,baked with oil or butter. stems: fiber. oil: for hair grease. seeds: purple & black dyes. (medicine) crushed root: applied to bruises, contusions. seeds: increase urine flow,clear phlegm. crushed root,mash applied as wet dressing: draw blisters. seeds infusion: lung infection, malaria. warm wash poultice of root decoction: snake bite,rheumatism. boiled heads: pulmonary trouble. seed powder & certain roots: baby sickness preventive.	Fernald & Kinsey 1958:357-358 Gilmore 1977:78-79 Hariot 1893:23 Hedrick 1972:298-300 Hoffman 1891:199 Krochmal & Krochmal 1973:119 Romans 1775:84-85 Scully 1970:92-93, 203-204,238,254-255 Swanton 1946:269,288 Vogel 1970:130 Weiner 1972:23,159, 161

Table 15. (continued)

Plant Name	Parts Utilized	Season Available	Uses	References
Peppervine *Ampelopsis arboria* (L.) Koehne	berry inedible	summer	none listed in available references	Small 1933:839
Cane "Giant cane" *Arundinaria gigantea* (Walt.) Chapm. "Switch cane" *Arundinaria tecta* (Walt.) Muhl.	seeds shoots stems	summer spring all year	seeds: cereal, flour, bread, porridge. young shoots: cooked vegetable. stems: fishing poles, pipestems, mats, baskets, hampers, corncribs, sitting & sleeping shelf along house wall, combs, split cane game of chance, flutes, blowguns, arrow shafts, spears, drills, bed matt-resses, torches, cabin lath or wattle, sieves, boxes, knives, rafts, fishing crails or traps, shields, stockades.	Burt & Ferguson 1973: 49,53,93,94,98,107, 200 Caddell 1982:38 Dumont 1753(I):154 DuPratz 1758(II):58-59,167,172-175,179, 183-184 Fernald & Kinsey 1958:91-92 Flint 1828:80-81 Hudson 1976:273,287 Margry 1875(I):558-559 Margry 1880(IV):174-177 Margry 1883(V):388-391 Shea 1861:80 Small 1933:139 Swanton 1911:58-60, 62,286,303-304,315, 328,346,348 Yanovsky 1936
Cocklebur *Xanthium* sp. (probably *X. pensylvanicum* Wallr.)	seed?	fall	seeds ground & mixed with corn meal & with squash seeds by western Indians (Sanford). seeds poisonous (Muenscher). (No reference to use in south-east. Example probably acci-dental daub inclusion.)	Fernald & Kinsey 1958:356-357 Muenscher 1939 Sanford 1937

Table 16. Selected edible understory plants possibly available in the Wilsford area.*

Common name	Latin name	Edible part
American lotus/ Wonkapin	Nelumbo lutea	tubers, seeds
American nightshade	Solanum americanum	leaves, fruit
Arrowhead/ Duck potato	Sagittaria graminea graminea	tuber
Bigroot morning glory	Ipomoea pandurata	roots
Blackseed plantain	Plantago rugelii	leaves, seed
Blue flowered tall lettuce	Lactuca floridana	leaves
Bracted plantain	Plantago aristata	leaves, seed
Bristly greenbriar	Smilax hispida	rhizomes
Broadleaf arrowhead	Sagittaria graminea platyphylla	tuber
Canary grass	Phalaris caroliniana	young plants, seeds
Cat-tail	Typha latifolia	flowering stems, shoots, rhizomes, pollen
Clammy groundcherry	Physalis heterophylla	fruit
Clearweed	Pilea pumila	leaves
Common arrowhead	Sagittaria latifolia	tuber
Common evening primrose	Oenothera biennis	shoots
Common greenbriar	Smilax rotundifolia	rhizomes, shoots
Common violet	Viola papilionacea	rhizomes, leaves, flowers
Corn salad	Valerianella radiata	leaves
Cutleaf evening primrose	Oenothera laciniata	young shoots
Dayflower	Commelina communis	leaves
Dayflower	Commelina diffusa	leaves
Dayflower	Commelina erecta	leaves
Dayflower	Commelina virginica	leaves
Downy groundcherry	Physalis pubescens	fruit
Giant arrowleaf	Sagittaria montevidensis	tuber
Giant cane	Arundinaria gigantea	shoots, seeds
Giant cutgrass/ Southern wildrice	Zizaniopsis miliacea	roots, seeds
Grayback/ Pigeon grape	Vitis cinerea	fruit
Groundcherry	Physalis angulata	fruit
Groundcherry	Physalis virginiana	fruit
Groundnut/ Potato bean	Apios americana	tuber

Table 16. (continued)

Common name	Latin name	Edible part
Highbush blackberry	Rubus argutus	fruit
Hydrolea	Hydrolea uniflora	leaves
Indian pipe/ Ghost flower	Monotropa uniflora	leaves, stems
Jack-in-the-pulpit	Arisaema triphyllum	roots
Jerusalem artichoke	Helianthus tuberosus	tubers
Johnny jump-up	Viola rafinesquii	leaves, flowers
Marsh blue violet	Viola cucullata	leaves, flowers, rhizomes
Marsh elder/ Sumpweed	Iva annua	seeds
Maypop/ Purple passion flower	Passiflora incarnata	flowers, fruit
Meadow beauty/ Deer grass	Rhexia mariana	leaves
Missouri violet	Viola missouriensis	leaves, flowers, rhizomes
Muscadine grape	Vitis rotundifolia	fruit
Pale dock	Rumex altissimus	leaves
Paleseed plantain/ Hoary plantain	Plantago virginica	leaves, seeds
Panic grass/ Panicum	Panicum agrostoides	seeds
Panic grass/ Panicum	Panicum anceps	seeds
Panic grass/ Witchgrass	Panicum capillare	seeds
Panic grass/ Panicum	Panicum commutatum	seeds
Panic grass/ Fall panicum	Panicum dichotomiflorum	seeds
Panic grass/ Panicum	Panicum dichotomum	seeds
Panic grass/ Panicum	Panicum gymnocarpon	seeds
Panic grass/Panicum	Panicum hians	seeds
Panic grass/ Panicum	Panicum lindheimeri	seeds
Peppergrass/ Pepperweed	Lepidium virginicum	leaves, seeds
Plantain	Plantago heterophylla	leaves, seeds
Pokeweed/ Pokeberry	Phytolacca americana	leaves
Purslane speedwell/ Necklace weed	Veronica peregrina	leaves
Red grape	Vitis palmata	fruit
Sawbriar	Smilax glauca	rhizomes
Saw greenbriar/ Catbriar	Smilax bona-nox	rhizomes, shoots
Sawtooth sunflower	Helianthus grosse-serratus	seeds
Sensitive fern	Onoclea sensibilis	leaves, roots
Slender amaranth	Amaranthus viridis	leaves, seeds
Southern buckthorn	Bumelia lyciodes	fruit

Table 16. (continued)

Common name	Latin name	Edible part
Southern dewberry	Rubus trivialis	fruit
Southern yellow woodsorrel	Oxalis dillenii	leaves
Spiderwort	Tradescantia ohiensis	leaves, young stems
Spiderwort	Tradescantia Virginiana	leaves, young stems
Spotted snapweed/ Jewelweed	Impatiens capensis	leaves
Stinging nettle	Urtica chamaedryoides	leaves
Summer grape	Vitis aestivalis	fruit
Swamp dock	Rumex verticillatus	leaves
Swamp violet	Viola affinis	leaves, flowers, rhizomes
Switch cane	Arundinaria tecta	shoots
Tall lettuce	Lactuca canadensis canadensis	leaves
Tall lettuce	Lactuca canadensis latifolia	leaves
Water hemp	Acnida tamariscina	leaves, seeds
Wild bean	Strophostyles helvola	fruit
Wild garlic	Allium canadense	entire plant
Yellow nutgrass/ Chufa	Cyperus esculentus	tuber
Yellow passion flower	Passiflora lutea	flowers, fruit
Yellow woodsorrel/ Sourgrass	Oxalis stricta	leaves, flowers

* after Thorne and Curry 1983; Table 10.

Table 17. Wilsford site faunal remains

Sample Number	Provenience	General Taxa*	Species and parts recovered*
2	Surface? (specific location unrecorded)	Mammal	White-tailed deer (Odocoileus virginianus): left astragalus
1	House 1 (probably plowzone	Bird	Pintail (Anas acuta): male; furcula or clavicles
4	House 1, surface	Mammal	White-tailed deer (Odocoileus virginianus): atlas (left & right fragments of one; miscellaneous thin fragment of second); large individual
5	House 1, interior postmold P-9 (see Figure 5)	Mammal	Unidentified bone fragment
		Bird	Unidentified bone fragments
		Fish	Buffalofish (Ictiobus sp.): bone fragments
			Minnow family (Cyprinidae): bone fragments
			Fish vertebra fragments: ribs, spines
			Fish osteichthyes
		Misc.	Unidentified fragments
6, 10	House 1, Feature 5 (center postmold)	Mammal	White-tailed deer (Odocoileus virginianus): Thoracic vertabra fragment; distal end of metapoda (metatarsus or metacarpus). (all burned)
			Eastern gray squirrel (Sciurus carolinensis): left tibia fragment. (burned)
		Bird	Pintail (Anas acuta): left radius; left ulna; left tibiotarsal fragment. (burned)
			Unidentified bone fragments: rib fragments; carina or keel fragment
		Mussel	Mussel/clam (Pleurobema cordatum): shell (burned)
		Snail	Snail (Campeloma sp.): shell (burned
		Misc.	Unidentified: 4 bone fragments (burned)
			Unidentified: 6 shell fragments (burned)

Table 17. (Continued)

Sample Number	Provenience	General Taxa*	Species and parts recovered*
9	House 1, small dark area, center of north ¼ of house (possibly refuse pit remains)	Mammal	Raccoon (Procyon lotor): left femur fragment
		Bird	Unidentified bird claw
		Fish	Sunfish (Lepomis, sp.): vertebrae
			Gar (Lepisosteus sp.): burnt scales
			Bowfin (Amia calva): vertebrae
			Unidentified: osteichthyes, vertebra, miscellaneous small bones
		Reptile	Eastern mud turtle (Kinosternon subrubrum): right hypoplastra, peripheral plate
		Mussel	Freshwater mussel (possible Pleurobema sp.?): shell
			Freshwater mussel (possible Lampsilis sp.?): shell
		Crustacean	Freshwater crawfish (Procambarus sp.): claw fragment
7	House 1 area, 90N-10E (Grid A), (probably plowzone	Mammal	White-tailed deer (Odocoileus virginianus): left ulna fragment
8	House 1 area, 80N-CL (Grid A), in SW wall trench	Miscellaneous	Unidentified bone fragments
3	House 5, Feature 4	Bird	Pintail (Anas acuta): right 3rd & 4th metacarpals
		Miscellaneous	Unidentified: 2 bone fragments

* Identifications courtesy of Robert C. Wilson, University of Florida

Table 18. Wilsford Site faunal species analysis.*

Species	Bone/ Shell Count	MNI	Percent MNI	Bone Weight (gm)	Biomass (kg)	Percent Biomass
Mammal						
Unidentified mammal	5	---	---	1.00	0.095	2.31%
Procyon lotor Raccoon	1	1	6.67%	0.49	0.054	1.31%
Sciurus carolinensis Eastern gray squirrel	1	1	6.67%	2.35	0.191	4.65%
Odocoileus virginianus White-tailed deer	6	1	6.67%	51.65	2.331	56.72%
Mammal Total	13	3	20.00%	55.49	2.671	64.99%
Bird						
Unidentified Aves	20	---	---	1.76	0.084	2.04%
Anas acuta Common pintail	2	2	13.33%	4.24	0.177	4.31%
Bird Total	22	2	13.33%	6.00	0.261	6.35%
Reptiles						
Kinosternon subrubrum Eastern mud turtle	2	1	6.67%	0.65	0.914	22.24%
Turtle Total	2	1	6.67%	0.65	0.914	22.24%
Reptile Total	2	1	6.67%	0.65	0.914	22.24%
Fish						
Unidentified fish	22	---	---	2.1	0.099	2.41%
Amia calva Bowfin	2	1	6.67%	0.2	0.012	0.29%
Lepisosteus sp. Gar	2	1	6.67%	0.15	0.004	0.10%
Cyprinidae Minnow family	7	1	6.67%	2.09	0.099	2.41%
Ictiobus sp. Buffalofish	1	1	6.67%	0.25	0.015	0.36%
Lepomis sp. Sunfish	7	1	6.67%	0.01	>0.001	>0.02%
Fish Total	41	5	33.33%	4.8	0.229	5.57%
Crustacean						
Procambarus sp. Crawfish	1	1	6.67%	0.05	***	***
Mussel						
Unidentified mussel	6	---	---	2.15	***	***
Pleurobema sp.	1	1	6.67%	3.75	***	***
Lampsilis sp.	1	1	6.67%	9.7	0.035	0.85%
Mussel Total	8	2	13.33%	15.6	**0.035	**0.85%
Snail						
Campeloma sp.	1	1	6.67%	0.25	>0.001	>0.02%
U.I.D.	34	---	---	7.65	***	***
Total	122	15	100.00%	90.49	4.11	100.00%

* Identifications and quantitative analysis courtesy of Robert C. Wilson, University of Florida.

** This represents the total biomass and percent biomass for that taxon based on those species that have allometric constants available.

*** No allometric constants have been calculated for these species.

Table 19. Allometric constants for biomass computation.*

Taxon	Slope (b)	Y-intercept (log a)
Mammal	0.81	1.41
Aves	0.84	1.24
Testudines	0.53	1.65
Bony Fish	0.89	1.38
Lepisosteus	0.81	0.75
Mussel (Elliptio and Lampsilis)	0.75	0.05
Snail (Campeloma and Viviparus)	1.20	0.26

* Courtesy of Robert C. Wilson, University of Florida.

Table 20. Faunal species possibly available for subsistence in the northern Yazoo Basin.

Mammals

*Beaver	Castor canadensis
Big brown bat	Eptesicus fuscus
Bison	Bison bison
*Black bear	Ursus americanus
*Bobcat	Lynx rufus
**Brazilian free-tailed bat	Tadarida brasiliensis
Cotton mouse	Peromyscus gossypinus
Coyote	Canis latrans
*Eastern chipmunk	Tamias striatus
*Eastern cottontail	Sylvilagus floridanus
Eastern harvest mouse	Reithrodontomys humilis
Eastern mole	Scalopus aquaticus
Eastern pipistrelle	Pipestrellus subflavus
Eastern spotted skunk	Spilogale putorius
**Eastern wood rat	Neotoma floridana
*Elk	Cervus canadensis
Evening bat	Nycticeius humeralis
*Fox squirrel	Sciurus niger
**Fulvous harvest mouse	Reithrodontomys fulvescens
Golden mouse	Ochrotomys nuttalli
*Gray fox	Urecyon cinereoargenteus
*Gray squirrel	Sciurus carolinensis
*Hispid cotton rat	Sigmodon hispidus
**Hoary bat	Lasiurus cinereus
**Indiana myotis	Myotis sodalis
Least shrew	Cryptotis parva
**Little brown bat	Myotis lucifugus
*Long-tailed weasel	Mustela frenata
Marsh rice rat	Oryzomys palustris
*Mink	Mustela vison
*Mountain lion (cougar)	Felis concolor
*Muskrat	Ondatra zibethicus
Nine-banded armadillo	Dasypus novemcinctus
*Opossum	Didelphis marsupialis
Pine vole	Pitymis pinetorum
*Raccoon	Procyon lotor
Rafinesque's big-eared bat	Plecotus rafinesquii
Red bat	Lasiurus borealis
*Red fox	Vulpes fulva
Red wolf	Canis rufus
River otter	Lutra canadensis
**Seminole bat	Lasiurus seminolus
Short-tailed shrew	Blarina brevicauda
**Silver-haired bat	Lasionycteris noctivagans
Southeastern myotis	Myotis austroriparius
**Southeastern shrew	Sorex longirostris
Southern flying squirrel	Glaucomys volans
*Striped skunk	Mephitis mephitis
*Swamp rabbit	Sylvilagus aquaticus
*White-footed mouse	Peromyscus leucopus
*White-tailed deer	Odocoileus virginianus
Woodland vole	Microtus pinetorum

* Reported archaeologically from the Delta (Potts & Brookes 1981; Olsen 1971; Connaway,this report; Penman 1977; Ford, Phillips & Haag 1955; Morgan & Raspet 1979).

** Rare or not reported from the Delta (Wolfe 1971).

Table 20 (continued).

Reptiles

(Turtles)	
*Alligator snapping turtle	Macrochelus temmincki
*Box turtle	Terrapene carolina
Chicken turtle	Deirochelys reticularia
*Common snapping turtle	Chelydra serpentina
*Cooter	Pseudemys sp.
False map turtle	Graptemys pseudogeographica
*Map turtle	Graptemys sp.
Midland smooth soft-shelled turtle	Trionyx muticans
Mississippi map turtle	Graptemys kohni
*Mississippi mud turtle	Kinosternon subrubrum
Missouri slider	Pseudemys floridana
*Mud turtle	Kinosternon sp.
*Musk turtle	Sternothaerus sp.
*Ornate box turtle	Terrapene ornata
Painted turtle	Chrysemys picta
Razor-backed musk turtle	Sternothaerus carinatus
Red eared turtle	Chrysemys scripta
River cooter	Pseudemys concinna
*Slider	Chrysemys sp.
*Softshelled turtle	Amyda refox
Spiny softshelled turtle	Trionyx spinifer
Stinkpot	Sternothaerus odoratus
Three-toed box turtle	
(Lizards)	
American alligator	Alligator mississippiensis
Broad-headed skink	Eumeces laticeps
Fence lizard	Sceloporus undulatus
Five-lined skink	Eumeces fasciatus
Green anole	Anolis carolinensis
Ground skink	Scincella laterale
Six-lined racerunner	Cnemidophorus sexlineatus
Slender glass lizard	Ophisanrus attenuatus
Southeastern five-lined skink	Eumeces inexpectatus
(Snakes)	
Black racer	Coluber constrictor
Broad-banded water snake	Natrix fasciata
Brown snake	Storeria dekayi
Canebrake rattlesnake	Crotalus horridus
Coachwhip	Masticophis flagellum
Corn snake	Elaphe guttata
*Cottonmouth moccasin	Ancistrodon piscivorus
Crowned snake	Tantilla coronata
Diamondback water snake	Natrix rhombifera
Eastern garter snake	Thamnophis sirtalis
Eastern ribbon snake	Thamnophis sauritus
Glossy water snake	Natrix rigida
Graham's water snake	Natrix grahmi
Gray rat snake	Elaphe obsoleta
Green water snake	Natrix cyclopian
Hognose snake	Heterodon platyrhinos
Midland water snake	Natrix sipedon
Mississippi ringneck snake	Diadophis punctatus
Mole snake	Lampropeltis calligaster

* Reported archaeologically from the Delta (ibid.).

Table 20(continued).

Reptiles

(Snakes, continued)	
Mud snake	*Farancia abacura*
Red-bellied snake	*Storeria occipitomaculata*
Rough earth snake	*Virginia striatula*
Rough green snake	*Opheodrys aestivus*
Scarlet snake	*Lampropeltis triangulum*
Smooth earth snake	*Virginia valeriae*
Southern copperhead	*Agkistrodon contortrix*
Speckled king snake	*Lampropeltis getulus*
*Water snake	*Natrix* sp.
Western cottonmouth	*Agkistrodon piscivorus*
Western pygmy rattlesnake	*Sistrurus miliarus*
Western ribbon snake	*Thamnophis proximus*
Worm snake	*Carphophis amoenus*
Yellow-bellied water snake	*Natrix erythrogaster*

Amphibians

American toad	*Bufo americanus*
*Amphiuma	*Amphiuma* sp.
Bird-voiced tree frog	*Hyla avivoca*
Bronze frog	*Rana clamitans*
Bullfrog	*Rana catesbiana*
Central newt	*Notophthalmus viridescens*
Dusky salamander	*Desmognathus fuscus*
Dwarf salamander	*Manculus quadridigitatus*
Eastern narrow-mouthed toad	*Gastrophryne carolinensis*
Fowler's toad	*Bufo woodhousei*
Gray tree frog	*Hyla versicolor*
Gray tree frog	*Hyla chrysoscelis*
Green frog	*Rana clamitans melanota*
Green tree frog	*Hyla cinerea*
*Leopard frog	*Rana pipiens*
Lessor siren	*Siren intermedia*
Marbled salamander	*Ambystoma opacum*
Northern cricket frog	*Acris crepitans*
Northern gopher frog	*Rana areolata*
Pickeral frog	*Rana palustris*
Red River waterdog (mudpuppy)	*Necturus maculosus*
Red salamander	*Pseudotriton ruber*
Slimy salamander	*Plethodon glutinosus*
Small-mouthed salamander	*Ambystoma texanum*
Southern cricket frog	*Acris gryllus*
Southern leopard frog	*Rana utricularia*
Spadefoot toad	*Scaphiophus holbrooki*
Spotted salamander	*Ambystoma maculatum*
Spring peeper	*Hyla crucifer*
Three-lined salamander	*Eurycea longicauda*
Three-toed amphiuma	*Amphiuma tridactylum*
Two-lined salamander	*Eurycea bislineata*
Upland chorus frog	*Pseudacris triseriata feriarum*
Western chorus frog	*Pseudacris triseriata*

* Reported archaeologically from the Delta (ibid.).

Table 20 (continued)

Fish	
Alligator gar	Lepisosteus spatula
American eel	Anguilla rostrata
Atlantic sturgeon	Acipenser oxyrhynchus
Banded pygmy sunfish	Ellasoma zonatum
Bantam sunfish	Lepomis symmetricus
*Bass	Micropterus sp.
Bigmouth buffalo	Ictiobus cyprinellus
Black buffalo	Ictiobus niger
Black bullhead	Ictalurus melas
Black crappie	Pomoxis nigromaculatus
Blackspotted topminnow	Fundulus olivaceus
Blackstripe topminnow	Fundulus notatus
Blacktail redhorse	Moxostoma poecilurum
Blacktail shiner	Notropis venustus venustus
Blue catfish	Ictalurus furcatus
Bluegill	Lepomis macrochirus
Blue sucker	Cycleptus elongatus
Bluntface shiner	Notropis galacturus
Bluntnose minnow	Pimephales notatus
*Bowfin	Amia calva
Brook silverside	Labidesthes sicculus
Brown bullhead	Ictalurus nebulosus
*Buffalofish	Ictiobus sp.
Bullhead minnow	Pimephales vigilax perspicuus
*Catfish	Ictalurus sp.
Chain pickeral	Esox niger
*Channel catfish	Ictalurus punctatus
Chestnut lamprey	Ichthyomyzon castaneus
Common shiner	Notropis cornutus
Creek chub	Semotilus atromaculatus
Creek chubsucker	Erimyzon oblongus claviformis
Cypress minnow	Hybognathus hayi
*Drum	Pogonis cromis
Emerald shiner	Notropis atherinoides
*Flathead catfish	Pylodictis olivaris
Flathead chub	Hybopsis gracilis
Flier	Centrarchus macropterus
*Freshwater drum	Aplodinotus grunniens
*Gar	Lepisosteus sp.
Ghost shiner	Notropis buchanani
Gizzard shad	Dorosoma cepedianum
Golden redhorse	Moxostoma erythrurum
Golden shiner	Notemigonus crysoleucas
Golden topminnow	Fundulus jenkinsi
Goldeye	Hiodon alosoides
Green sunfish	Lepomis cyanellus
Highfin carpsucker	Carpiodes velifer
Lake chubsucker	Erimyzon sucetta
Lake sturgeon	Acipenser fulvescens
Largemouth bass	Micropterus salmoides
Log perch	Percina caprodes

Table 20 (continued)

(Fish, continued)	
Longear sunfish	Lepomis megalotis
*Longnose gar	Lepisosteus osseus
Mimic shiner	Notropis volucellus
Mississippi silverside	Menidia audens
Mooneye	Hiodon tergisus
Mosquitofish	Gambusia affinis
Northern hogsucker	Hypentelium nigricans
Orangespotted sunfish	Lepomis humilis
Paddlefish	Polyodon spathula
Pallid sturgeon	Scaphirhynchus album
Pirate perch	Aphredoderus sayanus
Pugnose minnow	Opsopoeodus emiliae
Quillback carpsucker	Carpiodes cyprinus
Redear sunfish	Lepomis microlophus
Redfin pickeral	Esox americanus
Redfin shiner	Notropis umbratilis
Red shiner	Notropis lutrensis
River carpsucker	Carpiodes carpio
River shiner	Notropis blennius
Sauger	Stizostedion canadense
Shortnose gar	Lepisosteus platostomus
Shovelnose sturgeon	Scaphirhynchus platorynchus
Silverband shiner	Notropis illecebrosus
Silver chub	Hybopsis storeriana
Silvery minnow	Hybognathus nuchalis nuchalis
Skipjack herring	Alosa chrysochloris
Smallmouth buffalo	Ictiobus bubalus
Southern brook lamprey	Ichthyomyzon gagei
Speckled chub	Hybopsis aestivalis
Speckled darter	Etheostoma stigmaeum
Spotted bass	Micropterus punctulatus
Spotted gar	Lepisosteus productus
Spotted sucker	Minytrema melanops
Spotted sunfish	Lepomis punctatus
Starhead topminnow	Fundulus notti
*Sunfish	Lepomis sp.
Tadpole madtom	Noturus gyrinus
Threadfin shad	Dorosoma petenense
Walleye	Stizostedion vitreum
Warmouth sunfish	Chaenobryttus gulosus
Weed shiner	Notropis roseus
White bass	Roccus chrysops
White crappie	Pomoxis annularis
Yellow bass	Roccus interruptus
Yellow bullhead	Ictalurus natalis

* Reported archaeologically from the Delta (ibid.).

Table 20 (continued)

Birds

Acadian flycatcher	Empidonax virescens
American anhinga	Anhinga anhinga
American bittern	Botaurus lentiginosus
American coot	Fulica americana
American goldeneye	Glaucionetta clangula americana
American goldfinch	Spinus tristis
American merganser	Mergus merganser
American robin	Turdus migratorius
American woodcock	Philohela minor
Baltimore oriole	Icterus galbula
Bank swallow	Riparia riparia
Barn owl	Tyto alba
Barn swallow	Hirundo rustica
Belted kingfisher	Megaceryle alcyon
Black & White warbler	Mniotilta varia
Black-crowned night heron	Nycticorax nucticorax
Black duck	Anas rubripes
Black-throated green warbler	Dendroica virens
Blue goose	Chen caerulescens
Blue-gray gnatcatcher	Polioptila caerulea
Blue grossbeak	Guiraca caerulea
Bluejay	Cyanocitta cristata
Blue-winged teal	Anas discors
Bobwhite	Colinus virginianus
Broad-winged hawk	Buteo platypterus
Brown creeper	Certhia familiaris
Brown-headed cowbird	Molothrus ater
Brown thrasher	Toxostoma rufum
Bufflehead	Glaucionetta albeola
Canada goose	Branta canadensis
Canvasback	Aythya valisineria
Cardinal	Richmondena cardinalis
Carolina chickadee	Parus carolinensis
Carolina wren	Thryothorus ludovicianus
Catbird	Dumetella carolinensis
Cattle egret	Bubulcus ibis
Cedar waxwing	Bombycilla cedrorum
Chestnut-sided warbler	Dendroica pensylvanica
Chimney swift	Chaetura pelagica
Chipping sparrow	Spizella passerina
Chuck-will's-widow	Antrostomus carolinensis
Common crow	Corvus brachyrhynchos
Common grackle	Quiscalus quiscula
Common loon	Gavia immer
Common merganser	Mergus merganser
Common snipe	Capella gallinago
Dickcissel	Spiza americana
Downy woodpecker	Dendrocopos pubescens
Eastern bluebird	Sialia sialia
Eastern kingbird	Tyrannus tyrannus
Eastern meadowlark	Sturnella magna
Eastern phoebe	Sayornis phoebe
Eastern purple finch	Carpodacus purpureus
Eastern wood peewee	Contopus virens

Table 20 (continued)

(Birds, continued)	
Field sparrow	Spizella pusilla
Florida barred owl	Strix varia
Florida nighthawk	Chordeiles minor chapmani
Fox sparrow	Passerella iliaca
Gadwall	Anas strepera
Golden-crowned kinglet	Regulus satrapa
Great blue heron	Ardea herodias
Great crested flycatcher	Myiarchus crinitus
*Great egret (Common egret)	Casmerodius albus
Great horned owl	Bubo virginianus
Greater scaup	Aythya marila
Green heron	Butorides virescens
Green-wing teal	Anas carolinensis
Hairy woodpecker	Dendrocopos villosus
*Hawk	Buteo sp.
Hermit thrush	Hylocichla guttata
Hooded merganser	Lophodytes cucullatus
Hooded warbler	Wilsonia citrina
Indigo bunting	Passerina cyanea
Ivory-billed woodpecker (ext.)	Campephilus principalis
Kentucky warbler	Oporornis formosus
Killdeer	Charadrius vociferus
Le Conte sparrow	Passerherbulus caudacutus
Lessor scaup	Aythya affinis
Lincoln sparrow	Melospiza lincolnii
Little blue heron	Florida caerulea
Loggerhead shrike	Lanius ludovicianus
Louisiana parokeet (ext.)	Conuropsis carolinensis ludovicianus
Magnolia warbler	Dendroica magnolia
*Mallard	Anas platyrhynchos
Mississippi kite	Ictinia misisippiensis
Mockingbird	Mimus polyglottos
Mourning dove	Zenaidura macroura
Myrtle warbler	Dendroica coronata
Nashville warbler	Vermivora ruficapilla
Orange-crowned warbler	Vermivora celata
Ovenbird	Seiurus aurocapillus
Painted bunting	Passerina ciris
Parula warbler	Parula americana
Passenger pigeon (ext.)	Ectopistes migratorius
Pied-billed grebe	Podilymbus podiceps
Pigeon hawk	Falco columbarius
Pileated woodpecker	Dryocopus pileatus
*Pintail	Anas acuta
Prothonotary warbler	Protonotaria citrea
Purple martin	Progne subis
Red-bellied woodpecker	Centurus carolinus
*Red-breasted merganser	Mergus serrator
Red-breasted nuthatch	Sitta canadensis
Red-eyed vireo	Vireo olivaceus
Red-headed woodpecker	Melanerpes erythrocephalus
Red-shouldered hawk	Buteo lineatus
Red-tailed hawk	Buteo jamaicensis

Table 20(continued)

(Birds, continued)	
Red-winged blackbird	Agelaius phoeniceus
Ring-necked duck	Aythya collaris
Rose-breasted grosbeak	Pheucticus ludovicianus
Rough-winged swallow	Stelgidopteryx ruficollis
Ruby-crowned kinglet	Regulus calendula
*Ruddy duck	Erismatura jamaicensis rubida
Rufous-sided towhee	Pipilo erythrophthalmus
Rusty blackbird	Euphagus carolinus
Savannah sparrow	Passerculus sandwichensis
Scarlet tanager	Piranga olivacea
Shoveler	Spatula clypeata
Slate-colored junco	Junco hyemalis
Snow goose	Chen hyperborea
Snowy egret	Egretta thula
Song sparrow	Melospiza melodia
Southern bald eagle	Haliacetus leucocephalus
Southern screech owl	Otus asio
Sparrow hawk	Falco sparverius
Spotted sandpiper	Actitis macularia
Summer tanager	Piranga rubra
Swainson thrush	Hylocichla ustulata
Swamp sparrow	Melospiza georgiana
Tufted titmouse	Parus bicolor
Turkey vulture	Cathartes aura
Trumpeter swan	Cygnus buccinator
Virginia rail	Rallus limicola
Whooping crane	Grus americana
Whip-poor-will	Caprimulgus vociferus
White-eyed vireo	Vireo griseus
White-fronted goose	Anser albifrons
White-throated sparrow	Zonotrichia albicollis
*Wild turkey	Meleagris gallopavo
Winter wren	Troglodytes troglodytes
*Wood duck	Aix sponsa
Wood stork (ibis)	Mycteria americana
Wood thrush	Hylocichla mustelina
Worm-eating warbler	Helmitheros vermivorus
Yellow-bellied flycatcher	Empidonax flaviventris
Yellow-bellied sapsucker	Sphyrapicus varius
Yellow-billed cuckoo	Coccyzus americanus
Yellow-breasted chat	Icteria virens
Yellow-crowned night heron	Nyctanassa violacea
Yellow rail	Coturnicops noveboracensis
Yellow-shafted flicker	Colaptes auratus
Yellow-throated vireo	Vireo flavifrons

* Reported archaeologically from the Delta (ibid.).

Table 20 (continued)

Mussels

*Amblema plicata (costata)
Anodonta grandis grandis
Anodonta imbecilis
Anodonta opaca
Anodonta stewartiana
Arcidens confragosus
Carunculina parva
Carunculina texasensis
Corbicula leana
Crenodonta latecostata
Cyclonaias tuberculata
Elliptio beadleiana
Elliptio crassidens
Elliptio dilatata
Fusconaia ebena
Fusconaia undata
Lalata megaptera
Lampsilis anodontoides
Lampsilis orbiculata
Lampsilis ovata
Lampsilis teres
Lasmigona complanata
Lasmigona costata
Leptodea fragilis
Leptodea laevissima
Ligumia subrostrata
Megalonaias gigantea
Obliquaria reflexa
Obovaria olivaria
Obovaria unicolor
*Plectomerus dombeyanus
Plethobasus cyphyus
Proptera alata
Proptera purpurata
Quadrula asper
Quadrula nodulata
*Quadrula pustulosa
Quadrula quadrula
Tritogonia verrucosa
Truncilla donaciformis
Truncilla truncata
*Uniomerus sp.
Uniomerus tetralasmus
*Unionidae sp.
Villosa lienosa

Crustaceans

Chimney crayfish — Cambarus diogenes
*Crawfish — Procambarus sp.
Pond crayfish — Procambarus blandingi
Swamp crayfish — Procambarus clarki

Snails

*Campeloma sp.

* Reported archaeologically from the Delta (ibid.).

References for Table : Burch 1975; Chapman 1966; Connaway (this paper); Cook 1959; Grantham 1969; GSRI 1973; McClane 1965; Morgan & Raspet 1979; Olsen 1971; Penman 1977; Potts & Brookes 1981; Reid 1967; Thorne & Curry 1983; Weinstein et al. 1979; Wolfe 1971.

Table 21. Provenience of the Nodena vessel.

Location measured from stake 20N-30W:	1.6 ft. south 4.6 ft. west
Depth of bottom of vessel below sterile at stake 20N-30W:	0.25 ft.
Depth of bottom of vessel below surface:	1.39 ft.
Depth of bottom of vessel below burned floor surface in square 20N-20W:	1.31 ft.

Table 22. Dimensions of vessel and color motifs.

Greatest diameter of body		17.95 cm.
Diameter at base of neck		6.0 cm.
Diameter near top of neck		3.58 cm.
Height from base to top of broken area of neck		19.5 cm.
Estimated total height before breakage		20.32 cm.
Thickness of vessel wall in neck	range	0.40-0.50 cm.
Buff area widths at widest part of body	range	0.77-1.78 cm.
Greatest width of red panels	range	3.77-4.51 cm.
Length of red panels	range	12.8-13.3 cm.
Length/width average of red panels		13.06/4.02 cm.
Greatest width of white panels	range	3.80-4.74 cm.
Length of white panels	range	12.8-13.8 cm.
Length/width average of white panels		12.2/4.37 cm.

Table 23. Dimensions of miniature vessel.

Height from rim to base	20.0 mm.
Diameter of body at shoulder	29.7 mm.
Outside rim diameter	28.0 mm.
Inside diameter of neck	17.4 mm.
Greatest length x width of base	13.7 x 13.6 mm.
Handle width at center	6.2 mm.
Vertical length of handle	13.5 mm.

Table 24. Wilsford Site artifacts.
(a) ceramics from excavation.

Provenience	Type/variety	Body	Rim
Feature 1 (unknown whether House 1 or 2 area).	unidentified red filmed (Nodena?)	1	
	Mississippi Plain var. Neeleys Ferry	6	
House 1, interior support postmold.	Mississippi Plain var. Neeleys Ferry	1	
House 1, dark area, center north ¼ of house.	Mississippi Plain var. Neeleys Ferry	12	
	Barton Incised var. Barton		1
House 1, Feature 5, center postmold.	Mississippi Plain var. Neeleys Ferry	1	
	unidentified clay tempered	1	
	small, round, biscuit-shaped object	1	
House 2, south wall trench.	Mississippi Plain var. unspecified	1	
House 5, Feature 4, center postmold & trench.	Mississippi Plain var. Neeleys Ferry	1	
House 6, Feature 3, center postmold & trench.	Mississippi Plain var. Neeleys Ferry	10	1
	Barton Incised var. Barton	1	
	Avenue Polychrome var. Avenue	1	
	Mississippi Plain var. unspecified	3	
	Bell Plain var. unspecified	2	

(b) Lithics.

Provenience	Description	No.
Sq. 55N-30W (Grid A), level 6 in.	hammerstone, split pebble.	1
Hs.1, northwest trench, level 19 in.	secondary decort. flake, unut., chert.	1
Hs.1?, southeast trench, lev.12-18 in	primary & secondary decort.flakes, unut., chert.	2

Table 24(b). (continued)

Provenience	Description	No.
House 1, southwest trench.	burned pebble, unut.	1
	primary decort.flake, unut., chert.	1
Sq.50N-30W (Grid A), lev.6-12 in.	secondary decort.flake, unut., chert.	1
Sq.50N-30W (Grid A), level 8 in.	core, chert.	1
	secondary decort.flake, unut., chert.	1
Hs.1 area, Sq.75N-CL(Grid A),lev.6 in.	thinning flake or biface fragment, unut., chert.	1
Hs.1, Feature 5, center postmold.	core, chert, h-t.	1
Surface	secondary decort.flake, util.side, chert, h-t.	1
	secondary decort.flake, util.side & end, chert.	5
	secondary decort.flake, util.end, chert.	4
	thinning flake, util.end, chert.	2
	thinning flake, unut., chert.	1
	thinning flake, util.side, gray chert.	1
	secondary decort.flake, util.side, chert.	1
	granite or greenstone flake, unut.	1
	core, pebble, broken, chert.	3
	core, small pebble, flaked one end, chert.	1
	core, small pebble, chert, h-t.	2
	core, split pebble, banded chert.	1
	hammerstone, double-ended, quartz pebble.	1
	hammerstone, broken pebble, sandstone.	1
	abrader, small, smooth & flat one side, sandstone.	1
	chisel, broken end, edges chipped, chert, h-t.	1
	biface fragment, broken, gray quartzite.	1
	perforator, uniface, secondary flake, chert, h-t.	1
	Baytown chopper, biface bit, pecked body, chert.	1
	arrowpoint (Figure 19,D), chert.	1

Abbreviations: util.- utilized h-t.- heat-treated decort.- decortication
unut.- unutilized Hs. - House in. - inches

Note: Unless otherwise stated, "chert" means local yellow/tan gravel chert. Materials are not heat-treated unless stated. For feature or excavation unit proveniences, see Figures 3, 5, and 9.

Table 25. Radiocarbon Dates*

Sample Number	Radiocarbon Date;Lab.No.	Provenience**	References
1	560±75 B.P.(UGa-4713) (1390 A.D.)	House 1, NW trench post; Sq.110N-20E; 0.85 ft.	This paper
3	720±55 B.P.(UGa-285) (1230 A.D.)	House 1, center postmold, S.side Feature 5; Sqs. 90N-20E/30E; below plowzone	Noakes and Brandau 1974:137 Connaway 1981:83
4	485±60 B.P.(UGa-283) (1465 A.D.)	House 1, interior support postmold; Sq. 90N-20E; below plowzone, over 1.17 ft. deep	Noakes and Brandau 1974:137 Connaway 1981:83
5	525±60 B.P.(UGa-281) (1425 A.D.)	House 2, NE trench, burned post; Sq. 20N-20W; below plowzone, over 1.0 ft. deep	Noakes and Brandau 1974:137 Connaway 1981:83
7	375±95 B.P.(UGa-4714) (1575 A.D.)	House 3, interior support postmold; Sq. 10N-40W; 1.14 ft. deep	This paper

* All dates are uncorrected
** See Figures 5 and 9 for locations

APPENDIX

THE PARCHMAN PHASE IN THE NORTHERN YAZOO BASIN: A PRELIMINARY ANALYSIS

Mary Evelyn Starr

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I appreciate the large amounts of space I was allowed to take over for this work while employed at Pinson Mounds (TN) State Archaeological Area and at the Cobb Institute at MSU.

Private artifact collections were made available by Burt Jaeger and Fair Hays, both of Clarksdale, Mississippi. Fair also provided current information about the condition of some of the sites I was unable to visit.

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INTRODUCTION

This project was designed to better define the Parchman Phase, a Late Mississippian phase in the Northern Yazoo Basin, and to assess the usefulness of the phase as it is presently defined by Phillips (1970:639). It was intended to compare percentages of Mississippian ceramics from the fifteen sites originally placed in the phase with the sherd counts from the Peabody Museum's 1940-1947 Lower Mississippi Survey. The definition of the Parchman Phase was based on relative occurrences of certain ceramic types. In particular, it was hoped that such comparisons would show how the other sites compared with Wilsford and with each other, to provide a basis for deciding if the Parchman Phase is actually a distinct and discrete group of sites.

The collections examined indicate that Phillips' ceramic traits used to define Parchman are generally valid. However, the placement of some of the sites in the phase seems questionable, particularly those in the Coldwater River area.

From the analyses given, little or nothing can be added to the original definition of the ceramic complex of the Parchman Phase. However, it does seem to indicate that with some amendments, the present concept of the Parchman Phase provides a basis for further comparison of Mississippian systems in the area.

The Parchman Phase of the Mississippi Period was formulated by Phillips (1970:939), as he admits, on less than adequate data concerning the ceramics of the area. The Parchman Phase will, however, serve as a base when an adequate study of the Late Mississippian use of the area is begun. The Parchman Phase is bounded geographically by three better-defined phases, the Kent Phase to the north (Phillips 1970-938), and to the south by the Hushpuckena and Oliver Phases (Phillips 1970:941). The western border, other than the Mississippi River, is with the Old Town Phase near the mouth of the Arkansas River; what there is of an eastern bordering phase is the Quitman Phase. Both of these are less tightly defined than Parchman (Phillips 1970:940).

The geographical area of the Parchman Phase encompasses, if defined by sites shown in Phillips' (1970) Figure 447, approximately the southern third of Tunica County, the northern half of Coahoma County, and the northwestern half of Quitman County, all in Mississippi. The area measures less than 35 kilometers from north to south or from east to west, but includes sites in the Sunflower and Coldwater River drainages. The sites were recorded by the Peabody Museum's 1940-1947 Lower Mississippi Survey, and are mostly mound sites or mound groups. Few village sites without mounds were recorded; with the exception of the "missing" Hull Brake Site, all the Parchman Phase sites had one or more mounds at the time the LMS recorded them. With only ceremonial centers recorded, gaps appear between the "boundary" area sites of the surrounding phases, particularly between the northernmost Parchman sites: West, Dundee, and Canon, and the three Kent sites on Beaverdam Lake in central Tunica County; and between the southernmost Parchman sites: Carson and Dickerson, and the northernmost Hushpuckena-Oliver sites: Bramlett, Alligator, Garner, and Oliver. The distinction

between the Parchman and Quitman sites on the Coldwater River is less distinct, in the ceramics as well as geographically (Figure 21).

Parchman Phase Ceramics

It was intended to compare the counts and percentages of Mississippian ceramics collected by the Lower Mississippi Survey in the 1940s with more recent collections, since the LMS collections were the basis for Phillips' definition of the Mississippian phases. We hoped that the two, or as it turned out three, data sets would be comparable. Sherd counts made by the LMS were obtained for ten of the fifteen sites. Phillips' Figure 447 shows Parchman Phase components on the Dickerson, Salomon, Carson, Prowell, Barbee, Parchman, Hull Brake, Lula, Posey, and Aldison sites. For comparative purposes, collections were analyzed by the writer during 1983 and 1984. These collections were made by the Mississippi Archaeological Survey for the most part. Where they were obtained from other sources, they will be so credited in the discussion of the individual sites. Collections from thirteen of the fifteen sites (Dickerson, Salomon, Carson, Prowell, Barbee, Parchman, Wilsford, Lula, Posey, Whiting, Aldison, West, and Canon) were available. In addition, ceramic counts from collections from Salomon, Carson, and Parchman made by Ian Brown (1977) were included in the comparison.

The LMS sherd counts are broken down into counts of rim and body sherds for the Mississippian shell-tempered ceramics classified into the following types established by the Survey in Phillips, Ford, and Griffin (1951):

Neeley's Ferry Plain
(now Mississippian Plain, var. Neeley's Ferry)
Parkin Punctated
Barton Incised
Ranch Incised
(now Winterville Incised, var. Ranch)
Vernon Paul Applique
Fortune Noded
Manly Punctated
Tyronza Punctated
Bell Plain
Kent Incised
(now Barton Incised, var. Kent)
Rhodes Incised
Walls Engraved
(now Walls Engraved, var. Walls)
Hull Engraved
(now Walls Engraved, var. Hull)
Mound Place Incised
Old Town Red
Carson Red-on-Buff
Nodena Red and White
Avenue Polychrome

Hollywood White Slipped
Spendthrift Negative Painted
Wallace Incised
Stokes Bayou Incised
Oliver Incised
Owen Punctated
Leland Incised
Blanchard Incised
(now Leland Incised, var. Blanchard)
Arcola Incised
(now Barton Incised, var. Arcola)
Unclassified shell-tempered incised and punctated

The recent collections were first sorted as strictly as was possible by these ceramic types, originally defined by Phillips, Ford, and Griffin (1951:61-153). They were then sorted according to more recently defined types and varieties, mostly those defined or discussed by Phillips (1970:37-176). The final sherd counts presented in Tables 26 to 39 are given with type and variety system nomenclature, although the comparative value might have been greater with the old survey types, as the available LMS sherd counts are sorted by the older definitions and Phillips states that the LMS counts and examination of surviving collections were the basis for his definition of the area phases. "Adequate" collections from the Parchman, Carson, Salomon, Dundee, and West sites made by the Lower Mississippi Survey in 1947 were used as the central measure for the ceramic traits used to construct, define, and assign sites to the Parchman Phase.

Phillips describes the Mississippian ceramic assemblage of the Parchman Phase, on which he bases his phase definition and site assignments, by comparison with the ceramics of the Kent Phase sites, which he believes Parchman closely resembles. Both Kent and Parchman are defined as having nearly equal counts of Bell Plain and Mississippi Plain rim sherds. Kent and Parchman differ in that in Parchman, Barton Incised is more common than Parkin Punctated, while Barton and Parkin occur with about even frequency in Kent; and in that Walls Engraved, var. Hull is more common in Parchman, while Walls Engraved, var. Walls is more common in Kent. Phillips lists Barton Incised, var. Kent as a marker for Kent, while it is a rare minority type in Parchman. A consistent minority element of "southern" types--Owens Punctated and Leland Incised--are also offered as traits of Parchman Phase ceramic assemblages. In considering Phillips' statement that "the rest of the list is about the same for both phases..." (Phillips 1970:940) it is assumed that the definition of Parchman Phase ceramics is intended to include noticeable quantities of Old Town Red, Carson Red-on-Buff, Nodena Red and White, and Avenue Polychrome.

Chronological Position of the Parchman Phase

Phillips (1970:940), while not actually attempting any chronological placement of the Parchman Phase, seems to think that

it is somewhat earlier than the Walls Phase, which he does not tie down too closely either, although his Table 18 gives four radiocarbon dates for the Fuller site (Chucalissa) ranging from 1600 ± 200 to 1440 ± 200. Phillips, in assessing Parchman as possibly earlier than Walls, depends upon the evidence of the ceramic assemblages from the lower levels of 1941 test pits at Walls that were characterized by less Bell Plain in relation to Mississippi Plain, more Barton Incised, and less Parkin Punctated, an assemblage Phillips thinks compares favorably with Parchman. He also suggests that Walls, var. Hull, given as a marker for the Parchman Phase, may be related to some varieties of L'Eau Noire Incised, and so may be earlier than Walls, var. Walls.

There are definite traits in the Parchman Phase collections which seem to point to its extending quite late into the Late Mississippian-Protohistoric time range. Notable is the occurrence of teapot form vessels at the Carson and Parchman sites, the latter having fragments of a Nodena Red and White teapot possibly associated with a bundle burial. Otherwise, the high percentages of painted types and other elaborate mortuary type wares would also seem to indicate a later Mississippian date, certainly up to the Protohistoric. Phillips, Ford, and Griffin (1951:368), in discussing the possible association of archaeological sites with De Soto's Quizquiz towns, state that the surface collections and derivative frequency seriations constructed for the area indicate that the Carson group, Parchman, and Salomon were occupied in 1541 A.D., although the large earlier occupations caused bias in the seriation toward a date somewhat earlier in the Mississippi Period.

Dickerson (22-Co-502)

The Dickerson site (LMS 15-N-10) was recorded by the Lower Mississippi Survey as a village site approximately 40 acres in size with a conical mound 90 feet in diameter and nine feet high and an undetermined number of smaller mounds. The site was classified as early Baytown (Phillips, Ford, and Griffin's "F-E" time level, Phillips, Ford, and Griffin 1951:314) since a majority--3123 of 3173--of the sherds from the LMS's 1947 surface collections were of Baytown or earlier cultural association.

22-Co-502 is possibly the same Dickerson site from which Thomas (1894:255) describes the excavation of burials and ceramics for the Bureau of American Ethnology. Thomas reported a site with rounded or rectangular mounds, presumably house mounds, as the ones he dug into were composed of beds of fired daub and clay and had a high density of lithic and ceramic artifacts. The mounds seem right for Dickerson, as does the high artifact density: Phillips, Ford and Griffin describe the site as "rich" and the Mississippi Archaeological Survey reports an unusually high density of lithics and ceramics. Thomas also located his Dickerson site on the Sunflower River. In the information obtained from the Peabody Museum's Lower Mississippi Survey site files, it is suggested that Thomas in fact worked on the Parchman site, which is around three miles east of Friars Point. This does not

seem a very reasonable explanation, as Parchman has several large mounds which Thomas would certainly have commented on, and is located on Mill Creek, a separate tributary to the Sunflower River. It seems plausible that Thomas' Dickerson site is the same as the present site known as Dickerson and that Thomas was confused about the site being south southeast of Friars Point and simply stated that it was to the east.

John Connaway of the Mississippi Archaeological Survey visited the Dickerson site in 1968 and recorded it as having several mounds very badly eroded and spread by cultivation and a village area of 25 acres, an estimate much lower than the LMS's estimate of 40 acres. A surface collection made by the MAS and analyzed by John Penman shows Dickerson to have strong Marksville and Baytown components. This is apparently the same sherd count given by Brown (1977:13), who did not visit the site again in his 1977 survey of Coahoma County Mississippian sites. The counts for plain wares and most of the decorated wares in the MAS collection look about "right," but the extremely high incidence of Nodena Red and White (53.6%) causes the entire collection to be suspect (Table 26). The collection was not available for examination at the time of this study, but it would be very important to examine it in the future. One very possible explanation is that the sherds were from a single vessel. This problem of skewing the sample size has been encountered in other collections, usually as the result of including a pothunter's discarded potsherds in a general surface collection. Although it is not known on what areas of the site the general surface collections were made, the Mississippian component seems limited in relative size; perhaps it is similarly limited in area or time range. The Mississippian occupation could be isolated from the earlier components if it is so limited.

As Table 26 shows, Phillips had very little in the way of Mississippian ceramics to go on in placing Dickerson in his Parchman Phase, although his inclusion of the site in his Dorr Phase of Baytown and Peabody Phase of Coles Creek seem better founded based on the surface collection (Phillips 1970:Figures 444-447). Even the basic comparative counts used to define the phase are not available for making a diagnosis of the LMS collection. There are no plain rim sherds and not enough decorated wares to make adequate comparisons.

Table 26. Mississippian ceramic counts
Dickerson 22-Co-502

	LMS				MDAH			
Type/Variety	Rim	Body	Total	%	Rim	Body	Total	%
Barton Incised			1	3.6				
var. Unspecified	1		1					
Bell Plain			8	28.6			23	20.9
var. Bell					4	19	23	
var. Unspecified		8	8					
Leland Incised							1	9.09
var. Unspecified						1	1	
Mississippi Plain			19	67.9			22	20.0
var. Neeley's Ferry		19			2	15	17	
var. Unspecified						5	5	
Nodena Red and White							59	53.6
var. Nodena					1	58	59	
Old Town Red							3	2.7
var. Beaverdam						2	2	
var. Old Town					1		1	
Parkin Punctated							1	9.0
var. Harris					1		1	
Winterville Incised							1	9.0
var. Winterville						1	1	
TOTAL			28				110	

Salomon 22-Co-504

The Salomon site was apparently first recorded by Calvin Brown (Brown 1926:106) who mentioned in his reporting of Mississippi mound sites that "two and a half miles northeast of the town of Coahoma there is a group of mounds consisting of two large mounds and several small ones. There are recent burials on the tallest. The group has not yet been surveyed and studied." The recent burials are shown as Hull Cemetery on the 1932 Marks quadrangle. This cemetery is now untended; the graves date at least as early as 1855.

The Lower Mississippi Survey (Phillips, Ford, and Griffin 1951:51) described the site as a "large village site with large rectangular platform mounds and small mounds in plaza arrangement." The site was incorrectly recorded as "Salomon - 15-0-1," but the landowner's name is correctly transcribed as Salmon on their sketch maps. In 1947, Mound A was recorded as being 27 feet tall and having a ramp facing southeast and an apron four feet tall to the northeast. It faced Mound B (15 feet tall) across a plaza approximately 400 feet long. Four other rectangular and six square mounds were recorded, although their locations are not all shown on the LMS sketch map. Cultural material was described as scarce and having a time range of "E-B" or through the Mississippi Period.

The Salomon site was next officially recorded in 1968 by Sam McGahey of the Mississippi Archaeological Survey. It was described as a Baytown and Mississippian village site of approximately forty acres with two mounds on the bank of Hull Brake. The character of the site had changed greatly since 1947. Mound B had been hauled away by the county road department for road fill in 1958. According to local collectors burials and artifacts were found during the destruction of Mound B. One burial, on the northeast, was a flexed child found with a Baytown Plain drilled discoidal sherd. Other artifacts reported were about twenty large chunkey stones, a large polished celt, a fragment of a Carson Red-on-Buff human effigy bottle (a foot), and twenty-three Pontchartrain, Mud Creek, Pickwick, and various unidentified type projectile points of a time range of 2000 B.C. to A.D. 400, three projectile point distal ends, three preforms, and a blade-like flake, all but two of which are of Fort Payne chert (Connaway National Register nomination). Most of the other mounds noted by Phillips, Ford, and Griffin had been plowed away, with the exception of Mounds C and D.

In Ian Brown's 1977 survey of Coahoma County Mississippian sites for Cottonlandia Museum, Greenwood, Mississippi (Brown 1977:27-31), four surface collections and a sketch map of the site were made. Only Mound A was included, and it was noted that it had apparently changed little since 1947. Brown describes the ceramic density as medium, stating that the ceramics are mostly Mississippi Period. He also notes that "a solid blanket" of burned daub occurs and that its occurrence demarcates the edges of the plaza in front of Mound A. Brown estimates the limits of the site to Hull Brake, Black Bayou, and an area approximately fifty meters northeast of the mound.

In November 1983, John Connaway of the Mississippi Department of Archives and History visited the Salomon site in the process of preparing a National Register inventory nominating the Salomon site to the National Register of Historic Places. In the nomination description, Connaway points out some discrepancies in earlier survey data. The plaza area, which is bounded by dense concentrations of burned daub and is itself devoid of cultural material, is described as being 400 feet long, but the paved road which is its southeastern boundary is only 225 feet from Mound A. Mound A is basically the same as it was in 1947, but it has aprons on both the southwest and northeast sides, not just the northeast as the LMS map shows. The ramp faces the southeast, not the southwest as Brown (1977:29) states.

The LMS 1947 survey reported only Baytown and Mississippian components, but Phillips (1970: Figures 444-447) also assigns components of the Dorr Phase of the Marksville Period, Coahoma Phase of the Baytown Period, the Peabody Phase of the Coles Creek Period, as well as the Parchman Phase of the Mississippi Period. Brown (1977:29) also notes only Baytown and Mississippian ceramics; these are certainly the predominant occupations.

Evaluating the Salomon collections by the criteria Phillips offers for the Parchman Phase, the collections of the LMS and the MDAH, and to an extent of Brown, for the most part fall within the definition. Rim sherd counts give a proportion for Bell Plain to Mississippi Plain of 37:37 (LMS) and 72:74 (MDAH). However, the LMS counts show 47 sherds of Barton to 47 sherds of Parkin. Brown shows two Barton, no Parkin, and MDAH shows 100 Barton, nine Parkin. The LMS Parkin count seems far too heavy. It should run around 8:1 or 10:1 Barton:Parkin. Walls Engraved is present in all the collections, as are varying amounts of painted types and various "southern" types: Leland and Winterville in the LMS collection; Addis in Brown's; and Leland and Winterville in the MDAH collection. Brown's collections, while not divided into rim and body sherds, seem to have too much Mississippi Plain to Bell Plain, but this can be made to look better by including his Addis with the Bell, as his Addis was undoubtedly counted as Bell by the LMS and as Bell, <u>var. unspecified</u> by me.

Table 27. Mississippian ceramic counts
Salomon 22-Co-504

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	Brown 1977 Total	Brown 1977 %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Addis Plain					5	5.1				
var. Greenville					2					
var. unspecified					3					
Avenue Polychrome								7	7	0.4
Barton Incised			47	3.9	2	2.0			100	6.5
var. Barton							19	53	72	
var. Kent							2	1	3	
var. Togo							2	1	3	
var. unspecified	16	31	47		2		5	17	22	
Bell Plain			192	15.9	9	9.0			503	32.9
var. Bell					9		62	403	465	
var. unspecified	37	155	192				10	28	38	
Carson Red-on-Buff								3	3	0.2
Fortune Noded								2	2	0.1
Grace Brushed					1	1.0				
Hollywood White		5	5	0.4	3	3.0		1	1	0.1
Leland Incised									4	0.3
var. unspecified		2	2	0.2			4		4	
Maddox Engraved								1	1	0.1
var. Silver City								1	1	
Mississippi Plain			888	73.6	73	7.4			798	52.2
var. Neeley's Ferry	37	841	888				74	724	798	
Nodena Red and White		6	6	0.5			1	22	23	1.5
Old Town Red			6	0.5	5	5.1			53	3.5
var. Beaverdam					3		1	28	29	
var. Old Town					2			20	20	
var. unspecified		6	6					4	4	

Table 27. Mississippian ceramic counts
Salomon 22-Co-504 (continued)

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	Brown 1977 Total	Brown 1977 %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Parkin Punctated			47	3.9					9	0.6
var. Harris								6	6	
var. Castile								1	1	
var. unspecified	16	31	47					2	2	
Tyronza Punctated		1	1	0.1						
Rhodes Incised									3	0.1
var. Horn Lake								3	3	
Walls Engraved			8	0.7	1	1.0			3	0.2
var. Hull	2	6	8		1		3		3	
Winterville Incised			2	0.2					10	0.6
var. Ranch		2	2							
var. Winterville							4		4	
var. unspecified							3	3	6	
Unclassified incised and punctated	1	2	3	0.2			5	7	10	0.6
Totals			1207		99				1530	

Carson Mounds 22-Co-505

The Carson Mounds site, which now consists of five large mounds and an associated village area stretching for about a mile along Ritchie's Bayou, was visited in 1884 by Col. P. W. Norris and later by W. H. Holmes, whose description of the site and excavations carried out there is reported by Thomas (1894:253-55). Thomas' Plate XI and description of the site shows it as having a group of mounds in the northwest in an enclosed area of about five acres surrounded by an earth embankment three to five feet high, and a ditch. A flat-topped circular mound 192 feet in diameter at the base and fifteen feet high, possibly built on a platform five or six feet high, and several smaller mounds were within the enclosure. Excavations by Holmes into the top and sides of the largest mound (Mound A) revealed "firebeds of burnt clay" throughout the mound, as well as charcoal, ash, potsherds and lithics. A possible borrow pit 100 feet in diameter was noted to the southeast of the enclosure. Mound B, not excavated, consisted of double truncated cones. Mound C was oval and rounded, 210 feet x 150 feet x 16 feet high, built on an oval platform; the whole construction totaled 36 feet high. Minor test excavations of Mound C and surrounding elevations revealed dense lenses of burned clay, ash, charcoal, lithics and ceramics, indicating intense occupation. Mound D was described as a "roughly pentangular and very symmetrical" flat-topped mound 25 feet high, with an almost adjoining rounded mound measuring 100 feet x 75 feet x 8 feet high. This mound also had a great amount of burned clay and daub. Mound E was described as a pair of truncated conical mounds built on a platform 120 feet x 80 feet x 5 feet high and largely composed of burned daub and other remains of burned buildings. At this point in his description, Thomas mentioned that there were several others of these apparent midden accumulation ridges that were not noted on his map of the site. He also noted the presence of borrow pits adjacent to mounds and larger depressions, filled with water at that time and appearing as swamps and ponds, indicating larger borrow pits. Holmes' excavations and other work entailing digging done on the plantation had uncovered few burials and even fewer whole vessels. Thomas' hopes for further findings were confounded by the landowners' unwillingness to have further excavations disturb the mounds.

Calvin Brown (1926:108-113) next described the Carson site, providing a summary of Thomas' report, but no additional information. The 1940 Works Progress Administration also surveyed the Carson site. The WPA recorded six large mounds and several smaller ones. The largest was 310 feet in diameter and 25 feet high, with others measuring 5 feet to 18 feet in height.

The Peabody Museum's Lower Mississippi Survey (Phillips, Ford, and Griffin 1951:51) in 1940-47 recorded the Carson site as three separate sites:

15-N-6	Montgomery	(Thomas' enclosure to the NW)
15-N-7	Stovall	(Thomas' Mound B area)
15-N-8	Carson	(Thomas' Mounds C, D, E, F area)

By 1947, most of the smaller mounds or areas elevated by midden accumulation had been spread by plowing. Montgomery was described as

a "village site with large rectangular platform mound and small mound;" Stovall as a "large double conical mound;" and Carson as a "village site with large platform mound, large double conical mound and small mound." Phillips, Ford, and Griffin assigned a time range of "D-A" or Baytown through Late Mississippian for Montgomery; a time range of "F-A" or Early Baytown through Late Mississippian for Stovall; and provided no chronological information about Carson. No collection was made on Carson, but Phillips, Ford, and Griffin (1951:31-72) stated that they think Carson would fall along their "B" time level and date as late as 1541. Most of the LMS collections came from Montgomery, but they justified the division into three sites by the fact that they perceived the three portions of the site as having different time ranges. Phillips (1970:940) may later have recombined the sites in his discussion of the Parchman Phase, as he discussed the Carson sites as 15-N-6, the designation originally assigned to Montgomery alone, and described it as having a primarily Mississippian occupation.

Phillips, Ford, and Griffin (1951:371) admitted to the possibility that Montgomery (and Carson) was one of the "capitals" of Quizquiz, although they admittedly did not fully develop the further possibility that the Montgomery, Parchman, and Salomon groups were thus towns of Quizquiz, since it would conflict with the De Soto Commission's theory of a crossing farther south at Sunflower Landing. This possibility was based on several facts. In 1541, Montgomery would have been close enough to an active Mississippi River channel to satisfy the requirements of the documents; the ceramic collection indicates occupation around their "B" time level, or at the time of the entrada; the palisaded temple-mound-plaza arrangement with a large planned village coincides with the De Soto accounts; and there are other large towns (Parchman and Salomon) with similar town patterns close by that would also have been occupied around 1541.

The Mississippi Archaeological Survey recorded the Carson site in 1968, referring to the previous work. At that time there were five large mounds and several smaller ones remaining, having the same measurements as were reported by the WPA. Most of the site was in cultivation, with the exception of the five larger mounds, two of which had modern dwellings on them.

Members of the Memphis Archaeological and Geological Society excavated briefly in the area of Thomas' earth embankment (Phillips, Ford, and Griffin's Montgomery site). The 1951 excavations are preliminarily reported by Beaudoin (1952:10), who stated that at that time "ten or twelve large, flat-topped mounds and many smaller ones" remained. His measurements of mounds do not coincide with those of Thomas. He recorded the dimensions of Mound D as 68 feet x 78 feet (cf. Thomas, 310 feet) along the base, 48 feet x 56 feet (cf. Thomas, 210 feet) across the summit platform, and 20 feet (cf. Thomas, 25 feet) high. According to Beaudoin, the old Carson mansion, which had burned some years before, had stood on this mound. The dimensions offered in his preliminary report, however, seem to indicate that the mound he was referring to as the site of the Carson mansion was Mound A. Since Thomas' Plate XI shows the Carson mansion on Mound C, there

is obviously some discrepancy between the two sets of dimensions and mound designations. Beaudoin also indicates that sections of the earthen embankment were still visible on the plowed surface as a slight ridge at a few points. He also reported a number of burned house floors and burials, indicating a substantial village and associated cemetery area.

Brain, Toth, and Rodriguez-Buckingham's 1974 study of the route of De Soto's 1541 passage through the area recalls the suggestion that the Carson site may have been one of the Quizquiz towns. They return to the same evidences that Phillips, Ford, and Griffin had offered but failed to develop because a strong theory for a more northerly Quizquiz would have conflicted with the Sunflower Landing theory of the entrada crossing point. Brain et al. (1974:261) also noted that the ceramics from the Montgomery area of Carson "show a full complement of all the ceramic markers used to define a De Soto dateline." He further suggested that the sites in the general area having late components, including Carson, might be linked with the historic Tunica on the basis of Swanton's (1911:317) statement that Chickasaw and Choctaw traditions place Tunica "oldfields" in the Friars Point area.

Ian Brown visited the Carson site in his 1977 survey of Coahoma County Mississippian sites. He recounted (1977:6) the previous work described above and evaluated the condition of the site in 1977. Mound A, with Carson Pelegrin's house on it, was about three meters high and apparently had changed little since Holmes' 1880s visit. However, the smaller mounds recorded by Holmes were reduced to small rises in the surrounding fields. Brown estimated that double conical Mound B was between three and one-fourth and four meters high, quite a loss from Holmes' 36 feet. Holmes also reported daub, ceramics and lithics as being dense in the excavation of Mound B, but Brown noted no material in this area. Mound C, which Holmes described as having a height of 16 feet, was found by Brown to be only one meter high, with John Pelegrin's house on it. When Holmes visited the site, Mound D had a house and barn on it, with an overall height of 30 feet. Brown states that it, in 1977, was "'saddle-back' in cross-section and...considerably reduced in height." Mound E had a modern height of one and one-half to three meters. Brown found little Mississippian material in the area of Mound D, but did find Jaketown preforators, which are associated with Poverty Point-like cultures. Mound F, which Holmes described as five feet to six feet high was, in Brown's words, "little more than a hump in John Pelegrin's back yard." In 1984, the mound group had changed in few respects, but ownership had changed to the Prudential Insurance Company.

The ceramic collections for Carson (Table 28) were the largest available for study. Three sources were utilized: the Lower Mississippi Survey's sherd count sheet, sherd counts reported by Brown (1977: Tables 2,3), and a large collection loaned by Burt Jaeger of Clarksdale, Mississippi. The LMS collection, made in 1947, was from the area of the site that was catalogued as Montgomery and consisted of 961 sherds. This collection can probably be considered one of the most representative for the Mississippian assemblage at the site, although it came from a limited area. Several of the other

collections have serious biases. Brown reported two collections having Mississippian ceramics. His Table 2 listed materials from twelve small collections made by him at various points on the site in 1977, and while this collection is the smallest of the lot, it is probably the least biased. The second collection Brown reported (Table 3) were materials from a sample from a large collection belonging to Dr. Van Burnham of Clarksdale. This collection is restricted to the Mound A area and is intentionally biased toward rims and decorated sherds. Neither of the collections Brown reported was broken down into rim and body sherds, and so are not useful for some of the comparisons that yield criteria used in the definition of Parchman Phase Mississippian components. The collection borrowed from Burt Jaeger consisted of 2289 Mississippian sherds, and while they were not counted here, there are probably an additional half of that number of Coles Creek, Baytown and Marksville sherds. This collection was made over a number of years, primarily by Dabney Carson. The collection was later loaned to French Camp Academy by John and Carson Pelegrin, before it came into Burt Jaeger's possession. A sherd count made by Harvard may exist for this collection, including an unknown amount of material not included here and several fragmentary vessels (at least one large Mississippi Plain vessel base and body portion and one partial rim and body of a Parkin Punctated var. unspecified jar).

The LMS rim sherd counts for Mississippi Plain var. Neeley's Ferry in proportion to Bell Plain are not consistent with the definition of Parchman (16:67), but since only 31 of their 480 sherds of Neeley's Ferry were separated into rims and body sherds, the actual count of rims may have been more even. Other counts used in diagnosing Parchman assemblages seem about right in the collection: more than 2:1 for Barton over Parkin which is a high amount of Parkin; showings of Carson, Hollywood, and Nodena; a more than noticeable variety of minority elements of "southern" types--Leland and Owens; and a good representation of Walls Engraved var. Hull.

The most noticeable count in Brown's collection is the high incidence of Addis Plain. What Brown counted as Addis in the Coahoma County survey is probably what I have usually counted as Bell Plain var. unspecified. Most of this material, in my opinion, does not adequately fit into the definition of Addis. However, Brown is certainly more familiar with the Addis occurring further south than I am--I have never seen any of it. Still, the Bell type paste that does not fit the var. Bell definition that is found in this area, having amounts of fine shell and dark compact pastes but including a great variety of other tempering agents, is very similar to Bell types found further north than the accepted range for var. Holly Bluff and seems to vary considerably from the Addis defined further south.

The Burnham collection has a much greater predominence of Barton over Parkin than is usually observed. The amounts of painted wares seem about right, considering the known biases, as do the counts for the plain wares. The counts of what Phillips described as "southern" types seem too high, however.

The Jaeger collection also seems to be biased in some respects, largely toward great numbers of painted types. Counts of Bell Plain

and Mississippi Plain, var. Neeley's Ferry are fairly close to even (163:128). The Mississippi Plain sherds included what seemed like a far too high percentage of lugs and strap-handles, so there is probably some bias against unmodified rims, at least as far as the coarse shell tempered ceramics go. The Barton again heavily outweighed the Parkin and fairly large (for minority types) percentages of Leland, Owens, and Winterville. In addition, the collection included two sherds, evidently from the same vessel, of a fine shell and grit tempered, broad curvilinear engraved or trailed vessel with heavy red painting on both the interior and the exterior. These sherds closely resemble the types Keno Trailed and Foster Trailed-Incised, which occur largely in the Red River valley and Ouachita areas on about the same time level as the late Mississippi Period (Suhm and Jelks 1962:42, 87).

Table 28. Mississippian ceramic counts
Carson 22-Co-505

Type/Variety	LMS				Dr. B Brown		Brown 1977		Burt Jaeger			
	Rim	Body	Total	%	Total	%	Total	%	Rim	Body	Total	%
Addis Plain							13	10.1			8	0.3
var. Addis							2					
var. Greenville							1					
var. unspecified							10		2	6	8	
Avenue Polychrome					3	1.0				26	26	1.1
Barton Incised			66	6.9	116	38.8	9	7.0			263	11.5
var. Arcola					2				27	7	34	
var. Barton					99		9		148	13	161	
var. Kent	1	2	3						2	4	6	
var. Togo					8				4	2	6	
var. unspecified	30	33	63		7				40	16	56	
Bell Plain			312	32.5	49	16.4	10	7.8			340	14.9
var. Bell					49		10		139	139	278	
var. unspecified	69	142	312						24	38	62	
Carter Engraved					1	0.3						
var. Carter					1							
Carson Red-on-Buff			3	0.3							34	1.5
var. Carson		3	3						4	27	31	
var. Olmond									3		3	
Grace Brushed											4	0.2
var. Grace										4	4	
Hollyknowe Ridge Pinched					1	0.3					2	0.1
var. Hollyknowe					1					2	2	
Hollywood White		2	2	0.2						3	3	0.1

Table 28. Mississippian ceramic counts
Carson 22-Co-505 (continued)

	LMS				Brown 1977				Burt Jaeger			
					Dr. B		Brown					
Type/Variety	Rim	Body	Total	%	Total	%	Total	%	Rim	Body	Total	%
Leland Incised			2	0.2	3	1.0					12	0.5
var. Blanchard					2				4	8	12	
var. Leland		2	2		1							
Mississippi Plain			480	49.9	42	14.0	89	69.0			776	33.9
var. Neeley's Ferry	16	15	31		42		89		128	648	776	
Nodena Red and White			6	0.6	2	0.7					215	9.4
var. Nodena		6	6		2				2	213	215	
Old Town Red			24	2.5	9	3.0	6	4.6			428	18.6
var. Beaverdam					9		4		23	285	308	
var. Old Town							2		17	69	86	
var. unspecified	4	20	24						9	25	34	
Owens Punctated			2	0.2	22	7.4					5	0.2
var. Owens					6				3	2	5	
var. Menard					1							
var. Widow Creek					7							
var. unspecified		2	2		8							
Parkin Punctated			25	2.6	22	7.4	2	1.6			50	2.2
var. Parkin					19				4	4	8	
var. Harris									15	15	30	
var. unspecified	6	19	25				2		9	13	22	
Pouncey Ridge Pinched					3	1.0				3	3	0.1
Tyronza Punctated	1	3	4	0.4								
Wallace Incised											1	-
var. unspecified										1	1	

Table 28. Mississippian ceramic counts
Carson 22-Co-505 (continued)

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	Brown 1977 Dr. B Total	Brown 1977 Dr. B %	Brown Total	Brown %	Burt Jaeger Rim	Burt Jaeger Body	Burt Jaeger Total	Burt Jaeger %
Walls Engraved			8	0.8	9	3.0					29	1.3
var. Hull		8	8		9				12	17	29	
Winterville Incised					17	5.7					37	1.6
var. Blum					1							
var. Ranch									6	20	26	
var. Tunica					12							
var. Winterville					4							
var. unspecified									5	6	11	
Unclassified shell-tempered incised and punctated	6	21	27	2.8					32	19	51	2.2
Unclassified shell-tempered engraved and red-filmed										2	2	0.1
Totals			561		299		129				2289	

Prowell 22-Co-506

The Lower Mississippi Survey recorded Prowell as 15-O-7, a large village site with three small mounds, one three feet high but "spread" and two others that had been destroyed (Phillips, Ford, and Griffin 1951:313). Based on a large surface collection (2034 sherds), the site was assigned an Early Baytown component by Phillips, Ford, and Griffin. Only 15 Mississippian sherds (Table 29) are shown on the LMS analysis sheet and neither Phillips, Ford, and Griffin (1951) nor Phillips (1970) further discussed Prowell as being a Mississippian site, with the exception of Phillips' assigning it to his Parchman Phase in his Figure 447.

In 1968, when Sam McGahey of the Mississippi Archaeological Survey visited and recorded the site, no mounds were visible. The site was described as plowed, eroding into Moore Bayou and in cultivation. Baytown Period ceramics were collected during the 1968 survey, but the site was inconsistently classified as Marksville Period, probably because Phillips (1970: Figures 444, 446, 447) included Prowell in his Dorr Phase of the Marksville Period, Peabody Phase of the Coles Creek Period, and Parchman Phase of the Mississippian, but he did not specifically assign it to a Baytown phase.

The only available surface collection, probably that made in 1968, consisted of 39 sherds, but contained no Mississippian ceramics. It was not possible to visit the site during the course of this project to obtain further collections. With this small collection of Mississippian materials and general lack of information, it is not possible to assess the place of the Prowell site within the context of the arguable actual existence of the Parchman Phase.

Table 29. Mississippian ceramic counts
Prowell 22-Co-506

	LMS				MDAH			
Type/Variety	Rim	Body	Total	%	Rim	Body	Total	%
Barton Incised			2	13.3				
var. unspecified	1	1	2					
Mississippi Plain			12	80.0				
var. Neeley's Ferry	1	11	12					
Old Town Red			1	6.7				
var. unspecified	1		1					
TOTAL			15				0	

Barbee 22-Co-510

The Barbee Mound (22-Co-510) is listed in the Mississippi Department of Archives and History site file as a Baytown Period village site with a small conical mound which is probably of Woodland Period association. There is a modern cemetery on the mound and on the land adjacent to the mound on the east. The site is on the silty natural levee of Carter Bayou on the east side of Highway 61. Immediately to the west of Highway 61, continuing along the same natural levee, is a village area of undetermined size with a fairly compact concentration of prehistoric ceramics with very little lithics or burned daub. This area was recorded as 22-Co-560 by the Mississippi Archaeological Survey. However, when the Barbee Mound was recorded by the Lower Mississippi Survey as 15-0-2, a village site with a small conical mound, the area to the west of Highway 61 was apparently included. The mound was at that time described as measuring 100 feet x 8 feet (Phillips, Ford, and Griffin 1951:314). The cemetery was not described, but was in existence; grave markers date from the mid-1800s. A surface collection and sherd count was made. The LMS collection of 124 sherds is made up primarily of Baytown Plain and Mulberry Creek Cordmarked ceramics, with only one sherd each of Bell Plain and Hull Engraved (now recorded as Walls Engraved *var.* *Hull* (Table 30)). The writer's surface collection from 22-Co-510 made in June 1983 consists of five small, eroded, grog tempered sherds, all from the fill of recent graves. No material was noted in the fields surrounding the cemetery on the east side of Highway 61. A collection of 65 sherds was made on 22-Co-560, all grog tempered types, predominantly Mulberry Creek Cordmarked and Baytown Plain, with minor representation of Larto Red and Withers Fabric-Marked. The area to the west of Highway 61 has an area of less than 150 square meters; because of the heavy ground cover, no estimation of the area of the site to the east is made. Phillips, Ford, and Griffin's original assignment of the Barbee Mound to Early Baytown (Phillips, Ford, and Griffin 1951:51) seems reasonable, but Phillips' placement of the Barbee Mound in the Parchman Phase seems unfounded, as only two Mississippian sherds were recovered, surely not an adequate sample on which to base a phase assessment. As a further inconsistency, in discussing the Coahoma Phase of the Baytown Period, Phillips stated that Barbee is one of three recorded sites which are "pure Coahoma," implying that no other components are represented, although he showed Barbee in Figure 447 as having a Mississippian component (Phillips 1970:907).

Table 30. Mississippian ceramic counts
Barbee 22-Co-510

	LMS				MDAH			
Type/Variety	Rim	Body	Total	%	Rim	Body	Total	%
Bell Plain			1	50.0				
var. *unspecified*		1						
Walls Engraved			1	50.0				
var. *Hull*	1							
TOTAL			2				0	

Parchman Place 22-Co-511

The Parchman Place site was first reported by Brown (1926:107) in a simple statement that "a mound is reported on the Roselle place two miles southwest of Coahoma." The Lower Mississippi Survey (Phillips, Ford, and Griffin 1951:51) described it as a "large village site with large and small platform mounds and small mounds in plaza arrangement" with a time range of "B-A" or Late through Terminal Mississippian. Parchman Place was not discussed as either a large or small ceremonial center (Tables 12 and 13:315-328), but it was briefly discussed as a Quizquiz town (1951:371). In this discussion they provided information on the site available from the LMS site card. Parchman Place was described as having mounds and a well defined plaza. Mound A, a large platform mound, was of "uncertain" shape, 60 meters in diameter at the base and six to seven meters high. No line of a palisade was recorded, though this would be expected of a Quizquiz town or any town of that time.

William Haag, who recorded Parchman Place in the University of Mississippi site file in 1950, stated that it consisted of five mounds in a plaza arrangement with four additional possible mounds, and that there was "more polychrome here than at any other site visited." The Mississippi Archaeological Survey next described the site in the late 1960s, stating that by then Mound B had been bulldozed across the top and was then around eight feet high. With the exception of Mounds A and B, the rest of the site, an area up to 100 acres, was in cultivation.

Brown (1973:3) observed only four mounds, but noted that the site, which was at that time (September) planted to cotton, had many rolling hills which he could not identify as specific mounds. He states that the primary mound was still intact and that its ramp seemed to face southwest--that is to the left of the plaza. In fact, this is not a ramp but another mound at the side of the large mound, a situation that is paralleled at Salomon, where Brown also interprets the smaller mound as a ramp when Salomon and Parchman clearly have ramps facing the plaza. Although Brown's collections were confined to the turnrows, he also commented on the unusually high incidence of polychrome pottery and on the heavy daub scatter.

In March 1984, John Connaway and Sam Brookes of the Mississippi Department of Archives and History, Fair Hays, and the writer visited the Parchman Place site to map house patterns of daub scatters plowed up that spring. Twenty-five distinct areas were defined and their interiors were intensively collected. Other collections were also made on the site. Mound A was heavily grown up with a good stand of trees and undergrowth. A square or rectangular mound around two to two and one-half meters tall is adjacent to and on a line with Mound A to the southwest. There is also possibly another mound, platform, apron, or midden ridge adjacent to Mound A to the northeast. Mound B, which had been bulldozed from the top, was apparently originally rectangular, but now has a wedge shape. Other mounds were not specifically identifiable, but hillocks and ridges with very dense daub and some lithics and ceramics surround a low clean plaza. The

plaza is estimated to measure (NW-SE) 100 meters by (NE-SW) 30 meters. Although the collections from March 1984 have not yet been washed or analyzed, there is again an impression of a high rate of incidence of polychrome pottery as well as many whole and fragmentary chisels and celts.

Phillips, Ford, and Griffin seriate Parchman Place as late in their "B-A" range. This is reinforced by the discovery of Nodena Red and White teapot fragments, possibly associated with a bundle burial in the turnrow south of Mound A, during the March 1984 mapping.

Parchman Place is one of five sites from which the LMS obtained large collections and on which Phillips (1970:940) based his observation concerning Parchman Phase ceramic assemblages. The LMS collection (Table 31) from Parchman Place, aside from the already stressed high rate of painted types, has less than equal rim count proportions of Bell Plain to Mississippi Plain var. Neeley's Ferry (30:14), no Parkin to 65 sherds of Barton, some Walls Engraved var. Hull , and very little (two sherds of Owens Punctate) that could be considered "southern," out of a total of 998 Mississippian sherds.

Brown's (1977:4) five collection areas yielded a total of 124 Mississippian sherds. Brown's collections are not differentiated by rim and body sherds, but his totals for plain sherds (Bell to Neeley's Ferry) is 13.7% to 61.3%, a little more toward Neeley's Ferry than the average for the larger collections. Brown also counts 17 sherds of Barton and none of Parkin (but two ridge-pinched). Anna Incised and Grace Brushed are the only "southern" types. He also records three sherds (2.4%) of Hull, a high percentage for this type. Again, the polychrome types are well represented.

In the MAS collection, even with "Addis" counted (as it usually was) as Bell, Neeley's Ferry outweighs Bell 30:20. This inconsistency on my part in attempted sorting of fine tempered pastes should reinforce how un-"Bell" looking most of the Bell is in this area. Again the total percentage of Mississippi Plain (66.1%) seems a little high, although not much. Barton counts 31 compared to only one for Parkin. "Southern" types are again not as well represented as at some of these sites. Walls Engraved var. Hull appears at about a normal rate, but the painted types run higher than average. In all there are 108 sherds of Avenue Polychrome, Carson Red on Buff, Hollywood White, Nodena Red and White, and Old Town Red, making up 6.7% of 1611 sherds, a respectable amount for these minority types, particularly Hollywood.

Table 31. Mississippian ceramic counts
Parchman Place 22-Co-511

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	Brown (1978, Table 1) Total	Brown (1978, Table 1) %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Addis Plain									20	0.4
var. Addis							7	13		
Anna Incised					1	0.8				
var. unspecified					1					
Avenue Polychrome			3	0.3					8	1.6
var. Avenue		3	3					8	8	
Barton Incised			65	6.5	17	13.7			31	6.3
var. Barton					16		4	7	11	
var. Estill							2	2	4	
var. Togo					1			2	2	
var. unspecified	28	37	65				2	12	14	
Bell Plain			312	31.3	17	13.7			63	12.9
var. Bell					8		11	38	49	
var. Holly Bluff							2	10	12	
var. unspecified	30	282	312		8			2	2	
Carson Red-on-Buff			6	0.6					8	1.6
var. Carson								8	8	
var. unspecified		6	6							
Fortune Noded			1	0.1						
var. Fortune		1	1							
Grace Brushed					1	0.8				
var. Grace					1					
Hollywood White			6	0.6	1	0.8			3	0.6
var. Hollywood		6	6		1			3	3	
Leland Incised									2	0.4
var. Blanchard								1	1	
var. unspecified							1		1	
Mississippi Plain			572*	57.3	76	61.3			323	66.1
var. Neeley's Ferry	14	3	17		75		26	174	300	
var. unspecified					1		4	19	23	

Table 31. Mississippian ceramic counts
Parchman Place 22-Co-511 (continued)

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	Brown (1978, Table 1) Total	Brown (1978, Table 1) %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Mound Place Incised					1	0.8				
var. Mound Place					1					
Nodena Red and White			10	1.0	1	0.8			24	4.9
var. Nodena		10	10		1		1	22	23	
var. Douglas								1	1	
Old Town Red				1.3	4	3.2			34	6.9
var. Old Town					1		3	21	24	
var. Beaverdam					3			10	10	
var. unspecified	1	12	13							
Owens Punctate			2	0.2						
var. unspecified		2	2							
Parkin Punctate									1	0.2
var. Hollandale								1	1	
Pouncy Ridge Pinched					2	1.6				
var. Pouncy					2					
Walls Engraved			2	0.2	3	2.4			2	0.4
var. Walls								1	1	
var. Hull	1	1	2		3			1	1	
TOTAL			998		124				489	

*Collection in possession of LSU not divided by rim/body sherds included in LMS collection list.

Hull Brake 22-Co-515

The Hull Brake site was assigned site number 15-0-8 by the Lower Mississippi Survey team that visited the site in 1947. A record of a collection of 31 sherds exists, 29 of which are of Baytown Period association, with two sherds of "Neeley's Ferry Plain" representing a Mississippian occupation. Phillips, Ford, and Griffin (1951:52) provided no information other than to state that it was a "village site."

The Mississippi Archaeological Survey also recorded the Hull Brake site as 22-Co-515, apparently solely on the LMS reports. Both the LMS and the MAS give the same location for the Hull Brake site. However, attempts by the Mississippi Archaeological Survey (John Connaway, personal communication) and the writer to locate a site of this description have failed.

Obviously, with this lack of information, it is not possible to discuss this site within the context of the Parchman Phase.

Table 32. Mississippian ceramic counts
Hull Brake 22-Co-515

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Mississippi Plain var. Neeley's Ferry	2		2	1.000	(No known collection)			
TOTAL			2					

Wilsford 22-Co-516

The Wilsford site will not be discussed here, since it is described in the body of this report.

A sherd count from the LMS 1947 surface collection was available, as were several small surface collections, some of which were made at the time of the 1969 excavation. The MDAH collections were analyzed by John Connaway. In the LMS collections Bell rims outweigh Mississippi 8:4; the MDAH counts are equal, 4:4. If the material Connaway counts as Addis, 2 rims, is included, the counts are more similar. Barton to Parkin ratios are 23:3 (LMS) and 16:0 (MDAH). Nodena Red and White and Hollywood White represented painted types.

Overall, the Wilsford site seems to fit in well with the rest of the Parchman Phase sites. The collections, while smaller, compare favorably with the nearest Parchman Phase sites (Parchman and Salomon) and with the ceramic assemblage that Phillips proposes as defining Parchman Phase occupations.

Table 33. Mississippian ceramic counts
Wilsford 22-Co-516

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Addis Plain							13	10.1
var. Holly Bluff					2		2	
var. unspecified						11	11	
Barton Incised	9	14	23	18.8			16	12.5
var. Barton					4	9	13	
var. Campbell					1		1	
var. unspecified					2		2	
Bell Plain	8	11	19	15.6			15	11.7
var. Bell					4	11	15	
Fortune Noded		2	2	1.6				
Hollywood White		1	1	0.8			1	0.8
var Hollywood						1	1	
Mississippian Plain	4	67	71	58.2			76	59.4
var. Neeley's Ferry					4	72	76	
Nodena Red and White		3	3	2.5			2	1.5
var. Nodena						2	2	
Parkin Punctated		3	3	2.5				
Unclassified shell-tempered plain					1		1	0.8
Unclassified shell-tempered interior incised					1		1	0.8
Unclassified shell-tempered white filmed						1	1	0.8
Unclassified shell-tempered incised					1	1	2	1.5
Totals			122				128	

Lula 22-Co-517

The Lula site (LMS site designation 15-0-4) was recorded by the Lower Mississippi Survey as a large village site with a large rectangular platform mound and small mounds and assigned a time range of "F-D" or Early to Middle Baytown Period based on sherd counts made in 1947 (Phillips, Ford, and Griffin 1951:52).

The site was next recorded in 1971 by the Mississippi Archaeological Survey as a large village site with two mounds, one of which measured 40 to 60 feet by 4 to 5 feet high. The condition of the site was undescribed, except for a statement that it was in cultivation. A small surface collection was made, consisting of 16 Baytown Period and eight Mississippian sherds (Table 34). Recent efforts to locate mounds or a village site in the location of the Lula site have failed, so the site has apparently been destroyed since 1971 (John Connaway, personal communication 1984).

The LMS collection from Lula is typically small, consisting of 11 sherds, seven of which were classified as Baytown Plain. The MDAH collection is likewise small and hence not very reliable for comparisons. However, the presence of Barton Incised var. Kent is noteworthy as several of the more northern of the Parchman Phase sites (Figures 20, 21) have provided examples of Kent from relatively small collections. Phillips (1970:938) gave Kent as a "marker" for his Kent Phase, and as a rare minority for Parchman Phase sites.

Table 34. Mississippian ceramic counts
Lula 22-Co-517

	LMS				MDAH			
Type/Variety	Rim	Body	Total	%	Rim	Body	Total	%
Barton Incised			1	25.0			2	25.0
var. Kent	1		1					
var. Unspecified					1	1	2	
Mississippi Plain			2	50.0			6	75.0
var. Neeley's Ferry		2	2			6	6	
Old Town Red			1	25.0				
var. Unspecified		1	1					
TOTAL			4				8	

Posey Mound 22-Qu-500

The Posey Mound (LMS 15-0-6) was recorded in 1947 by the Lower Mississippi Survey as a small ceremonial center with a rectangular platform mound 15 feet high, associated small mounds, and scattered daub, making the site sound like a small Mississippian ceremonial complex, but based on the ceramic assemblage it was assigned to Phillips, Ford, and Griffin's (1951:52) "F-D" time level or Early to Middle Baytown (Phillips, Ford, and Griffin 1951:324).

The Mississippi Archaeological Survey recorded the Posey Mound Site in 1968, tentatively dividing the site into two areas. The primary mound was described as having "one side gouged out by a Caterpillar," and a second, less than 100 yards north of the primary mound, was described as measuring 50 feet on a side and two feet high. Materials collected in the area of the smaller mound were Baytown Period ceramics with a minority of Mississippian ceramics, a triangular arrow point, and scattered human skeletal remains.

Posey Mound is on the Coldwater River, a part of the Tallahatchie rather than the Sunflower drainage, where Phillips' Quitman Phase, which is even more tentative than Parchman, geographically begins. The only criterion based on type and variety sherd counts that Phillips (1970:940) gives for Quitman is lack of Bell Plain in comparison to more northerly site groupings. The rim sherd proportion counts of Bell Plain to Mississippi Plain at Posey are 0:0 (LMS); 2:5 (MDAH); and 2:10 (Fair Hays). This seems a greater difference than is permitted in the definition of Parchman as having nearly equal Bell to Mississippi rim counts, particularly since this criterion seems to be holding up well for the larger collections. Besides, the material counted as Bell in both the MDAH and Fair Hays collections is very marginal, as are the pastes of the other types generally defined as occurring on Bell type pastes. There are notable amounts of fine shell or pockets from leached shell, the surfaces and cores are generally greys or dark, and bottle forms and carinated bowls occur, but the paste is somewhat lumpy and has great amounts of grog, grit or other tempering agents included, and thickened rims expected for southern types occur. Unfortunately, no comparative material from any of Phillips' Quitman Phase sites was available at the time the Posey Mound collections were examined. Given the inadequate (17 sherd) LMS collection and the position on the Coldwater River, it is hard to attempt to reconstruct Phillips' reasoning in placing the Posey Mound site in his Parchman Phase.

If the logical geographical integrity and the defined range of variability and similarity of ceramic assemblages are to be preserved for the Parchman Phase, the Posey Mound site should be excluded from it, or at least considered as belonging to a marginally similar border area.

Table 35. Mississippian ceramic counts
Posey Mound 22-Qu-500

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	MAS Rim	MAS Body	MAS Total	MAS %	Fair Hays Rim	Fair Hays Body	Fair Hays Total	Fair Hays %
Barton Incised							1	1.6			1	1.5
var. unspecified						1	1			1	1	
Bell Plain			4	23.5			16	2.5			18	26.1
var. unspecified		4	4		2	14	16		2	16	18	
Leland Incised											1	1.5
var. unspecified										1	1	
Mississippi Plain			12	70.6			47	73.4			47	68.1
var. Neeley's Ferry		12	12						10	37	47	
Mound Place Incised	1		1	5.9								
var. Mound Place												
Old Town Red											2	2.9
var. unspecified										2	2	
TOTALS			17				64				69	

Whiting 22-Qu-511

Phillips (1970: Figure 447) includes the Whiting site (15-0-15) as a Parchman Phase site on his map of Mississippian phases, although he did not specifically mention it in the discussion of the Parchman Phase. The Whiting site was recorded by the Lower Mississippi Survey as a Late Baytown ("E-C") village site with small mounds. Phillips, Ford, and Griffin (1951:322) listed Whiting in their Table 12 as a small ceremonial center, but provided no further information other than to state that the site had "some" daub.

The Mississippi Archaeological Survey recorded the Whiting site, but no further information is provided in their site files. However, Fair L. Hays, Jr., an area amateur archaeologist, provided some information. At the time of this summary, the mound or mounds of the Whiting site had been extensively spread by plowing.

No sherd count from the Whiting site was included in the materials secured from the Lower Mississippi Survey, and the Mississippi Archaeological Survey has not made a collection from Whiting. However, a collection made by Fair Hays was made available for study (Table 36). The collection is small and obviously biased toward rim sherds and decorated sherds, but the dissimilarity in rim sherds of Mississippi Plain var. Neeley's Ferry and Bell Plain (9:3) makes the assemblage look quite different from the central tendency of Parchman Phase, where Bell and Neeley's Ferry are consistently nearly equal in rim sherd counts.

The Whiting site is one of the southernmost of the sites Phillips includes in the Parchman Phase. It is 5.6 km from Posey Mound and similarly lies in the Coldwater rather than the Sunflower drainage. The position of Posey as a Parchman Phase site is quite shaky. If Posey is excluded from Parchman, Whiting becomes a border region secondary ceremonial center. However, the only collection, though admittedly a small and evidently biased one, suggests that Whiting should not be included in Parchman either, if a tight definition of Parchman Phase based on its ceramic traits is desired.

Table 36. Mississippian ceramic counts
Whiting 22-Qu-511

	Fair Hays Collections			
Type/Variety	Rim	Body	Total	%
Barton Incised			3	16.7
var. Barton	2	1	3	
Bell Plain			5	27.8
var. unspecified	3	2	5	
Mississippi Plain			9	50.0
var. Neeley's Ferry	9		9	
Nodena Red and White			1	5.6
var. Nodena		1	1	
TOTAL			18	

Aldison 22-Qu-514

The Aldison site was originally recorded as "Allison" by both the Lower Mississippi Survey and the Mississippi Archaeological Survey. The site is named for the landowner, a Mr. Aldison. The Lower Mississippi Survey recorded the site as 15-0-13, but no further information other than the section, township, and range is given on the available copy of their site file card. Phillips, Ford, and Griffin (1951:52) describe the site as a "village site with rectangular platform mound and small mounds" and assign a time range of "E-A" or Baytown through Terminal Mississippian, but mistakenly locate it in Tunica County.

The Mississippi Archaeological Survey also records the site as Allison and repeats the LMS's site description, but properly places the site in Quitman County. It is not clear if this site was actually visited by a Survey field party or was recorded on the basis of amateurs' reports in conjunction with Phillips, Ford, and Griffin's report.

The Aldison mound is on the high east bank of the Coldwater River. The rectangular platform mound, the only mound distinguishable now, is around three meters high; remnants of a ramp indicate that it faced east. If there was a clear plaza area in front of the mound, it is now obscured by a tenant shack. The mound looks as if it has an apron or adjacent mound to the south, but the entire area of the mound has been badly disturbed by erosion, plowing, construction, and historic grave digging.

The LMS sherd count from 1947 was made available for study. A collection of 86 sherds was made at that time, of which 29 are of Baytown or earlier association. MDAH had no surface collection from Aldison, so the writer made a collection in late May 1983, before the cotton crop was well advanced. The village area seemed to be about six acres, but the artifact density and daub scatter were relatively sparse, even in comparison with the usual scarcity of materials on these sites. The relative density of lithics is higher. The landowner, Mr. Aldison, is reputed to have several fragments of Mill Creek chert hoes and admits to "plowing up dead Indians around about on the place." He has been disappointed so far in finding no whole pots or celts. If energy permitted, he might dig further into the site, but so far the only eminent danger to the site is the deep annual plowing and resulting deep erosion.

Aldison, like the other Coldwater River sites, seems rather marginal in its position in the first Parchman Phase. In the LMS collection Mississippi Plain rims outnumber Bell 3:0; in the MDAH collection, 7:2. Otherwise, Barton does outnumber Parkin 4:1 and 3:0 respectively (Table 37).

Table 37. Mississippian ceramic counts
Aldison 22-Qu-514

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Barton Incised			4	7.0			3	4.7
var. Barton						3	3	
var. unspecified	1	3	4					
Bell Plain			18	31.6			6	8.2
var. unspecified		18	18		2	4	6	
Mississippi Plain			34	57.6			62	84.9
var. Neeley's Ferry	3	31	34		5	48	53	
var. unspecified					2	7	9	
Old Town Red							2	2.7
var. Old Town						2	2	
Parkin Punctated			1	1.8				
var. unspecified		1	1					
TOTAL			57				73	

Dundee 22-Tu-501

The Dundee site was apparently first recorded by Brown (1926:116) as the "Mounds of Dundee," where he dug at least one burial.

The Lower Mississippi Survey of 1940-47 (Phillips, Ford, and Griffin 1951:51) recorded Dundee (14-0-8) as a "large village site with large and small mounds" and assigned it a time range of "D-C" or Baytown. Phillips, Ford, and Griffin listed Dundee in Table 12 (1951:323) as a small ceremonial center. The LMS site card describes the site as having principal mounds on the natural levee of Bear Lake. Mound A, possibly originally rectangular, was irregularly oval and rounded but fairly flat-topped, around 100 feet x 120 feet and 12 feet high. Mound B was also possibly originally rectangular, but rounded by plowing, and 15 feet high and 100 feet in diameter. Mound C, fairly regularly conical, was 12 feet high. Mound D, 70 feet in diameter and three feet high had been much spread by cultivation. There was "considerable" daub on all areas of the site, but no Mississippian ceramics. Collections from the Mound C area and the west slope of Mound B were mostly Mulberry Creek Cordmarked.

The Mississippi Archaeological Survey recorded the Dundee site, 22-Tu-501, as a village of about four acres with four mounds. Measurements for the mounds were A: 20 feet high; B: 28 feet high; C: 16 feet high; and D:five feet high, but later note "three mounds, a fourth cultivated and about two feet high and to the east of three big ones." The three big ones are now smaller, but not cultivated.

Obviously there are some discrepancies in these two or three sets of measurements of mound heights.

The LMS sherd count for Dundee was unavailable. No collection has ever been made by the MAS, and it was not possible for the writer to visit the site. However, in his discussion of the Parchman Phase, Phillips (1970:940) stated that Dundee was one of the sites providing an adequate collection for establishing the central traits of the Parchman Phase. If this is the case, the Dundee site definitely deserves more study.

West 22-Tu-520

The West Mounds or Hood Mounds site (LMS site number 14-0-10) was recorded and described as a large Mississippian village site with large platform mounds and smaller mounds by the Lower Mississippi Survey. A plaza 200 feet long, oriented toward the east, with a primary ramped rectangular mound 18 feet high and a second rectangular mound five feet high was described by Phillips, Ford, and Griffin (1951:321). When the Mississippi Archaeological Survey recorded the site in the late 1960s or early 1970s the larger mound had a house on it and the other mounds and village area of the site, estimated at 30 acres, were in cultivation. The two larger mounds were described as being in fairly good condition, but a smaller mound was being or had recently been actively pot-hunted, indicating that this "mound" was probably a house foundation/midden accumulation elevation.

No ceramic analysis form from the LMS was available for this study, but Phillips (1970:940) states that an "adequate" collection was made and uses ceramic characteristics of West as one of the bases of his formulation of the Parchman Phase. A moderate sized collection in the possession of the Mississippi Department of Archives and History was analyzed (Table 38). A pre-Mississippian occupation is represented by a fairly small proportion of Mulberry Creek Cordmarked and Baytown Plain ceramics. The LMS collection must also have included some earlier materials, as Phillips (2970: Figure 445) shows West as having a Coahoma Phase component during the Baytown Period. However, at West, at least in the areas where the collections were made, the Mississippian component is much stronger. There may be some important biases in the MDAH sample, however; the percentages of decorated, especially painted, wares seem very high compared to the levels of plain wares. Also, while the rim sherd counts are equal for Bell Plain and Mississippi Plain, the body sherd counts are noticeably heavy toward Bell Plain, which is quite out of the usual pattern. Comparison to the LMS sherd counts would be invaluable in this case, as the high counts of painted/filmed ceramics and the strong incidence of Bell Plain are both traits Phillips stressed in his definition of the Parchman Phase.

Table 38. Mississippian ceramic counts
West Mounds 22-Tu-520

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Avenue Polychrome	(Sherd Count						1	1.4
var. Avenue	Unavailable)					1	1	
Barton Incised							12	16.2
var. Barton					3	8	11	
var. Togo						1	1	
Bell Plain							37	50.0
var. Bell					4	30	34	
var. Holly Bluff					1	2	3	
Leland Incised							1	1.4
var. unspecified						1	1	
Mississippi Plain							18	24.3
var. Neeley's Ferry					5	13	18	
Nodena Red and White							4	3.4
var. Nodena						4	4	
Old Town Red							1	1.4
var. Beaverdam						1	1	
TOTAL							74	

Canon 22-Tu-523

The Lower Mississippi Survey recorded the Canon site (14-O-13) as a large village site with a large mound and assigned it to time level "E-D" or the Baytown Period as it was then defined (Phillips, Ford, and Griffin 1951:51). No copy of the LMS site card or sherd count was available at the time of this study, but presumably further information was collected, as Phillips (1970: Figure 447) included Canon in the Parchman Phase , as well as in the Dorr Phase of the Baytown Period in Figure 445 and in the Walnut Bend Phase of Coles Creek in Figure 446, although he seemed unsure about both the sorting of Wheeler Check Stamped, which is used as the main marker for Walnut Bend, as well as the time range of the sites classified as Coles Creek outside the nuclear areas of the phase in the lower St. Francis drainage (1970:915).

The Mississippi Archaeological Survey recorded the Canon site in 1967 as a large village site with an oval or subrectangular mound measuring 100 feet in diameter and 12 feet high. A surface collection made at the time was recorded on the MDAH site card as consisting of Mulberry Creek Cordmarked, Baytown Plain, Wheeler Check Stamped, Larto Red Filmed, Mississippi Plain, and Barton Incised ceramics. However, the location of this collection is now unknown and a collection made in May 1983 was used in the comparative analysis (Table 13).

In 1983 the site seemed practically unchanged from the 1969 description. The village site was in peanut cultivation, and the ground is being broken heavily each year for this. The mound has a cover of trees and, though not measured, seems more on the order of 10 feet high. There is a large pothole in the top which the landowner, Mr. John Canon, believes was dug in the 1920s or 1930s. Burned daub is densest on the site on the surface of the mound, but is widely scattered in a two to three acre area to the east of the mound and on the east bank of Walnut Lake.

The 1969 surface collection would probably have been more indicative of the ceramic assemblage than the 1983 collection, since only a few Mississippian sherds were recovered in 1983 and a majority of these were under three cm in maximum dimensions, making accurate description of types and varieties uncertain. Although the ceramics are typically uninformative, the presence of a sherd of Barton Incised var. Kent, together with the site's northern location and previous inclusion in the Walnut Bend Phase, possibly indicating continuous occupation during the transition to the Mississippi Period, is interesting. If Canon fits into the Parchman Phase, it certainly is located as a border region secondary ceremonial center. The presence of ceramic types associated with more northerly bordering phases suggests the possibility that contact between Parchman and Kent phases took place and could be studied at Canon.

The Canon site definitely deserves more study. Questions as to the construction date of the mound would perhaps be answered by clearing a profile cut of the pothunters' pit as this pit is quite deep. The mound's original shape has been made indistinct by erosion or other disturbance, but it seems quite likely that it was originally

rectangular and is of Mississippian construction, as it is heavily covered with daub and seems more rectangular than conical or oval in plan. However, Phillips, Ford, and Griffin (1951:313) described the mound as measuring 100 feet x 30 feet x 12 feet in their Table 11 of sites. The site also has the possibility of providing data to help better define the eastern limits of the Walnut Bend Phase, if Cannon can be seen as fitting into the pattern of this phase.

Table 39. Mississippian ceramic count
Canon Site 22-Tu-523

Type/Variety	LMS Rim	LMS Body	LMS Total	LMS %	MDAH Rim	MDAH Body	MDAH Total	MDAH %
Barton Incised	(Sherd Count						8	21.1
var. Barton	Unavailable)					4	4	
var. Kent					1		1	
var. unspecified					1	2	3	
Bell Plain							8	21.1
var. Bell					4	3	7	
var. Addis						1	1	
Mississippi Plain							22	57.9
var. Neeley's Ferry					3	19	22	
TOTAL							38	

PROPOSALS FOR FURTHER STUDY OF THE PARCHMAN PHASE

Refinement of the definition of the Parchman Phase as based on ceramic assemblages. Considering the temporal and areal extent of the majority of these sites, the observed ceramic density, and the presently available collections, much work could still be done to refine our concept of the Parchman Phase if we wish to base the defining of phases on their ceramics. The existing collections and other collections that might become available, particularly those of amateur archaeologists and other cooperative collectors, should be examined. Some of these collections are quite extensive, and although they probably are not representative of the ceramics as a whole, would still be useful if properly handled, with the known biases in mind.

All collections should be analyzed more intensively than were the collections described above. Non-Mississippian (other than "shell tempered") should be included, and some use should be made of a modal approach to ceramic analysis rather than relying only on a strict type and variety system of description. In the process of the analysis of the ceramics, I came to realize how arbitrary the concept of "Mississippian equals shell tempering" is in the area, particularly with the Bell (or Addis) type pastes. There are several quite distinct vessel forms and rim modes that are also slighted by the use of only the type and variety system. These in particular need to be looked into, as it seems that they will be valuable in further describing the ceramics.

Refinement of temporal placement of the Parchman Phase. The problem of temporal differences in the ceramics of the area also needs work, particularly in differentiating the Coles Creek-Early Mississippian periods, which are not actually within the range of the Parchman Phase. Phillips, in equating lack of Bell Plain and dominance of Mississippi Plain with an earlier date, seems to lean toward such an earlier date for Parchman, but factors apparent in some of the ceramic collections seem to indicate quite late dates. Most of these primary and secondary ceremonial center mound groups have an extensive range of occupation. Some components, particularly from the earlier periods, seem to be more localized within the sites. Therefore it should be possible to isolate some areas that would have a chronologically "pure" value, although stricter stratigraphic control in excavation is to be desired. There are methods other than excavation available. For one, systematic collection of some form of random or stratified samples could feasibly be made on some sites, as might other intensive surface collections, with strategies based on the better defined physical areas of the sites. In tightening the chronological control, collections from the smaller Mississippian sites that seem to fall within the geographical range of the Parchman Phase should be included, as these sites should have much shorter spans of occupation and so would offer a different set of data for use in seriation or other analyses that look at time values. The

traits of the collections from smaller villages and farmsteads will, however, probably differ considerably from those of the ceremonial centers, although the smaller villages or farmsteads recorded so far usually provide a fairly wide range of utilitarian types, as well as the Bell and Nodena finewares.

Settlement pattern within the Parchman Phase and relation to those of surrounding phases. As is evident in the discrepancies and gaps in the site descriptions discussed above, a program of study of the physical attributes of the mound groups is needed. It could be argued that this study deserves priority, due to the fact that the sites are in poor condition due to agriculture, erosion, and other recent activity and are only getting worse. The physical features are the most noticeable while these once-impressive sites are being destroyed, but of course the entire archaeological record is being destroyed at the same time, and some types of sites are disappearing much faster than the mounds are. Still, it seems that mapping and careful recording of village areas associated with the mounds deserves a high priority. Although Phillips, Ford, and Griffin (1951) and Phillips (1970) discuss problems relating to Mississippian settlement patterns, Phillips does not offer any proposals as to what was happening in the Parchman Phase. Quite a number of smaller villages and "farmsteads" or "hamlets" are known for the region, but we do not possess enough information even to say if they are relatively earlier, at the same time level, or later than the Parchman Phase. It does not seem plausible that Parchman is entirely a time of nucleated settlement in towns, even with the enormous amount of cultural debris on the mound sites. It seems more likely that Parchman follows the pattern documented for the surrounding areas to which it seems related (Morse 1973; Morse 1981), with a large central (not necessarily geographically central) town serving as the political, religious, and economic center, with secondary ceremonial centers distributed throughout the area, and with smaller villages, hamlets, and individuals' farms subsidiary to these secondary centers.

The previously recorded smaller sites, as well as other known but unrecorded sites, possibly do not provide a representative sample of the actual pattern of distribution for smaller sites. Many places where farming or other extraction activity around the ceremonial centers would be expected to take place have no smaller sites recorded (Figure 21). Conversely, there are some Mississippian settlements in areas rather remote from identified ceremonial centers. A program of intensive systematic survey would be useful to fill in these gaps. It should be stratified to include areas known to be conducive to settlement (systems with concentrations of high sandy natural levees) as well as other "less desirable" areas. With the already known density of sites around some of the mound groups, it seems likely that there are a lot of very small unrecorded sites of the type that would have had a single to several houses and that would have been in use for a relatively short time, primarily as a habitation site near suitable farmland and other exploitable resources. This discussion has avoided the issue of the identification of other special purpose

sites, that is hunting camps, chipping stations, and extraction sites for other resources, as none have been specifically identified; but they would certainly be of great importance in understanding the overall settlement pattern. A program of intensive survey would be quite time-consuming if it is to sample the site distribution of the area adequately, but some method of recording new sites would be necessary for a program of research with the given problems in mind.

Taylor 22-Qu-507

The Taylor site (15-P-2) was recorded by the Lower Mississippi Survey, but their site description or artifact collection list was unavailable at the time of the writing of this discussion. Phillips, Ford, and Griffin (1951:52) list Taylor as having a small conical mound, but assign no date to the site.

At present, the Taylor site has no mound and appears to be an unimpressive lithic scatter of around half an acre. It is discussed as a Mississippian site since the base of a Madison point and a Nodena point have been found on the site. Whether or not there are Mississippian ceramics, or indeed any ceramics, is unknown. No collection was available for study and one was not made. The above statements are based on a few brief personal recognizances made several years ago. Mississippian use of the Taylor site could possibly have been as a small farmstead, hunting camp, or chipping station.

Brooks 22-Qu-540

The Brooks mound is reported by area collectors to be predominantly Woodland, but producing a few triangular points and occasional sherds of various Mississippian painted types. It seems that this site and several other unrecorded sites on South Lake are small Mississippian villages or farms, but without further artifactual material it is impossible to estimate a time range for the Mississippian occupation.

Stone Mounds 22-Qu-538

The Stone Mounds site (22-Qu-538) consisted of three low rises on the natural levee of an old oxbow known as Horseshoe Brake, near a concentration of sandy and silt loams and clays. Ceramics from surface collections indicate Baytown or Coles Creek and Mississippian occupations. The site was destroyed by land leveling in 1982. At that time three rectangular house patterns with a light daub scatter were recorded but not tested. The three houses were superimposed; they measured approximately 25 feet square, approximately 17 feet by 20 feet, and approximately 10 feet by 11 feet (Starr 1982:22-26). The Mississippian occupation of the Stone Mounds site was probably in the

form of a small village or farmstead, but at present no chronological position can be assigned to it, and it seems that the site has been entirely destroyed.

Indian Creek 22-Pa-513
Davidson 22-Pa-592

The Indian Creek site (15-P-3) was recorded by the Lower Mississippi Survey as a village site with a large platform mound and a Woodland Period time range ("F-E") (Phillips, Ford, and Griffin 1951:52). It is not known if the LMS collection included any Mississippian materials; the area given by the LMS coordinates has a fairly extensive Mississippian occupation with scattered daub and Mississippi Plain sherds. The location is on the edge of the bluff, or rather on a wide, high, outwash fan. Exactly where the large platform mound was is uncertain. The area is now quite irregular due to erosion, but there is no clear indication of a mound.

Further north on the edge of the bluff and nearer to where Indian Creek leaves the hills, the aboriginal occupation continues. Like the Indian Creek site, the Davidson site is predominantly Woodland, with a fairly large percentage of Mississippian materials. Davidson is likely a continuation of Indian Creek, if indeed the LMS did not combine them. However, there is now a large intervening gullied area containing no artifactual material separating the sites. As no collections containing ceramics were available from either site, it is not possible to assess the Mississippian occupation of the sites other than to say that it exists. It is noteworthy that Indian Creek is a good source of fairly large, workable grade yellow chert gravel, as well as some tabular ferruginous sandstone and small amounts of limonite and hematite.

Corn Lake 22-Pa-514

The Corn Lake site was recorded by the Lower Mississippi Survey (Phillips, Ford, and Griffin 1951:52) as a village site with mounds, with a "D-B" time range or Baytown-Late Mississippian.

The site is actually a string of Woodland campsites or small villages and Mississippian farmsteads stretching for about one and one-half kilometers along the bank of Corn Lake. Area artifact collectors indicate that there are several isolated patches of daub, with little associated ceramics and only occasional triangular points or Nodena or other painted types of sherds. No further information could be obtained concerning the Mississippian ceramics or the presence of mounds.

The Mississippian agricultural use of this area was probably intensive, in light of the described settlements and the fact that there is a large concentrated area of high sandy loam surrounded by a large area of gumbo.

Crenshaw 22-Pa-528

The Crenshaw site was reported by Robert Howell (MDAH site files) as a large village site with three large temple mounds. Howell reports Madison and Nodena points, but does not specifically describe Mississippian ceramics, stating that most are Baytown Period. Howell suggests occupations ranging from 800 A.D. to 1600 A.D.

The three large platform mounds are still fairly symmetrical and evident as constructions. However, as they are located on the edge of the bluff they may not be entirely man-made. The largest has a recent cemetery on it. It is around eight meters high, 75-100 meters square, and very steep-sided. A second mound is close to the first, about three meters high, and not as noticeably rectangular due to varied disturbances. The location of the third mound is uncertain, but debris with very little daub has been found to the immediate west of mounds, up to the hills. The majority of the artifactual material comes from the south side of Fowler Creek, which was, before channelization, a broad gravel-bearing stream. The majority of this material is Late Archaic and Woodland, with light Mississippian material scattered over an area of approximately 25 acres. The Mississippian ceramics are mostly Mississippi Plain, with some Barton, Parkin (seemingly more than is acceptable from Parchman, but this is based not on a count of a surface collection but rather only on an impression), and some Bell and Nodena.

If the mounds at Crenshaw are Mississippian, the recording of this site will help complete the distribution of secondary ceremonial centers in this area, as there is no lack of smaller Mississippian occupations in the surrounding area that are otherwise remote from any ceremonial centers or larger villages.

Gates 22-Pa-521

The Gates site is a large predominantly Woodland and Late Archaic site. However, there is a light Mississippian occupation evidenced by a Nodena arrow point and a very few Mississippian ceramics. In 1971, Sam Brookes excavated a 12.5 feet square rectangular wall trench house. Most of the material associated with the house was Mulberry Creek Cordmarked and Larto Red Filmed. However, one sherd of Barton Incised was recovered (Connaway 1981).

Fulmer Place 22-Pa-591

The Fulmer site is predominantly Woodland, but has some Mississippian ceramics, in addition to reported Madison and Nodena points. The shell tempered ceramics are predominantly Mississippi Plain, but it seems that there is a fairly large amount of Bell Plain relative to other sites in the area and a fair amount of Barton Incised and Nodena Red and White. The site covers around ten acres,

but the Mississippian occupation so far seems localized in an area of less than one acre, indicating a hamlet or, most likely, a farmstead.

Clover Hill 22-Co-625
Bobo 22-Co-535

The area between the lower Parchman sites and the northern Hushpuckena sites has several fairly well documented Mississippian sites recorded (Figure 21). Two, Bobo and Clover Hill, had salvage excavation attempts made during their destruction.

Clover Hill (22-Co-625) was recorded in 1969 as a small village, ca. four acres, with a possible eroded mound remnant or high midden accumulation on a natural levee and burned daub concentrations. In 1973 the Mississippi Archaeological Survey excavated a rectangular wall trench house (Connaway 1981:45-49), recovering some shell tempered ceramics and material for radiocarbon dates (1525±55; 1510±60; 1360±65) which could all fall in the Parchman Phase, although the 1360 date seems early for the site considering the ceramics. Five partially restorable vessels were recovered from the plowed surface some years ago by a local amateur. These included a Bell Plain, var. unspecified bottle and a bowl with notched rim; a Mississippi Plain, var. Neeley's Ferry jar and a bottle with short, wide neck; and an Avenue Polychrome, var. unspecified bottle. Other types listed for the site by Brown (1977) include Parkin Punctated, var. unspecified; Old Town Red, var. Old Town; Barton Incised, var. Barton; and part of a large jar which seems to be closest to Barton Incised, var. Estill, but also has some similarities to var. Portland. Portland is the historic variant of Barton, and similar sherds have been found at the Parchman site.

Bobo (22-Co-535) was recorded by the Lower Mississippi Survey (16-N-18) as a small mound (Phillips, Ford, and Griffin 1951:53). In 1973, when the site was destroyed, archaeologists with MDAH and local amateurs recorded five of eighty-plus house patterns revealed in earth moving. Sherds of Mississippi Plain, var. Neeley's Ferry; Barton Incised, var. Barton; Bell (now Addis) Plain, var. Holly Bluff; Wallace Incised, var. Wallace; Plaquemine Brushed, var. Grace; and Winterville Incised, vars. Rising Sun and Winterville, were recovered, as well as material for two radiocarbon dates (1275 A.D. ± 100 and 870 A.D ± 90), both of which are too early for Parchman Phase (Potts and Brookes 1981). As indicated above, however, there were ceramics indicating late Mississippian occupation, and many of the house patterns in the village area could well have originated during that time.

Refining the definition of the Parchman Phase in relation to surrounding phases. More comparison of ceramics, other artifact classes, construction techniques, site structure, and settlement pattern is needed both within and outside the area. The Coldwater River area in particular deserves more study, as the recorded sites

assigned to the present archaeological phases seem to grade from Parchman to Quitman, with no distinct breaks, either in the ceramics or in the geographical locations. Also, there are a number of sites in the area having Mississippian occupations which have not been assigned to specific phases.

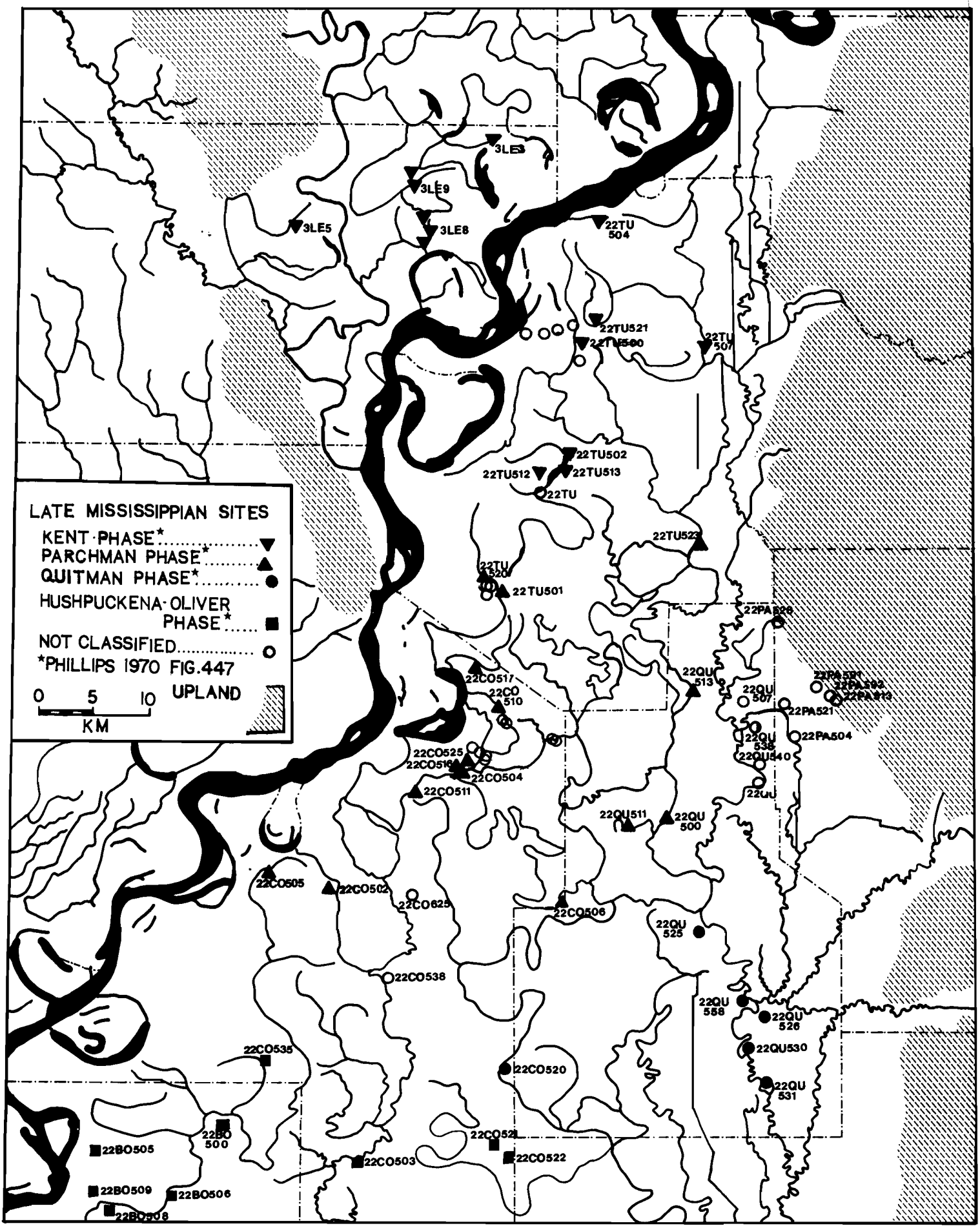
Whiting, Posey, Aldison, and Canon are the only Mississippian sites recorded by the Lower Mississippi Survey that Phillips places in the north Quitman--west Panola--southeast Tunica County area. There is a large area that is known to have a fairly heavy amount of Mississippian settlement east of the major drainage, the Coldwater River, and west of the bluff hills. Sites having Mississippian components of unknown chronological position have been recorded by the Mississippi Archaeological Survey since the LMS' 1940s work, and Mississippian settlement is fairly well documented in the area. LMS sites 15-P-2 (Taylor), 15-P-3 (Indian Creek), and 15-P-4 (Corn Lake), have Mississippian occupations in the form of villages or farmsteads. These sites are in the area in question, but are not placed into either the Parchman or the Quitman phases by Phillips. These and a number of other sites having Mississippian components have been discussed briefly in order to present what little is known about the Mississippian settlement in the area and to point out or suggest what types of data future investigation could provide. The sites located in the flood plain proper are villages and farmsteads, generally without known earthworks, and are located on higher natural levees on or near concentrations of sandy to silty loams. Two other sites seem quite important for study, as they are larger village sites on the edge of the bluff or loess hills. Both are near points where gravel-bearing strata leave the hills and are on prominent outwash fans or erosional remnants of loess hills (Figure 21).

CONCLUSIONS

The main purpose I can see that this project has served is to point out how little is actually known about the development and later manifestations of the Mississippian Period in the study area. A coherent research plan should be drawn up and implemented addressing the questions that have been raised. The preceding discussion is to be taken as a general outline of basic problems and approaches for research. It is based on gaps noticed in the present data set and on cultural materials and other information that is known to be available for study.

Phillips' original explanation of the Parchman Phase so far seems to be the best way available for describing and comparing the Mississippian occupations of the Sunflower River area, but it is severely limited in focusing on ceramics and mound groups. Relationships between ceremonial centers and their relationships with groups occupying smaller sites needs much clarification. Likewise, the ceramic assemblages are inadequately understood. I can offer little refinement of the list of the ceramic traits that Phillips originally proposed for defining Parchman Phase occupations. The rim sherd counts for Bell Plain and Mississippi Plain are very close to equal, while the total percentage of coarse shell tempered plain sherds, many of which are from decorated utilitarian vessels, ranges from around 50% to a maximum of around 70%. One thing that can be added is that much of the material sorted as Bell Plain does not fit the definition of Bell Plain based on Memphis and north area ceramics. There is very little shell in any of it, and there are many grit and grog particles included in the temper. However, this material does not entirely fit the definitions for Addis Plain either, but it is closer to Addis than to Bell. Barton Incised outnumbers Parkin Punctated quite heavily, at least 10:1, usually 15-20:1. Painted types (Avenue Polychrome, Carson Red on Buff, Hollywood White Filmed, Nodena Red and White, Old Town Red) account for fairly large amounts of the total collections, around 5% of the larger collections. The wide variety of minority types show s a strong southern influence, as Phillips notes, but there is also a weaker representation of types from farther north in the Mississippi Valley.

As I have said, this paper does not even begin to assess Phillips' construction of the Parchman Phase adequately, with the exception of stating that the general pattern Phillips offers for the ceramic assemblages seems to hold for most of the sites. Due to inadequate collections on the part of the Lower Mississippi Survey, the Mississippi Archaeological Survey, and myself, it is impossible to assess the placement of a few of the sites, so there is nothing but geographical position to serve as the basis for the inclusion of these sites. The ceramic collections seem to indicate that a few of the sites should be excluded from the Parchman Phase, particularly some in the Coldwater River area, at least until the "Quitman" Phase and the surrounding unclassified sites have been better studied.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HUSHPUCKENA-OLIVER PHASE*
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