EXCAVATION OF A MISSISSIPPIAN FARMSTEAD AT THE BRANDYWINE POINTE SITE (40DV247), CUMBERLAND RIVER VALLEY, TENNESSEE

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ABSTRACT

Salvage excavations at the Brandywine Pointe site (40DV247) focused on investigations of an isolated Mississippian period structure and associated features. Excavations yielded substantial samples of lithic, ceramic, radiocarbon, faunal, and botanical specimens relating to occupation of the structure. Site 40DV247 is presented and interpreted as a classic example of a Dowd phase (A.D. 1050 to A.D. 1250) farmstead from the Cumberland River drainage.

Introduction

In 1992, the majority of a significant archaeological site in northeastern Davidson County, Tennessee, was scheduled for private development as an upscale subdivision called Brandywine Pointe (Fig. 1). Limited excavations at the site in 1987 had identified prehistoric as well as historic components (Gardner 1987). The prehistoric component (Area C) was located along a gently sloping ridge projection overlooking the floodplain of the Cumberland River. Aware of the potential for human interments and pursuant to provisions of the Tennessee cemetery statutes (*Tennessee Codes Annotated [46-4-101-104]*), the developers hired DuVall & Associates, Inc., a local archaeological consulting firm, to identify cemeteries or isolated burials within the construction area. To accomplish the limited goal of identifying cemetery areas, consultants systematically placed a series of plow strips and backhoe trenches across the entire ridge top landform. During the course of these investigations, an approximately 30 m square area of extremely dark midden soil containing shell-tempered ceramic sherds was identified. Despite substantial coverage of the site area in the form of surface-collected plowstrips, hand-excavated test units, and mechanical stripping, this dark

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area proved to be the only one producing significant concentrations of diagnostic Mississippian artifacts (including shell-tempered ceramics and small triangular projectile points). Subsequent investigations revealed an isolated Mississippian structure and associated features. Since the realm of the consultants' responsibilities was restricted to identification of cemetery areas, State Archaeologist George "Nick" Fielder agreed to provide staff time for excavation of the structure prior to its destruction. The extensive coverage of the site area by the consultants strongly suggests that the Mississippian occupation at Brandywine Pointe was limited to the single structure and associated remains reported herein (Moore and Smith 1993).

Structure and Associated Feature Descriptions

The identified structure is a fine example of Mississippian period architecture with most, if not all, of its features at least partially intact (Figs. 2 and 3). The 6 m square building exhibited rounded corners and exterior wall posts at approximately 30 cm intervals. Interior features included four support posts, a central puddled-clay hearth, an infant stone-box burial, and an unusual limestone feature. In addition, a series of small interior posts aligned with the support posts probably represent wind screens or partitions, since they are located between the hypothesized entrance(s) on the southern wall of the structure and the central puddled-clay hearth. A row of exterior posts along the southeast corner of the building may represent the remains of a covered work area or storage facility, possibly similar in function to the summer houses or ramadas recorded in the eastern Tennessee Valley Dallas culture (Davis 1990:248; Polhemus 1987:1221).

The floor of the structure was not distinguishable during hand-excavation or mechanical stripping. House fill was homogeneous from the base of plowzone to subsoil, consisting of a dark brown loam containing minute particles of burned earth and charcoal flecks. The absence of daub and the limited distribution of baked clay samples near the central hearth indicate that the structure did not burn (either intentionally or accidentally). Additionally, the absence of substantial renovation posts or overlapping wall elements indicates that no significant reconstruction work was attempted on the structure prior to its abandonment.

Excavation of the central hearth revealed an essentially intact squarish feature with rounded corners (Fig. 4). Hearth fill consisted of a dark brown to black loamy clay containing the remnants of a shell-tempered jar and numerous chert flakes. Unfortunately, the fill yielded no charcoal and plans to procure archaeomagnetic samples were stymied when the feature was destroyed by looters.

A cross-section of the hearth completed prior to its destruction yielded evidence of three separate construction stages (Fig. 5): (a) a level area of fired clay approximately 2 cm in thickness; (b) a basin-shaped, molded clay layer placed on top of, and separated from, the level burned area by a layer of dark soil; and (c) a liner of limestone-tempered clay plastered directly onto the interior walls of the basin, presumably to refurbish the hearth.

A second interior feature was initially identified by the presence of a scatter of small fragmentary limestone slabs in the plowzone. During clearing of the area, two tabular limestone fragments were identified *in situ* along the western edge of a slight depression retaining a small amount of dark loamy fill. Prior investigations at sites within the region suggested the possibility that this feature represented the remnants of an infant or child stone-box grave. Although initial field examinations failed to identify skeletal remains, fine-mesh screening of the fill in the laboratory yielded a single small bone fragment subsequently identified as a clavicle from a newborn or infant.

A second limestone-lined feature was identified roughly 1 m east of the hearth (Fig. 6). Excavation revealed several small, tabular limestone fragments vertically set to a depth of approximately 30 cm in a gently outward-slanting, circular pattern approximately 40 cm in diameter. The base was comprised of tabular limestone fragments laid flat to complete what strongly resembled a stone bowl in profile. Although the limestone fragments appear to have been exposed to heat, none exhibited signs of intense or direct burning. Based on the proximity to the hearth, the authors suggest a possible cooking related function for the feature.

In addition to features relating directly to the structure, several presumed "yard features" were investigated. Among these features was a substantial midden concentration (Feature 20) located southeast of the structure. The location of this concentration of extremely dark midden soil directly outside the presumed entrance to the structure is suggestive of a "dump area" associated with the house. Other identified features included several small pits, and a roughly linear series of posts (drying rack?), which may represent the remains of exterior domestic work areas. Although the artifactual remains from these features do not permit any strong conclusions concerning their functions, their concentration in areas directly outside the structure entrance is suggestive of a yard pattern, which merits future investigation.

Artifact Descriptions

The placement of the Mississippian farmstead atop a rich preexisting multicomponent site complicates the interpretations of certain types of artifacts, especially the lithic assemblage. Of the more than 8,400 lithic artifacts

recovered from the 1992 work, only a handful can be confidently associated with the Mississippian occupation. Even lithics found within Mississippian feature contexts remain somewhat suspect, as they could result from infiltration from earlier disturbed midden deposits. Some general observations are in order, however.

The overwhelming majority of lithic artifacts from the site were manufactured from locally available cherts, including primarily Ft. Payne. This generally fine-grained, opaque resource exhibits a wide range of textures and colors (Amick 1987:40–44), and the 40DV247 assemblage includes specimens with variable combinations of blue, gray, and tan. As with most sites within the study area, stream beds rather than quarries appear to have served as the most popular source for knappable material, based on the smooth, waterworn cortex visible on numerous core fragments and flakes. All pecked and ground-stone artifacts were made from materials such as quartzite and sandstone, which are also available as remnant deposits in local streambeds.

Two nonlocal stone resources, Dover chert and greenstone, were identified in the Brandywine Pointe collection. Dover chert, originating primarily in the Western Highland Rim roughly 90 km northwest of the study area, is a homogeneous, nonlustrous, gray to brown colored material with mottled black and gray inclusions. This resource is commonly found on local Mississippian sites in the form of hoes, celts, and chisels (Jolley 1980; Kline 1984; Smith 1992, 1993; Smith, Moore, and Fowler 1993). Fourteen specimens of Dover were recovered from the Brandywine Pointe excavations, comprising one celt, one thin biface, and twelve decortication flakes. Six of the flakes were associated with Mississippian period features, with the remainder from disturbed contexts.

A second nonlocal resource from the site is represented in a single greenstone celt rejuvenation flake from Feature 20. This hard, dark green material has been reported at a number of other Mississippian sites within the middle Cumberland drainage (Jones 1876; Smith 1992; Smith and Moore 1993; Smith, Stripling, and Moore 1993). A comprehensive survey for source locations of greenstone has yet to be undertaken. However, one large outcrop of this material has been identified in Polk County, Tennessee, along the Hiwassee River, some 160 km southeast of Brandywine Pointe (Riggs et al. 1988:32).

Despite ample evidence for cultivation at the site, no chipped-stone hoes or other digging tools were recovered. Several flakes of Ft. Payne chert with polished dorsal surfaces comprise tentative evidence for the rejuvenation of implements used for agriculture. These flakes may result, however, from rejuvenation of woodworking tools, based on the presence of a highly polished Dover celt.

Madison ($n = 14$) and Nodena ($n = 1$) points comprise the identifiable Mississippian projectile sample from Brandywine Pointe. For comparative purposes, basic metrical characteristics of the Madison points are presented in Table 1. Although samples are currently limited, further research may well distinguish temporal shifts in point size ratios for Mississippian sites.

Despite the restrictions imposed on excavations at Brandywine Pointe, a relatively large sample ($n = 1149$) of ceramics was recovered. Approximately 92.1% ($n = 1058$) of the assemblage consisted of shell or mixed shell and other temper ceramics presumably attributable to Mississippian occupations, most of which were retrieved from features in the vicinity of the structure. The overwhelming majority of these sherds were tempered with moderate amounts of coarsely crushed mussel shell, with occasional minor admixtures of what appears to be crushed aquatic gastropods. In addition to this primary temper, a preponderance of sherds included secondary agents that may represent either deliberate or accidental inclusions (e.g., rounded grit particles, sand, and limestone particles in varying percentages).

The Brandywine Pointe farmstead assemblage is characterized by primarily plain-surfaced vessels, with only minor quantities of sherds exhibiting surface modifications. A small number ($n = 10$) of shell or mixed temper ceramics with exterior cordmarking are present. The remainder of the Mississippian sherds exhibiting surface modifications include 36 sherds originating from fabric-impressed pans, two incised sherds, and singular examples of punctations and positive painting.

A minimum of 19 vessels was identified, including jar, bowl, bottle, and pan forms. Similar to most late prehistoric assemblages, globular-to-subglobular jars with rounded bases ($n = 10$) are the predominant vessel form in the Brandywine Pointe ceramic assemblage (Figs. 7*a-j*). Rims are predominantly slightly incurvate with thickened rounded or slightly flattened lips. A minimal sample of jar forms exhibited direct or nearly direct rims, with associated flattened lips (Figs. 7*b* and 7*j*). Manipulatory appendages ($n = 6$) were represented by a preponderance of double lugs ($n = 5$) and a fragmentary flattened loop handle. Bowls were represented by a single fine-shell-tempered rim sherd (Fig. 7*k*), suggesting an outslanting wall bowl generally associated with Mississippian occupations during the A.D. 1050–1250 period (Smith 1992:123).

Pan forms ($n = 6$) were represented in substantial quantities in the ceramic assemblage, including samples exhibiting rough unmodified exterior surfaces (Figs. 8*a,* 8*c-e*) and fabric-impressed surfaces (Fig. 8*f*). A singular example of a well made, fine-paste plain surfaced pan was also identified (Fig. 8*b*). The strong representation of pans at Brandywine Pointe stands in stark contrast to past interpretations of these vessels as salt processing implements, since no salt or sulphur springs are located within any reasonable radius

of the site. Although pan forms may have served such a function at sites located adjacent to saline springs (e.g., Castalian Springs, Sulphur Dell/French Lick), such forms are also well represented in virtually every known domestic assemblage from the Central Basin. In common households such as 40DV247, these vessels were probably used for the purposes of communal food storage and/or serving.

Although no rim sherds of bottles were included in the sample, a large thin-walled, fine-paste body, sherd-tempered with finely crushed mussel shell almost certainly represents a portion of a bottle. Comparisons of the fragment to other samples from the region suggest that the sherd was probably from a large hooded or cylindrical-necked bottle.

Apparently because of poor conditions for bone preservation, the Brandywine Pointe faunal assemblage was limited to 55 identified elements representative of fauna from the study area, including white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), woodchuck (*Marmota monax*), beaver (*Castor canadensis*), gray squirrel (*Sciurus carolinensis*), turkey (*Meleagris gallopavo*), mallard/black duck (*Anas* spp.), and box turtle (*Terrapene carolina*). Although no formal tools were recovered during the investigations, three identified specimens exhibited cut marks, including two scored and snapped turkey (?) fragments (Feature 20) and one deer metapodial fragment (Test Unit 8, Level 3) displaying cut marks on a lateral side. In addition, an unidentified large mammal fragment from Feature 14 had also been scored and snapped.

Although the recovered botanical samples are not extensive in nature, they are critically important due to the relative paucity of similar materials from the region (Table 2). Charred wood from the site includes examples of eight distinct species of tree, including a preponderance of bottomland forest species. Cane (*Arundinaria gigantea*) is common in extensive stands throughout the floodplain terraces of the Central Basin (although upland stands overlooking floodplain terraces have also been noted in areas with permanent seeps and springs).

Charred nutshell was extensively represented in the sample and was identified in all features yielding botanical remains. Hickory (*Carya* sp.) and black walnut (*Juglans nigra*) were the only two nut species represented, with hickory predominating. Comparisons of the charred wood sample with nutshell samples suggests that inhabitants may have been procuring nuts at some distance from the structure and utilizing nearby (primarily bottomland) species for firewood. Other wild plant foods were represented by the presence of relatively substantial quantities of persimmon and honey locust, both generally considered bottomland species.

Carbonized remains of two cultigens, maize and cucurbits, were recovered from Features 19, 52, and 54. Maize is well represented from Feature 54,

including three cob segments, five cob fragments, three carbonized kernels, and eighteen cupules (Table 3). The sample consists of eight-, ten-, and twelve-row specimens, with the more reliable samples of cob segments consisting exclusively of ten-row specimens. The sample probably represents a single depositional event, and thus should not necessarily be considered fully representative of the varieties of maize grown in the region. Another interior post, Feature 52, yielded a small sample of four cob fragments representing eight- and ten-row specimens. Other samples from the Basin suggest a greater genetic diversity but consistently exhibit a predominance of ten-row specimens (cf. Smith 1992: Table 8). Although the variability in Central Basin maize cannot be fully explained with available samples, interpretations of Fort Ancient maize samples suggest "a mixture of Eastern Eight Row, an early maturing variety found farther north and adapted to shorter growing seasons, and a more ancient, North American Pop, with twelve to fourteen rows of kernels" (Rossen 1990:244). This pattern would appear to be supported in the Central Basin samples as well, although there are hints of increasing genetic diversity after about A.D. 1250 (cf. Smith 1992:Table 8). Although cucurbit remains were fragmentary, their size suggests a larger fall harvest curcurbit (i.e. pumpkin) rather than a summer harvest squash (Andrea Shea, personal communication, 1993).

Radiocarbon Determinations

Three charcoal samples from this structure were submitted for radiocarbon analysis. Dating results are presented in the following formats. B.P. dates reflect the radiocarbon years before present reported by the dating laboratory. A.D. dates are presented in two formats. First, dates are presented as corrected dates using the ten-year atmospheric calibration curves in the program CALIB (University of Washington 1987). The number to the left of the brackets represents the minimum range at two standard deviations; the number(s) within the brackets represents the absolute calendrical dates; the number to the right of the brackets represents the maximum range at two standard deviations. Other uses of A.D. dates (for example, A.D. 1000–1250) refer to broader chronological periods or phases established as a result of a series of radiocarbon dates from the region. A nutshell sample from an interior support post (Feature 54) yielded a date of 960 ± 70 B.P. (Tx-7687), with a corrected date of A.D. 904[1028, 1145, 1146]1220. Wood charcoal samples from two exterior wall posts (Features 62 and 91) produced respective dates of 860 ± 60 B.P. (Tx-7688) and 690 ± 60 B.P. (Tx-7689). Corrected dates for these features are A.D. 1020 [1191] 1280 and A.D. 1220 [1281] 1399, respectively. Radiocarbon determinations were corrected at two standard

deviations using the 10-year atmospheric record calibration curves in the program CALIB (University of Washington 1987).

The three samples submitted for radiocarbon determinations were selected on the basis of field observations concerning contextual integrity. Although Features 62 and 91 (exterior wall postholes) did not appear substantially disturbed, it should be noted that the charred wood samples from these features represent the consolidation of mixed charcoal from fill rather than samples from post remains. Carbon in the form of charred nutshell from Feature 54 was selected because of the wealth of directly associated botanical samples, suggesting deposition during occupation of the structure (i.e. charred prehistoric maize cobs and kernels). As such, the sample from Feature 54 is considered the most reliable of the three samples and serves to date the associated maize. Interpretation of these dates suggests a potential range of occupation for the structure sometime between A.D. 1000 and 1250, with a high likelihood of actual occupation between A.D. 1210 and 1230.

A similar farmstead in western Davidson County, 40DV68, yielded a highly comparable single radiocarbon date of 930 ± 60 B.P. (Tx-6998), with a corrected date of A.D. 990 [1040, 1095, 1119, 1140, 1151] 1230 (Norton and Smith 1993). Although "two farmsteads does not a regional culture make," the strong comparability of the samples and their similar environmental regime is supportive of the overall settlement framework presented in the following discussion.

Concluding Remarks

The identification of a Mississippian farmstead at Brandywine Pointe was particularly fortuitous for local researchers. This site type has been documented only minimally in the Middle Cumberland region (cf. Smith 1992:349–350), but is critically important in testing hypotheses concerning the development and evolution of regional Mississippian polities. Although excavations at farmsteads and small hamlets produce lesser quantities of artifacts than equivalent operations at villages or mound centers, the generally shorter occupation span at smaller sites permits the refinement of chronological sequences often obscured by more extensive long-term occupation of larger sites. In addition, while mound centers and nucleated villages are important types of sites in settlement hierarchies, significant percentages of the Mississippian populace were living in smaller and more dispersed settlements.

The relative absence of comparative data from other farmsteads and hamlets in the region substantially complicates interpretations of both chronology and functional variation with the settlement hierarchy. Recent efforts

by the Tennessee Division of Archaeology to identify and investigate these types of sites have begun, however, to produce some insights (Smith 1993; Smith and Moore 1993; Smith, Moore and Fowler 1993; Norton and Smith 1993).

Although farmsteads and hamlets were almost certainly present during the entirety of Mississippian occupations in the middle Cumberland Valley of Tennessee (Fig. 9), they were probably most common during the tentatively defined Dowd phase (*ca.* A.D. 1050–1250). In current interpretations, the Dowd phase is characterized by the rise of numerous autonomous or semiautonomous polities along the Cumberland River. These polities were generally centered on settlements with single platform mounds and rapidly growing resident populations, with the majority of the population dispersed into single family farmsteads, many of which ultimately developed into family-based structure clusters (hamlets) and multiple-family hamlet clusters (small villages). As the population base and settlement system expanded, the corresponding sociopolitical network appears to have collapsed, resulting in the growth of several nucleated fortified villages during the subsequent Thruston phase (*ca.* A.D. 1250–1450; for a more complete discussion, see Smith 1992 and Smith and Moore 1993).

Presumably, relatively small isolated Mississippian structures like that at Brandywine Pointe represent single family dwellings. The presence of only a single structure, the absence of rebuilding episodes, and the lack of evidence for dense midden deposits suggest that the area was used only for perhaps a single generation. Many of the farmsteads and hamlets of the Dowd phase probably represent fissioning of growing village populations associated with mound-centered polities, and their eventual success or failure would have been determined by the demographic vagaries of individual families and locale-specific access to needed resources. The failure of many of these farmsteads and hamlets may be related to increasing competition within the Central Basin during the terminal decades of the Dowd phase. As competition and conflict increased, populations appear to have nucleated into fortified villages. The proximity of the Brandywine Pointe site to several larger settlements located directly across the Cumberland River on Drakes Creek suggests at least the possibility that some farmstead and hamlet populations may have eventually abandoned their settlements for the security of village life.

Despite the restrictions placed on data recovery at Brandywine Pointe, the site produced some very substantial information concerning Mississippian occupations in the Central Basin between A.D. 1050 and 1250. Salvage excavations with time and labor restrictions can be structured to produce results that are meaningful beyond the collection of raw data. Although the conclusions and interpretations presented herein are tentative, the authors

feel that research in the Central Basin has been structured far too often as simply a compilation of raw data and field observations. It is hoped that the ideas proposed in this article will help to structure and guide future researchers in their identification and investigation of similar types of sites.

Acknowledgments

This article represents the end product of a successful cooperative effort between the state and private sector. The authors would like to thank the developers of Brandywine Pointe, Mr. Keeling Turner and Mr. Bill Kottas, for permitting excavation of the structure. None of the information regarding the Mississippian structure would have been obtained without their gracious consent and interest. Also, DuVall & Associates, Inc. kindly shared the results of their work with the Division of Archaeology, and were more than helpful with the loan of their backhoe.

Excavation of the Mississippian structure was directed by Michael Moore and Kevin Smith of the Division of Archaeology. Suzanne Hoyal, Katherine Sanford, Parris Stripling, and Scott Jones of the Division comprised an able field crew. Middle Cumberland Archaeological Society members George Heinrich and John Dowd also assisted with the structure excavation, and their efforts were greatly appreciated. All faunal remains recovered from the excavations were analyzed by Emanuel Breitburg. Botanical remains were evaluated by Andrea Shea. The remainder of the artifactual assemblage was examined by Michael Moore (lithics) and Kevin Smith (ceramics).

Tennessee Division of Archaeology
Department of Environment
and Conservation

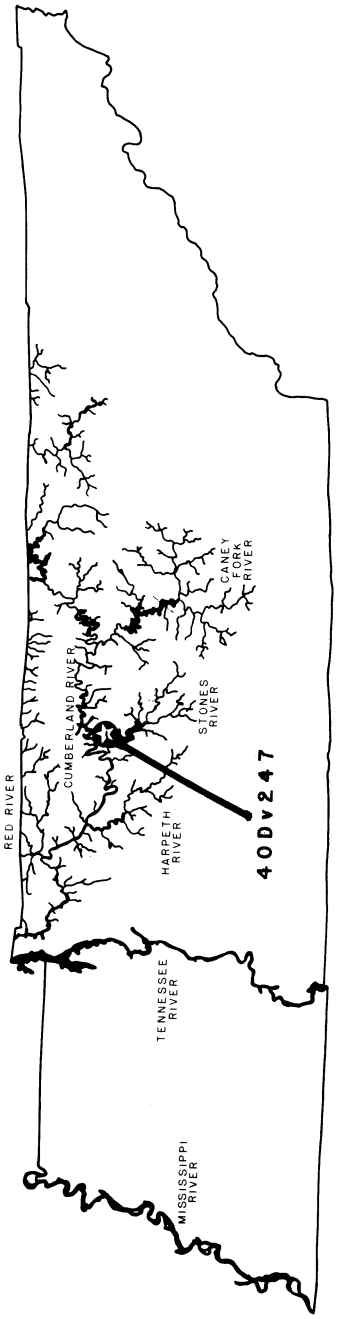

Fig. 1. Site location.

Fig. 2. Structure photo.

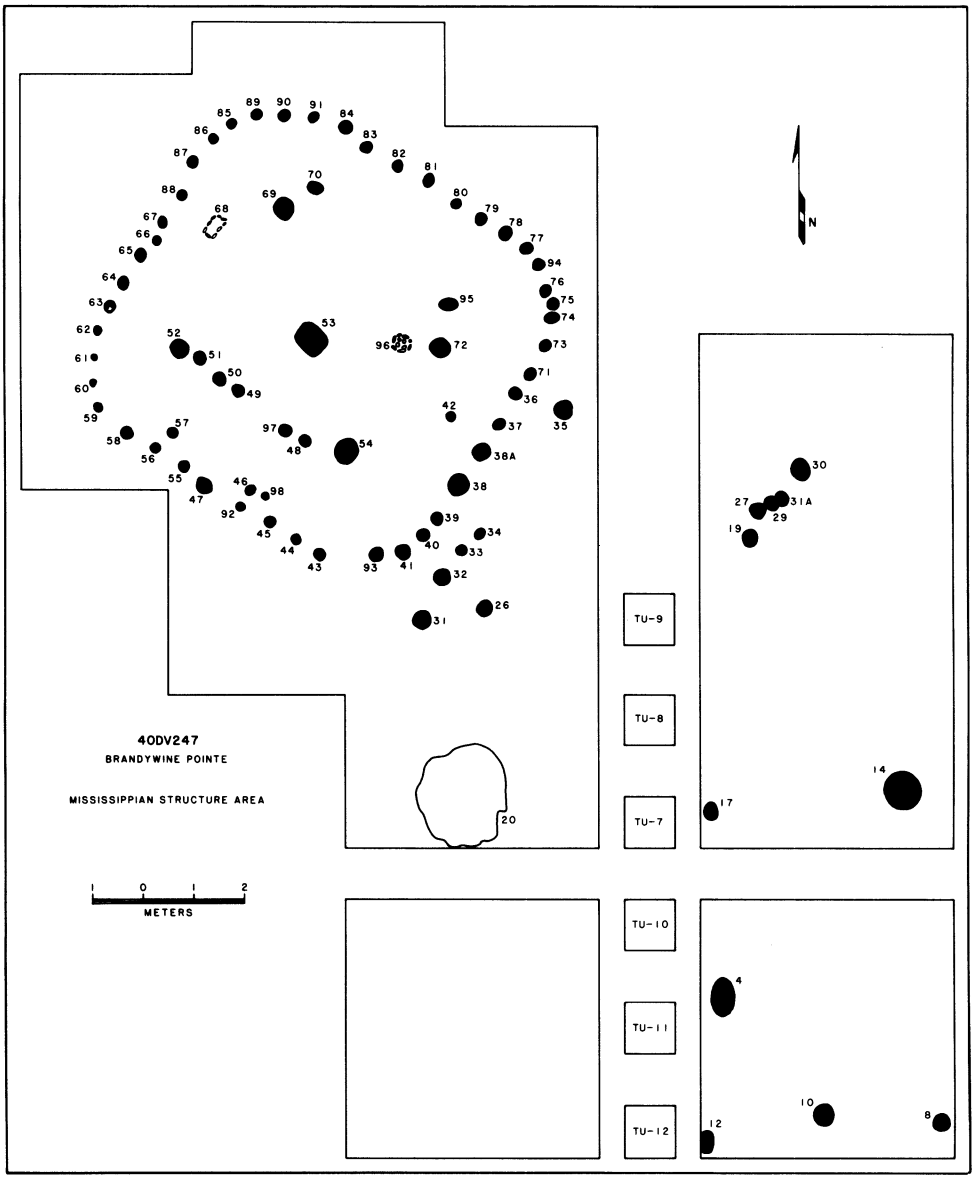

Fig. 3. Structure plan.

Fig. 4. Hearth photo.

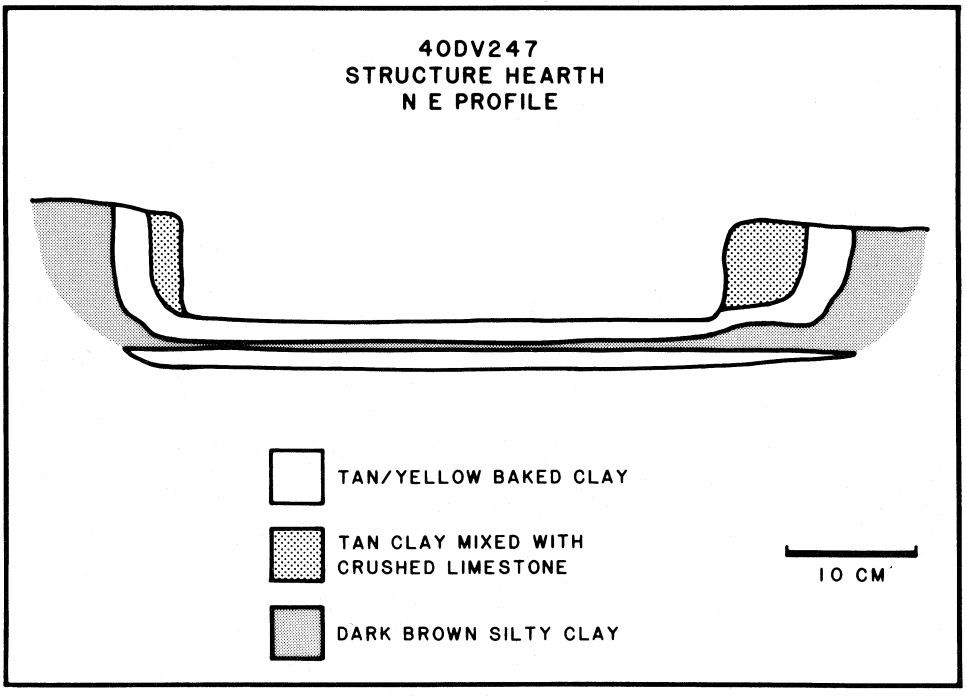

Fig. 5. Hearth profile.

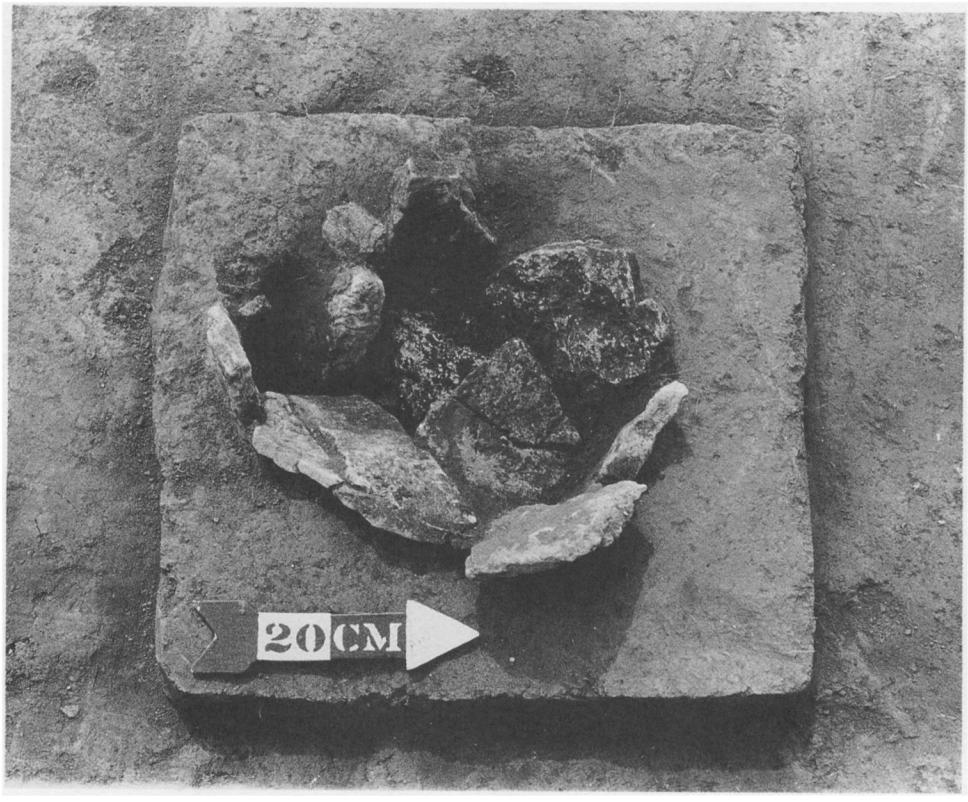

Fig. 6. Limestone feature photo.

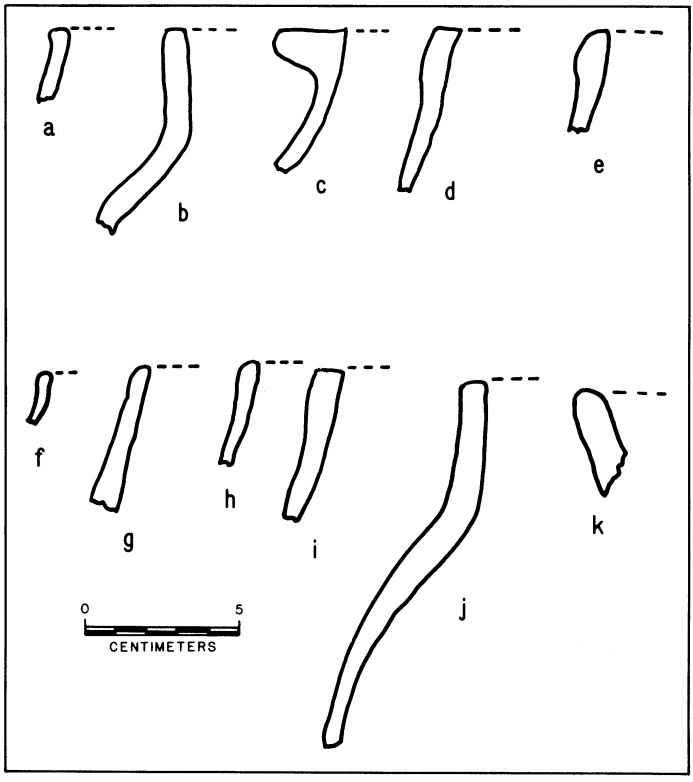

Fig. 7. Ceramic profiles.

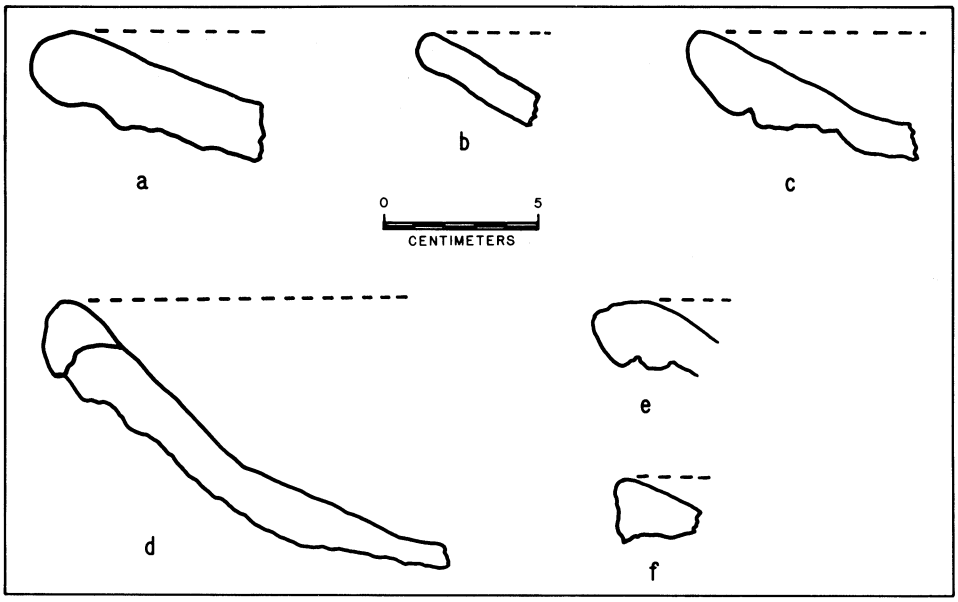

Fig. 8. Ceramic profiles.

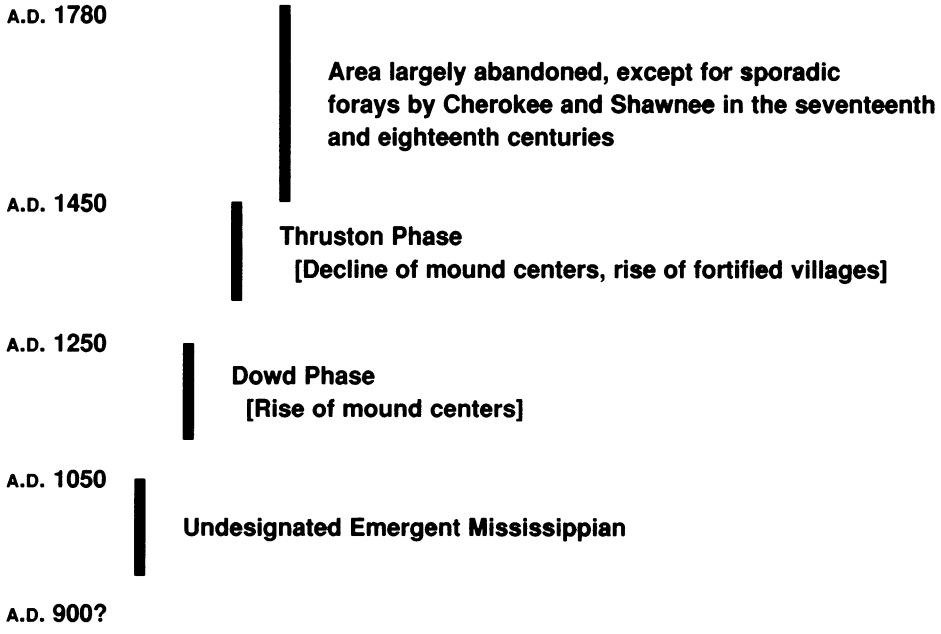

Fig. 9. A chronological framework for Mississippian occupation in the Middle Cumberland River valley.

TABLE 1

Measurements of Mississippian Projectile Points from Brandywine Pointe (in millimeters)

Provenience	*Point Type*	*Maximum Length*	*Maximum Width*	*Maximum Thickness*
General Surface[a]	Madison	24.6[b]	16.9[b]	3.8
General Surface[a]	Madison	21.4[b]	17.8	3.7
General Surface[a]	Madison	15.2[b]	16.5	3.5
General Surface	Madison	6.8[b]	20.5	4.3
General Surface	Madison	18.2[b]	18.7	3.4
General Surface	Madison	21.4[b]	15.1	4.8
General Surface	Madison	14.5[b]	20.4[b]	3.6
General Surface	Madison	29.2[b]	12.8	3.3
Structure Area, Surface	Madison	30.4[b]	18.6	4.1
Structure Area, Surface	Madison	19.8[b]	13.5	3.8
Test Unit 5, Level 1	Madison	11.6[b]	15.9[b]	3.4
Test Unit 7, Level 1	Madison	34.6	14.5	5.0
Test Unit 7, Level 1	Madison	18.9[b]	17.0	5.3
Test Unit 8, Level 1	Madison	12.8[b]	16.0	3.9

[a]Recovered from 1987 Investigations.
[b]Broken.

TABLE 2

Identified Botanical Remains from the 1992 Excavations of Brandywine Pointe

Species	*Feature 4*	*Feature 14*	*Feature 19*	*Feature 52*	*Feature 54*	*Feature 55*	*Feature 80*	*Test Unit 7 Level 2*
Wood/Cane Charcoal (29.0g)								
Maclura pomifera, Osage Orange	—	—	—	10f	8f	—	—	—
Juglans sp, Walnut/Butternut	—	—	—	—	3f	—	—	—
Carya sp, Hickory	—	—	—	7f	1f	—	—	—
Fraxinus sp, Ash	—	—	—	—	2f	—	—	—
Quercus sp, Oak	—	—	—	—	1f	—	—	—
Prunus sp, Cherry	—	2f	—	2f	—	—	—	—
Arundinaria sp, Cane	—	—	—	8f	15f	—	—	—
Gleditsia triacanthos, Honey Locust	—	—	—	3f	—	—	—	—
Nutshell[a]								
Carya sp, Hickory	2f 0.2g	55f 2.2g	4f 0.8g	15f 8.0g	22f 0.4g	1f 0.2g	5f 0.3g	1f 0.2g
Juglans nigra, Black Walnut	—	—	2f 0.8g	—	11f 0.2g	—	—	—
Seeds/Fruits								
Diospyros virgniana, Persimmon	—	—	9w 0.9g	—	23w 2.8g	—	—	—
Gleditsia triacanthos, Honey Locust	—	—	1w 0.1g	1 0.1g	—	—	—	—
Cucurbita sp, Cucurbit rind	—	—	—	—	4f 0.1g	—	—	—
Curcurbita sp, Cucurbit seed	—	—	—	—	1f <0.1g	—	—	—
Maize								
Cob Segments	—	—	—	—	3	—	—	—
Cob Fragments	—	—	—	4	5	—	—	—
Kernels	—	—	10f	—	3w	—	—	—
Cupules	—	—	—	—	18	—	—	—

Note: w = whole, f = fragments, g = grams.

[a]Does not include 5.0g combined sample from Feature 54 for radiocarbon date.

TABLE 3

Measurements of Analyzed Maize from Structure Interior Support Posts, Features 52 and 54[a]

Provenience	*Sample Type*	*Cupule Width*	*Cupule Length*	*Glume Width*	*Wing Width*	*Estimated Row Number*	*Actual Row Number*	*Kernel Width*	*Kernel Length*	*Kernel Thickness*
Feature 52	Cob Fragment	9.0	2.0	—	1.0	8	—	—	—	—
		9.0	2.5	—	1.0	8	—	—	—	—
	Cob Fragment	8.5	2.5	—	1.0	8	—	—	—	—
		8.0	2.5	—	1.0	8	—	—	—	—
	Cob Fragment	8.5	2.5	—	1.0	10	—	—	—	—
		8.5	3.0	—	1.0	10	—	—	—	—
	Cob Fragment	8.0	2.5	—	1.0	10	—	—	—	—
		8.0	2.0	—	1.0	10	—	—	—	—
Feature 54	Cob Segment	6.5	2.5	—	1.0	—	10	—	—	—
		8.5	3.0	—	1.0	—	10	—	—	—
		9.0	3.0	—	1.0	—	10	—	—	—
		7.5	3.0	—	1.0	—	10	—	—	—
		8.5	2.5	—	1.0	—	10	—	—	—
	Cob Segment	7.0	2.5	—	1.0	—	10	—	—	—
		8.5	2.0	—	1.0	—	10	—	—	—
		7.5	3.0	—	1.0	—	10	—	—	—
	Cob Segment	7.5	2.5	—	1.0	—	10	—	—	—
		7.0	2.5	—	1.0	—	10	—	—	—
		7.5	2.5	—	1.0	—	10	—	—	—
		8.0	2.5	—	1.0	—	10	—	—	—
		6.5	2.5	—	1.0	—	10	—	—	—
	Cob Fragment	7.0	2.0	—	1.0	10	—	—	—	—
		7.0	2.0	—	1.0	10	—	—	—	—
	Cob Fragment	7.0	2.5	—	1.0	10	—	—	—	—
		6.8	2.0	—	0.5	10	—	—	—	—
		6.5	2.0	—	0.5	10	—	—	—	—
	Cob Fragment	7.0	1.5	—	1.0	10	—	—	—	—
		7.0	2.0	—	1.0	10	—	—	—	—
		6.5	2.0	—	1.0	10	—	—	—	—
	Cob Fragment	9.0	2.0	4.0	1.5	8	—	—	—	—
		8.5	2.0	4.0	1.5	8	—	—	—	—

TABLE 3 (continued)

Provenience	Sample Type	Cupule Width	Cupule Length	Glume Width	Wing Width	Estimated Row Number	Actual Row Number	Kernel Width	Kernel Length	Kernel Thickness
	Cob Fragment	9.0	2.0	—	1.5	8	—	—	—	—
		9.0	2.0	—	1.5	8	—	—	—	—
		9.0	2.0	—	1.5	8	—	—	—	—
	Cupule	5.5	2.5	—	1.5	12	—	—	—	—
	Cupule	5.0	1.0	—	1.5	12	—	—	—	—
	Cupule	6.0	1.5	—	0.5	12	—	—	—	—
	Cupule	6.0	1.5	—	1.5	10	—	—	—	—
	Cupule	9.0	1.5	=	—	10	—	—	—	—
	Cupule	8.5	1.0	4.0	—	10	—	—	—	—
	Cupule	6.2	1.0	—	2.0	10	—	—	—	—
	Cupule	7.0	1.5	=	1.5	10	—	—	—	—
	Cupule	8.0	1.5	—	1.5	10	—	—	—	—
	Cupule	9.0	1.0	5.0	2.0	8	—	—	—	—
	Cupule	9.0	1.0	4.5	1.0	8	—	—	—	—
	Cupule	8.5	1.5	4.5	1.0	8	—	—	—	—
	Cupule	9.0	1.5	5.0	2.0	8	—	—	—	—
	Cupule	9.5	1.5	5.0	1.0	8	—	—	—	—
	Cupule	7.5	1.5	—	1.5	8	—	—	—	—
	Cupule	8.5	1.0	—	1.0	8	—	—	—	—
	Cupule	7.0	1.0	—	1.5	8	—	—	—	—
	Cupule	9.0	1.0	—	1.5	8	—	—	—	—
	Kernel	—	—	—	—	—	—	9.5	7.0	5.0
	Kernel	—	—	—	—	—	—	9.0	5.5	6.0
	Kernel	—	—	—	—	—	—	8.0	6.5	4.5
TOTAL		404.5	103.5	36.0	58.0	360.0	130.0	26.5	19.0	15.5
RANGE		5.5–9.5	1–3	4–5	0.5–2	8–12	8–10	8–9.5	5.5–7	4.5–6
MEAN		7.8	2.0	4.5	1.2	9.2	10.0	8.8	6.3	5.2
STANDARD DEVIATION		1.1	0.6	0.4	0.3	1.3	0	0.6	0.6	0.6

PERCENTAGE 8-ROWED = 34.62. PERCENTAGE 10-ROWED = 59.62. PERCENTAGE 12-ROWED = 5.77.

[a]Measurements in millimeters.

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