CONTENTS

Test Excavations at an Upland Mississippi Site in Oktibbeha County, Mississippi
Evan Peacock 1

The Persistence of Choctaw Pottery
Jerome A. Voss 21

The “Sardis” Cormorant Cord Impressed Vessel
James C. Brandon,
Charles H. McNutt 35

Review: Skeletal Biology in the Great Plains: Migration, Warfare, Health, and Subsistence
Homes Hogue 42

Review: Cat Monsters and Head Pots: The Archaeology of Missouri’s Penniscot Bayou
Marvin T. Smith 46

Special Report: Preserving the Swan Lake Canoe
Jo Miles-Seely 48
Mississippi Archaeology is published to present information of a basically technical nature on field work, artifact analysis, and archaeological theory, and to serve as the journal of record for archaeological activity in Mississippi. Contributions treating the archaeology of Mississippi or the Southeastern region are solicited for publication. Preparation of manuscripts should follow the style used in this issue; arrangements for electronic transfer of manuscripts can be made after acceptance of a submission, but submission should be made in hard copy form.

Test Excavations at an Upland Mississippian Site in Oktibbeha County, Mississippi

Evan Peacock

Sites with shell-tempered pottery occurring in the area around Starkville, Mississippi, are often assumed to be Late Mississippian or Protohistoric due to their location on chalk ridges within the Black Prairie uplands. Recent analyses suggest that many of these sites may in fact represent components from earlier in the Mississippian period. This paper presents the results of test excavations at a ridgetop site near Starkville that yielded abundant live shell-tempered and sand-tempered sherds in direct association. A thermoluminescence date suggests that the major occupation at the site took place in the early twelfth century. The implications of this date and other recent information for examining Late Prehistoric/Protohistoric settlement pattern shifts in the area are discussed.

Introduction

The belt of dissected hills which constitutes the western edge of the Mississippi Black Prairie is known to contain a great number of archaeological sites. A dense concentration of sites has been noted in an area of over six square miles on the north side of the city of Starkville (Atkinson 1979; Blakeman 1985; Futato 1989:182; Lolley 1992). This has been labeled the “Starkville Archaeological Complex” by Marshall (1992), and has generally been thought to represent a distinctive Late Mississippian to Protohistoric settlement locus, home area of the poorly known Chakchiuama tribe in early historic times (Atkinson 1979, 1987a; Blakeman 1985). It has been suggested that these ridgetop sites are the result of a settlement pattern shift that took place late in prehistory, when Mississippian farmers moved out of the Black Belt bottomlands onto the higher landforms (Atkinson 1987a:63; Futato 1989:130; Johnson 1990; Johnson and Sparks 1986; Johnson et al. 1989; Johnson et al. 1991). The reasons for this settlement pattern shift are unclear, but Johnson and Sparks (1986: 76) have suggested that it was a relatively rapid phenomenon.

Despite the recognition of high site density, little systematic work has been done in the Starkville area to date. Scattered surveys have been carried out, as have numerous small salvage excavations of sites affected by housing development. The most formal published work is that of Atkinson (1979), who has done a valuable service in describing the material
along the top of the ridge. This unanticipated action evidently destroyed a large portion of what must have been a relatively intact site.

Test excavations were carried out in February, 1990. The initial step was to construct a topographic map of the site (Figure 1). A benchmark was established on the highest point of the ridge and given an assumed elevation of 100 meters; the topographic contours are referenced to that datum. During construction of the field road a large area had been cleared and bladed by bulldozers. Artifacts were scattered around the cleared area (labeled Area I in Figure 1), but mapping of these showed no apparent patterning. The road also cut through a substantial concentration of daub on the eastern side of the site. A portion of the site (Area II) lying west of a fence line remains undisturbed.

One 2x2 meter unit was excavated south of the field road, and two 1x1 meter units were excavated north of the road. The dirt from these units was screened through quarter-inch wire mesh. The test units revealed evidence of considerable past erosion, a situation typically encountered at upland Black Belt sites. A thin humus layer overlay a dense, compact clay (Figure 2). Artifacts were recovered from the top few centimeters of the clay stratum but evidently represented the intrusion of cultural materials into the subsoil by roots or other biotic activity. No evidence of a midden or a preserved organic soil horizon was found, although there was a thin zone of organic staining in the upper few centimeters of the clay horizon north of the road (shown as a dotted line in Figure 2). No features were encountered in these excavation units.

In addition to excavating, shovel testing was done on the north and south sides of the site. The purpose of these tests was to see if the site was confined to the ridgetop and to search for a dump deposit on the slopes such as had been encountered at the late Mississippian Yarborough site (22-CI-814: Solis and Walling 1982; cf. 22-CI-764: Johnson et al. 1991). The dirt from the tests was screened through quarter-inch mesh. The tests produced no artifacts or other evidence of a dump deposit. These negative findings were corroborated by a number of small core tests put down at random intervals around the site.

The main effort of the testing was concentrated on exposing and excavating the daub concentration noted earlier. This concentration, labeled Feature 1, was approximately four square meters in area and lay on top of the clay subsoil. Several large sherd's were noted within the daub. The road in front of the feature was quite churned and muddy; it was therefore shovelled to remove the mud and to check for the presence of postholes or other features, none of which were found.

The feature required considerable cleaning, as a large amount of dirt from road construction had been piled on top of it. This dirt was removed and discarded, as was the thin leaf and root mat beneath it. The soil over-
Artifact Analysis

Daub

The individually collected daub fragments were cleaned, weighed, and examined for cane impressions and other features. The pieces varied greatly in size, ranging from five centimeters to 20 centimeters in diameter. Half of the pieces displayed cane impressions, which ranged from .50 to 1.41 centimeters in width and had an average width of .78 centimeters. The number of impressions per piece ranged from one to eight, with the average being two. Many of the pieces of daub contained small, unidentifiable fragments of burned bone, and a few contained small potsherds. This suggests that the clay came from within the site boundaries. It is logical to assume that the clay source for daub was nearby, since the great weight of the clay would make transport over long distances difficult. Ethnographic accounts indicate that house construction was accomplished rapidly, which also supports the notion that clay from nearby sources was used. For example, Adair’s description of Chickasaw house construction states that “In one day, they build, daub with their tough mortar mixed with dry grass, and thoroughly finish, a good commodious house” (Williams 1930:449).

There is little in the way of direct comparisons that can be made with this sample. No similar features have been excavated in the immediate area. The most detailed daub analyses known to the author are those presented from the Mississippian period Wilsford site in Coahoma County (22-CO-516: Connaway 1984) and the Yarborough farmstead site in Clay County (Solis and Walling 1982). In comparing the daub characteristics from these sites, one major difference noted was the lack of grass tempering in the daub from 22-Ok-694. At Wilsford, virtually all the daub displayed abundant impressions of grass that had been mixed with the clay prior to application to the walls (Connaway 1984:38-39). Frequent grass impressions were also noted in the daub from Yarborough (Caddell 1982:1238). Grass tempering was also common in daub from the Lyon’s Bluff site (22-Ok-520), a Mississippian mound and village located approximately eight miles northeast of 22-Ok-694 (Peacock 1993). The lack of grass impressions in the daub from 22-Ok-694 suggests that grass was not readily available in the hills where the site is located. A number of deciduous leaf impressions were noted, which suggests that the ridge was covered primarily in hardwoods at the time the structure was built. A few impressions of pine needles were also noted (Peacock 1993).
Lithics

Lithics were relatively rare at 22-Ok-694. One complete triangular point came from the surface in the cleared area. The base of another triangular point was found on the field road leading south from the site (Figure 4). These were the only bifaces recovered, except for the bit of a gravel adze that was found on a road running along the top of the next ridge to the south. Most of the lithics (including both of the triangular points) are of heat-treated Tuscaloosa gravel; none of the light grey chert commonly used by the eighteenth-century Chickasaw (Atkinson 1987b:40-41; Johnson et al. 1991:44; Johnson 1994) was noted (Table 1). While changes through time in non-metric dimensions of triangular points (blade shape, base shape, raw material, etc.) have been noted

Table 1. Lithics from 22-Ok-694. *Originally reported as unheated.

<table>
<thead>
<tr>
<th>Provenience</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>road on first ridge south of site</td>
<td>biface fragment</td>
<td>unheated gravel adze bit</td>
</tr>
<tr>
<td>road running south from site</td>
<td>quartzite biface</td>
<td>fragment, unmodified cobble triangular point base, heat-treated gravel, broken from impact fracture</td>
</tr>
<tr>
<td>general surface</td>
<td>flake</td>
<td>primary decortication, heat-treated gravel</td>
</tr>
<tr>
<td>Area I artifacts plotted on map</td>
<td>biface</td>
<td>triangular point, heat-treated gravel*</td>
</tr>
<tr>
<td>cleaning Feature 1</td>
<td>pebble</td>
<td>small, heat-treated gravel</td>
</tr>
<tr>
<td>2N21E daub layer under daub</td>
<td>flake quartzite</td>
<td>secondary decortication, heat-treated gravel hammerstone fragment, light brown</td>
</tr>
<tr>
<td>3N21E daub layer</td>
<td>pebble</td>
<td>unmodified gravel</td>
</tr>
<tr>
<td>5N22E Zone 2</td>
<td>shatter</td>
<td>heat-treated gravel</td>
</tr>
<tr>
<td>6N23E Zone 2</td>
<td>flake</td>
<td>interior, heated, possibly Kosciusko quartz</td>
</tr>
<tr>
<td>7S30E Zone 2</td>
<td>flake</td>
<td>interior, heat treated gravel</td>
</tr>
</tbody>
</table>

for the central Tombigbee River drainage (Peacock 1986), individual points cannot be securely assigned to any particular period, since the types tend to overlap the boundaries of culture-historical units.

As might be expected at a habitation site with few lithics, three of the four flakes found have edge modification. A quartzite hammerstone fragment was recovered from beneath the daub in Feature 1.

Ceramics

Reexamination of the ceramics from 22-Ok-694 suggested that the amount of sand-tempered pottery had originally been overestimated due to the fact that shell was very sparse in many sherds, and may have been overlooked. All the ceramics were therefore reanalyzed. A small piece was broken off each sherd and the fresh break was examined using a 10x magnification hand lens. The results of this analysis should take precedence over the data presented in the original report.

The ceramic assemblage is dominated by live shell-tempered plain (51.5%) followed by sand-tempered plain (26.9%; Table 2). The shell is typically very finely crushed, and ranges in quantity from a few scattered pieces to very dense. In contrast to the Chickasaw pottery from Lee County (Atkinson 1987b; Jennings 1941:176-178; Rafferty 1992; Stubbs 1982) and some of the Rolling Hills material from northern Starkville (Atkinson 1979:63; Lolley 1992), there is no evidence that fossil shell was used as a tempering agent at 22-Ok-694. No decorative modes usually associated with Late Mississippian/Protohistoric wares, such as spiral incising, notched rim fillets, or applique strips (Curren 1984; Johnson and Sparks 1986; Johnson et al. 1991; Rafferty 1992; Solis and Walling 1982; Stubbs 1982) were noted.

Most of the ceramics from the site are undecorated (see Table 2 and Figure 5). A few rim treatments were present. Small, triangular nicks were noted on the flat lip and of a sand-tempered sherd from Feature 1. Two sand-tempered sherds from the feature had slightly thickened lips with small, rounded punctuations (Figure 5d); one shell-tempered sherd displayed a similar treatment. A large shell-tempered rim sherd with a strap handle had nodes along the rim that continued over the top of the handle (Figure 5c). The most elaborately decorated sherd is a thin-walled, shell-tempered rim sherd displaying three horizontal rows of nodes, one along the outside of the rim and two further down on the body of the vessel (Figure 5g). The shell is extremely sparse in this sherd.

Vessel forms range from small bowls with folded rims (both sand- and shell-tempered), to large globular bowls with strap handles (shell-tempered), to large jars with flattened rims (sand-tempered: Figure 5e). A few of the latter sherds are smoothed almost to the point of burning. In contrast, most of the shell-tempered sherds are fairly crude and some are
quite thick (up to 1.4 centimeters). A minor Woodland component is indicated by the presence of two sand-tempered cordmarked sherds from the surface collections. What percentage of the sand-tempered plain sherds belong to this earlier component is unknown. There is an undoubted association of sand- and shell-tempered ceramics from within and beneath the daub in Feature 1.

Table 2. Ceramics from 22-Ok-694.

<table>
<thead>
<tr>
<th>Provenience</th>
<th>Shell plain</th>
<th>shell noded</th>
<th>shell plain, punctuated rim</th>
<th>shell eroded</th>
<th>gog/sg/shell plain</th>
<th>gog plain, eroded</th>
<th>sand plain</th>
<th>sand plain, punctured rim</th>
<th>sand plain, nicked lip</th>
<th>sand cordmarked</th>
<th>sand eroded</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>58</td>
<td>4</td>
<td>1</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>95</td>
</tr>
<tr>
<td>Feature 1</td>
<td>18</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td>2N21E in and under daub</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>2N22E in and under daub</td>
<td>9</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>3N21E in and under daub</td>
<td>4</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>3N22E in and under daub</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>5N22E Zone 2</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>6N23E Zone 2</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>7N30E Zone 2</td>
<td>11</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>TOTAL</td>
<td>134</td>
<td>2</td>
<td>1</td>
<td>26</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>70</td>
<td>2</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>%</td>
<td>51.5%</td>
<td>0.8%</td>
<td>0.4%</td>
<td>10%</td>
<td>1.9%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>26.9%</td>
<td>0.8%</td>
<td>0.4%</td>
<td>0.8%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Figure 5. Some ceramics from Feature 1, 22-Ok-664. A. Shell-tempered plain; B. Shell-tempered plain, slightly thickened lip; C. Shell-tempered plain, noded rim; D. Sand-tempered plain, punctate on thickened rim; E. Sand-tempered plain, flattened lip; F. Shell-tempered plain; G. Shell-tempered noded.

Faunal Remains

It has been pointed out (Scott 1981) that in order to understand the economy of Mississippian farmsteads, faunal information from small sites must be made available (cf. Hogue and Peacock, 1995). A very small amount of faunal material was recovered from Feature 1. This was sent to Susan Scott for identification; the data are presented in Table 3. Both

Table 3. Faunal remains from 22-Ok-664.

<table>
<thead>
<tr>
<th>Provenience</th>
<th>Animals Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>2N21E daub layer</td>
<td>Box turtle—peripheral; Deer—two sesamoid fragments; Colubridae (non-poisonous snake) occipital; Unidentifiable snake—proximal rib; Unidentifiable medium-sized mammal petrous temporal; Raccoon—metapodial; One unidentifiable fragment</td>
</tr>
<tr>
<td>3N22E daub layer</td>
<td>Deer—dew claw fragment; Medium mammal—distal metapodial; Medium mammal/bird—distal phalanx; One unidentifiable fragment</td>
</tr>
<tr>
<td>2N22E daub layer</td>
<td>Small mammal/medium bird—claw</td>
</tr>
</tbody>
</table>
deer and small mammals are represented, as are non-poisonous snake and box turtle. It is doubtful that this small assemblage in any way represents the spectrum of animals being exploited by the site inhabitants. Destruction of faunal remains probably occurred from the shrink/swell activity of the clay soils (cf. Hogue and Peacock 1995; Johnson et al. 1991). The amount of floral remains recovered was so small that no identification was attempted.

Chronology

At the time the original survey and testing reports were submitted, it was felt that 22-Ok-694 represented a Late Mississippian or Protohistoric farmstead dating to approximately the late fifteenth century (Marshall 1989; Peacock 1990:21). This was based primarily on the site's location, as models devised for the Black Prairie suggested that ridgetop sites with shell-tempered pottery were the result of a settlement pattern shift that took place either shortly before or just after the period of initial historic contact (Johnson and Sparks 1986; Johnson et al. 1991:2). The presence of both sand- and shell-tempered ceramics was not out of line with this reasoning, as both temper types were in use during Protohistoric and early Historic times in the Black Prairie uplands (Atkinson 1987b; Jennings 1941; Johnson et al. 1991; Rafferty 1992; Stubbs 1982). It was felt that the few sand-tempered cordmarked and mixed shell/grog-tempered sherds were artifacts associated with an earlier occupation at the site.

The ceramic analysis was not conclusive in this regard, however. The few decorated sherds could not easily be classified using existing type definitions. The total lack of fossil shell as a tempering agent certainly seemed to indicate a prehistoric (as opposed to Protohistoric) occupation. As noted above, ceramics diagnostic of the Late Mississippian to Protohistoric phases, such as engraved body sherds or filleted rims, were lacking, as were the light grey chert lithics commonly found at contact period aboriginal sites in the Black Prairie uplands of north Mississippi (Atkinson 1987b:40-41; Johnson 1994). While noded rims and handles have been noted in early Mississippian contexts at the Moundville site in Alabama (Steponaitis 1983) and at the Tibbee Creek site in Lowndes County, Mississippi (O’Hear et al. 1981), the temporal duration of this decorative mode is currently unknown (Steponaitis 1983:112; cf. Sheldon and Jenkins 1986:99).

Unfortunately, no charcoal sufficient for radiocarbon dating purposes was recovered from the excavation. Therefore, a large, shell-tempered plain sherd from beneath the daub in Feature 1 was submitted to the University of Washington for thermoluminescence analysis. This produced a date of A.D. 1140 ± 88 (UWTL66-4), much earlier than expected based on the settlement pattern models discussed above. The technical results of the TL test seemed to indicate that the early date was correct. The following quotes from a letter sent by Dr. Robert C. Dunnell, of the University of Washington, serve to illustrate the point:

As requested, we did both high-temperature and predose analyses. The latter proved useless as the sample failed to generate enough of a signal to be distinguished from background noise. The high-temperature analysis is textbook perfect. The sample developed a classic plateau and showed no signs of fading. Technically, it is one of the best results we have obtained. In the initial analysis we obtained a result of AD 1149 ± 11; however, the N+ data seemed a little anomalous. Consequently, we prepared a new set of sample discs and redid the high temperature analysis and calculation. From this we obtained the result of 1140 ± 88 and this is the result that should be used.

I realize that this does not agree with your initial supposition of age. There is no real way in which the discrepancy can be explained physically. While K contamination can produce dates that are too young, there is no kind of contamination that can make them too old here. The common error for dates that are too old is low firing and mixing a geologic age with an archaeological one. This is precluded entirely by the perfect plateaus displayed by your sample. The unavoidable conclusion is that the sherd was last heated in the early twelfth century (Dunnell 1990).

An attempt was made to corroborate the TL date using measurements of the strap handles on shell-tempered sherds, a method devised by Steponaitis (1983:102-103) for use on vessels from the Moundville site in Alabama. The method involves measuring the width at the top and bottom of handles, then computing the top width/bottom width ratios. A ratio of handle width to thickness is also used. Steponaitis found that handles generally became wider and thinner through time. The data from his work (Steponaitis 1983:Tables 22, 24, 25 and 26) are shown in Table 4, along with the measurements taken from the two complete handles (both on shell-tempered sherds) from 22-Ok-694. (Only those Moundville specimens for which all measurements were available are included in Table 4). It can be seen that the metric data from 22-Ok-694 are most similar to Steponaitis' Moundville I data.

Following Steponaitis (1983: Fig. 29), a scattergram was constructed plotting the middle width : thickness ratios against the top width : bottom width ratios (Figure 6). With the Moundville data, the earlier specimens tend to fall in the lower left corner of the diagram, while later specimens trend progressively toward the upper right. As can be seen in Figure 6, the two specimens from 22-Ok-694 fall exactly where expected if they were early Mississippian.

These data are not conclusive. It is debatable whether vessel fragments from an upland farmstead on the western edge of the Black Prairie can be
Table 4. Metric data on handles from Moundville and 22-Ok0694.

<table>
<thead>
<tr>
<th></th>
<th>Top Width</th>
<th>Bottom Width</th>
<th>Middle Width</th>
<th>Thickness</th>
<th>TW:BW ratio</th>
<th>MW:Th ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-Ok-694</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>19</td>
<td>21</td>
<td>10</td>
<td>0.8</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>24</td>
<td>19</td>
<td>11</td>
<td>1.0</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>20.5</td>
<td>21.5</td>
<td>20.0</td>
<td>10.5</td>
<td>0.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Moundville I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>24</td>
<td>20</td>
<td>8</td>
<td>1.2</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>13</td>
<td>10</td>
<td>6</td>
<td>0.8</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>19</td>
<td>20</td>
<td>12</td>
<td>1.7</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>18</td>
<td>16</td>
<td>10</td>
<td>0.9</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12</td>
<td>13</td>
<td>9</td>
<td>1.3</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>1.4</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>9</td>
<td>5</td>
<td>1.0</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>22</td>
<td>22</td>
<td>7</td>
<td>1.3</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>17</td>
<td>17</td>
<td>10</td>
<td>1.4</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>17.8</td>
<td>14.9</td>
<td>13.7</td>
<td>7.4</td>
<td>1.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Moundville II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>18</td>
<td>16</td>
<td>6</td>
<td>1.1</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>15</td>
<td>13</td>
<td>7</td>
<td>1.1</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>17</td>
<td>16</td>
<td>6</td>
<td>1.2</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>16</td>
<td>15</td>
<td>6</td>
<td>2.1</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>22.5</td>
<td>16.5</td>
<td>15.0</td>
<td>6.3</td>
<td>1.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Early Moundville III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>18</td>
<td>5</td>
<td>1.4</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>15</td>
<td>12</td>
<td>5</td>
<td>1.3</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>13</td>
<td>10</td>
<td>3</td>
<td>1.7</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>16</td>
<td>19</td>
<td>5</td>
<td>2.1</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>12</td>
<td>17</td>
<td>4</td>
<td>2.2</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>13</td>
<td>13</td>
<td>5</td>
<td>2.5</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>10</td>
<td>12</td>
<td>4</td>
<td>2.9</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>11</td>
<td>12</td>
<td>8</td>
<td>1.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>22</td>
<td>27</td>
<td>5</td>
<td>2.3</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>12</td>
<td>13</td>
<td>8</td>
<td>1.3</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>26.4</td>
<td>14.0</td>
<td>15.3</td>
<td>5.2</td>
<td>1.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Late Moundville III</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>13</td>
<td>12</td>
<td>6</td>
<td>2.1</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>3.6</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12</td>
<td>10</td>
<td>5</td>
<td>1.3</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>15</td>
<td>20</td>
<td>5</td>
<td>3.0</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>16</td>
<td>15</td>
<td>5</td>
<td>1.4</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>15</td>
<td>15</td>
<td>5</td>
<td>1.9</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>17</td>
<td>14</td>
<td>5</td>
<td>1.2</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>15</td>
<td>15</td>
<td>5</td>
<td>2.1</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>18</td>
<td>17</td>
<td>4</td>
<td>1.3</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>1.9</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>1.9</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>24.3</td>
<td>13.0</td>
<td>12.9</td>
<td>5.0</td>
<td>2.0</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Figure 6. Handle-shape ratios of unburnished jars from Moundville (from Steponaitis 1983) and 22-Ok-694.

legitimately compared in this fashion to vessels obtained from burials at the premier Mississippian mound center of the Southeast. The data can be used, however, to at least suggest that 22-Ok-694 is in fact an early Mississippian site, as indicated by the TL date. Future studies of this kind should shed light on the applicability of the method in the Mississippi Black Prairie.

It would be helpful if other absolute dates could be obtained from 22-Ok-694, but given the lack of charcoal and the expense of thermoluminescence dating, it is unlikely that such will be forthcoming in the immediate future. There are, however, additional data accruing which suggest that the settlement pattern shift into the dissected uplands of the Black Belt may not have occurred as late, or been as abrupt, as previously believed. For example, Lolley's (1992) seriation of assemblages from the Starkville area seems to indicate the occurrence of sites well back into the Mississippian period, a possibility noted by Atkinson (1987a:64). Also, terminal fourteenth-century radiocarbon dates have recently been obtained from the South Farm site (22-Ok-534), a small ridgetop farmstead southeast of Starkville (Hogue and Peacock, 1995). This evidence tends to suggest that rather than being abrupt, the reorganization of populations
was a gradual process that may have taken centuries. In this scenario, the terraces of the larger waterways of the Black Belt were not simply abandoned for the ridges; rather, settlements expanded during Mississippian times to include both physiographic settings (cf. Atkinson 1987a:63). This hypothesis is supported not only by the presence of both Mississippian and Protohistoric sites in the ridges around Starkville, but by sites in the larger stream bottoms which contain both Mississippian and Protohistoric materials (e.g., Johnson and Sparks 1986:74; Solis and Walling 1982). These latter sites have been characterized as “atypical” in previous models (Johnson and Sparks 1986:74), but make sense if a more gradual settlement pattern shift is postulated.

Conclusions

Johnson et al. (1991) have argued that “it has become evident on the basis of our work in the Black Prairie that sites with shell tempered pottery located in the uplands are Protohistoric while those found in the stream bottoms and on the terraces are primarily Mississippian” (1991:68). With the availability of more information, it would not be surprising if such models require rethinking. The data now being accumulated indicate that location alone cannot be used for establishing the likely temporal placement of any particular site. There are hundreds, if not thousands, of small sites with live shell-tempered pottery in the Mississippi Black Prairie. Surface collections from these small sites generally fail to yield diagnostics sensitive enough to place them in any particular phase within the general Mississippian/Protohistoric cultural periods (Johnson and Sparks 1986:65). Without such diagnostics, it is premature to classify particular sites as early, middle, or late Mississippian, or Protohistoric; to do so attributes a false accuracy to the resultant models. As an example, sites found in the Starkville area have been lumped together as part of the “Starkville Archaeological Complex” and assumed to be late (Marshall 1992). This may result in an inflated number of Protohistoric component being assigned to the area, adding difficulties to attempts at compiling demographic data (see Galloway 1994: Fig. 6). Rather than an abrupt shift of settlement from the terraces of the larger river and tributary bottoms to the smaller upland drainages (Johnson et al. 1991:2), it is suggested that, in the Starkville area at least, the reorganization of populations was a more gradual process.

There are other aspects of Mississippian settlement in the Black Belt that need to be reexamined. One involves site size. Johnson and Sparks summarized known data some years ago: “While most Mississippian sites are large enough to suggest several families are living together, most Protohistoric sites are too small to contain more than two or three houses” (1986:72). The new information concerning chronology suggests that the small, one- or two-house farmstead is a phenomenon that began long before the Protohistoric period (cf. Hogue and Peacock 1995). More attention should also be focused on the presence of earlier components at these small sites. Current models suggest that upland ridge sites with shell-tempered ceramics in the Black Belt are almost always single-component (Johnson 1990:60; Johnson and Sparks 1986:68). However, many of these sites seem to have minor Woodland components as well, based on the presence of small amounts of sand-tempered cordmarked pottery (e.g., Hogue and Peacock 1995; Johnson et al. 1991:35; cf. Rafferty 1991). Site 22-Ok-694 is a good example of this phenomenon.

While the ongoing reexamination of existing collections promises to shed much light on the process of Mississippian adaptation in the Black Belt, new excavations are sorely needed to provide large ceramic samples and materials suitable for absolute dating. Only then will the thorny questions surrounding the timing and nature of Late Prehistoric settlement processes in the area become answerable.

Acknowledgements

I would like to thank the management of the Golden Triangle Planning and Development District for the cooperation shown during excavation of 22-Ok-694. Bobby Fugitt and David Rafferty served as field crew, and volunteer labor was supplied by Janet Rafferty and Mary Ann Fugitt. Drafting and computer space was made available at the Cobb Institute of Archaeology, Mississippi State University. Holly Beeland was kind enough to prepare the artifact illustrations. A special thanks to T. R. Kidder for his insightful editorial comments.

Collections

The artifacts from 22-Ok-694 are stored at the Curation Laboratory, Mississippi State.

Evan Peacock is a Zone Archaeologist with the US Forest Service, Tombigbee Ranger District, in Ackerman, MS.

References

Atkinson, James R.
Atkinson, James R.

Blakeman, Crawford H., Jr.

Brent, Floyd V., Jr.

Caddell, Gloria M.

Connaway, John M.
1984 The Wilsford site (22-Co-516), Coahoma County, Mississippi. Mississippi Department of Archives and History Archaeological Report 14.

Curren, Caleb

Dunnell, Robert C.

Futato, Eugene M.

Galloway, Patricia

Gray, Bruce
1993 Cultural resources survey of proposed relocation of U.S. Highway 82, Mississippi Highway 25, and Mississippi Highway 12 at Starkville, Oktibbeha County, Mississippi. Report on file, Mississippi Department of Archives and History, Jackson.

Hogue, S., Homes, and Evan Peacock
1995 Environmental and osteological analysis at the South Farm site (22OK534), a Mississippian farmstead in Oktibbeha County, Mississippi. Southeastern Archaeology 14(1):31-45.

Jennings, Jesse D.

Johnson, Jay K.

Johnson, Jay K., and John T. Sparks

Johnson, Jay K., Patricia K. Galloway, and Walter Belokon

Johnson, Jay K., Geoffrey R. Lehmans, James R. Atkinson, Susan L. Scott, and Andrea Shea

Lolley, Terry L.

Marshall, Richard A.
1989 A Report of cultural resources management survey at the proposed Starkville landfill addition, Oktibbeha County, Mississippi. Report on file at the Mississippi Department of Archives and History, Jackson.

O'Hearn, John W., Clark Larsen, Margaret M. Scarry, John Phillips, and Erica Simmons
1981 Archaeological salvage excavations at the Tibbee Creek site (22Lo600), Lowndes County, Mississippi. Mississippi State University Department of Anthropology, Starkville.

Peacock, Evan
1990 Archaeological testing at the Landfill #1 site (22-Ok-694), Oktibbeha County, Mississippi. Report submitted to the Golden Triangle Planning and Development District. On file at the Mississippi Department of Archives and History, Jackson.
The Persistence of Choctaw Pottery

Jerome A. Voss

Until recently collections of pottery from Choctaw sites have been limited, but new collections have allowed more extended analyses. Analysis of decorative design styles discussed in this paper suggests that arguments regarding the communicative importance of decorative motifs may help elucidate the internal political dynamic of the Choctaw confederacy in the late eighteenth century.

Introduction

The late eighteenth- and early nineteenth-century Choctaw archaeological sites in eastern Mississippi reflect both indigenous cultural persistence and change resulting from increasing interaction with Euro-American society. These processes are evident in the consistent patterning of the artifact inventories from surface collections and test excavations (cf. Blitz 1982, Voss 1984); see example below:

<table>
<thead>
<tr>
<th>Site</th>
<th>Native American Pottery</th>
<th>Euro-American Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>22KE554</td>
<td>6 decorated and 59 undecorated sherdsh</td>
<td>1 gunflint and 1 green glass fragment</td>
</tr>
<tr>
<td>22KE565</td>
<td>5 decorated and 138 undecorated sherdsh</td>
<td>1 gunflint, 3 dark green glass fragments, and 1 handpainted earthenware sherd</td>
</tr>
<tr>
<td>22KE567</td>
<td>3 decorated and 79 undecorated sherdsh</td>
<td>6 earthenware sherd, 1 porcelain sherd, and 3 glass fragments</td>
</tr>
</tbody>
</table>

Many of the sites have produced Euro-American trade goods. The only category of indigenous artifacts that has been consistently recovered from Mississippi Choctaw sites is pottery (Voss and Blitz 1988:133).

With respect to the adaptation and accommodation of the Choctaw to the Euro-American presence, the persistence of pottery traditions is an issue worth exploring. On the one hand, it is clear that the Choctaw stopped making many traditional items during the eighteenth century (Blitz 1985). Through the deerskin trade they had gained access to Euro-
American trade goods upon which they became increasingly dependent (White 1983). And, indeed, trading lists document the demand for a variety of imported goods, including ceramic and metal vessels. As Woods notes (1980:36), “the Indians quickly discovered that metal cookware was nearly unbreakable and could endure the heat of an open fire for much longer than could pots made of clay.” On the other hand, pottery manufacturing and the use of traditional designs continued through the period of the removal to Oklahoma. Although the demand for trade vessels may have been greater than the available supply, the continued use of traditional designs suggests that the persistence of pottery-making was not simply a result of supply-and-demand factors and, thus, may have meaningful implications for understanding the dynamics of culture change in the region.

Historians have paid little attention to Choctaw pottery, almost certainly because references to pottery are rare in eighteenth- and nineteenth-century documents (cf. Getty 1989:417). In a typical statement, Debo notes that the Choctaw “made pottery, which seems to have been of a rather inferior sort” (1961:11). In a footnote she adds that “in the museum of the Oklahoma State Historical Society are specimens of Choctaw pottery which were brought from Mississippi during the removal period, 1831-33. They are of ungraceful shape and only slightly decorated” (1961:11, note 30). Likewise, historic Native American pottery traditions have generally received little archaeological attention. As Williams has noted, archaeologists “have been led to feel that most southeastern Indians stopped making pottery in the eighteenth century, at least stopped making anything worth looking at from an archaeological point of view” (1981:116).

Archaeological fieldwork conducted in Mississippi since 1980 has, however, provided the opportunity for more detailed studies of continuity and change in Choctaw material culture. For example, the University of Southern Mississippi investigations in Kemper and Neshoba Counties led to the discovery of 59 sites with Choctaw components and to the definition of an eighteenth- and nineteenth-century Choctaw ceramic complex (Blitz 1985; Voss 1984; Voss and Blitz 1988). Stylistic analyses of sherds recovered during these investigations have yielded certain initial conclusions concerning spatial and temporal variability in Choctaw ceramics (Voss and Mann 1986; Voss 1989), conclusions which are relevant to the larger issue of ceramic persistence.

Building on these previous studies, this paper provides a foundation for placing the indigenous pottery tradition within the larger Choctaw sociocultural context and explaining its persistence in terms of several interrelated factors: the articulation of pottery with other components of Choctaw culture, the new social and economic contexts into which the

Figure 1. Free-hand incised pottery: (A-F) Fatherland Incised and (G-I) Nicked Rim Incised.

Choctaw moved during the eighteenth and nineteenth centuries, the active participation of the Choctaw in the maintenance of a cultural identity, and the role that pottery may have played in enhancing social unity.

Choctaw Pottery Design Variation

The Choctaw ceramic complex consists of four decorated and four plain types (Blitz 1985; Voss and Blitz 1988: 133-137). One decorated type, Nicked Rim Incised, is relatively rare and will not figure in this discussion (although see Mooney 1992 for a significant discussion linking Nicked
Rim Incised to the Chickasawhays of the Southern Division). I will focus on the three most common decorated types: Fatherland Incised, Kemper Combed, and Chickachae Combed. Since the two combed types are distinguished from each other on the basis of temper rather than design, I will consider both combed types as a single group.

The designs on these types are similar, consisting of curvilinear and rectilinear bands of closely-spaced, parallel lines. The designs on the Fatherland Incised sherds (Figure 1, A-F) were incised free-hand, while the designs on the combed types (Figure 2) were applied with a comb-like instrument. Combing appears to have been an innovation of the second half of the eighteenth century. Combed sherds from dated contexts come primarily from late eighteenth- and nineteenth-century sites in Mississippi, Louisiana, and Oklahoma (Ford 1936:48-49; Galloway 1984; Voss and Blitz 1988; Ward 1983, 1986).

The fragmentary nature of the sherds has made it very difficult to analyze overall design structure on Choctaw vessels and has hindered attempts to draw well-substantiated conclusions concerning design variation. Previous stylistic analyses have focused on two design attributes which could be measured on almost all decorated sherds: (1) the number of parallel lines in a design element; and (2) the interval between adjacent lines in an element, including both the average interval for an element and the deviation of line intervals from the element average (see Voss and Mann 1986 for a complete discussion of attribute measurement). Although the conclusions to be drawn from these studies must be considered provisional because of the assemblage characteristics, the results are consistent and suggest that there were changes in the perception and function of pottery designs during the late eighteenth and early nineteenth centuries.

In the collections recovered during the 1982 and 1984 University of Southern Mississippi field investigations, there are differences between the combed and Fatherland Incised types in the measured design attributes (Voss and Mann 1986). Fatherland Incised sherds have an average of approximately three lines per design element, while the combed sherds have an average of four lines per element. The lines in combed design elements are more closely spaced than in the free-hand incised elements, with mean values of 1.27 mm and 2.20 mm respectively. Finally, the lines in the combed elements are more regularly-spaced, exhibiting relatively little variation when compared to the more irregularly-spaced lines on Fatherland Incised. The regular spacing of lines on combed elements may not seem very surprising since it has been assumed that such designs were applied with a comb. This finding does, however, support the conclusion that a comb was the instrument used in design application. On the basis of these differences between the Fatherland Incised and combed pottery,
A number of factors threatened the unity of the eighteenth-century Choctaw confederacy: subcultural variation between regional divisions, the involvement of the Choctaw in the British-French conflict in the Southeast, and the increasing economic dependence upon Euro-Americans (Galloway 1985). By the turn of the nineteenth century, this economic dependence had seriously disrupted Choctaw life (White 1983). The influx of settlers into Mississippi after 1800 exacerbated these problems, hastening the adoption of Euro-American characteristics by the Choctaw and leading to the forced removal of most Choctaw to Oklahoma.

This combination of internal disorder and external pressures created the type of situation which has fostered in many other societies active sociocultural responses that serve to reestablish or reinforce unity. Little argues that the early nineteenth-century Cherokee “selectively accepted and manipulated the foreign idea of civilization, expressing through material culture both the adoption of ‘white ways’ and the preservation of their own tradition” (1995:4). In particular, she points out that at the Cherokee capital of New Echota some of the more visible aspects of material culture, including architecture, followed a Euro-American pattern, while objects used within the household or in less visible contexts followed more traditional Cherokee patterns (Little 1995:7).

Kidwell (1986) contends that, during the decades after the removal of most Choctaw to Oklahoma, the remaining Mississippi Choctaw were able to maintain an ethnic identity because of social and geographic isolation; the perpetuation of important activities, such as rituals, singing, dancing, and the stickball game; and the maintenance of ties with traditional lands. The use of certain items of traditional material culture and stylistic expression must also have been important. As Howard and Levine note (1990:5):

It is generally conceded by anthropologists that the Mississippi Choctaws are more traditional than their Oklahoma kinsmen. This is particularly evident in the areas of arts and crafts, music, dance, language, and costume. The reasons for this cultural conservatism are undoubtedly closely tied to the group’s struggle to survive as an ethnic group in a white-dominated, hostile, racist social environment. Therefore, in Mississippi, native dress, language, dances, music, games, and crafts have had an important function as symbols of ethnic identity, and this function has served to foster their survival.

As with the Cherokee pattern described by Little (1995), indigenous pottery manufacturing and decoration may, therefore, have played a role in promoting and symbolizing ethnic unity within the Choctaw confederacy.

As nice as it sounds, this conclusion begs certain questions. Why and how did pottery designs assume this presumed role? The ethnohistorical
evidence seems to suggest something very different. There is, after all, a remarkable absence of comment about pottery by most Euro-American observers of the eighteenth and nineteenth centuries. Also, the argument presumes that the designs were highly visible. A design will not serve the purpose of signaling cultural identity and unity unless it can be observed by others. Anyone who has worked with Choctaw pottery knows that the designs are not particularly dramatic and, in fact, may not be visible from a distance of more than a few feet. Although some of the obscurity in design is a result of the weathering of sherds, it is hard to conclude that the designs were particularly vivid.

One factor that may have enabled pottery to serve a role signifying unity was its linkage with other cultural components (cf. Barrett 1991:105-112). The ethnographic literature contains numerous examples of the continued use of traditional tools or crafts by societies experiencing significant change because of the articulation of such objects with other practices or institutions, which may be social, economic, political, and/or religious in nature. As an example involving pottery, Reina notes that traditional pottery manufacturing continued in a Mayan community in Guatemala at least in part because of a high value placed upon the craft. Some women continued to make traditional water jars because the skill was judged important in the choice of marriage partners (Reina 1966:67-68). In her description of the !Kung San exchange system called *hara*o, Wiessner (1982) describes the importance of traditional beadwork which circulated along with tools and European goods, particularly clothing. Wiessner considers *hara*o as a significant mechanism of economic risk reduction and maintenance of social solidarity.

The lack of historical documentation concerning pottery hinders the assessment of possible links between it and other facets of indigenous Choctaw culture. It does appear, however, that pottery played a role in important rituals. For example, pottery was used during different phases of the well-documented funeral ritual. Writing during the first half of the eighteenth century, an anonymous French narrator described the events immediately following a death:

As soon as he is dead his relatives erect a kind of cabin in the shape of a coffin, directly opposite his door six feet from the ground on six stakes, surrounded by a mud wall, and covered with bark in which they enclose this body all dressed, and which they cover with a blanket. They place food and drink beside him, giving him a change of shoes, his gun, powder, and balls. They say that it is because he is going into another country, and it is right that he have everything he needs in his journey [quoted in Swanton 1918:64-65].

Although the narrator is not specific, it is likely that the food and drink were placed by the body in pottery bowls.

Several months after the death of the individual, ritual specialists removed the flesh from the decaying body. One relevant description of this phase of the ritual was written by Milfort in 1802:

While the priest is on the scaffold occupied with the dissection, all of the others who are present busy themselves on their side in lighting fires, on which they place for guests great earthen pots full of food. When these viands are cooked, they remove them from the fire in order to allow them to cool without touching them, for the priest alone is permitted to remove the coverings, and he can do so only after having finished his operation... When each has taken his place the medicine man or priest uncovers the vessels, and, without having even washed his hands, which he has merely wiped on some grass, he puts them in the pots in order to draw out the viands and distribute them among the relatives and friends of the dead man, according to their rank [quoted in Swanton 1931:174-175].

This practice appears to have had a lengthy history. The anonymous French narrator also claims that the bone-picker "without washing her hands, comes to serve food to the assembly" (Swanton 1918:65). As used in the bone-picking ceremony, the pottery would have been visible to large numbers of Choctaw, some almost certainly coming from different communities. Virtually all accounts of bone-picking indicate that all of the relatives and friends of the deceased were present at the ritual (cf. Halbert 1900:355-356; Swanton 1931:170-182).

Milfort's description of the earthen pots used in the ritual feast is somewhat problematic. It would be an exaggeration to describe any known Choctaw pottery as "great" in size. None of the sherds recovered from Mississippi sites appear to have been part of particularly large vessels. Likewise, the few complete bowls in Oklahoma collections are not large (Gettys 1989). Nevertheless, the descriptions of the different phases of the ritual illustrate a ceremonial context in which traditional pottery may have played a visible and significant role.

Aspects of the funeral ritual changed early in the nineteenth century. Bodies were no longer placed on scaffolds and allowed to decompose; the bone-picking ceremony disappeared. The Choctaw started to bury individuals in graves around which were erected decorated poles. There was continuity, however, in other aspects of the ritual, including ceremonial mourning, wailing, and feasting. After a period of mourning which may have continued for several months, relatives and friends gathered at the grave for a pole-pulling ceremony which included considerable lamentation, dancing, and ceremonial feasting. Accounts document the cultural regulation of the distribution of food during the feast:

As the afternoon begins to draw to a close, the hunters bring forward their barbecued venison and deposit it on the ground between the camp fires of the
headmen. Some families have brought with them for the common feast large kettles full of hominy. These, too, are brought forward and placed on the ground along with the venison. As night begins to close upon the scene, the camp fires are lighted up afresh, and the two headmen hold a consultation. They make an estimate of the numbers of their respective iksa [moieties] present, and proportion the food accordingly. The rigid law of Choctaw etiquette at an Indian cry requires that the two iksa must eat separate and distinct from each other. This is a sacred and inviolable law [Halbert 1900:361-362].

There were other ritual and ceremonial contexts in which pottery may have been important. Several observers remarked on the frequency with which the Choctaw had feasts, leading Swanton to conclude that “what they lacked in ceremonials they seem to have made up for in social dances and feasts” (1931:221). Descriptions of these feasts (cf. Swanton 1931:225) demonstrate the level of cultural regulation. The feasts would have provided a context in which all ritual components (including food, clothing, spatial arrangement, cooking pots, and serving implements) may have been invested with significant meaning.

It must be emphasized, however, that while pottery appears to have had significant ceremonial functions well into the nineteenth century, archaeologists have not recovered sherds from what can be identified as ritual contexts in Mississippi, but rather from what were household sites where the pottery probably had domestic uses. This does not present any interpretive difficulties, however, because the household would have provided a second significant context in which traditional pottery may have served to reinforce a Choctaw identity. In this context pottery would have been continually visible. With respect to the perpetuation of Cherokee identity during the nineteenth century, Little argues that “one of the Cherokee women’s new roles may have been the discreet maintenance of certain traditional practices, including the manufacture and decoration of ceramics” (1995:7). This conclusion probably applies equally well to the Choctaw.

Therefore, the continued manufacture and use of Choctaw pottery may reflect its articulation with other parts of the culture. I have emphasized social and ritual links, but the domestic contexts were certainly important. To the extent that pottery was visible daily within the household and also during special rituals and feasts, it would have been a suitable vehicle for symbolizing social and ethnic identity at a time when mechanisms promoting unity would have been particularly important (cf. Carr 1995; Voss and Young 1995; Wobst 1977).

Although each facet of this argument may appear insignificant by itself, the sum provides a compelling, albeit circumstantial, case. Pottery manufacturing did continue into the nineteenth century, as did the application of traditional designs. The regional distribution of certain design elements points to the transmission of culturally-recognized and consciously-employed styles. The social context was one in which active symbolism of ethnic identity is to be expected. And pottery appears to have been linked to other aspects of the culture in a manner which would have made it visible during interaction, thereby enhancing its role in promoting sociocultural unity.

It may be inappropriate to ignore the poverty in which so many Choctaws lived (White 1983). The continued manufacturing of pottery bowls may have been an expedient response to an inability to acquire sufficient numbers of trade vessels. The poverty, however, did not disappear. The pottery did, apparently during the middle of the nineteenth century (Blitz 1985:53). Bushnell notes that the Choctaw living on Bayou Lacomb in Louisiana no longer made pottery bowls in the first decade of the twentieth century, although some remembered seeing bowls earlier in their lives (1909:13). If the persistence of pottery was related to its linkage with other aspects of the Choctaw culture, the eventual cessation of pottery manufacturing and use would be expected to accompany the major cultural changes which occurred during the nineteenth century (cf. White 1983:137). Many of the contexts in which pottery designs may have been a visible statement of identity changed significantly. For example, Halbert describes the changes which occurred in the funerary rituals during the second half of the nineteenth century, noting that “one custom after another has gradually passed out of use” (1900:365). It is probably not coincidental that the pottery and many traditional rituals, such as the funeral ceremonies, passed out of use together.

Acknowledgments

My thanks to Pat Galloway for her insights concerning the links between Choctaw pottery and ritual. An earlier version of this paper was presented at the 1991 meeting of the Society for Historical Archaeology in a symposium on Choctaw archaeology organized and chaired by Marshall Gettys.

Jerome A. Voss is an associate professor of anthropology at Michigan State University.

REFERENCES

Blitz, John H.
1982
Kemper County, Mississippi, archaeological survey artifact catalog. Unpublished catalog, Department of Sociology and Anthropology, University of Southern Mississippi, Hattiesburg.

1985
An Archaeological study of the Mississippi Choctaw Indians. Mississippi Department of Archives and History Archaeological Report 16.

Bushnell, David L, Jr.
1909

Carr, Christopher
1995

Debo, Angie
1961

Ford, James A.
1936
Analysis of Indian village site collections from Louisiana and Mississippi. Louisiana Department of Conservation Anthropological Study 2. Louisiana Geographical Survey, New Orleans.

Galloway, Patricia
1984

1985

Gettys, Marshall
1989

Gilman, Antonio
1982

Halbert, Henry S.
1900

Howard, James H., and Victoria L Levine
1990

Kidwell, Clara Sue
1986

Little, Barbara J.
1995
Tracking identity and survival: Trends in interpreting acculturation through material culture. Paper presented at the annual meeting of the Society for Historical Archaeology, Washington, D.C.

Mooney, Tim
1992

Reina, Ruben E.
1966

Swanton, John R.
1918

1931

Voss, Jerome A.
1984

1989

Voss, Jerome A., and John H. Blitz
1988

Voss, Jerome A., and C. Baxter Mann
1986

Voss, Jerome A., and Robert L. Young
1995

Ward, Rufus
1983

1986

White, Richard
1983
The roots of dependency: Subsistence, environment, and social change among the Choctaws, Pawnees, and Navajos. University of Nebraska Press, Lincoln.
The “Sardis” Cormorant Cord Impressed Vessel

Jamie C. Brandon and Charles H. McNutt

This paper gives a detailed description of a vessel donated to the University of Memphis Information Center, and describes the means by which the vessel was classified.

Introduction

In the summer of 1993 an unidentified woman left the major portion of a Cormorant Cord Impressed vessel with Christie Murphy, then a student employee at the University of Memphis Information Center. The woman said that she had found it “at Sardis” and suggested that the vessel might be of interest to the archaeology department. The vessel came into the hands of the junior author and subsequently received considerable attention in the press. Attempts were made to contact the “mystery woman” in order to obtain more detail about the vessel’s discovery, but to no avail (Commercial Appeal 1993). After considerable delay, the senior author undertook the “pot project” and prepared the initial manuscript and a drawing of the vessel. McNutt contributed sufficient additions and revisions to merit junior authorship.

Description (see Figures 1 and 2)

Temper: sparse, coarse clay particles irregularly distributed throughout the paste. Paste also includes mica flecks and small amounts of very fine sand, probably not temper

Texture: well smoothed with rather chalky feel

Hardness: 2 to 3

Color: a consistent 5Yr6/8 (reddish yellow) on the interior; 5Yr6/6 (reddish yellow) with various firing cloud discolorations on the exterior. Firing coloration penetrates vessel wall ca. 2 mm from both exterior and interior. Core 7Yr3/1 (very dark gray)

Surface Finish: well smoothed. Exterior appears floated, interior slightly raspy

Rim mode: recurved, with a slightly everted lip

Lip: thinned to rounded point, exterior surface vertical

Vessel form: globular jar
**Thickness (mm):** 6.5 at base, 6.2 at point of maximum girth, and 5.8 at rim

**Orifice Diameter (cm):** 12.5

**Vessel Height (cm):** 13.3

**Maximum Girth (cm):** 16.9

**Orifice : Height Ratio:** 0.9:1

**Height : Girth Ratio:** 0.8:1

**Suspension? holes:** 2 holes 6 mm in diameter on opposite sides of vessel, centered 11 mm below orifice. Formed before vessel was fired.

---

**Figure 1. The “Sardis” vessel.**

**Comments**

This donated vessel (hereafter referred to as the Sardis vessel), can be classified as Cormorant Cord Impressed, *var. Cormorant* (Phillips et al. 1951:73; Phillips 1970:77). It is a globular-bodied jar with an outcurved rim which terminates in a slightly everted lip. The Sardis vessel’s exterior and interior are well smoothed, with the exterior exhibiting considerable “polish,” apparently from floating. No red filming is visible on either the interior or exterior of the vessel. The base of the vessel does not evince polish; presumably it has been worn off from use. Mainfort and Chapman’s phrase “slightly raspy” (1994:158) is a felicitous reference to the exterior base and interior.

---

**Figure 2. The “Sardis” vessel. Photographed by Gerald Smith.**

The Sardis vessel is primarily tempered with sparse, coarse clay particles irregularly distributed throughout the paste. The paste itself is relatively hard for the variety, but still displays a somewhat chalky feel that is regarded as a hallmark of Tchula period ceramics (Brookes and Taylor 1986).

Decoration occurs on the interior and exterior. Interior decoration consists of short (2-3 mm) vertical (probably) cord impressions on the upper lip, spaced about three to four mm apart. These impressions are not clear, and definite wear is present. Exterior decoration is confined to the upper rim. Just below the lip there is a row of deep cord impressions six to eight mm in length and perpendicular to the rim. These impressions are spaced about six mm apart. Below these impressions, a single horizontal cord impression runs around the vessel; this serves as the framing line for a decoration zone about 12 mm wide. The lower framing line is also a single cord impression. Between these framing lines is a series of parallel diago-
nal cord impressions, applied from upper left to lower right. These diagonals are spaced three to four mm apart and average about 24 mm in length. Below this decorated band there is another series of short cord impressions perpendicular to the rim, five to eight mm in length and spaced about six mm apart. The total decorated area averages 26 mm in width, and all cordage is S-twist.

Discussion

For the Yazoo Basin area, Phillips (1970:16) defined the northern Tchula period Lake Cormorant culture as a “stop gap” term comprising a ceramic complex of “general Early Woodland cast,” as opposed to the more southern Tchefuncte, with its Gulf Coast orientation. He proposed Cormorant Cord Impressed pottery as one of the best markers for the culture (1970:876). Phillips’ original definition of the Lake Cormorant culture was based largely on a series of surface collections from sites in northwest ernmost Mississippi, along with tests at the very complex Lake Cormorant site (Phillips et al. 1951:248-53). He ascribed this material to the Turkey Ridge Phase (1970:878) and noted that its geographic and temporal limits were not well defined.

A somewhat fuller picture of the Lake Cormorant culture has emerged in recent years. Excavations at the Boyd site, 22Tu531, have yielded dates which may pertain to a discrete Cormorant stratum (Connaway and McGahey 1971). Here two pit features yielded (uncorrected) C-14 dates of 2170 ± 90 BP (220 B.C.) and 1865 ± 100 BP (A.D. 85). These dates have been taken alternatively to suggest early Marksville (Toth 1988) or late Tchula (Brookes and Taylor 1986; Ford 1990).

Brookes and Taylor (1986) have convincingly argued for aligning Phillips’ (1970:879-80) Norman Phase with Lake Cormorant rather than Tchefuncte. Still more recently, Janet Ford (1990) has described material from the hill country in Panola and Lafayette Counties which Weinstein (1991) has designated the Tidwell Phase.

At present, then, the Lake Cormorant Culture consists of 4 phases in north Mississippi: Turkey Ridge, Boyd, Norman, and Tidwell. Possible extensions exist northwest to southeast Missouri (Phillips 1970; Smith 1979; Morse 1986; Mainfort and Chapman 1994) and northeast to the Pickwick and Wheeler basins (Phillips et al. 1951:73). Excellent summaries of Lake Cormorant can be found in Ford (1990) and Weinstein (1991). Even with the resurgence of excavated data, however, whole or partially restored vessels of Cormorant Cord Impressed are rare (see Ford 1990), thus underscoring the importance of the Sardis vessel.

Cormorant Cord Impressed has not escaped the ambiguous paste problems that plague Tchula period ceramics. By now countless researchers have lamented the problems of the chalky/sandy continuum and grappled with typologies that clearly define these ceramics (Ford and Quimby 1945; Phillips et al. 1951; Phillips 1970; Smith 1979; Ford 1981; Brookes and Taylor 1986; Mainfort 1986; Mainfort and Chapman 1994). This paste continuum does have some spatial and perhaps chronological variation, the significance of which is still debated (cf. Phillips et al. 1951:252, 432; Phillips 1970:891). The paste of Cormorant Cord Impressed was originally defined as having variable amounts of sand (Phillips et al. 1951:73). Phillips (1970:878) described the major associated types as Baytown Plain, var. Bowie and Withers Fabric Marked, “mainly Withers variety but also some Twin Lakes.” Bowie and Twin Lakes are both sandy fabrics. Brookes and Taylor (1986:23) describe Cormorant paste as “soft and chalky,” and in west Tennessee Cormorant Cord Impressed is manifest in Smith’s Tchefuncte ware (1979) and (largely in) Mainfort and Chapman’s Forked Deer and Madison Series (1994). Smith’s Tchefuncte ware and the closely comparable Forked Deer series are described specifically as lacking sand, whereas the Madison series is regarded as a sandy variant of the Forked Deer series (Mainfort and Chapman 1994:159). The Sardis vessel’s paste would appear to fall somewhere in Main fort and Chapman’s Madison series. It is a bit denser, probably from high firing, and has a finer surface finish than one might expect for Madison material; in this respect the grog tempered sherds from the vessel at McCarty (Morse 1986:79) are of interest. Closer to Sardis, the mention of sandy paste from the Tidwell Mound site (Connaway and McGahey 1971:30) is obviously relevant. Although the Sardis vessel has slight peculiarities, it does not suggest the Marksville type paste necessary for Toth’s (1988) var. Bayouville.

The Sardis vessel differs from the three Cormorant Cord Impressed vessels recovered from the Tidwell and Tyson sites (Ford 1990) in both form and execution, Vessel D from Tidwell being a shallow carinated bowl with interior red filming, and Vessels H and I from Tyson both being deep bowls.

Because the origin of the Sardis vessel was described to the authors simply as “Sardis,” it is possible that it may be from Clear Creek mounds, discovered during a drawdown of Sardis Lake (Ford 1990). If this is the case, the Sardis vessel may be seen as extending the decorative motifs of the Tidwell Phase material to the Clear Creek area. But with the minimal information supplied by the donor and the integrity of the Clear Creek material itself in question, this remains purely conjectural.

Acknowledgments

We both wish to thank Gerald Smith for providing the excellent photograph of the vessel.
Jamie C. Brandon is a graduate student and Charles H. McNutt is a professor of anthropology at the University of Memphis.

References

Brookes, Samuel O., and Cheryl Taylor

Commercial Appeal

Connaway, John, and Samuel O. McGahey
1971 Archaeological investigations at the Boyd site, Tunica County, Mississippi. Mississippi Department of Archives and History, Technical Report Number 1.

Ford, James A., and George I. Quimby

Ford, Janet

Mainfort, Robert C.

Mainfort, Robert C., and J. Shawn Chapman

Morse, Dan F.

Phillips, Philip

Phillips, Philip, James A. Ford, and James B. Griffin

Smith, Gerald P.

Toth, Edwin Alan

Weinstein, Richard A.
Book Reviews


Reviewed by S. Homes Hogue

This edited volume on the skeletal biology of the Great Plains developed out of concerns about the repatriation of Native American skeletal remains and burial artifacts. In the introduction to the text the editors maintain an understanding of the emotions and demands of those who support timely repatriation, but add that gaining a better understanding of the past through the study of skeletal remains and burial artifacts is a "highly valued enterprise." Additionally, the editors believe that research in this area will contribute to a better understanding of Native Americans and that it will benefit them and others as well.

Indeed this research endeavor does provide a greater understanding of Native Americans who occupied the Great Plains region from the Paleo-Indian period until European contact. The collection of papers epitomizes the multidisciplinary approach involving specialists in archaeology, ethnohistory, ethnology, biological anthropology, biology, and others joining together to successfully integrate their specializations with prehistoric and historic Plains research. Findings include information on Plains adaptation, population biology, and cultural and historical relationships. Not only are the problems faced by Native Americans with the onset of European contact addressed, but also considered are the effects of frontier life on early Euro-American pioneers.

The volume is organized into five parts in addition to a concluding sixth part that provides an overview of Plains human skeletal biology by Douglas Ubelaker. Papers included in Part 1 center on the archaeology and mortuary practices of the Plains region. Chapters by Blakelee (Chapter 2) and Brooks (Chapter 3) provide important cultural and ecological background information on the region, including details on chronology, cultural affiliations, and archaeological evidence for warfare, migration, and subsistence patterns, topics specifically addressed in subsequent chapters. Snortland's paper (Chapter 4) considers the mortuary factors associated with a Northern Plains Woodland cemetery, 32-SN-22, comparing them with patterns observed at other sites. This investigation led Snortland to challenge conclusions drawn by earlier interpretations of the Sonota, Arvilla, and Devils Lake-Soursford mortuary complexes based solely on archaeological evidence with no supporting physical anthropological evidence.

Part 2, titled "Demography and Paleopathology," begins with a discussion (Chapter 5) by Donald J. Ortner on methodology in paleopathology. This paper sets the stage for the seven additional chapters included in Part 2, where pathology data is used to better understand the effects of settlement patterns and contact on the health of prehistoric and historic Plains occupants. Three of the studies (Chapters 7, 8, and 11) consider one or more of the diseases affecting prehistoric populations: degenerative diseases, trauma, inflammations, metabolic disorders, and dental pathology. Williams' chapter (Chapter 7) provides an overview of the disease patterns observed in Archaic and Woodland populations in the Northern Plains. Using the five disease categories listed above, Williams demonstrates that the overall health of what he terms "prehistoric" (Archaic and Woodland) populations in the Northern Plains region was better than the health of later village occupants.

In Chapter 8, Schrmer et al. examine endemic treponematoses from skeletal series in prehistoric western Iowa. The researchers combined radiographic and histologic techniques, inflammatory lesion patterns, and radiocarbon dates to provide supporting evidence that endemic treponematoses existed in Iowa as early as 610 BC in small populations whose subsistence economies probably focused on hunting and foraging.

The discussion by Willey and Hofman (Chapter 11) on the presence of interproximal grooves and their correlation with dental disease provides a unique research strategy combining ethnohistory and paleopathology. The authors conclude that by the insertion of materials between the teeth, indicated by the presence of interproximal grooves in the dentition, pain caused by dental disease may have been reduced. They also suggest that a plant, perhaps black sarsaparilla (Echinacea angustifolia), may also have been used to relieve the pain created by periodontal and other dental disease.

The three remaining chapters in Part 2 offer discussions of the health of contact period aboriginal populations. Trimble (Chapter 6) reconstructs a general history of the smallpox epidemic on the Plains using ethnohistorical data. This information was then combined with epidemiological models of disease causation to improve understanding of the processes behind the spread of smallpox and its cultural consequences. Research by Kelley and others (Chapter 9) examines the evidence for respiratory disease among protohistoric and early historic...
Plains Indians. In Chapter 10, the authors describe otitis media, mastoiditis, and infracranial lesions in two subadults, one recovered from an eighteenth-century historic cemetery and the other from a prehistoric farming and hunting-gathering community. This paper by Mann, Owsley, and Reinhard presents decisive interpretations on the variability of disease manifestations on the skeleton.

Biological distance and anthropometry are the central research areas presented in Part 3. Several chapters (14, 18, 19, and 20) focus on specific skeletal morphology and the implications for reconstructing behavior patterns. Others (Chapters 13, 15, 16, and 17) center on identifying variation, both metrical and non-metrical, within and between skeletal series to better understand migration and aggregation patterns of the populations in the region.

Part 4, "Subsistence Strategies and Dietary Assessments," contains three articles where bone chemistry is used in the determination of diet. Tieszen's paper (Chapter 21) provides an overview of the ecology of stable isotopes in the Great Plains. The most important feature is the information concerning environmental influences on carbon and nitrogen isotope levels in humans and other mammals. The application of stable isotope analysis in the reconstruction of the diet provides the research agenda of Chapters 22 and 23. In Chapter 22, Tuross and Fogel present information from the Sully site, a postcontact period site occupied between 1650-1733 in the Northern Plains area. The authors conclude that bison meat was a major component of the diet. The most interesting result of this study was the use of stable isotope analysis as an indicator of breastfeeding. At the Sully site, the data indicates that women breastfed their infants for one year without introducing maize into the diet until about age two. From age two to five, the authors suggest that children were consuming less meat than adults, eating more fruits and vegetable foods instead.

Habicht-Mauhe, Levendosky, and Schoeninger present in Chapter 23 the dietary analysis of the Antelope Creek phase (AD 1200-1450) populations. Little evidence for Antelope Creek subsistence patterns has been recovered, but bison is predominant in the analyzed faunal assemblages. Maize also appears at many sites as the most common plant food, with a combination of wild grains being represented as well. Using trace mineral assays of zinc and strontium in combination with nitrogen and carbon isotope analysis, the authors uncover some interesting patterns. First, there are differences in male and female diets, with females showing more variability in the type of diet than males. Second, it is suggested that 90% of the Antelope Creek diet consisted of bison, maize, prickly pear cactus, and amaranth, with the remaining 10% consisting of a variety of wild plants and game. The results of these analyses support previous archeological interpretations of Antelope Creek phase subsistence as a broad-based economy that integrated hunting, foraging, and horticulture.

Warfare on the Plains is the title of Part 5. This section begins (Chapter 24) with a discussion by Robarchek on the popular anthropological theories (ecological, sociobiological, and sociocultural) traditionally used to explain warfare. Three of the chapters (28, 29, and 30) focus on the skeletal evidence for warfare at particular sites. Evidence for warfare was indicated by the presence of traumatic injuries such as burning, scalping, fractures, embedded projectiles, and cut marks on human skeletal remains.

Several papers took a more regional approach in investigating Plains warfare, combining evidence from several skeletal series located either in the Southern or Northern Plains. Research on the Southern Plains region by Brooks (Chapter 25) demonstrated that warfare was small-scale for the most part, with increased intensity on frontiers. Causes for the conflicts are attributed to both boundary maintenance and trade relationships. In Chapter 27, Owsley also concludes that warfare is typically small-scale in the Northern Plains region, with occasional episodes where entire villages were destroyed. This small-scale pattern of warfare did not change dramatically with European contact.

Olsen and Shipman (Chapter 31) observed cut marks on the Over Collection from the Northern Plains region and also concluded that warfare did not increase in the early historic period. They do, however, maintain that two distinct patterns of bone modification could be distinguished in the skeletal series, the first associated with secondary burial defleshing procedures and the second with conflict-related injuries. Males rather than females appeared to have more traumatic injuries associated with conflict, while no evidence of this kind of injury was observed in the subadult sample.

Skeletal Biology in the Great Plains: Migration, Warfare, Health, and Subsistence provides an important example of what can be achieved by interdisciplinary research. Used collectively, the approaches taken and research questions addressed by these authors in their individual studies make this volume valuable to biological anthropologists, archaeologists, and other researchers working both in the Plains region and elsewhere.

S. Homes Hogue is an assistant professor of anthropology at Mississippi State University.

Reviewed by Marvin T. Smith

Students of the Mississippian and Protohistoric periods in the Southeast have long needed information on sites in the Southeast Missouri area. The Campbell site, well-known to collectors and archaeologists alike, is perhaps the most famous site in the region, but it is not alone. Michael O’Brien and his colleagues, including Mississippian’s own Richard Marshall, have provided a wealth of information that will take many years to digest. Their stated goal is to “present data, not to speculate about social and political organization” (preface and p. 249), and this goal is certainly fulfilled. This is a handsome volume complete with color plates, numerous black and white illustrations, and excellent maps.

O’Brien and Gregory Fox present a detailed discussion on ceramic typology and phase definitions for the region. They find problems with existing ceramic typologies (especially with regard to mixing categories of stylistic attributes and functional features). They also find problems with existing phase definitions, especially in the common use of percentages of Bell Plain vs. Neely’s Ferry (or Mississippian) Plain to place sites into phases. They argue that following many of the criteria now in use, many phases cannot be distinguished. They suggest that the time has come to abandon the phase distinction (p. 93), but they suggest that there are certain ceramic types that are useful for ordering sites in a chronological sequence.

After a detailed discussion of the environmental setting of the sites in Pemiscot County, the focus turns to evidence of early and middle Mississippian period sites. Excavations at the Murphy site and the Kersey site (excavated by Marshall) revealed much data on mortuary practices, but little else. Bundle burials, cremations, and extended burials (perhaps in that chronological order) were recovered. Accompanying ceramic vessels are described.

One of the major chapters of the volume details what is known about the Campbell site, a large Mississippian site that has produced a few Spanish trade goods. This important discussion updates the earlier Missouri Archaeologist site report by Chapman and Anderson (1955) and corrects many problems with the early analysis. For example, O’Brien and Holland are able to show that there is no plaza as originally reported. They further debunk the idea of a shaman burial and the interpretation of separate cemeteries at Campbell. They present a detailed analysis of the Campbell site ceramics and describe European materials found. As a small mistake in an otherwise good analysis, they illustrate two “Clarksdale” bells from western Tennessee that they say are similar to those found at the Campbell site. Unfortunately, the bells that they illustrate are not the Clarksdale type, but later cast metal bells of the late seventeenth or eighteenth centuries. The question remains, what type of bell is present at Campbell, and what does it tell us about occupation into the historic period?

O’Brien and Williams then provide data on nine other late period sites in Pemiscot County. The data from these sites are uneven, and all are less detailed than those from Campbell. Nevertheless, this is an important chapter to help place Campbell in a larger context. One site, Brooks, has also produced early European contact material, reported in this volume for the first time.

Thomas Holland provides a detailed analysis of human skeletal material from the Pemiscot County sites, most of which came from the Campbell site. He finds that males are underrepresented, but as a whole the population is healthy. Cranial deformation is common in adult females but rare in children, suggesting to Holland that females were imported from other areas as wives. The population suffered from numerous dental caries, and there are two cases of a “tuberculosis-like condition.”

In the concluding chapter (and indeed, throughout the book), O’Brien provides his vision of the direction that more research should take. Where did the late prehistoric inhabitants of Pemiscot County come from? How are they related to groups in Northeast Arkansas and Western Tennessee? Can they be identified with ethnohistorically known peoples? Many forms of analysis are proposed which may help answer these questions.

This volume provides an abundance of data, while criticizing many past analyses of Mississippian groups of the Missouri-Arkansas-Tennessee area. While many of the criticisms may be well-founded, O’Brien and his colleagues offer little in the way of new interpretations. We might label this work as controversial. It is a volume that must be read, and will be an important source of data for new syntheses of the late prehistory of the Middle Mississippi Valley.

Marvin T. Smith is an associate professor of Anthropology at Valdosta State University.
Preserving the Swan Lake Canoe
By Jo Miles-Seely

This essay documents the efforts made to preserve the Swan Lake Canoe since its discovery in 1989 and the preparations being made by the Mississippi State Historical Museum to exhibit it.

Introduction

The Swan Lake Canoe is a twenty-five-foot, Mississippian period, platform-style baldcypress dugout canoe. It is 400 to 500 years old and was found in Washington County, Mississippi. It is unusual for several reasons. First, canoes are seldom discovered. Because of the nature of their use, dugouts are isolated finds, and normally there is no surface indication of their presence. Second, wood does not usually preserve in an archaeological context. Third, the tool marks plus the distinctive platform style point to Native American manufacture (see Figure 1). To find an old wood canoe is rare; to find a prehistoric one, in situ and in good condition, is rarer still. Watercraft in a river-oriented society, as the Mississippian culture was, must have been plentiful at one time. Yet this canoe is one of the few examples that have survived (see McGahery 1984 for an inventory of some previously-known Mississippi canoes and a bibliography).

The canoe belongs to the U.S. Fish & Wildlife Service (USFWS). In February of 1993, the Southeast Regional Office of the USFWS agreed to loan the craft to the Mississippi State Historical Museum for 50 years. The museum is currently redoing exhibits that include the Mississippian period. The staff at the Mississippi State Historical Museum feel fortunate to have the opportunity to exhibit and interpret this unique artifact to the public.

Cultural Setting

The canoe was found on the bank of Steele Bayou where it runs along the east edge of Swan Lake. Swan Lake is a relic meander loop of the Mississippi River that is now 14-15 kilometers east of the present-day channel. The first human activity dates to around AD 200, about the time that the bend was being cut off as an active channel. The area was occupied from the late Marksville period (AD 200-400) through the Coles Creek period (AD 800-1200). Human occupation of the area diminished after AD 1200 and saw minor use between 1400 and 1700. During this time there was a decline in highly centralized centers, and the Swan Lake area was probably being exploited by smaller local centers such as the nearby Law site. It is during this period of minimal human activity that the canoe was made and used.

Figure 1. An engraving by Theodore de Bry of Southeastern canoe-building practice in the sixteenth century. This engraving will be used along with the canoe in the forthcoming exhibit.

Discovery and Recovery

The canoe was found in August of 1989 by the U.S. Army Corps of Engineers (COE) during dredging operations in Steele Bayou. The site is on Yazoo National Wildlife Refuge (YNWR) land in Washington County, Mississippi. The Vicksburg District of the COE entered into an agreement with Coastal Environments, Inc. of Baton Rouge, Louisiana to recover and remove the canoe and report the results. The goal of the excavation was a rapid, controlled recovery to prevent damage from exposure and vandalism. With the assistance of numerous interested volunteers the excavation took place in five days during early September of 1989. The recovery of the canoe, from which this description is taken, is fully described in Richard Fuller’s report (Fuller 1992).
Once the canoe had been excavated it had to be moved to a safe place where it could undergo further analysis and preservation. This had to be done without causing further damage to the large but fragile artifact. The interior was cross-braced to stabilize the sides and each platform was braced to keep the cracks from getting worse. A trench was dug so the canoe could be floated into the bayou. Guided by a boat manned by YNWR personnel, it was taken to a landing where it was loaded onto a flatbed truck and slowly driven to refuge headquarters a quarter-mile away. It was submerged in a pond to keep it from drying out until the treatment phase could be started.

Condition

It is remarkable that the canoe was preserved in the first place. The reason that it did not deteriorate is because it was quickly buried in an anaerobic organic muck shortly after abandonment. The canoe is complete and in pretty good condition, the major damage being large cracks in both platforms. The cracks occurred either during manufacture or use as attested by the mend holes on either side of each split. Fuller thinks that the crack in the bow, which extends into the body, made the vessel less than watertight and was the reason for its abandonment. There are also two deep cracks, one on either side of the bow platform, that are cause for concern. The sides have expanded due to soil pressure from being buried, and the canoe now has some mold and insect damage.

Treatment

Randy Breland, deputy project leader at the YNWR, has overseen the preservation of the boat since it was excavated. He researched treatment options and submitted a proposal to the U.S. Fish and Wildlife Service Southeastern Regional Office. Based on his research and consultation with others, the canoe was treated with 600 weight polyethylene glycol (PEG). The PEG penetrates cell structure and replaces the cellulose lost during decomposition. In March, 1990, it was moved from the pond to a metal vat specially constructed to hold it while undergoing treatment.

For four years the canoe lay in the PEG bath, from March 1990 until May 1994. During that time more chemical was periodically added to gradually increase the solution from 20 percent to 80 percent. YNWR staff checked the canoe on a regular basis, but fortunately nothing eventful happened. Meanwhile, at the urging of Chief Archaeologist Sam McGahey, its fate was being negotiated between the director of the Mississippi State Historical Museum and the director of the USFWS regional office.

Drying

Once the canoe was saturated with PEG, it needed to be allowed to dry without getting wet again. If the canoe lay in water the chemical would migrate out of the canoe, undoing four years of treatment. There was no indoor space available at the YNWR headquarters, so the most viable solution was to turn the vat into a drying chamber. Before the vat was drained, several inches of styrofoam were floated under the boat. This would allow air to circulate under and around the canoe. Once the vat was drained a square was cut out of each end to increase air circulation. Screening was placed over the holes to prevent animals from getting inside. The lids could be removed on sunny days and replaced when needed to prevent moisture from getting into the chamber.

The general rule of thumb for drying PEG-saturated wood is one year per inch for hardwood. Cypress is a softwood, so the drying time could be shortened. The canoe is two inches thick at its thickest point, so it needed to dry for eighteen months to two years. It had been out of the bath for eighteen months before it was moved to Jackson, Mississippi. It is now indoors, where it can continue the drying process.

Planning

The Mississippi State Historical Museum has expressed interest in the canoe and has been involved in the treatment process. The goal is to move the canoe to the museum as soon as it is ready. The process of moving the canoe will be a joint effort between the museum and the YNWR.

Packing and Moving

With the guidance of the conservators, several plans were discussed and discarded. Options for moving included using sandbags to support the canoe, building a frame and sling contraption, or using the vat as a crate. We also had to decide what kind of truck to use to transport the dugout and how to get it onto the truck. Options for moving it onto the truck included using a sling to hand carry it or using some mechanical means. Route and speed also had to be worked out to provide as smooth a ride as possible. And finally, we had to figure out how to get the canoe...
off the truck and into its new temporary home. Not an easy task in an enclosed, restricted space.

The vat was transformed for a third time into a packing crate so the canoe could be transported in it to Jackson. It provided protection during the trip and eliminated the need to handle the canoe directly. The sides of the canoe bend easily, possibly due to the loss of wood from worm damage, so it is important to handle the canoe as little as possible.

The goal in packing was, of course, to enable the boat to be moved ninety miles without any damage. We needed to keep the boat stable and to provide for shock absorption (see Figures 2 and 3). The styrofoam remained underneath the canoe, but additional ethafoam pieces were cut to fit and then slid into place between the boat and the vat along both sides. The blocks were spaced approximately 10 inches apart. Pieces of soft foam were cut to the right length and slid into place between the blocks to act as spacers. Pieces of soft foam were packed around the two cracks on either side of the bow platform. An ethafoam collar was cut for both the bow and the stem platforms. Each collar had a slit in it that the platform fit through. The collars were to give support to the platforms during transportation and to keep the cracks from getting any wider. Two wood structures padded with ethafoam were made to fit the interior of

the canoe to keep the sides from collapsing should any pressure be exerted from the exterior. A board was nailed over the screen on the stem end of the vat.

Figure 2. Andy Zawacki (ATR) and Cavett Taff (MSHM) pack the canoe to be transported from Yazoo National Wildlife Refuge to the State Historical Museum in Jackson.

Figure 3. Interior and exterior packing of the Swan Lake canoe.
Thanks to Robert Heath, a Mississippi Archaeological Association member who works for the Right-of-Way Division, Mississippi Department of Transportation (MDOT) became involved. Dr. Robert Robinson, director of the department, donated the equipment and staff time that was needed to get the canoe safely to Jackson from the Hollandale area. A crew went up to the YNWR to look over the situation and, along with refuge staff, made recommendations on how to lift and transport the canoe. They also came to the Museum's storage facility to make equipment recommendations for unloading. Another crew actually moved the canoe. They did an excellent job.

The packed canoe had to be moved to a place where it could be loaded onto a flatbed truck. The lids were taken off the vat to prevent damage to them during loading. Ethafoam was laid over the boat to protect it while chains were being attached to the vat. Five I-beams that run the width of the vat had been welded to the bottom to keep it off the ground, so a chain was wrapped around the vat on the outside of the second I-beam from the end. The other end of the chain was wrapped around the outer two forks of a frontend loader bucket. The same thing was done on the other end, so that the vat could be lifted by two chains with the frontend loader. The bucket was slowly raised to see if the vat would remain rigid, and it did. The vat was lowered and the chains were adjusted to level it while it was being moved.

The flatbed was backed up onto the gravel road by the equipment shed. Five pieces of dense fiberboard, each topped by a piece of ethafoam, were placed on the flatbed approximately where the I-beams would be used. The frontend loader lifted the vat onto the flatbed and the board and foam were positioned under the beams. The canoe was placed in the center of the width of the truck. A strap was run the length of the canoe and both ends attached to the truck. The lids were put back on and a strap went over each one.

MDOT provided two radio trucks, two law enforcement cars, and the flatbed truck. The lead radio truck reported road conditions back to the rest of the convoy. Behind the lead truck was a law enforcement car followed by the flatbed truck (see Figure 4). The flatbed was followed by the other law enforcement car and finally the second radio truck. Museum staff members followed along behind in the Department van.

The route was west on Highway 436 then south on Highway 61. At Anguilla we headed west on Highway 14 until we came to Highway 49. We took this highway south to Jackson, taking the truck route around Yazoo City to avoid the steep hill out of the Delta. Interstate 220 north was used to avoid congestion, stoplights, and rough roads in Jackson. The convoy came into town on Interstate 55 south. The speed never exceeded 38 miles per hour and the trip back to Jackson took 4 hours to drive. High-

Figure 4. The Swan Lake canoe was transported to Jackson on this flatbed truck provided by the Mississippi Department of Transportation.

way 61 was in the worst shape, and we only went 20 miles per hour on that section of the trip. The other highways were in good shape, but we had to slow down to go over bridges.

Two stops were made to check the canoe en route. The first stop was on Highway 436 just before we reached Highway 61. We checked the canoe at the beginning of the trip to make sure it was adequately packed and riding safely. The second stop was just before Yazoo City on the median where the truck route leaves Highway 49. The collar around the bow platform had shifted. The collar was moved back into place and more soft foam was packed between the collar and the end of the vat.

Jack Laws, owner of Laws Construction Company, lent us a crane truck and two operators. They were waiting at the storage building when the canoe arrived. A strap was put around either end of the vat and attached to the crane, which lifted the vat from the flatbed to the crane truck. The vat was longer than the crane truck so one end had to be tied onto the truck. The truck then drove into the building and the vat was lowered to the floor. The canoe now rests safely, still in the vat, in a building near the State Historical Museum in Jackson.
Exhibition

There are still several steps that have to be worked out. We have to determine what steps need to be taken, if any, to finish preserving the canoe (see Figure 5). This may include superficial application of additional PEG. Once that is finished, and the exhibit fabrication has progressed to a certain point, we will move the canoe to the Museum. The same options exist that were possible for moving the canoe at the YNWR. We can hand carry it with a sling device, build a sling and frame that will roll, or use the same heavy equipment to get it out of the building as we did in getting it in. However, every time it is suspended in the air it is vulnerable. We will probably construct a special sling and hand carry it, with resting places set up at several places along the route. We still need to build a special mount for the canoe and to plan and implement a controlled environment for it.

All of this preparation is required so that the canoe will be preserved to be seen by Mississippians and visitors to the state. Thanks to the generosity of the U.S. Fish and Wildlife Service and to the assistance of Andrew Zawacki, Kate Singley, the Mississippi Department of Transportation, and Laws Construction Company, the canoe will be featured in a new diorama depicting Native American life in the Mississippi Delta not long before European contact.

Summary

From the beginning the preservation of the Swan Lake Canoe has been a cooperative project. Numerous knowledgeable people have taken an interest in the canoe and have contributed time and advice regarding its preservation. The Mississippi State Historical Museum is fortunate to be a temporary repository for the canoe and we are doing our part to preserve and interpret this fascinating artifact to the public.

References

Fuller, Richard S.

McGahey, Samuel O.