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Textile Production and Use as Revealed in Fabric Impressed Pottery from Mound Bottom (40CH8), Tennessee

Jenna Tedrick Kuttruff and Carl Kuttruff

This research is based on the analysis of fabric impressed pottery sherds recovered during archaeological excavations at the Middle Mississippian period site of Mound Bottom, Tennessee, a regionally important civic-ceremonial and habitation center. Textile attributes were considered as evidence of the techniques used by their makers to achieve particular characteristics of utility in the finished textile. One use of these textiles was in the manufacturing process of large, utilitarian pottery vessels, and desirable fabric characteristics would include high levels of flexibility, strength, and durability. Use of an ordinal index of textile production complexity indicated differences in Mound Bottom textile complexity within different fabric structures and between excavation areas of the site. On average, textiles from Mound Bottom showed less variety and were less complex than textiles impressed in pottery from Wickliffe, Kentucky, and organic textiles recovered from Spiro, Oklahoma, and Ozark bluff shelters in Arkansas and Missouri. Although only a portion of the total Mississippian textile complex is represented, impressions on pottery contribute significantly to the present knowledge of prehistoric textiles of the southeastern United States.

Introduction

Whereas pottery is often considered an archaeologist’s delight because of its frequent breakage and disposal along with its generally excellent preservation in the archaeological record, textiles are not. In many prehistoric cultures, including the Mississippian period that spanned the time from approximately AD 900-1600, textiles and textile products may have been as common as pottery, if not more so. However, textile use, wear, and discard patterns differ from those of ceramics, and their survival is certainly less typical. In spite of such biases, it is important that archaeological textile remains be systematically studied so that complementary cultural information can be obtained from textile evidence to enrich our knowledge of the
material culture of populations known only through the archaeological record.

This paper presents information on the production and use of textiles by Mississippian people who lived at the Mound Bottom site in Tennessee. As at the majority of archaeological sites in the eastern United States, no organic textile remains have been recovered; therefore, impressions on pottery are the primary source of textile information available from Mound Bottom. The study is based on the analysis of fabric impressions from all of the fabric impressed sherds recovered during the 1974 and 1975 excavation seasons. The textile impressions were examined to determine certain textile attributes related to yarn and fabric structure, textile complexity, and evidence of usage of the textiles as tools in the manufacture of fabric impressed pottery.

Figure 1. Mound Bottom site (40CH8) (adapted from map by Fisher 1926; Tennessee State Archives, Map CH1370). Shaded area is shown in Figure 2.

Mound Bottom Site Description

Mound Bottom (40CH8) is a large Mississippian period site located in Middle Tennessee near the western edge of the Nashville Basin, approximately 33 km west of Nashville (Figures 1 and 2). In Cheatham County, it is situated in a horseshoe bend of the Harpeth River about 17 km above its confluence with the Cumberland River. The site consists of a large civic-ceremonial and habitation center that covers an area of approximately 36.4 hectares. Mound A, a large platform mound, is 10.5 meters high and covers approximately 0.63 hectares at its base. A rectangular plaza lies to the east of this large mound and is surrounded by ten lesser platform mounds. One notable low mound, Mound L, is situated near the center of the plaza, and two small mounds lie to the east of the plaza area. Habitation areas are located to the east, south, and west of the mound group. Artifact cross-date comparisons and a series of nine radiocarbon dates from the site indicate a range of occupation from ca. AD 900 to 1250 (Kuttruff 1979; O'Brien 1977).

Figure 2. Mound Bottom site (40CH8) showing locations of mounds and excavation units. Area 1 is a possible high-status living area and Area 2 is a general village area (adapted from O'Brien 1977: Figure 1).
The earliest description of this site was made in 1823 by Haywood (1973); other early descriptions and reports include Jones (1876), Putnam (1882), and Thurston (1897). The first systematic archaeology done in the area was sponsored by the Smithsonian Institution (Myer 1921, 1922, 1923). This was followed by work by Cox (1926), then State Archaeologist for Tennessee, and later by the University of Tennessee in conjunction with the WPA, but this latter work has not been published. In 1973 the Tennessee Department of Conservation purchased the Mound Bottom site, and excavations were conducted in 1974 and 1975 (Kuttruff 1979; O’Brien 1977).

**Mississippian Period Fabric Impressed Pottery**

Fabric impressed pans are often a component of the Mississippian period ceramic complex. These pan forms are commonly known as salt pans, a term long established in the archaeological literature and derived from the recognized association of this type of ceramic ware with saline springs (e.g., Brown 1980:20; Phillips 1970:95). Salt pans are generally shell tempered, have a common circular to oval bowl shape, and vary in size, but are often much larger than other classes of Mississippian period plates or bowls. The exterior surfaces of salt pans typically exhibit fabric impressions. Less common are plain, roughened, or grass and leaf impressed surfaces. Decorated salt pans are also uncommon, but reported decorations include punctuations, grooves on flattened lips, and red-slipped or painted vessels (Brown 1980:24-25).

Kimmswick Fabric Impressed as defined by Williams (1954:219-220) is one classification for this basic pottery type, and Phillips (1970:95) suggested that all fabric impressed salt pan sherds from the Southeast be classified as such. However, in his synthetic study “Salt and the Eastern North American Indians,” Brown (1980:20) listed some 14 different formal type names for ceramic salt pans. Brown concluded that there are only two basic types of salt pans: one is adorned with textile impressions on the exterior and sometimes on the interior surfaces, and the other has a smooth or merely roughened exterior surface. These two pan types are often found at the same site, as was the case at Mound Bottom.

Fabric impressed salt pans are most commonly associated with the core area of the Mississippian period populations and are in fact concentrated in the middle Mississippi River drainage and tributary drainages. Their distribution and correlation with the distribution of known saline springs in the Midwest and upper Southeast has also been discussed in detail by Brown (1980:11-19; 25-27, Figures 3 and 5). Generally, the heaviest concentrations of salt pan sherds are found in proximity to salines or salt springs, but they are also found in other contexts at considerable distances from salt springs. Mound Bottom is an example of this lack of association with salines.

Whether textiles were used in the production of salt pan vessels merely as a means of decoration or played a more functional role in the production process is not known with certainty (e.g., Brown 1980:30-31; Holmes 1896:45, 1903:67-73; Linton 1944:373). It is generally accepted, however, that salt pans were constructed using some form of mold, and most researchers agree that the fabrics would have facilitated the removal of partially dried vessels from the molds. They may also have supported the vessels during subsequent shaping and finishing processes and/or helped to prevent rapid drying and the consequent cracking of the clay.

**Mound Bottom Salt Pan Pottery**

The fabric impressed salt pan sherds considered in this paper were a minority ware in the total ceramic collection from 1974 and 1975 field work. The 510 sherds from surface collections and excavations constitute less than 3% of the total ceramic inventory. Excavations at Mound Bottom have demonstrated the association of salt pan sherds with habitation areas that included domestic structures and associated midden deposits. Although the civic-ceremonial areas of the site were not as extensively sampled, all of the salt pan sherds that were recovered from Mound Bottom came from habitation areas of the site.

The pan forms from the Mound Bottom site were classified as either Kimmswick Plain or Kimmswick Fabric Impressed. In conformance to the formal type descriptions, they all have a coarse shell temper and a contorted and porous texture with either plain or fabric impressed surface finishes. A minimum of seven vessels of Kimmswick Plain was identified as compared with a minimum of 62 Kimmswick Fabric Impressed vessels (O’Brien 1977:374-378).

Vessel shapes consist of large shallow pans that were low, wide vessels, generally over 30 cm in diameter and ranging upward to greater than 50 cm in diameter. Measured wall angles of the pans average 60 to 70 degrees from vertical, but may approach nearly 80 degrees. In general, the shapes of the pans varied from circular to oval and were quite irregular and uneven. Two types of rim forms were identified. One is a simple, direct rim that was often only rounded. Sherds from 17 vessels with this rim form were identified. Rim diameters measured for 10 of the 17 vessels range from 30 to 52 cm,
with a mean of 43 cm. A second rim form has a slightly flaring or thickened rim. This portion of the sample includes sherd from at least 45 vessels, and estimated rim diameters range from 28 to 50 cm, with a mean of 41 cm. Although occasionally noted at other sites, there were no sherd in this collection that had fabric impressions on their interior surfaces (O’Brien 1977:374-378).

Mound Bottom Textile Analysis

Of the 510 fabric impressed sherd examined, only 354 (approximately 69%) had impressions clear enough to be analyzed. Positive casts of the negative impressions in the sherd were made using modeling clay as an aid in the analysis. Both the casts and the sherd were examined and measurements were taken under a low power binocular microscope.

Textile manufacture requires at least three levels of decision making. Each level affects the others and ultimately affects the resulting fabric characteristics, which in turn determine performance in various end uses. These three decision making levels are: 1) fiber selection and processing; 2) yarn construction or structure; and 3) fabric construction or structure.

Fiber

Textile impressions on pottery do not provide a good source of information about fiber selection and processing. The fibers represented in the Mound Bottom sample are most probably vegetal or cellulosic as opposed to animal or protein. This supposition is based on information from similar organic Mississippian period textile remains rather than on direct evidence found in the negative impressions or the positive cast reconstructions, but the use of animal hair fibers and feathers has been documented in Mississippian textiles (e.g., Holmes 1896; King and Gardner 1981; Kuttruff 1988; Sibley et al. 1985; Willoughby 1952). These protein fibers are frequently used in combination with vegetal fibers.

Either soft (bast) fibers, which are elongated strands from the stem structure or inner bark of plants, or hard (leaf) fibers of plants, which are comparatively stiff elongated strands from leaves and leaf stems, may have been utilized (Emery 1966:5; Hurley 1979:3-4; Scholtz 1975:10). The use of bast fibers would produce a more flexible textile than the use of leaf fibers. Evidence of extensive fiber shredding and/or separation, such as protruding fiber ends, was not indicated in the impressions or in the positive casts, but it may not be possible to see evidence on this scale due to the coarseness of the paste of the pottery and the subsequent use and wear of the vessel. The fibers observed in the positive casts looked very similar across the sample.

Table 1. Summary of Mound Bottom yarn attributes by fabric structure category.

<table>
<thead>
<tr>
<th>Yarn structure category</th>
<th>plain</th>
<th>alt-pr</th>
<th>compact</th>
<th>complex</th>
<th>indet</th>
<th>total</th>
</tr>
</thead>
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<td>Combined not spun</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>76</td>
<td>4</td>
<td>26</td>
<td>33</td>
<td>477</td>
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<tr>
<td>Plied spun</td>
<td>35</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>51</td>
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<tr>
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<td>87</td>
<td>5</td>
<td>26</td>
<td>37</td>
<td>529</td>
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Diameter of warp elements

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<th>2-3.9 mm</th>
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<td></td>
<td>70</td>
<td>6</td>
<td>0</td>
<td>4</td>
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<tr>
<td></td>
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<td>0</td>
<td>0</td>
<td>4</td>
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<td>0</td>
<td>4</td>
</tr>
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<td></td>
<td>13</td>
<td>6</td>
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<td>5</td>
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<tr>
<td></td>
<td>225</td>
<td>59</td>
<td>5</td>
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Diameter of weft elements

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<td>0</td>
<td>4</td>
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<td>58</td>
<td>5</td>
<td>18</td>
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<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
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<tr>
<td></td>
<td>225</td>
<td>59</td>
<td>5</td>
<td>3</td>
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Angle of ply twist

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<th>Tight (26-45 degrees)</th>
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<td></td>
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<tr>
<td></td>
<td>Total identifiable</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>3</td>
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</tbody>
</table>

Yarn

Yarns are the elements, or strands of fibers, used in the production of a fabric. A summary of yarn attributes derived from the fabric impressions is given in Table 1. Following Emery (1966:9), three classifications of yarn structure were observed. These were all composed of fibers of limited length and include combined not spun, single spun, and plied spun yarns (Figure 3a). Only one example of a combined not spun fabric element was present in the sample (Figure 4a). The passive element of this spaced twined fabric consisted of multiple strands of fibrous material used as a unit, but the strands were not twisted together. This example was one of the coarser fabrics represented in the total sample, with the passive combined element measuring 4.0 mm in diameter and the active single spun element measuring...
Figure 3. Yarn characteristics: a) yarn structure: combined not spun (left), single spun (center), plied spun (right); b) direction of twist: S (left) and Z (right); c) angle of twist (after Scholtz 1975).

3.0 mm. Because they were not spun, the fibers of the combined element were free to spread out or open up and thus there were no spaces between the inactive elements. Other spaced twined fabrics with spun singles or plies exhibited at least a small opening or space between passive elements.

The most commonly occurring yarn structure is single spun (Figure 4b). Spinning is the process of drawing out and twisting together fibers of limited length into a continuous strand. Length, size, strength, and

Figure 4. Examples of yarn structures with sherd on the left and cast on the right: a) combined not spun; b) single spun; c) plied spun.

texture of the yarn can be controlled during the spinning process. A single yarn is the simplest continuous assemblage of spun fibers that is suitable for fabric construction. These yarns are present in the Mound Bottom sample both as active and passive elements. They range in diameter from 1.0 to 3.0 mm and are present in 97%, or all but 12 of the identifiable fabrics. Of the active twining elements, 97% are spun singles, and 87% of the passive elements are of this type.

Spun plied yarns are formed by twisting together two or more single spun yarns. All of the examples identified appear to be 2-ply, that is,
composed of two single yarns twisted together (Figures 3a, 4c). These plied yarns range in diameter from 1.5 to 4.0 mm and are present both as active (8) and as passive (44) elements of fabrics. They are present in 13% of the identifiable fabric structures.

Both the direction and the angle of the ply twist were recorded (Figure 3b, c). In all instances the yarns were S-plied or twisted in such a fashion as to produce a \( (\) \) slant when held in the vertical position (see Emery 1966; Hurley 1979; or Scholtz 1975). The angle of twist ranges from 15 to 35 degrees from the vertical axis of the yarn. Emery (1966:12) designated a yarn of “medium” twist as having an angle between 10 and 25 degrees and a “tight” twist between 25 and 45 degrees. Using these designations, 41% of the plied passive elements have a medium twist and 59% have a tight twist. Among the plied active elements, 88% have a medium twist and 12% have a tight twist.

Fabric

The most common form of fabric structure in the sample is twining. In a twined fabric at least two active elements spiral or turn about each other and enclose the opposite set of passive elements. According to Emery (1966:196), twined fabrics can vary from one another in the following ways: 1) the direction of the twining-twist; 2) the number and succession of non-twining elements; 3) the amount or degree of twining-twist between passages of non-twining elements; and 4) the number of components of each twining group. Another variation in twined fabrics is whether the active or twining elements are in the warp (lengthwise) or weft (crosswise) direction of the fabric.

Because the textile evidence preserved as negative impressions on pottery sherds is fragmentary, it is usually impossible to determine the direction of the warp and the weft elements of the fabric structure. In spaced twining, the weft is generally assumed to be the active or twining set of elements. This is based on Emery's statement that warp twining is consistently compact or close-twined and weft twining can be either compact or spaced. Examples of complete or nearly complete Mississippian period twined textiles seem to support this assumption (e.g., Kuttruff 1988; Scholtz 1975). However, it cannot be taken as a conclusive statement.

Of the total of 510 sherds examined, fabric structures could be identified for 346 or 68%. Three basic twined fabric structures are identifiable in the Mound Bottom sample using Emery's classification (Figure 5). These are: 1) spaced 2-strand S-twist weft twining; 2) spaced 2-strand S-twist alternate-pair weft twining; and 3) possibly compact 2-strand twining. A fourth category was also used to include complex structures or combinations of two or more fabric structures.

Figure 5. Fabric structures: a) spaced 2-strand S-twist twining; b) spaced 2-strand S-twist alternate-pair twining; c) compact 2-strand S-twist twining (after Scholtz 1975).

Spaced 2-strand S-twist weft twining, or plain twining, (Figures 5a, 6a) is present on 266 (77%) of the identifiable sherds. An S-twining twist slants down to the right when the active elements are held in the vertical direction, but slants down to the left when the passive elements are held in the vertical position. In every case where the direction of the twining twist was discernable it is an S-twist. The spacing between twining rows varies from less than 3 to more than 20 mm.
Spaced 2-strand S-twist alternate-pair weft twining (Figures 5b, 6b), the second most frequently occurring fabric structure, constitutes 17% of the identifiable sample with 59 cases. In this structure, the twining elements enclose the warp or passive units in pairs and repeatedly form new pairs by splitting those in the previous row. This results in a zigzagging of the deflected warps.

The third category of possibly compact 2-strand twining (Figures 5c, 6c) is questionable because of the difficulty in determining the true fabric structure due to the closeness of the yarns. Impressions made by compact warp or weft twining and warp- or weft-faced plain weave would be almost identical. Without the actual fabric, a positive identification is not typically possible. Drooker (1989, 1990, 1992) refers to this category as “weft-faced” rather than “compact.” There are only five examples (1%) in this category. The distance between centers of the obscured elements ranges from 7 to 13 mm.

There are 16 examples in the fourth category of complex structures or combinations of two or more fabric structures (Figure 7). They constitute 5% of the identifiable sample. This category includes combinations of compact and spaced twining, spaced and alternate pair twining, twining and 1/1 interlacing, twining and irregular interlacing, and areas of grouped yarns. Most of the pottery sherds are too small to give a clear indication of overall patterning that would result from the combinations of fabric structures. One example of spaced and alternate-pair twining forms an obvious diagonal design line in the fabric structure (Figure 7b). The combination of compact and spaced twining (Figure 7a) forms horizontal design lines.

When the textile structures present in the Mound Bottom pottery impressions are compared with those reported on Mississippian pottery from other sites (see Drooker 1990: Table 2),¹ undecorated plain, alternate-pair, and compact (weft-faced) twining are the most commonly reported fabric structures. Decorated twining such as those included in the Mound Bottom combination or complex category have been reported at 13 of the 35 other sites. Missing from Mound Bottom are examples of plain and twill interlacing and examples of knotted and looped netting. Interlacing has been reported at 12 sites, while netting has been reported at only 5 sites.

¹ Mississippian sites included in this comparison are Angel, Bat Creek, Beckum Village, Ft. Loudon, Guntersville Basin, Herrell, Hiwassee Island, Jewell, Kimmswick, Kincaid, Livermore, M1/8, M1/14, Martin Farm, Morris, Mound Bottom, Norris 5, 9, 10, 11 and 17, Obion, Ocmealge, Paradise, Saline River, Salt Spring, Stone, Tinsley Hill, Tolu, Toqua, Tr/10, Wheeler Li/36 and Ma/4, Wickliffe, and Williams.
Textile Production Complexity

In a study by Kuttruff (1988, 1989, 1991), a systematic measure for determining production complexity of textiles was developed and applied to organic remains of prehistoric textiles from the southeastern United States. The purpose of this textile production-complexity index (TPCI) was to formalize and make explicit the ranking process used to differentiate the complexity and production costs of pre-industrial textiles. The development of the textile index was based on the “production step measure” for prehistoric ceramic manufacture developed by Feinman (1980, 1985; Feinman et al. 1981). That measure was designed for use with fragmentary pieces of pottery and was developed on the premise that pottery types differ as to their complexity and the amount of time and labor involved in their production.

Table 2. Summary of Spiro textile production complexity by fabric structure category.

<table>
<thead>
<tr>
<th></th>
<th>min.</th>
<th>mean</th>
<th>max.</th>
<th>std. dev.</th>
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<td>13.86</td>
<td>14.00</td>
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<td>Knotting (3 textiles)</td>
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<td>Fabric count category</td>
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<td>10.00</td>
<td>12.00</td>
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Table 3. Summary of Ozark bluff shelter textile production complexity by fabric structure category.

<table>
<thead>
<tr>
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<th>no. cases</th>
</tr>
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<tr>
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<td>4.00</td>
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<td>16</td>
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<td>7.00</td>
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<tr>
<td>Index No. 2</td>
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<td>8.00</td>
<td>10.00</td>
<td>1.16</td>
<td>7</td>
</tr>
<tr>
<td>Combination/Complex (1 textile)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>0.00</td>
<td>1</td>
</tr>
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<td>5.30</td>
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<td>8.30</td>
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</table>

Textiles also differ in their complexity and the amount of time and labor involved in their production. Because it is not possible to determine the exact amount of time or energy costs involved in the production of specific prehistoric textiles, the TPCI was devised as a comparative, ordinarily scaled index of the number of decisions and amount of labor involved in the production of a given textile. The index as originally developed takes into consideration fibers, yarns, coloration, patterning, and scale. The assigned values for each textile are totaled to obtain a numerical index of complexity, with higher values indicating greater complexity and increased time and labor costs involved in manufacture.

Table 4. Summary of Mound Bottom textile production complexity by fabric structure category.

<table>
<thead>
<tr>
<th></th>
<th>min.</th>
<th>mean</th>
<th>max.</th>
<th>std. dev.</th>
<th>no. cases</th>
</tr>
</thead>
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<tr>
<td>Total sample (510 sherds)</td>
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</tr>
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<td>354</td>
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<td>4.27</td>
<td>7.00</td>
<td>0.53</td>
<td>354</td>
</tr>
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</tr>
<tr>
<td>Plain twining (266 sherds)</td>
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<td>4.00</td>
<td>0.47</td>
<td>263</td>
</tr>
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<td>263</td>
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<td>8.00</td>
<td>0.62</td>
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<tr>
<td>Alternate-pair twining (59 sherds)</td>
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</tr>
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<td>Index No. 3</td>
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<td>7.50</td>
<td>0.41</td>
<td>11</td>
</tr>
<tr>
<td>Compact (5 sherds)</td>
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<td>0.45</td>
<td>5</td>
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<td>5</td>
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<td>4.00</td>
<td>0.45</td>
<td>5</td>
</tr>
<tr>
<td>Index No. 3</td>
<td>6.50</td>
<td>7.32</td>
<td>7.50</td>
<td>0.41</td>
<td>11</td>
</tr>
<tr>
<td>Combination/Complex (16 sherds)</td>
<td>2.00</td>
<td>2.15</td>
<td>4.00</td>
<td>0.52</td>
<td>15</td>
</tr>
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<td>7.00</td>
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<td>15</td>
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<tr>
<td>Index No. 3</td>
<td>8.30</td>
<td>8.30</td>
<td>8.30</td>
<td>0.00</td>
<td>0</td>
</tr>
</tbody>
</table>

Drooker (1989, 1990, 1992) incorporated the use of modified versions of the TPCI in her study of textile impressions on 1,666 pottery sherds from the Wickliffe Mounds site in Kentucky, a Mississippian period site dating from AD 1000 to 1300. It was not possible for Drooker to measure all of the original index components on all fabric impressions, so three different indices were used. Modification No. 1 included fabric count (scaled to an ordinal number) plus the number of textile structures present; No. 2 added the average yarn ply number; and No. 3 added the amount of warp yarn twist (by category).

The TPCI can be used in making both intra-site and inter-site comparisons of prehistoric textile remains. The modified indices used in Drooker's study were applied to the Mound Bottom textile data so
that comparisons could be made with the Wickliffe data. Data obtained from the analysis of Mississippian period organic textile remains from Craig Mound at the Spiro site and Ozark bluff shelter burials (Kuttruff 1988) were used to calculate modified TPCI values so that they could be compared with the data obtained from fabric impressed pottery. Summaries by fabric structure categories are given in Table 2 for Spiro textiles and Table 3 for Ozark textiles. To look for similarities and differences within the Mound Bottom site itself, textile complexity values were calculated and compared by fabric structure category and by provenience.

A summary of Mound Bottom TPCI values and fabric count categories by fabric structure are shown in Table 4. The low number of cases in Index No. 3 makes its use less than desirable, and Drooker (1989:202) has demonstrated that the more components included in the index calculation, the more refined are the possibilities of differentiation among the textiles studied. Therefore, Index No. 2 is used in the following comparisons.

The mean complexity value for the total Mound Bottom sample is 4.27, which is lower than the 4.63 value from Wickliffe (Drooker 1989: 150), 4.79 from the Ozarks, and 7.59 from Spiro. When compared by fabric structure category, there are differences within the Mound Bottom sample. As would be expected, the category with combined fabric structures has the highest mean TPCI value (5.13). The means for other categories in order of decreasing complexity are: alternate-pair twining 4.50, plain twining 4.18, and compact 3.30. These differences vary somewhat from Drooker's (1989:205) findings in her Wickliffe textile analysis, but she did not separate those impressions with more than one fabric structure, so those would have been included within the other categories. Also, her fabric counts are higher for compact or weft-faced textiles than those from Mound Bottom. Drooker's mean values by fabric category using index No. 2 are: alternate-pair twining 4.96, compact 4.65, plain twining 4.44, and knotting 4.00. Knotting is not present in the Mound Bottom sample. Mean index No. 2 values for Spiro textiles by fabric category are: complex fabrics 10.86, compact 9.17, plain twining 7.82, knotting 7.67, and alternate-pair twining 6.89. These values are higher than those from the Ozarks (alternate-pair twining 6.67, plain twining 5.33, compact fabrics 5.30, compact 5.14) and from pottery impressions from either Mound Bottom or Wickliffe.

Two of the excavation areas at Mound Bottom have been interpreted by O'Brien (1977:464-468) as a possible high-status living area (Area 1) and a general village area (Area 2) (see Figure 2). Table 5 gives a summary of the textile production-complexity index values for the total sample, high-status area, village area, and all areas except the high-status area. Unfortunately, the sample sizes are quite different, with Area 1 having 295 cases and Area 2 having only 22 cases. Even when the sherd counts from the village area are added to the sherd counts from all other areas of the site there are only 59 cases. Using Index No. 2, the village area had the highest TPCI value of 4.41 and the high status area had a value of 4.28.

<table>
<thead>
<tr>
<th></th>
<th>min.</th>
<th>mean</th>
<th>max.</th>
<th>std. dev.</th>
<th>no. cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td>3.00</td>
<td>4.27</td>
<td>7.00</td>
<td>0.53</td>
<td>354</td>
</tr>
<tr>
<td>Index No. 2</td>
<td>3.00</td>
<td>4.28</td>
<td>7.00</td>
<td>0.52</td>
<td>295</td>
</tr>
<tr>
<td>Area 1 (high status)</td>
<td>4.00</td>
<td>4.41</td>
<td>5.00</td>
<td>0.51</td>
<td>22</td>
</tr>
<tr>
<td>Area 2 (village)</td>
<td>4.00</td>
<td>4.20</td>
<td>6.00</td>
<td>0.57</td>
<td>59</td>
</tr>
</tbody>
</table>

In the original study of organic Mississippian textile remains, higher TPCI values were found to be associated more with high-status burials (7.59) than with low-status burials (4.79) (Kuttruff 1988, 1991). It is thought that many of these textiles were used in the Mississippian society as visible indicators of social status. However, Mississippian fabric impressed pottery is not considered to have been a status item, and the textiles used to manufacture this coarse, utilitarian pottery are believed also to have been utilitarian in nature, even though they are not believed to have been made specifically for use in pottery manufacture (Kuttruff 1987; Drooker 1989). However, there are instances of complex textile impressions in Mississippian pottery, such as from the Stone Site, Tennessee (Drooker 1991), that are similar to textiles from high-status contexts such as Spiro, Oklahoma, (Brown 1976; Kuttruff 1988) and Etowah, Georgia (Byers 1964; Larson 1971; Moorehead 1932; Sibley and Jakes 1986, 1989).

Textile Attributes and Pottery Manufacture

The question of whether the textiles used in pottery manufacture were made solely for that purpose or were originally made with other uses in mind is an important consideration. In the latter case, the usage of textiles in pottery manufacture would be a secondary rather
than a primary function, and their particular utilitarian characteristics would be determined by different criteria. There is no doubt, however, that these textiles were selected to function in the process of pottery manufacture. If they were created specifically for this purpose and were considered to be purely functional, a limited variety of textiles might be expected, but if they were created for other purposes or were considered as a means of decoration then a greater degree of textile variation might be expected (see Drooker 1989, 1990, 1992 for her interpretation of original functions of Wickliffe textiles impressed on pottery).

Fabric Characteristics

If the textiles were used to line the mold to facilitate removal and then were separated from the vessel before firing, they could be used repeatedly. Since the manufacture of textiles is more time and labor intensive than the manufacture of pottery, such reuse would be desirable. The stresses placed upon the textiles during the handling of large plastic ceramic vessels and the subsequent removal from the partially dried or leather hard clay would be considerable, but this technique would help to minimize stresses on the ceramics. Specific fabric characteristics necessary for textiles used in this manner include relatively high levels of flexibility, strength, and durability. As indicated below, these characteristics are related to choices, involving fiber, yarn, and fabric, made during the manufacture of the textile.

Yarns made of longer fibers, such as bast or leaf fibers, generally have more strength than yarns made of shorter fibers, such as fur, feather, or seed hair fibers. The longer the fibers, the lower the amount of twist necessary to make a cohesive yarn. As noted above, in some instances twist is not necessary at all. The amount of twist in the singles yarns was often not discernable in the pottery impressions, but it was fairly obvious that some degree of twist was employed. Up to a point of diminishing returns, an increase in the amount of twist in a yarn is expected to increase its strength.

The number of fibers spun together would also affect the strength of a yarn and would be reflected in yarn diameter. The Mound Bottom yarn diameters range from 1.0 to 4.0 mm. Only 1% of the yarns are 4.0 mm in diameter, 70% ranged from 2.0 to 3.9 mm, and 29% ranged from 1.0 to 1.9 mm in diameter. In combination with the fiber type, the diameter of the yarns would also affect the stiffness of the fabric. A fabric made with large yarns composed of stiff fibers would be less flexible than one made with smaller yarns of comparable fibers. A plied yarn is generally stronger and more even in diameter than a singles yarn, but plying also adds to the labor cost involved. This added strength and evenness apparently was not necessary, because plied yarns are present in only 13% of the fabric structures.

Ninety-five percent of the identified fabric structures from Mound Bottom were fairly simple. The labor costs involved in making these fabrics would be lower than if the fabric structures were more complex and intricate. In the two spaced twined structures, the greater the distance between the rows of twining elements the less time would be needed to construct the textile. The spacing between twining rows also affects the flexibility of the fabric, with the more open constructions being more flexible and more easily manipulated.

The stability of fabric structures may also have been an important factor in relation to its usage in pottery manufacture. An open twined fabric would be much more stable and would have less yarn slippage than a comparably open interlaced fabric. It should be noted that no open interlaced fabric structures were identified even though a fabric of this type could have been made more quickly than the structures represented in the sample.

Fabric Wear and Manipulation

Evidence of fabric wear was noted during the analysis of the pottery impressions (Figure 8). This evidence included missing or broken active and/or passive elements (2 and 5 examples, respectively) and fabric distortion (6 examples). Fabric distortion was evidenced by overly irregular twining rows that may have been forced out of their original position by stress applied during use of the textile. Fabric distortion was also noted when the angle of intersection between active and passive elements was considerably off from the original 90 degree angle.

Layering of fabric was noted in 9 of the impressions. Only one-third of the instances of layering were noted on rim sherds; the remaining two-thirds were on body sherds. Considering the positioning of a flat textile into a curved, basin-shaped mold, one would expect more layering near the outer edges of the vessel. Two factors may have affected these observations. One is the fact that many of the impressions were smeared and indistinguishable near the rims, and also there is no way to tell the position of a body sherd in most pan vessel forms. Consequently, body sherds that exhibited fabric layering may actually have been from a position fairly close to the outer edge of the vessel. Other possible reasons for layering of fabric impressions is the use of more than one textile if the textiles were smaller than the vessel itself or to reinforce a textile that was worn or had large holes.
Summary and Conclusions

The antiquity of textiles is greater than that of ceramics in the eastern United States, and the ceramic arts have been intimately associated with the textile arts. Holmes (1903:68) considered textile forms and markings to be characteristic of the initial stages of the ceramic arts in this part of North America. Many Early Woodland period ceramics illustrate these associations, and they are also evident in Mississippian period fabric impressed ceramics as demonstrated here.

Textile attributes reveal information about variation in textile use. Specimen morphology and composition affect the performance of textiles under varying conditions, and the costs involved in both labor and materials reflect the importance or value placed upon a particular textile specimen. Since this study deals only with textiles used in the manufacture of large, utilitarian ceramic vessels, certain textile attributes would have been desirable while others would likely have been purposefully avoided.

The use of textiles in the manufacture of Mississippian period ceramics probably served both functional and decorative purposes. The textiles facilitated removal of the clay vessels from their molds and minimized stresses on the pottery during handling and drying; at the same time they imparted texture and pattern to the surface of the vessel. Textiles used in this way were subjected to considerable stress, and therefore strength and durability along with flexibility would have been important fabric characteristics. Textile attributes represented on the fabric impressed pottery from Mound Bottom indicate the decisions made and techniques used to achieve the above characteristics of utility in the finished textile.

The basic fabrics represented in the Mound Bottom pottery are similar in structure and scale to those reported from other Mississippian period sites. Twining dominates the sample, while interlacing (weaving) and netting are noticeably absent. The mean complexity value for Mound Bottom impressed textiles is lower than that for Wickliffe impressed textiles and organic textile remains from Spiro and Ozark bluff shelters.

Analysis of the textiles used in the production of fabric impressed pottery leads toward a better understanding of the total Mississippian textile complex. Not all information about the textiles is ascertainable from the study of impressions, because such things as fiber content, color, and surface patterning are impossible to know. However, systematic studies of fabric impressions on pottery over a range of time, geographic locations, site sizes, and site types, including the use of
textile production-complexity indices, will yield information on similarities and differences in these textiles. When combined with what is known from the small number of extant textiles, this information will provide a more complete inventory of Mississippian period textile production and use.

Acknowledgements

The 1974 and 1975 excavations of Mound Bottom were conducted under the direction of Carl Kuttruff and were sponsored by the Tennessee Division of Archaeology, Department of Conservation. The textile attribute data upon which this paper is based was collected by Jenna Tedrick Kuttruff in 1986.

Jenna Tedrick Kuttruff is an assistant professor of human ecology at Louisiana State University and Carl Kuttruff is a consulting archaeologist and adjunct professor of anthropology at Louisiana State University.

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Migration of the Chickasawhays into the Choctaw Homeland

Tim Mooney

The composite nature of Choctaw society during the historic period has long been recognized by scholars and lay observers alike. Traditionally, this recognition is expressed by dividing the Choctaw Homeland, situated in east-central Mississippi, into three districts or divisions, the Eastern, the Western, and the Southern. Each division encompasses the headwaters of one of three drainages, the Pearl River in the west, the Suwannee in the east, and the Chickasawhay-Leaf-Pascagoula network in the south. The headwaters of these three drainages lie in close proximity to each other and form the focal point of the Homeland.

Based on this recognition, Patricia Galloway formulated an hypothesis for the genesis of the Choctaw in the Homeland area during the sixteenth and seventeenth centuries (Galloway n.d.). In brief, the hypothesis states that the three large alluvial river valleys that surround the Homeland, the Tombigbee, Pearl, and Chickasawhay-Leaf-Pascagoula, supported mound-centered polities which began to disintegrate in the late fifteenth and early sixteenth centuries. Populations from the affected polities moved into the upland headwater regions of the Pearl, Suwannee, and Chickasawhay-Leaf-Pascagoula, which during the preceding Mississippian Period appear to have been unoccupied. Over a two hundred year span, these populations coalesced into the Choctaw of the Historic Period. The resulting confederacy, somewhat more coherent than that of the Creeks, would bear the imprint of the three division arrangement well into the nineteenth century.

The genesis hypothesis also allows for greater elaboration of the mechanisms, participants, and processes of coalescence. Any understanding of the movement of native peoples in the protohistoric and early historic periods must be as fine-grained as possible. In this paper I wish to focus on one such participant group, the Chickasawhays of the Southern District. Two lines of evidence bear on the possible point of origin of the Chickasawhays and their migration into the Homeland: the ethnohistorical record and the ceramic collection from site 22-Ck-502 (Figure 1), named Chickasawhay in the Mississippi Department of Archives and History (MDAH) site files. This site, associated with the historic town of Chickasawhay, is located in Clarke County, Mississippi, approximately 1.5 km southeast of Wautubee. Analysis of these two lines of evidence strongly suggests that the Chickasawhays
migrated into the Southern Division from a region within the confluence basin of the Tombigbee and Alabama rivers in present-day southwestern Alabama, probably toward the very end of the period envisioned in Galloway's genesis hypothesis (Figure 2). From Chickasawhay Town and its dependencies, the Chickasawhays played a formidable role in affairs of the Southern Division and the Choctaw confederacy.

To the French of colonial Louisiana, the Chickasawhays were early, long-lived, and in the main steadfast allies. This fealty appears to have been born of necessity. In his 1732 letter to the Commissaire Salmon, the Jesuit missionary Father Michel Baudouin, who by that time had lived four years in Chickasawhay Town, stated that the Chickasawhays had sought the protection of the French initially because of the depredation which the English and their native allies visited upon them. As a consequence, the Chickasawhays would “never depart from the fidelity they owe the French” (Rowland and Sanders 1929:156).

Baudouin wrote that along with the Conchas (of the Eastern Division), the Chickasawhays would have been wiped out by the marauding allies of the English except that they abandoned their villages and sought aid from Bienville at Mobile, who then provided them with firearms and munitions with which they successfully repelled their enemies. Baudouin asserted in the same letter that Bienville sent interpreters to the principal villages of the Choctaws to inform them of the French protection over the Conchas and the Chickasawhays, which extended against not only the English and their native allies but other Choctaws as well.

Baudouin in his letter mentioned that prior to the forced abandonment of their villages by the incursions of the English and their native allies “The Chickasawhays were formerly called the Choctaws of the prairie and composed ten considerable villages.” The appellation is noteworthy. The site 22-Ck-502 (Chickasawhay) is located in the North Central Hills physiographic region of east-central Mississippi (Figures 2 and 3). Bordering it on the south lies the Jackson Prairie physiographic region. Some 8 to 10 miles wide, the Jackson Prairie forms a narrow belt of gently rolling grasslands dotted with clusters of trees. The belt extends in a shallow arc from the Loess or Bluff Hills of western Mississippi into the confluence basin of the Tombigbee and Alabama rivers to the Red Hills region of southern Alabama (Blitz 1985:34; Hooks 1973:5). Although no archaeological sites associated with the Choctaws have been found in the Jackson Prairie to date, the acknowledgement that the Chickasawhays once bore the label “Choctaws of the prairie” at least suggests that they had moved into the well-forested North Central Hills area, a region defined by a varied topography with elevations ranging from 200 to 600 feet above sea level, from a very different landscape more like the open meadow which is the French meaning of the term la prairie.

If operations by the English and their Indian allies forced the Chickasawhays to abandon their former villages in the “prairie” and to begin an alliance with the French, the Chickasawhay migration into the Homeland probably occurred in the early years of the eighteenth
century. The most intense English-inspired slaving raids affected the area roughly between 1690 and 1710 (White 1985:35). Trade guns appeared on the French order lists for the deer hide trade by 1701 (Woods 1980:37). While Bienville's admonition to other Choctaw towns may betray a misunderstanding of the political structure of the confederacy that the French called "Choctaw," the warning also may reflect a fairly recent arrival of the Chickasawhays into the Homeland. The process of integration would have needed more time to render such a warning unnecessary. The Chickasawhays did, however, maintain a close relationship with the Conchas, often coordinating policy and its execution during the early historic period (Noyan to Maurepas January 4, 1739; Rowland et al. 1984, IV:161-162). In addition, Baudouin's mention of the former description of the Chickasawhays as the "Choctaws of the prairie" would indicate a memory still sufficiently fresh to be learned by the missionary, who began his ministry at Chickasawhay Town in 1729.

A second ethnohistorical reference comes from an anonymous 1747 letter describing its author's journey from Mobile to Fort Tombecbé on the upper Tombigbee River. On this trip the author encountered few natives while ascending the Tombigbee River, but he did meet several Chickasawhays who were gathering salt near a Tohome camp at a locale called Salt, a salt spring located "just above the Alabama-Tombigbee fork flowing into the Tombigbee" (Rowland et al. 1984, IV:308). The presence of the Chickasawhays illustrates not only a knowledgeable familiarity with the valuable resources of the confluence basin (Figure 2), but also a license or claim to tap those resources. Custom may have sanctioned this exploration because of a prior association or even residual privileges based on prior residence that permitted the Chickasawhays access to vital resources in the area of the basin. I now want to turn to the archaeology of the Chickasawhays to follow the second line of evidence: a stylistic affinity of a part of the ceramic assemblage from 22-Ck-502 with ceramics from the confluence basin of the Tombigbee-Alabama rivers.

Archaeology of the Chickasawhay

Henry B. Collins, who conducted the earliest systematic archaeological investigation of the Choctaw Homeland in the summers of 1925 and 1926, based that survey upon the work of H.S. Halbert, the prominent nineteenth-century scholar of the Choctaws, who relocated historic Choctaw towns using eighteenth-century French and British maps that included the Homeland. In 1926 Collins visited the Chickasawhay site, where he made a small surface collection that included
combed decorated sherds later named Chickachae Combed by Quimby in 1942 (Blitz 1985:22-23). Work on the historic Choctaws from Collins until the 1970s centered mostly on writing about this single ceramic type.

In 1975 the Mississippi Department of Archives and History conducted survey work in the upper Souinlovey Creek and upper Chickasawhay River drainages. The survey team relocated Collins' candidate for Chickasawhay Town as well as another eighteenth-century Choctaw site, the Hall site (22-Ck-505), about one mile north of Chickasawhay. In 1985 the Cobb Institute of Archaeology, Mississippi State University, conducted a field season at Chickasawhay after a local amateur archaeologist, Terry Sisson, had independently rediscovered the site when it had been extensively disturbed by clearcutting. Logging residue had been bulldozed into four long windrows which ran north to south across the site. With the support of the Department of Archives and History and a small grant from the Pat Harrison Waterway Development Authority, the Cobb Institute team conducted a controlled surface collection and excavated five 1 x 1 meter squares. Surface collection accounts for the bulk of the artifacts retrieved. In 1991, I analyzed all the artifacts retrieved by the Cobb as well as the Sisson surface collection.

The Cobb/Sisson collection is overwhelmingly aboriginal in origin, but European ceramics, glassware, trade beads, gunflints, and flintlock fragments reveal clear evidence of contact with the eighteenth-century French. The collection reflects an historic Indian occupation during the second and third quarters of the eighteenth century.

Among the 1,792 aboriginal sherds retrieved is a collection of rim sherds representing about five percent of this total and 12% of the decorated aboriginal ware. These rim sherds are composed chiefly of Addis paste, though some sherds contain abundant amounts of fine sand. Typically the rim forms are straight with flattened lips or slightly excurevate with thickened lips, although some sherds are slightly incurvate with flattened lips. Near or on the rim all bear notches, punctations, or delicately incised chevrons. These rim adornments accompany diverse decorations on the body below the rim. Only simple bowls appear to be represented by these rims.

I divided these sherds into four groups based on body design; the accompanying rim modification further divides each group. The largest group (Mode A—Imataha Incised) contains sherds with bodies decorated with bands of parallel incised lines which begin near the lip and descend either perpendicular or at an oblique angle to the lip. Several sherds have bands that descend from a single or double incised line running parallel to the lip edge. The second group (Mode B—

Figure 4. Modes from Chickasawhay (22Chk502). Mode A: first row, sherds 2-4, and second row, sherds 1-2; Mode C: second row, sherd 3; Mode B: second row, sherd 4, and third row, sherd 1.
Atakabe Incised) includes sherds decorated with nested rectilinear designs. Sherds in the third group (Mode C—Fanimingo Incised), much fewer in number, are distinguished by chevrons and zoned triangles filled with parallel lines. In the final group (Mode D—Patlaco Nicked), the body of the sherd contains no discernible decoration (Figure 4). The decorations seen in all of the groups, particularly Mode A (Imataha Incised) and Mode B (Atakabe Incised), have close parallels with the Doctor Lake Incised ceramics found in the confluence basin of the Tombigbee and Alabama rivers.

The temper of the Doctor Lake Incised ceramics includes “fine shell, fine sand and organic inclusions” (Fuller, Silvia, and Stowe 1984:215). While the paste textures of the Doctor Lake Incised ceramics appear uniform and the color ranges from charcoal gray to grayish brown, the texture of the Chickasawhay material ranges from very compacted and finely-textured to coarse-textured ware; the paste color extends from coal black to orange-red. The decorations found on the Doctor Lake Incised ware reminded Fuller, Silvia, and Stowe of Pensacola Incised var. Pensacola, though some sherds also reminded them of Chickachae Combed. These authors suggested a date of about AD 1600-1750 for Doctor Lake Incised (Figure 5).

Finally, a determination of the extent of distribution and life span of these rim modifications should be attempted. In 1982 and 1984 the Department of Sociology and Anthropology at the University of Southern Mississippi conducted survey work in Kemper County, Mississippi. The survey discovered 73 sites and confirmed two other sites. Thirty-nine sites had definite Choctaw components and another 20 probably possessed Choctaw components. Kemper County lies in the former Eastern Division of the Choctaw Homeland.

Based primarily on the survey work, Voss and Blitz in 1988 proposed a Choctaw ceramic complex for the late eighteenth and nineteenth centuries. Included in the complex is the type Nicked Rim Incised, the temper of which includes a mix of fine grog/sand/shell. Simple bowls are the only known vessel form for this type. From the ceramic description, Nicked Rim Incised encompasses Mode A from the Chickasawhay material (Blitz 1985:76). At 22-Ks-525, the supposed site of Yashu Iskatini, an eighteenth-century Choctaw settlement, the survey found a large rim sherd, tempered primarily with grog but including a small amount of finely crushed shell. Nicks are placed along the flattened, incurvate rim, below which are nested rectangles of fine incised lines. This description appears compatible with the Mode B material from Chickasawhay.

In his 1985 monograph on the Choctaws, Blitz provides the ceramic distribution for 54 Kemper County sites. Nicked Rim Incised is repre-

Figure 5. Doctor Lake Incised (a-c, e, g with “Doctor Lake” rim). Provenience: (a-b) 1Ch219; (c-f) 1Ch217; (g) 1Wn86. (After Fuller, Silvia, and Stowe 1984:226.)

sented at 15 of the sites or 27% of all sites listed. The absolute number of sherds found at each site, however, is very low. The number of sherds at any one site relative to the total number of sherds retrieved for the site, however, is quite variable, ranging from a high of 16% to a low of 0.8%. Altogether 970 sherds were reported for these 54 sites. Forty-five of these sherds are Nicked Rim Incised. Including the nested rectangle
decorated sherd from 22-Ke-525, 4.6% of the sherds retrieved from the 54 sites fall within the Nicked Rim Incised/Mode A-B designations.

Blitz has also looked at the ceramic assemblages represented in the collections from Fort Tombecbē and three known nineteenth-century Choctaw component sites. Nicked Rim Incised ceramics are absent from all of these sites. The sealed context at Fort Tombecbē, situated just east of known Eastern Division sites, dates the pottery found from 1736 to 1763. The absence of the Nicked Rim Incised type from Fort Tombecbē led Blitz to the conclusion that this type predates 1736 (Blitz 1991). If the Chickasawhays did carry a version of Doctor Lake Incised into the Choctaw Homeland, then this decorative style, while present in the Southern and Eastern Division during the eighteenth century, may have been short-lived within the Homeland. Interestingly, no ceramics similar to Nicked Rim Incised or the Modes from Chickasawhay have been found to date in any Western Division sites (Ken Carleton, pers. comm.)

In conclusion, a strong argument based on the ethnohistorical record and the Mode A-D ceramics from 22-Ck-502 can be made for the entry of the Chickasawhays, the “Choctaws of the prairie,” into the Homeland in the last years of the seventeenth century and early years of the eighteenth century. Locating sites with Choctaw components and good sealed contexts dating to the protohistoric and early historic periods remains vital, though experience shows that this task can be quite daunting. To hope to understand the genesis of the historic tribes of the Southeast we need to expand the use of fine-grained analysis of the ethnohistorical and archaeological record. I hope this modest analysis is an addition to that enterprise.

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Preliminary Report on Ceramic Vessels from the 1991 Oliver Salvage

Mary Evelyn Starr

The Oliver site, in Coahoma County, Mississippi, is about 160 air miles south of Memphis, 60 miles south of the present mouth of the St. Francis, and 40 miles north of the area of the debouchements of the White and St. Francis rivers.

In 1901 and 1902, Charles Peabody excavated most of a Mississippian mound near the shoals of the Sunflower River in Coahoma County, Mississippi (Figure 1). One hundred fifty-eight burials, many accompanied by ceramic vessels and some with items of European manufacture, were removed from the largest of the Oliver mounds. Glass beads and Nodena and Madison points and other stone tools typical of the middle and late Mississippi Period were found in surrounding fields. Some of the vessels are shown in poor-quality photographs in his 1904 report, and the trade goods are described in fair detail (Peabody 1904). In 1941 the Lower Mississippi Valley Survey conducted stratigraphic test excavations at the site (Phillips et al. 1951). The results of this work, along with Belmont’s (1961) reanalysis of Peabody’s notes and specimens, formed the basis for Phillips’ (1970) definition of the Hushpuckena and Oliver phases. Radiocarbon dating is beginning to provide a firmer basis for this quite large collection of rather dissimilar components (Connaway 1984; Marshall 1988; Starr 1992; see Table 1).

The Oliver site has figured significantly in attempts to reconstruct the route of De Soto and the origins of the Tunica (Brain 1984, 1988; Weinstein 1985), and in connection with this problem the University of Mississippi conducted a controlled surface collection of the site (Styer 1991). Soon thereafter, in 1991, the site was largely destroyed by earthmoving equipment. Volunteers led by John Connaway of the Mississippi Department of Archives and History carried out some salvage work while the site was being destroyed.

Forty complete or largely reconstructable vessels and a few additional protohistoric artifacts are included in the collected specimens. Most of this material has not been analyzed. Of the recovered materials with more specific proveniences recorded, twenty-one vessels come from hearths, five from burials, and five from trash-filled pits. Typologically, the assemblage is dominated by Mississippi Plain.

Figure 1. The northern Yazoo Basin.
Table 1. North Delta radiocarbon dates calibrated according to Stuiver and Becker 1986.

<table>
<thead>
<tr>
<th>Site</th>
<th>Date (A.D.)</th>
</tr>
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<tbody>
<tr>
<td>West</td>
<td>1300-1200</td>
</tr>
<tr>
<td>Wilsford</td>
<td>1500-1400</td>
</tr>
<tr>
<td>Powell Bayou</td>
<td>1600-1500</td>
</tr>
<tr>
<td>Ellis</td>
<td>1800-1700</td>
</tr>
<tr>
<td>Flowers #3</td>
<td>1900-1800</td>
</tr>
<tr>
<td>Clover Hill</td>
<td>2000-1900</td>
</tr>
</tbody>
</table>

Site references:
West, Tunica County, Mississippi: Buchner 1989
Wilsford, Coahoma County, Mississippi: Conaway 1984
Powell Bayou, Sunflower County, Mississippi: Starr 1992 and new dates provided by Cobb Institute of Archaeology, Mississippi State University
Ellis, Phillips County, Arkansas: report in preparation by Garrow and Associates for Memphis District, U.S.A. Corps of Engineers
Flowers #3, Tunica County, Mississippi: Conaway 1981
Clover Hill, Coahoma County, Mississippi: Conaway 1981.

Figure 2. Specimen 84, two Winterville Incised jar fragments (two sherds at top and single sherd at bottom right); Specimen 39, two sherds at bottom left.

Figure 3. Specimen 68, Old Town Red, var. Beaverdam bowl.
Bell Plain paste was recognized only in teapots and bottles and is of the mixed shell and grog composition typical for the mid-Delta. Two jar fragments with Winterville Incised interlocking scrolls, both from the same pit but from different vessels (Figure 2); an Old Town Red var. Beaverdam bowl (Figure 3); a jar rim with perpendicular trailing or wide, careful brushing; and a jar with curvilinear and rectilinear incising on the rim above zoned pinching on the body (Figure 4) that cannot easily be taken as the Togo variety of Barton Incised are the only decorated types represented in the portion of the collection we are concerned with here. Many other types are represented in other collections from the Oliver site and indicate the far-flung connections to be expected on a large site near the Mississippi channel.

Vessels recovered from hearths include various jar and bowl forms, of a wide range of sizes. Some are vessel fragments that may have been in active use as such. The forms represented are large and small jars, some with handles; “helmet” bowls, a class intermediate between the typical Mississippian bowl and jar forms; scalloped and flaring rim bowls; and probably bottles. Sooting of exteriors, charred material adhering to vessel interiors, and interior spalling and oxidation resulting in bright reddish colors occurs on some of these specimens, all indicative of domestic function. Two small jar rims were recovered.

Figure 4. Specimen 9, incised jar with zoned pinching.

Figure 5. Specimen 13, plain flaring-rim bowl with flat base.

Figure 6. Specimen 14, plain helmet bowl.
upside down near burned areas; the bases of the vessels were removed by the dirt buggies.

Two hearths in the mound area had groups of vessels associated with them; one of five vessels and the other of six. These and the charcoal recovered in association with them provide an excellent opportunity for the application of radiocarbon dating. The first group is composed of a highly oxidized flat based flaring-rim bowl (Figure 5); two helmet bowls, one extremely oxidized (Figure 6) and the other with charred material deposits on the interior and a distinct fire-cloud pattern on the base (Figure 7); a jar with two strap handles (Figure 8); a sooted large jar fragment (Figure 9); and a possible jar fragment. The second group is composed of two probable bottle bases, one with a distinct pontil; a large jar with marked neck restriction; two large, broad flattened-base flaring-rim bowls; and a sooted helmet bowl. The apparent contemporaneity of the standard Mississippian jar with the helmet bowl, both of which have individual specimens showing sooting (Figure 10), is one of the more interesting aspects of the portion of the collection recovered from hearths.

In the cases where bone preservation was sufficient to permit identification of interment type, burials were with one exception extended burials, indicating that they belong to the earlier, Hushpuckena phase occupation, as bundle burial has previously been charac-
terized as a protohistoric Oliver phase trait. Inclusion of vessels as grave goods seems to be determined by vessel size and limited to the smaller size range. That vessels were not always specifically manufactured for such ritual disposal in graves is evidenced by the heavy soot and charred material accumulations on the kettle, and possibly by the ambiguously patterned sooting on the Old Town Red bowl rim. Estimated volumes of vessels from graves are 3.3, 3, 2, 1.5, and .5 liters. This conclusion supports a similar conclusion that Childress (1992) makes concerning the Late Mississippian Walls phase, but there are only five specimens from burials in the present study.

The bundle burial was accompanied by a heavily sooted Mississippi Plain vessel (Figure 11). This can be assigned to a local class that might be called Colonoindian ware, as it is an apparent copy of a brass kettle, with flat base, cylindrical sides and perforated tabs above the rim. While this is an apparent protohistoric artifact, it does not date to the latest occupation of the site, as the grave lay under and was not cut by a house wall trench. A Bell Plain hooded bottle, probably an owl effigy, (Figure 12) accompanied a grave that contained two individuals, one interred above the other. The lower individual had no skull and had a fractured Madison point in the chest cavity. The upper individual had a Nodena point near the right hand and two copper or brass coils, one

Figure 10. Specimen 2, jar with sooting.

Figure 11. Specimen 1, Mississippi Plain "kettle."

Figure 12. Specimen 3, Bell Plain hooded bottle.
near the head, the other near the elbow. These artifacts conform with the type generally described as "hair-pullers," and one had cane preserved in it. Both were made of rolled and curled sheet metal, as are the bracelets found in another burial. This third protohistoric burial also contained the skeletal remains of two children, one with the four copper bracelets and the other with five small black or very dark blue glass beads. In addition to the kettle and hooded bottle from apparent protohistoric graves, an Old Town Red simple bowl (Figure 13), a small, nearly flat, scallop-rim bowl (Figure 14), and an everted-rim helmet bowl (Figure 15) were recovered from other graves.

The morphological variation of the materials just described has been taken to indicate that the vessels of this assemblage may have been manufactured over a long time span, and may possibly derive from occupations by two non-related groups separated by perhaps a century. It is therefore of limited utility to attempt to define sets or morphological assemblages from the present Oliver site collection, as it lacks stratigraphic provenience, although some vessels are associated with as yet unprocessed radiocarbon samples. Reconstruction of vessels shows a tendency toward the intergrading of the jar and bowl form (Figure 16), but a lesser intergradation in size as measured by rim diameter and estimated volume. Measurable jars (N=11) are at the high end of this continuum, of up to 46 liters' capacity, while that
of the largest helmet bowl (N=5) is about three liters, the size of the "kettle" (see Figure 11). Jar rim diameters range from 50 to 13 centimeters, while helmet bowls have a narrower range, from 22 to 18 centimeters.

Artifacts of European origin recovered by Peabody include small iridescent blue glass beads from six burials, two quartz beads from a burial, "brass" or copper tubular beads from three burials, Clarksdale bells from two burials (others have apparently come from Oliver; indeed, it may be more proper to call them "Oliver bells" [Brown 1926]), and three other incidences of "brass" in graves. With one exception, the interment type is the defleshed or bundle burial. An additional remarkable find of Peabody's, of as yet uncertain significance, was a turquoise necklace, probably of Pueblo origin, in a child's grave. While the Clarksdale bell and ground quartz beads may date to the De Soto era, the mid 1500s, other early Spanish artifact types have not been recovered, and the abundance of the materials, made evident by Peabody's comment that glass beads could be picked up in the fields, argues against such an early date for the Oliver protohistoric component. The nonlocal materials in their limited range or narrow diversity and in their frequency resemble those recovered from the Menard site about twenty miles to the south, as do to a certain extent the ceramic types and vessel forms (Belmont 1961; Ford 1961; House 1991). Attempts have been made to derive the European materials from both sites from the French Arkansas Post, which was established in 1686. The lack of diversity and the distinctive bias toward items of personal adornment is emphasized by comparison with graves from the Yazoo Bluff's region, where after about 1700, guns, metal vessels and tools, and a wide array of other artifact types were available (Brain 1988). These considerations, along with the Oliver lithic complex (Nodena points, endscrapers, pipe drills, large triangular knives), suggest that the European artifacts at the Oliver site date earlier, in the mid-1600s. Arrival of European trade goods preceded direct contact in this region, and a wide variety of French and Spanish sources along the Gulf Coast or even the Upper Mississippi drainage, some unknown to recorded history, could be the ultimate American source of the Oliver site materials.

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The G.W.O. Site (22-Jo-568), An Early Archaic Site in Jones County, Mississippi

H. Edwin Jackson and Susan L. Scott

Introduction

Much of what is known about early Holocene settlement patterns on the Gulf Coastal Plain of south Mississippi is based on surface finds which, as a consequence of modern land use, tend to be in interriversine upland settings. The recent discovery of the G.W.O. site (22-Jo-568), located in the Bogue Houma Creek floodplain (Figure 1), illustrates a different dimension of early Holocene settlement practices. In addition to being among the few in situ early Archaic components known from south Mississippi, its unique setting suggests great potential for the presence of other early components in the floodplains of fairly small streams, a physiographic setting often considered to be of low archaeological productivity.

Our discussion of the G.W.O. site relies on a very limited investigation, one that was constrained by the cultural resource management nature of the testing program with its inherently restricted timetable. We make no claim of having produced an exhaustive study. Rather, our intent is to use the evidence gathered for management purposes to bring attention to this class of Early Holocene sites. One hope is that future research on such sites will be more likely to employ novel field tactics to maximize their information potential.

Overview of Early Archaic Archaeology in Mississippi

Early Archaic adaptations in Mississippi remain incompletely documented. In Mississippi only a single site, Hester, in Monroe County, has been extensively excavated and reported (Brookes 1979). Closer to the G.W.O. site, 22-Js-587 was discovered and tested during a cultural resources survey of the Tallahala Creek Lake in Jasper County (Atkinson and Elliott 1979:53-61). The Tallahala, a tributary of the Leaf River, is the next drainage to the west of the Bogue Houma. The site produced four terminal Paleo-Early Archaic projectile points identified as Daltons. Unfortunately, early materials appear to have been mixed with later artifacts. Finally, to the south is the Beaumont Gravel Pit site, located on the Leaf River in Perry County. It was excavated in the 1970s by avocational archaeologists (Geiger 1980). Analysis of recovered materials is currently underway (Geiger and Gliberti n.d.).
Chronological, technological, and typological questions have received the greatest attention from archaeologists interested in the Early Archaic (e.g., DeJarnette et al. 1962; Goodyear 1975; Griffin 1974). Chronology is based on a succession of diagnostic projectile point styles or types that appear to have applicability across large areas of eastern North America (e.g., Steponaitis 1986:371). Less well formulated are ideas about the economic and settlement patterns of the human populations living at the time. The Early Archaic spanned a time of worldwide climatic change, following the end of the most recent Ice Age of the Pleistocene Epoch. How human populations contended with early Holocene environments in the different regions of eastern North America and how different this may have been from the preceding Paleoindian adaptations to Late Pleistocene climatic conditions are questions that currently guide research on this time period (Smith 1986; Steponaitis 1986).

Alexander (1983:15) has suggested that the Early Archaic in the Mid-South may be subdivided into four sequential horizons, each equated with one or more projectile point styles. It is reasonable to consider Alexander's chronological model a "best guess," given the paucity of stratigraphic data relevant to Early Archaic chronology available at present.

The earliest horizon, Dalton, closely follows the preceding late Paleoindian stage, and shares much in the way of stone tool technology with the preceding era. Because of the transitional nature of Dalton stone tool technology, it is often included as a terminal Paleoindian horizon (e.g., McGahey 1987). The Dalton projectile point, on which the horizon is defined, is a lancelate point, exhibiting a thinned, and often ground, hafting area. Radiocarbon dates indicate that the Dalton horizon falls between 8000 and 7500 BC (Goodyear 1982). Representation of the Dalton horizon in Mississippi is mainly by surface finds, although excavations in north Mississippi at the Hester Site (22-Mo-559 in Monroe County) revealed a Dalton component in the lowermost levels of the site. In south Mississippi, at the Beaumont Gravel Pit site, a related or perhaps slightly later component is represented by San Patrice, var. Leaf River points (Geiger 1985). Varieties of San Patrice points bear morphological and technological similarities to Dalton or other Early Archaic points. The chronological position of San Patrice points is not entirely clear at present, but at least some investigators (e.g., Ensor 1986) have concluded that they are roughly contemporaneous with the Dalton point. McGahey (1987), in a survey of known Paleoindian points in Mississippi, listed only a single Dalton point from Jones County, although numerous examples are recorded in adjacent Perry and Greene counties.

The Big Sandy horizon follows Dalton in the scheme outlined by Alexander. Big Sandy points are part of an apparently widespread tradition of side-notched projectile points that appear following the Dalton horizon. There is some disagreement regarding the chronological placement of Big Sandy points relative to Daltons, due to differences in the contextual relationships of the two types at different sites. At Stanfield-Worley Rockshelter and Russell Cave in Alabama, Daltons and Big Sandys occur at the same (1 foot) level. At the Hester Site, however, there is a clear stratigraphic separation between the two types, supporting Alexander's contention of sequential horizons.

The Big Sandy horizon is followed by two horizons defined on the basis of corner-notched projectile points. The first of these, the Kirk Horizon, is represented by Kirk, Palmer, Plevna, and Decatur corner-notched points. Radiocarbon dates associated with Kirk-related components range from 7690 BC at Stanfield-Worley to 6145 BC at Russell Cave. A final Early Archaic horizon is equated with the Cypress Creek point.

Site Investigation

At the G.W.O. site, archaeological remains are found in sediments comprising a small sandy knoll which rises as much as five feet (1.5 meters) above the presently active floodplain (Figure 2). On the rise, vegetation consists of a mixed pine-hardwood overstory, with holly, sassafras, and other small bushes comprising the understory. A hardwood overstory, mainly sweetgum and oaks, dominates the slightly lower elevations, with a palmetto-dominated understory.

In addition to one or more Early Archaic components, there is an apparently sparse Woodland component, suggested by a single grit-tempered sherd, and a Middle or Late Archaic component represented by a bannerstone fragment and a stemmed drill. Early Archaic remains are found between 30 and 70 cm below surface, represented by a consistently high density of debitage and Early Archaic artifacts. Diagnostic projectile point styles suggest that two early components are represented by this concentration of material.

The site was discovered during an archaeological survey of a proposed well pad location and related access road (Scott and Associates 1992). The initial indication of a site on the knoll was a pair of flat sandstone slabs, located in the backdirt of an animal burrow. One of the stones had been pecked or battered in the center of its flattest side, suggesting use as plant processing equipment. The second appeared to have acquired polish from use.
Initially, a series of six shovel tests and two 50 by 50 cm test pits in the vicinity of the nutting stones indicated the presence of lithic artifacts to a depth of 1 meter, with an apparent peak in artifact density at greater than 40 cm below surface. More extensive testing followed, during which a site grid was established and 28 additional shovel tests and four 1 by 1 meter units were excavated. Previous excavation units and shovel tests were tied to the grid. Each 30 by 30 cm test pit was excavated in 10 cm levels to a depth of 50 cm. Below 50 cm, matrix samples were collected using a four inch bucket auger to a depth of 100 to 120 cm. One by one meter units were excavated by arbitrary 10 cm levels. All matrix was dry-screened through 1/4 inch mesh.

Shovel testing established the approximate northern, southern, and western boundaries of the site (Figure 3). Subsurface remains
indicate that it covers an area of roughly 3400 square meters, with the long axis oriented along the extant ridge that trends northeast-southwest in the survey area. The site is 40 meters wide and at least 85 meters long.

An area of significantly higher artifact density, measuring 60 m by 25 m, was isolated by shovel tests; in this area of the site the density of chipped stone exceeds 50 pieces per cubic meter, based on the recovery in the upper 50 cm of deposits from each shovel test (Figure 4). Four 1 by 1 m units were excavated within this area of high concentration in an effort to collect diagnostic artifacts.

![Figure 4. Chipped stone artifact density based on shovel tests.](image)

**Stratigraphy**

In the central area of the site, where topographic relief was greatest, sediments consisted primarily of fine silty sands. The profile description recorded for the west wall of excavation unit N6E19 is typical of this area of the site:

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<table>
<thead>
<tr>
<th>Depth (cm)</th>
<th>Horizon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 cm</td>
<td>A Horizon</td>
<td>Dark Brown to Dark grayish brown (10YR3/3-10YR4/2) fine sand. Weak granular structure. Abundant organic matter and a thick root mat. Clear smooth boundary.</td>
</tr>
<tr>
<td>10-75 cm</td>
<td>C1 Horizon</td>
<td>Dark Brown (7.5YR3/4) very fine sand with strong brown (7.5YR4/6) mottles. Weak massive or no structure. Some fine roots decreasing with depth. Diffuse boundary.</td>
</tr>
<tr>
<td>75-105 cm</td>
<td>C2 Horizon</td>
<td>Strong Brown (7.5YR4/6) fine sand with reddish yellow (7.5YR6/6) mottles. Structureless. Diffuse boundary.</td>
</tr>
<tr>
<td>105+ cm</td>
<td>C2 Horizon</td>
<td>Mottled brownish yellow (10YR6/6) and yellow (10YR7/6) fine sand.</td>
</tr>
</tbody>
</table>

A small hole excavated in the southwest corner of N13E20 exposed white (10YR8/2) (slightly coarser) fine sand below 105 cm.

The Jones County Soil Survey (1986) maps the vicinity of the site as Trebloc silt loam (p. 81), the description of which fits the profiles exposed beyond the ridge. However, the ridge pedon itself is most like Bigbee loamy sand (p. 71), a soil series most often encountered to the west along the Leaf River floodplain. The Bigbee series "consists of excessively drained soils formed in sandy alluvial sediments on low terraces and flood plains" (U.S.D.A. 1986:71).

It is conceivable that the small sandy ridge on which the site is situated is a preserved remnant of an older low terrace of an ancestral course of the Bogue Houma Creek. A more detailed geomorphic and sedimentological examination of the site setting will be necessary to evaluate this suggestion.

**Artifacts**

A total of 493 chipped stone artifacts was collected during our investigation, including 1 ground and polished stone artifact, 4 pitted or otherwise modified pieces of sandstone, and a single ceramic sherd. Also collected were 64 sandstone pieces and five unmodified cobbles, which were probably transported to the site by its prehistoric occupants. Eighteen pieces of hematite or red ochre collected during the excavation may be human introductions to the site.

Other materials collected during the course of investigations include 55.1 g of burned earth, 58.1 g of charcoal (some portion of which is likely to be modern or otherwise non-cultural), and 3 small calcined bone fragments. The bone fragments were not identifiable. Although the majority of the carbonized material was wood charcoal, 14 frag-
ments of hickory nut shell were collected. Bone fragments were collected from N13E20, levels 4 and 5, and nut shell was collected from N13E20, levels 3, 4, 5, and 6.

Table 1. Distribution of artifact types by material.

<table>
<thead>
<tr>
<th>Artifact Class</th>
<th>Tan, Brown Chert</th>
<th>Heat-Treated Chert</th>
<th>Talahatta Quartzite</th>
<th>Other Quartzite</th>
<th>Siltstone</th>
<th>Other Chert</th>
<th>Fire-Shatter</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Tools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biface - Projectile point</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biface reworked into drill</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biface tool fragment</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perforated/fragment</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Drill</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Flaked adze</td>
<td>1</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>Uniface - endscraper</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uniface - Other</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>II. Retouched and Utilized Pieces</td>
<td></td>
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<tr>
<td>Retouched Primary Decortication Flake</td>
<td>1</td>
<td></td>
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<td></td>
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<tr>
<td>Retouched Secondary Decortication Flake</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Utilized Secondary Decortication Flake</td>
<td>3</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Utilized tertiary/interior Flake</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilized Broken Flake/Shatter</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>III. Production Byproducts</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Flaked Cobble</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Split Cobble</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Core</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Decortication Flake</td>
<td>36</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Secondary Decortication Flake</td>
<td>49</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tertiary/Interior Flake</td>
<td>79</td>
<td>29</td>
<td>59</td>
<td>3</td>
<td>14</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Biface Thinning Flake</td>
<td>16</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blocky Fragment</td>
<td>19</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broken Flake, Shatter</td>
<td>32</td>
<td>25</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>Bipolar Flake</td>
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<td></td>
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<tr>
<td>Core Rejuvenation Flake</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>IV. Fire-Shatter</td>
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</tbody>
</table>

Chipped Stone

METHOD OF ANALYSIS. Chipped stone tools were categorized into descriptive artifact classes. Manufacturing debris was classified according to basic technological categories. Retouch and utilization were noted based on visual examination under low magnification. Types of lithic material were recorded as well. Table 1 presents a summary of chipped stone artifacts and debris.

RAW MATERIALS. Raw material is dominated by local tan to brown pebble cherts, presumably available in stream bottoms, gravel bars, and Pleistocene gravel dominated formations (e.g., Collins 1984) (Table 2). Non-heated local chert comprises 55.8% of the collection (by count), while heat treated chert makes up another 19.6%. Fire-shattered spalls of heat-reddened cherts make up another 2.2%. Other cherts, which may also be derived from local sources, include examples of white fine-grained, gray, and gray and white banded varieties (0.8%). No clearly non-local varieties of chert were identified in the collection. Talahatta quartzite, which occurs in outcrops to the east of the site in western Alabama (Copeland 1968), comprises 16% of the collection, and is the second most common material represented. Other quartzites and a fine-grained rock, preliminarily identified as siltstone, contributed 1.8% and 3.9% respectively.

Table 2. Count and weight of chipped stone raw material types.

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tan, Brown Pebble Chert</td>
<td>272</td>
<td>311.2</td>
</tr>
<tr>
<td>Heat Treated Pebble Chert</td>
<td>99</td>
<td>80.6</td>
</tr>
<tr>
<td>Other Cherts</td>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td>Fire-Shatter Chert</td>
<td>9</td>
<td>7.7</td>
</tr>
<tr>
<td>Talahatta Quartzite</td>
<td>79</td>
<td>64.7</td>
</tr>
<tr>
<td>Other Quartzite</td>
<td>9</td>
<td>7.2</td>
</tr>
<tr>
<td>Siltstone</td>
<td>19</td>
<td>28.2</td>
</tr>
</tbody>
</table>

BIG SANDY PROJECTILE POINT. A single complete projectile point, identified as a Big Sandy, was found at 40-50 cm in N12E16 (Figure 5a). It is made from apparently heat-treated chert (based on luster), and is banded pink and cream in color. Biconvex in cross section, with a slightly incurvate base, it measures 32 mm long, 20 mm wide, and 7 mm thick and weighs 4.0 g. Some minor basal grinding is apparent.
The Big Sandy point is diagnostic of an Early Archaic component at the site.

**DALTON POINT FRAGMENT.** A heat-shattered basal fragment of an auriculated base point, likely a Dalton, was recovered from 40-50 cm in N6E19 (Figure 5b). It is made from chert. No measurements are possible. Dalton points are diagnostic of a terminal Paleoindian time frame and, based on Brookes' work at Hester, presumably predates the Early Archaic component represented by the Big Sandy point.

**STEMMED DRILL.** A tan chert contracting stem biface reworked into a drill was collected in the 10-20 cm level of N13E20 (Figure 5c). It is 39 mm long, 35 mm wide, 7 mm thick, and weighs 5.4 g. The contracting stem suggests a Late Archaic or Woodland temporal assignment.

**ADZES.** The bit from a bifacially flaked adze of brown chert was found in a shovel test at N20E50 at a depth of 20-30 cm (Figure 5d). It exhibits polish on one side and appears to have been resharpened prior to discard. It is 31 mm long, 28 mm wide, and weighs 16.6 g. A second adze was found in N13E20 at a depth of 30-40 cm (Figure 5e). It is made from Tallahatta quartzite and weighs 30.1 g.

**BIFACE FRAGMENT.** A biface fragment, apparently broken as a consequence of exposure to fire, was collected in the 20-30 cm level of N13E20. The specimen weighs 0.9 g. A second fragment, also apparently heat-shattered, was found in N12E16 at 50-60 cm. It weighs 2.3 g.

**ENDSCRAPE.** A unifacially flaked endscaper of Tallahatta quartzite was found in the 30-40 cm level of N13E20 (Figure 5f). It weighs 5.8 g.

**POINTED UNIFACES.** Two unifacially flaked microliths were recovered (Figure 5g, h). A tan chert specimen, the tip of which is missing, was recovered from N0E30 at 10-20 cm. It is 32 mm long and weighs 1.6 g. The second specimen, of heat-treated chert, was found in N6E19 between 20-30 cm; it is 17 mm long and weighs 0.5 g.

**OTHER UNIFACES.** A small tan chert flake with steep unifacial retouch on the distal end and along both lateral edges was found in N13E20 at a depth of 30-40 cm (Figure 5i). There is no evidence to suggest just how this tool was used. It is 25 mm long, 124 mm wide, 5 mm thick, and weighs 1.8 g.
PREFORMS, BLANKS. Two bifacially flaked artifacts were classified as preforms, following criteria set forth by Johnson (1989) (Figure 5), k). The first, a class II preform of tan chert weighing 4.0 g, was collected in N12E16 at 30-40 cm. This preform appears to have had a burination spall removed from the distal tip. The second, also a class II preform of tan chert, weighing 6.7 g, was found in N6E19 between 60 and 70 cm.

RETOUCHED AND UTILIZED PIECES. Fourteen pieces show evidence of either expedient retouch or edge damage indicative of use. It is likely that other flakes in the collection were utilized but failed to acquire damage recognizable by the naked eye or under low magnification. Four specimens, a primary decortication flake and 3 secondary decortication flakes, all of tan chert, exhibit clear edge retouch. The remaining 10 specimens (3 secondary decortication flakes, 5 interior flakes, and 2 broken flakes or pieces of shatter) all appear to have been utilized. Of the utilized pieces, 5 are tan chert, 4 are heat-treated chert, and 1 is quartzite.

PRODUCTION BYPRODUCTS. The vast majority of the chipped stone tool collection consists of production byproducts (n=455; Table 1). Flakes comprise the bulk of these (71%), followed by irregular chipping debris (blocky fragments and irregular shatter/broken flakes: 23%). Sixteen cores or core fragments (12 of tan-brown chert, three of heat-treated chert, and one of Tallahatta quartzite), and 12 split or flaked cobbles (all tan chert) complete this category of material.

Primary, secondary, and interior flakes were classified on the basis of cortex remaining on the distal surface, with primary flakes exhibiting 90% or more cortex, secondary flakes exhibiting 1%-90% cortex, and interior flakes lacking cortex. In addition, three other flake categories were tabulated in order to assess the relative importance of different stone tool technologies that might be represented at the site. Biface thinning flakes, as their name implies, are removed during the production of bifacial tools, and thus are indicative of a bifacial-based technology. Core rejuvenation flakes are those removed from the striking platform of a core to extend its use as a source of flakes, and are most closely associated with technologies employing flakes as tools or blanks. Finally, bipolar flakes provide evidence for use of a bipolar technique (involving the use of an anvil) to produce usable flakes.

Taking the collection as a unit, initial cortex removal, represented by primary and secondary flakes, accounts for 37% of the flake category. Interior flakes are more dominant (56%) and include small retouch flakes produced during the finishing stages of biface produc-
modified during use. Similar artifacts are associated with Early Archaic components in the Mid-south, including the Dalton component at Hester (Brookes 1979:13), the Beaumont Gravel Quarry (Giliberti, pers. comm.), the Whately site in central Louisiana (Thomas and Campbell 1978), and several Early Archaic components in the Tennessee River Valley (e.g., Chapman 1985:42).

Our interpretation of possible uses for these ground stones are based on Peacock’s (1985) guidelines for recognizing functional differences based on morphology and kind of damage. Specimens 1 and 3 are brown sandstone slabs weighing 228 g and 320 g respectively. They exhibit a shallow smooth depression with a small pitted area showing some polish. They could have functioned either as nut-cracking stones or a bow drill pivots, although Peacock conjectures that the latter may more likely be represented by a relatively deep pit. In either case, there is only minimal wear from use.

Specimen 2 is a brown sandstone slab weighing 183 g with a shallow depression on a smoothed face. It may have been used for grinding plant materials, although not sufficiently to produce an obvious pit.

Specimen 4 is a large brown sandstone slab, weighing 1161 g, with several pits that exhibit battering, suggesting its use as a possible anvil for bipolar flake production. Alternatively, it could have been used as a nutting stone, but only briefly since no polish was evident.

The remaining sandstone pieces were small, weighing less than 5 g each, with one exception. A flat ferruginous sandstone slab weighing 40.7 g was collected in the 50 by 50 cm test pit at S2W0.5, between 30 and 40 cm below surface. Modification was not apparent.

Artifact Distribution

Overall artifact density, based on chipped stone frequencies in the upper 50 cm of all shovel tests, is plotted in Figure 5. The artifact density conforms closely to the current topography, corresponding to the higher elevations of the knoll.

There is considerable variability in vertical artifact distribution in the shovel tests, presumably a consequence of sampling error (given the small areas involved) coupled with their widespread distribution across the knoll. The vertical distribution of artifact densities is more uniform in the larger excavation units in the central portion of the site. In the two 50 by 50 cm and four 1 by 1 m units, artifact density increases with each level, until a maximum density is reached between 30 and 60 cm below surface, with some variation in this peak from unit to unit. In two of the excavation units (N06E19 and N13E20), artifact densities drop off and then show a second, smaller increase in chipped stone density, possibly indicating two stratigraphically and temporally differentiated Early Archaic components. These two peaks could correspond to the presumed slight difference in age of Big Sandy and Dalton projectile points, though without further excavation the issue remains equivocal. Table 3 summarizes the distribution of chipped stone artifacts by level for the four 1 by 1 meter units.

<table>
<thead>
<tr>
<th>Table 3. Distribution of chipped stone by level.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>0-10</td>
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<tr>
<td>10-20</td>
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<tr>
<td>20-30</td>
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<td>30-40</td>
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<td>40-50</td>
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<td>50-60</td>
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<td>60-70</td>
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<td>70-80</td>
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<tr>
<td>80-90</td>
</tr>
<tr>
<td>90-100</td>
</tr>
</tbody>
</table>

Most of the formal stone tools are associated with the concentration of chipped stone at 30-60 cm. Only three formal tools were recovered in the upper 30 cm of the deposit, the stemmed drill (which stylistically appears to be of Late Archaic or Woodland age), a second drill, and a biface fragment. The remaining chipped stone tools occur between 30 and 70 cm. Both the Big Sandy and auriculated point fragment occur at 40-50 cm below surface. The two Tallahatta quartzite tools occur at 30-40 cm, vertically coinciding with a concentration of Tallahatta flakes in N06E19. The two in situ ground stone artifacts were also found at 30-40 cm in the central area of the site.

The present evidence suggests a sealed archaeological deposit, despite the fact that no clear “living floor” was isolated. The vertical spread of artifacts is not unexpected given multiple millennia of bioturbation in unconsolidated soils. Artifacts have likely been moved both downward and upward by treefalls, animal burrowing, and other events. Nonetheless, in the absence of more extensive excavation, we cannot entirely discount the possibility that the apparent stratigraphic distribution is a function of some complex interplay of time and these disturbing factors. Additional investigations will be
needed to assess the geoarchaeological context of the Early Archaic component.

Discussion

Archaeological remains accumulated at the G.W.O. site during at least three different time periods. The earliest and best represented falls within the Terminal Paleoindian-Early Archaic time range, as evidenced by the buried zone of artifacts associated with the possible Dalton and the Big Sandy point. This concentration of materials occurs between 40 and 50 cm, although bioturbation during the ensuing 8000 plus years has almost certainly resulted in vertical displacement of material. If the Early Archaic chronology posed by Alexander (1983) is applicable to south Mississippi, the temporal difference accorded these points may be reflected in possibly two stratigraphically differentiated early concentrations.

Other, later occupations are scantly represented. Middle or Late Archaic use of the site is represented by the bannertone fragment and stemmed drill respectively. The bannertone fragment was found on the margins of the site, and was associated with little else in the way of cultural remains. The stemmed drill was stratigraphically above the Early Archaic remains in the central area of the site, and may represent a temporary use of this slightly higher landform in the Bogue Chitto floodplain. Finally, a single sherd represents an apparently ephemeral Woodland occupation, presumably on the present surface. Low artifact densities in the upper 10 cm of the site preclude interpreting any significant or extended use of the site during the late Holocene.

The Early Archaic Occupation

Several preliminary observations may be offered regarding the nature of the Early Archaic occupation of the G.W.O. site. Their tentative nature should be obvious, given the paucity of information about Early Archaic utilization of the Gulf Coastal Plain and the limited nature of research at the site. First, there is a low ratio of projectile points to other tool categories, suggesting that a variety of maintenance activities took place, as might be expected in a residential camp. Since few true biface thinning flakes were identified, it is likely that a significant portion of the lithic reduction taking place at the site was aimed at producing usable flakes for expedient tools. A small percentage of flakes was demonstrably utilized; it is likely that more were in fact utilized, but failed to acquire significant damage from use.

Although biface manufacturing probably occurred at the site, it does not appear to have been the main focus of stoneworking. The high number of secondary and small interior flakes, including a number of edge retouch flakes (not tabulated separately), indicate tool-finishing and refurbishing.

A final clue to site function is the surprising number of utilized sandstone pieces recovered, given the scale of the investigation. Assuming that all are part of the Early Archaic component, their presence suggests that the site was not merely an ephemeral camp inhabited by a traveling band. Rather the location was either occupied for an extended period of time or more likely was reused with sufficient frequency to warrant stashing these cumbersome, relatively non-portable objects at the site. The polish on several of the ground stone pieces suggests use in processing plant foods. Coupled with the few charred nut remains and the bottomland setting of the site, the cumulative evidence suggests the site was a locus for exploiting bottomland nut-bearing hardwoods (oak, hickory, and pecan) as well as other edible bottomland plants.

Testing propositions about archaeological integrity and site function at sites such as G.W.O. will require the development of new approaches for larger scale excavations, ones that accommodate relatively artifact-sparse deposits that have been subjected to some degree of disturbance resulting from geo- and bioturbation. Where the formal properties of components may not be realized, data that will permit the analytical, i.e., post hoc differentiation of occupation units, must be the product of such approaches. The G.W.O. investigations will, we hope, point out directions that field and analytical developments may proceed.

Acknowledgements

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Evan Peacock

*Crops and Man*, by Jack Harlan, is primarily a synthesis of research dealing with the dynamics of crop dispersal. Crops (and their associated weeds) originate and migrate through a number of means, not the least of which is intentional human management. Tracking the history of any given species across space and time is an enormously complex problem: Harlan presents excellent coverage of many different species, and one of his prime sources of data is the archaeological record.

This is the second edition of a work which first appeared under the same title in 1975. The chapters are topical, beginning with expositions on classification (What is a crop? What is a weed?), moving to concepts of domestication and diffusion, and ending with areal overviews of the Near East, the Far East, and the Americas. It should be noted that each of the latter chapters begins with an "archaeological prelude," a brief culture history of each particular area as pertains to the subject at hand. Although Harlan is not an archaeologist, his grasp of the material and his ability to summarize the findings from each area are impressive.

Many concepts concerning the transition to agriculture are briefly explored. As an example, there is an overview of the myth, prevalent worldwide, that hunter-gatherers were too busy living their day-to-day, hand-to-mouth existence to have time to "invent" civilization. While arguing against this perception may seem like old news, it is unfortunately evident that such myths die hard. For instance, the brochure currently available at the Emerald Mounds site near Natchez, Mississippi, states that the agricultural Mississippian Indians "...wove cloth, tanned leather, and had more leisure time than the hunters and gathers [sic] who were their ancestors." Obviously, the well-documented fact that hunter-gatherers spend much less time engaged in subsistence-related activities than do agricultural groups has not yet quite gotten around.

Another concept covered by Harlan is Vavilov's theory of agricultural centers. According to this theory, an area where a given crop species displays the greatest genetic diversity is the area of origin for their species. This is based on the proposition that diversity increases through time. It is clear from Harlan's work that genetic variability arises from a number of sources, and all cases so far presented for Vavilovian centers of origin have been weakened considerably as more data have become available.

This second edition has been updated using a number of recent archaeological publications for each area under consideration. This is especially true for the chapter dealing with the New World, a testament to the recovery and analytic techniques of archaeologists and palaobotanists who work in regions where preservation bias is a formidable problem. There are, however, some surprising omissions: for example, there is no mention of Bruce Smith's research on Chenopodium, even though the genus is mentioned several times in the text. It is, of course, impossible to be entirely comprehensive in a work of this scope, and in general Harlan has done a commendable job of updating and revision.

In sum, the second edition of *Crops and Man* is a timely and useful reemergence of an important work. The concise coverage of theories concerning the processes of domestication, as well as the many basic definitions offered, will be helpful to students at all levels. The origin and dispersal histories of specific Old and New World crops will be an excellent aid to instructors who cover the origins of agriculture and the rise of civilizations in their courses. If another edition should follow, it is hoped that the formidable task of synthesis will be carried out with a thoroughness and skill equal to that displayed here. It is also hoped that "people" or "humans" will replace the inclusive "Man" in the title and elsewhere.

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George Sabo III

The nature and character of "representations" shaping human worlds, past and present, are manifestly diverse and irreducible to unitary conceptual frameworks. The contents of Representations in Archaeology, if anything, closely resemble their counterparts in real life. This collection of twenty essays (plus introductory and concluding summaries by the editors) is the product of a week-long seminar held in Bloomington, Indiana in 1987, sponsored by the French Centre National de la Recherche Scientifique and the National Science Foundation. An invited group of francophone and anglophone scholars gathered to discuss a variety of newly-emerged interpretive perspectives of archaeology that draw in one way or another upon the fields of semiotic, structural, and symbolic studies, broadly construed. In an attempt to confer some structure on an otherwise heterogeneous assemblage of views, the editors of this volume have grouped the resulting papers into four parts. While all of the essays must be characterized as treating "broadly theoretical" issues, most if not all of them grapple as well with more fundamental issues involved in working logically from data to conclusion.

Part I: "Philosophical and Semiotic Points of View," consists of five essays. The most salutary prospects for developing an interpretive archaeology aimed at comprehending the symbolic representations of former societies are offered, interestingly, by nonarchaeologists. Jean Molino, a semiotician, discusses the relevance to archaeology of some of his work concerning the conditions and operations of human symboling activity. James Bell, a philosopher, discusses how a focus on human agency in prehistory can serve to complement the more commonly employed holistic approaches to the study of cultural transformations. Dan Sperber advocates an "epidemiological" approach to the study of cognitive psychology. Michael Herzfeld explores areas of mutual concern in archaeology and cultural anthropology: he suggests that archaeology can offer many valuable insights concerning the issue of "evidential scarcity" resulting from the absence of linguistic discourse, whereas ethnology can provide incisive models derived from studies of the cultural forms ("artifacts") that various social patterns may take. Jean-Claude Gardin offers a comparative analysis of the formal logic, or "symbolic constructions," employed by various recently emerged "schools" of archaeological interpretations in an effort to clarify aspects of symbolic communication archaeologists themselves employ in their attempts to identify symbolic constructions of the past.

The optimistic prospects for interpretive archaeology sketched by the papers in Part I stand in contrast to the more cautious stances advocated by the three essays comprising Part II: "The Foundations and Limits of Interpretations." Allan Gallay reviews Binford's Mask site analysis along with his own studies of Tuareg campsites in order to examine the logical underpinnings of archaeological explanations of spatial phenomena. He argues that the ideological components sought in many "structuralist" and symbolic approaches operate mainly as "noise" distorting more basic technoecomic and behavioral factors. Developing a similarly cautious line of reasoning, Whitney Davis uses the case of paleolithic rock art to assess prospects for interpreting the "meaning" of prehistoric iconography. He argues that any such interpretations must depend upon grasping the "local knowledge"—that is, knowledge of "exactly in what way the properties of a visual display were produced for seeing-as." According to Davis, no amount of study of representational attributes alone will yield the identification of past "meaning." One should therefore first reconstruct the manner in which representational attributes were produced (on any kind of artifact), and then attempt to understand the sociocultural context of that production. In the third and final essay of Part II, Michael Fotiades examines the multiple ways in which archaeologists employ the concept of the "site" in an effort to elucidate our disciplinary ideology.

The six essays comprising Part III: "Symbolic and Structural Approaches," present the result and experiences of scholars who have actually attempted to employ interpretive frameworks in their research projects. Mark Leone and Elizabeth Kryder-Reid take up the perspective of "critical archaeology" to examine the ways in which representations of the past are presented to the public at the reconstructed historic towns of St. Mary's City and Annapolis, Maryland, in an effort to illuminate archaeology's mediative stance relative to past/present representations. Susan Kus reflects on two personal encounters with death—through participation in mortuary ritual during fieldwork in Madagascar, while visiting the traveling exhibit of the Egyptian pharaoh Ramses II in Memphis, Tennessee—to underscore the profound differences that separate the sensuous, physical-emotional realm of direct experience from a more detached and culturally decontextualized encounter with cultural phenomena.
Kus uses these anecdotes to convey most convincingly both the limits and the prospects for understanding actions performed by those (past or present) who stand in relation to us anthropologists as "cultural others." Patricia Galloway takes up the issue of using European descriptions of Southeastern American Indians as a basis for ethnohistorical reconstruction, whether for ethnological or archaeological applications. Taking a cue from Bourdieu's notion of the habitus, she develops a model of the multiple cognitive "scripts" or "frames" that Europeans and American Indians would have employed both to act in and make sense of their mutual and ongoing encounters. Consideration of the resulting sets of "world knowledge" can (and, Galloway argues, must) be applied as a control on the various categories of "evidence" we seek to extract from those documents. Olivier Aureneche takes up another tack on the "reading" of historical texts in its application of the historian's external and internal modes of documentary criticism to the examination of architectural remains in ancient Mesopotamia. Danielle Stordeur provides an analysis of Natufian bone tool assemblages from the Levant as a vehicle for exploring the logical foundations of archaeological reasoning employed to explain patterns of temporal and spatial variation. Catherine Perles explores the cognitive dimensions of prehistoric stone toolmaking by analyzing multiple strategies employed in raw material procurement, tool production, and toolkit management among Magdalenian populations in France and Neolithic populations in Greece. Her examination of options constraining choices within sets of strategies as a means to probe the intentions of prehistoric tool makers closely resembles the "local knowledge" approach advocated by Davis.

The final series of essays is presented in Part IV: "Formal analysis, Artificial Intelligence, and Cognitive Perspectives." Christopher Chippendale argues for the reconstruction of generative "grammars" for various categories of cultural productions (e.g., musical sequences, written texts, spoken texts, three-dimensional objects, kinship categories, etc.). Valentine Roux examines the formal logic of the "knowledge of reference" that permits archaeological propositions to be derived from ethnological studies. Henri-Paul Francfort, James Doran, and Marie-Salomé Lagrange present the results of computer-based, Artificial Intelligence simulations to investigate the archaeological reasoning used to explain the prehistoric development of urbanism in the Near East (Francfort), the emergence of sociocultural complexity in prehistory (Doran), and classification of architectural plans (Lagrange). Finally, Christopher Peebles reviews the ascendancy of positivism in late twentieth-century archaeological theory and suggests that an alternative conceptual framework, based on the philosophy of Karl Popper and recent advances in cognitive science, can allow for the investigation of past representations under logical criteria no less rigorous that those advocated by positivists.

If you have favored this review with your attention thus far, it is quite likely that you will find something of interest and worth in *Representations in Archaeology*. This book will appeal mainly to archaeologists and anthropologists who are interested in the fundamental premises and conceptual underpinnings that shape our inferential endeavors. While many of the essays deal with complex issues and highly specialized applications, the authors and editors have attempted to produce a book that presents their views in a reasonably clear and straightforward manner, and in this they have succeeded.

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Kenneth Carleton

This volume is a compilation of most of the papers given in an invited symposium at the 1986 meeting of the Southern Anthropological Society (one of the papers, that by Susan Greenbaum of the MOWA Choctaw of Alabama, was withdrawn upon objections by that group). The topic of this symposium, as signified by the title of this book, was Southeastern Indians in the late 20th century. This book is not an ethnography; there is, in fact, little mention of the traditional culture of most of the groups discussed except to say that they have or have not retained much traditional culture. Rather, this volume is a discussion of the corporate entities which make up the "tribes" and the individual personalities and internal factions involved in their operations. Thus, it is more a political/economic history of the various Indian groups over the past thirty (+/-) years than a cultural ethnography.
There are nine chapters and an introduction to the volume. The introduction gives a brief overview of studies on Southeastern Indians and a rationale for the present volume. Four of the chapters discuss one or two groups (the North Carolina Cherokees, the Seminoles and Miccosukes, the Poarch Creeks, and the Mississippi Choctaws) while four of the chapters have discussions of multiple groups by state (Virginia, North Carolina [exclusive of the Cherokees], South Carolina and Louisiana). The last chapter is an overview chapter further discussing points mentioned in the previous chapters and particularly concentrating on federal and state recognition. The authors are Helen C. Rountree (Virginia Indians), Sharlotte Neely (North Carolina Cherokees), Patricia B. Larch (North Carolina Indians, with a more detailed discussion of the Waccamaw SiouX), Wesley D. Tauckchiray and Alice B. Kasakoff (South Carolina Indians), Harry A. Kersey, Jr. (Seminole and Miccosukes), J. Anthony Paredes (Poarch Creek), John H. Peterson, Jr. (Mississippi Choctaw), Hiram F. Gregory (Louisiana Indians) and George Roth (overview chapter). All are anthropologists except Tauckchiray, who is an historian.

There are a number of topics discussed in most of the essays, including economic development, education, federal and state recognition, sovereignty issues, Indian identity, governmental organization, and sources (or lack thereof) of funds. The discussion of these issues is of necessity more or less detailed depending on whether the essay is about a specific group or is a survey of several groups by state. However, there is also a dichotomy in the discussions depending on whether the group is a federally recognized tribe or not. This dichotomy is very real, since the amount of federal funds and support as well as a public perception of legitimacy varies greatly between the tribes that are currently recognized and those that are not. The discussions about single groups give histories of the governmental and economic government of those groups over the past thirty years or since their recognition by the federal government. The surveys of multiple groups concentrate primarily on various programs for economic development, some federal and some local, which have been implemented by the different groups and on the efforts, or lack thereof, by these groups to gain federal and state recognition.

While the issue of federal recognition of Indian tribes is not generally well known even among professional anthropologists, let alone the general public, it is an extremely important issue among Indian groups, today more so than ever. Becoming officially recognized by the federal government establishes a "government-to-government" relationship between the federal government and the tribe. In real terms this means that the tribe qualifies for programs and monies set aside specifically for Indians because of the trust responsibilities assumed by the United States through treaties signed with the tribes. Federal recognition, to a certain extent, also serves to legitimize (especially to the general public) groups who are more controversial in their claims to be Indians. These topics are discussed to some extent in several of the essays and are dealt with in more detail in Paredes's introduction and in Roth's overview chapter. Roth is particularly well suited to discuss this topic since he is a staff anthropologist for the Branch of Acknowledgement and Research of the Bureau of Indian Affairs, the federal agency responsible for evaluating applications for recognition by the federal government.

Overall, this volume is well worth reading for anyone interested in the modern history of Southeastern Indians. The essays on specific groups are all well written and give a good background for understanding both the current structures of the tribes and new developments among them. The essays that are surveys by state are generally not as well written, but that is probably the fault of the format. They are less focused, having to jump around from one group to another. This volume is an excellent resource, giving access to a major portion of the modern literature about diverse Southeastern Indian groups which is sometimes very difficult to locate.

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Mary L. Kwas

The Arkansas Archeological Survey is to be commended for its continuing efforts to produce publications for the general public. This form of "public archaeology" is a valid and far-reaching contribution. Successful writing for the public, however, is not just a distillation of writing for professional archaeologists. There is a quantum difference...
have been helped by a general discussion of shared cultural traits, followed by the specific differences of the individual tribes.

Several illustrations in this chapter reproduced poorly, most especially the Delisle map on page 29. The italicized French place names are almost illegible, and there is no explanation in the outline as to its importance to the text.

I found the last two chapters to be the most interesting of the book, effectively answering a common question from the public, “what became of...?” The chapters dealt with the recent history of the Arkansas tribes: how they had thrived or faltered in modern times, their response to seemingly genocidal government policy, their creation and acceptance of new traditions, and their perseverance for survival. Photographs taken in the last few years give the public a look at the culture of living people. The combination of the photographs and the text offer a thoughtful and insightful look at modern Native Americans, helping to dispel the rampant stereotypes extant among non-Indians.

Aside from the content, the overall format of the book leaves something to be desired. The text is printed in double spacing that, along with the amateurish drawing of a thatched hut that appears on the cover, suggests a book intended for children. The text, however, is clearly written for adults, who would have been better served by a more polished and adult look.

There are quite a number of illustrations and maps sprinkled throughout the chapters, which add considerably to the format, but their reproductive quality is not consistent. Several are so poor, notably those by M. Bossau, that it would have been preferable to omit them. Although all the illustrations contain citations as to their titles and sources, few provide any interpretive explanations. Professional archaeologists would be able to interpret an unexplained illustration in the context of the text, but the same cannot be assumed for a non-expert. A single sentence of explanation would have better tied together the text and illustrations for the audience.

The title of the book is in two parts, (i.e. Paths of our Children: Historic Indians of Arkansas), but only the primary title appears on the cover and spine. Since the secondary title really describes what the book is about, it should have been on the cover as well. The explanation for the primary title doesn’t appear until the last page of text. It comes from a quotation by a member of the Osage tribe who explains the importance of keeping cultural traditions alive to provide “paths for our children.” I realize that “for” and “of” are very tiny prepositions, but they make a big difference in the meaning of the
phrase; the original quote is the only one that makes sense. This was an extremely sloppy editorial error.

Paths of our Children provides an informative and interesting account of Arkansas' Native Americans; still, as a publication intended for the general public, it just does not go far enough. A decade ago, amidst few other offerings of its kind, it might have been lauded as trend setting. Today, the ante is higher, since more and better books have become available for the general public. A noteworthy example is the "Indians of North America" series published by Chelsea House Publishers of New York, covering many tribes and formatted attractively with copious illustrations both in black-and-white and color.

Although one would not expect a state agency to compete with a New York publishing house, the polished products from professional publishers raise the standards against which more modest works must be judged. In this day of desktop publishing, archaeologists must utilize all the tools available to produce works for the public that will be uniquely suited to the intended audience and far more than abbreviations of professional work.

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