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Journal of Northeast Texas Archaeology

Vessels plowed up in this area

Area A

cultivated fields

Prairie Creek

bridge

slough

Area B

cultivated field

0 100 200 yds

N
# Table of Contents

Archaeological Investigations at the Pine Creek Site, an Allen Phase Settlement on Flat Creek in Northwestern Cherokee County, Texas

*Timothy K. Perttula, Bo Nelson, and Mark Walters,*
*with a contribution by James Feathers* ................................................. 1

New Radiocarbon Dates from East Texas Caddo Sites

*Timothy K. Perttula and Robert Z. Selden, Jr.* ........................................ 19

Analysis of a Surface Collection from the L. A. Hale (41TT12) Mound Site, Titus County, Texas

*Timothy K. Perttula* ................................................................................... 27

The Linebarger Site on Dry Creek, Camp County, Texas

*Timothy K. Perttula* ................................................................................... 31

The Chasteen Site (41UR18) on Big Cypress Creek, Upshur County, Texas

*Timothy K. Perttula* ................................................................................... 35

Analysis of Surface Collections from Areas A and B at the Sam Roberts Site (41CP8) on Prairie Creek, Camp County, Texas

*Timothy K. Perttula* ................................................................................... 39

The Sam D. Carpenter Garden Plot Site (41CP496), Camp County, Texas

*Timothy K. Perttula* ................................................................................... 47

Aboriginal Ceramic Sherds from 41MA30 in the Navasota River Basin in Madison County, Texas

*Timothy K. Perttula* ................................................................................... 53

Analysis of a Collection of Early Caddo Artifacts from the Davis-McPeek Mound Site (41UR4/99), Upshur County, Texas

*Timothy K. Perttula* ................................................................................... 57

Additional Ancestral Caddo Ceramic and Lithic Artifacts from the Three Mounds Creek Site, Gregg County, Texas

*Timothy K. Perttula* ................................................................................... 61
List of Authors

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Archaeological Investigations at the Pine Snake Site, an Allen Phase Settlement on Flat Creek in Northwestern Cherokee County, Texas

Timothy K. Perttula, Bo Nelson, and Mark Walters, with a contribution by James Feathers

INTRODUCTION

The Pine Snake site is a recently discovered late 17th to early 18th century Caddo Indian archaeological site located on private land in the northwestern part of Cherokee County, Texas, in the valley of a westward-flowing tributary to the Neches River. This is an area of the Pineywoods of East Texas that contains extensive numbers of Caddo archaeological sites along all major and minor streams (see Anderson et al. 1974; Kleinschmidt 1982; Perttula and Nelson 2007, 2009a, 2009b; Walters and Perttula 2012). Post-A.D. 1400 Frankston phase and post-A.D. 1650 Historic Caddo Allen phase sites, especially cemeteries dating to either phase, are particularly abundant in this part of East Texas (Cole 1975; Kleinschmidt 1982; Marceaux 2007, 2011; Perttula 2007a, 2007b, 2008, 2010, 2011). This article summarizes the findings from archaeological investigations we completed at the Pine Snake site in late 2008. They have produced important information on the domestic archaeological record at a well preserved Allen phase habitation site.

SETTING

This historic Caddo site has an spatially extensive archaeological deposit. It extends for more than 600 m along a narrow ridge top and ridge slope (370-400 feet amsl), as well as a swale or saddle, reminiscent of the setting of the nearby Kah-hah-ko-wha site (41CE354) on Flat Creek (Perttula and Nelson 2007), and a probable spring-fed intermittent drainage area, now dry (Figure 1). The current channel of Flat Creek is more than 800 m to the north; a seasonal tributary to Flat Creek also lies ca. 150 m to the east and southeast.

The vegetation on the ridge top and ridge slope landforms is a pine plantation that is approximately 10 years old. Consequently, surface visibility is less than 10% due to a thick understory of brush and vines. There is evidence of ridge rows of soil on the site, evidence of the clearing preparations in advance of planting the pine trees in rows.

WORK COMPLETED AT THE SITE

Thirty-nine shovel tests were first excavated on the ridge top and ridge slope to define the spatial limits of the site (see Figure 1). A total of 29 of the shovel tests excavated at the Pine Snake site were found to contain archaeological materials that occurred between 0-60 cm bs in Nacogdoches fine sandy loam sediments (see Mowery and Oakes 1959). These were principally ceramic vessel sherds (64%) that were concentrated in two areas at the northern (ST 576 and ST 581) and southern (ST 548-550, 552-555, and 557-561) ends of the site (see Figure 1). These concentrations surely relate to archaeological evidence of two or more Historic Caddo farmstead compounds preserved at the Pine Snake site. Other shovel tests were noted to contain lithic artifacts and animal bone, with most of the latter found to be in the southern ceramic concentration. The estimated spatial extent of the site is 20,100 m², or approximately 5.0 acres.

During the course of shovel testing, one shovel test (ST 558) in the southern ceramic concentration (see Figure 1) encountered a lens of darker soil, a mussel shell fragment, and a high number of ceramic sherds between 0-40 cm bs. Another shovel test (Unit 778), rectangular-shaped and about 70 x 100 cm in size to permit a better examination of the profile, was excavated adjacent to it (Figure 2). Encountered in Unit 778 was a zone of ash between 32-40 cm bs, followed by a hard, compact oxidized soil between 40-46 cm bs.
(Figure 3), resting directly on, or excavated slightly into, the clay subsoil. This deposit appeared to represent a basin-shaped hearth (estimated at that time as at least 115 cm in diameter) filled with ash and darker sediments. Ceramic sherds, wood charcoal, charred nutshells, animal bone, and mussel shell fragments were noted amidst this hearth feature, particularly between 20-40 cm bs.

The overall density of artifacts noted in the positive shovel tests (excluding the irregular-sized Unit 778) is considerable, at 2.69 per positive shovel test, or ca. 21.5 artifacts per m². In terms of the ceramic sherds, the highest densities noted in the shovel tests included 14 sherds in ST 558, nine sherds in ST 555, and eight sherds in ST 550, all in the southern concentration at the site (see Figure 1). Also noted in this same area were several Perdiz arrow point fragments (see below).

Subsequent to the completion of the shovel testing, additional controlled excavations were done in the southern part of the Pine Snake to better define the archaeological character of the hearth feature, as well as to examine the archaeological deposits in more detail around the hearth. The additional work included the excavation of five 1 x 1 m units (Units 782-786) around ST 558 and Unit 778 (see Figure 2) as well as a ca.
Various fine-screen samples were taken from Units 781-783 and the post hole features exposed in the work (see below and Appendix 1). Additionally, a 40 x 40 cm fine-screen unit was excavated just south of ST 558 (see Figure 2). This work exposed a large hearth feature (Feature 1) that most likely represents a central hearth inside a Caddo domicile, along with seven post holes, as well as an abundance of Historic Caddo Allen phase artifacts discarded in and around the hearth.

The archaeological deposits in this part of the Pine Snake site range between 30-50 cm in thickness overlying a red clay subsoil (Figure 4). The uppermost deposit (Zone 1) is a dark yellowish-brown (10YR 3/4) sandy loam A-horizon that ranges from 12-40 cm in thickness. Outside the area of the Feature 1 hearth, the second soil zone (Zone 2) is a strong brown (7.5YR 4/6) sandy loam E-horizon about 15 cm in thickness. Below this is a red (2.5YR 4/6) clay B-horizon (Zone 3) (Figure 4). In the area of the Feature 1 hearth, lying below Zone 1 is a ca. 10-20 cm thick very dark grayish-brown (10YR 3/2) sandy loam (Zone 4) occupational deposit that rests directly above a lens of ash and an oxidized deposit, but this charcoal-stained sediment also extends in a 50-80 cm wide band outside of, but adjacent to, the oxidized basin (see Figure 2). Below Zone 4 is a thin gray ash lens (Zone 5a), between 3-5 cm in thickness, that accumulated through hearth use atop the oxidized basin. The oxidized basin sediments (Zone 5b) are a hard baked red (2.5YR 4/8) sandy loam that are a maximum of 16 cm in thickness (see Figure 4). The oxidized basin appears to have been excavated into the Zone 3 B-horizon approximately 12 cm in the deepest part of the hearth basin.
The features documented in the limited archaeological investigations at the Pine Snake site include the Feature 1 hearth and seven post holes (PH 1-7) (see Figure 2). One of the post holes (PH 6) intrudes into the Zone 5a ash deposits in the hearth (see Figure 4), and clearly postdates its accumulation. The top of PH 7 was exposed underneath Zone 4 deposits, but is coeval with the Feature 1 ash and oxidized basin deposits (see Figure 4), and thus it is not a central structure post; our excavations did not identify a central post associated with Feature 1.
Feature 1 consists of several associated sediments. First is an intensely oxidized red sandy loam (Zone 5b) hearth basin that is approximately 110 cm (north-south) x 180 cm (east-west) (see Figure 2). In the center of the hearth, the basin extends from 31-48 cm bs (see Figure 4). The thickness and hard-baked character of the basin indicates that the hearth was repeatedly used and re-used for a number of years by the Caddo peoples living at the Pine Snake site.

In the approximate center of the Zone 5b basin is a concentrated 60 x 65 cm area of gray ash (Zone 5a). The top of the ash is exposed at 28 cm bs (see Figure 4). Above this is the Zone 4 deposits (13-28 cm bs) of very dark grayish-brown sediments (with charcoal flecks and staining) that are likely to have been raked out of the hearth to clean and empty the basin. This band of charcoal-stained sediments is present to the immediate north, west, and south of the oxidized basin (see Figure 2).

The Feature 1 hearth was probably located inside a structure, although the excavations were not sufficiently intensive or of a large-enough scale to identify a structure wall post pattern. Such a hearth, with a concentrated and well-preserved ash deposit in the central part of the basin, would have been “used almost exclusively for warming, as suggested by white ash smoldering fires, which are less suitable for cooking than the higher-intensity outdoor fires with their constant flow of oxygen to fuel the flames” (Shafer 2003:37).

### Post holes

PH 1-5 are arranged in a semi-circle along the northern and western parts of the Feature 1 hearth. Given their placement, and their generally small size (Figure 5), they may mark the construction of a screen along one side of the hearth while it was in use. The exposed tops of the post holes are at 33-35 cm bs, and they extend to 38 cm bs (PH 5), 41 cm bs (PH 4), 44 cm bs (PH 2 and PH 3), or 47 cm bs (PH 1). Only PH 1, PH 4, and PH 5 were set in the Zone 3 clay B-horizon. The post hole fill is either a dark grayish-brown sandy loam with charcoal flecks (PH 1, PH 3), a dark yellowish-brown (10YR 4/4) sandy loam with charcoal flecks (PH 2), or a dark brown (10YR 3/2) sandy loam with no charcoal flecking. With the exception of PH 1, which is 19 cm in diameter and a typical size for a wall or smaller interior post support of a Caddo house, post hole diameters range from 10-13 cm, much too small for them to have likely served as wall posts.

PH 6 intersects the Zone 5a ash in Feature 1, and postdates the accumulation of the ash (see Figures 2 and 4). This post, with straight sides and a flat bottom, is approximately 19 cm in diameter, and extends from 28-37 cm bs. Its fill is a very dark grayish-brown sandy loam (Zone 4).

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**Figure 5. Profiles of post holes 1-5 at the Pine Snake site.**
PH 7 is a larger post feature (26 cm in diameter), probably a support post, that had been placed along the western side of the oxidized basin, probably cutting through it, or less likely set next to it when it was in use (see Figures 2 and 4). The fact that the post was first recognized only below the Zone 4 hearth debris suggests it had been placed at approximately the same time as the hearth was in use; hearth sediments were incorporated into the fill. This post has sloping sides and a rounded bottom, and extends from 35-66 cm bs. The fill of this post is primarily a strong brown sandy loam (Zone 2) that is mottled with very dark grayish-brown sandy loam (Zone 4) and chunks of oxidized soil.

**THERMOLUMINESCENCE DATING, by James Feathers**

Two ceramic sherds and a chunk of the intensely oxidized Feature 1 hearth basin were submitted to the University of Washington Luminescence Dating Laboratory for thermoluminescence dating (Feathers 2010). The two sherds—both parallel brushed cooking jar body sherds—are from Unit 785 (24 cm bs) and Unit 786 (28 cm bs). The sample of oxidized soil from Feature 1 is from 39-41 cm bs in Unit 785.

Dose rate measurements were made on each sample as well as an associated sediment sample. Due to time limitations, measurements on three of the sediment samples did not get completed, but variation in radioactivity among them was not great, so an average from the same site was used for age calculation for those particular samples. The difference in radioactivity between sherds and associated sediments was also not great in most cases, suggesting the ceramics were made from similar material as the sediments. Dose rates were determined using alpha counting and flame photometry. The beta dose rate calculated from these measurements was compared with the beta dose rate measured directly by beta counting. These were in agreement for nine of the samples, but differed for the other seven. In the latter case, the beta dose rate from beta counting was used for age calculation. The cause of the discrepancy in beta dose rates is not certain, but it could relate to disequilibrium in the uranium decay chain. Moisture content was estimated as 80 ± 20 % of saturated value for the sherds, and 10 ± 5 percent for the sediments. Table 1 gives all relevant data, including the total dose rate for each sample.

<table>
<thead>
<tr>
<th>Sample</th>
<th>(^{238}\text{U}) (ppm)</th>
<th>(^{235}\text{Th}) (ppm)</th>
<th>K (%)</th>
<th>Beta dose rate (Gy/ka)</th>
<th>Total dose rate (Gy/ka)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(β)-counting</td>
<td>(α)-counting/ flame photometry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UW1964</td>
<td>2.19±0.15</td>
<td>3.56±0.76</td>
<td>0.89±0.06</td>
<td>1.02±0.08</td>
<td>1.13±0.06</td>
</tr>
<tr>
<td>UW1965</td>
<td>5.41±0.35</td>
<td>14.12±1.43</td>
<td>0.80±0.03</td>
<td>1.53±0.14</td>
<td>1.82±0.07</td>
</tr>
<tr>
<td>Sediment</td>
<td>1.97±0.14</td>
<td>3.21±0.72</td>
<td>0.73±0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UW1966</td>
<td>2.95±0.20</td>
<td>6.56±0.99</td>
<td>1.07±0.06</td>
<td>1.85±0.16</td>
<td>1.47±0.06</td>
</tr>
</tbody>
</table>

*Dose rate calculated for TL. It will be slightly lower for OSL because of lower alpha efficiency.

Equivalent dose was determined by TL, IRSL and OSL. The TL measurements, in general, were characterized by poor plateaus (Table 2). In only two samples did the plateau (region of constant equivalent dose) extend beyond 320°C, symptomatic of relatively low firing conditions. In half the samples there was some sensitivity change with second glows. All but three growth curves were fit with linear functions. Anomalous fading was ubiquitous, and apparent in all but three samples (Table 2).

OSL was measured on 5 or 6 aliquots per sample. The OSL signal was generally strong, at least 10 times the intensity of the IRSL signal (in the SAR protocol). This is typical for ceramics and because
IRSL mainly stems from feldspars, which are involved in anomalous fading, this probably means the OSL signal does not fade appreciably. Weak signal allowed equivalent dose for IRSL to be measured on more than two aliquots for only one of the samples. Equivalent dose values are given in Table 3. The equivalent dose values differ among TL, IRSL and OSL, which is not surprising given that the b-values (which reflect the lower efficiency of alpha irradiation in producing luminescence) also differ. However, the OSL equivalent dose is unusually low, when compared with the TL and IRSL values, for most samples, the significance of which will be taken up next. The b-values are also given in Table 3. These are fairly typical values, although the IRSL values are based on limited data due to a weak signal. The IRSL/OSL b-values were not measured for UW1964, due to an oversight; an average value was used for OSL age calculation.

Table 2. TL measurements.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Plateau (°C)</th>
<th>1st/2nd ratio*</th>
<th>fit</th>
<th>g-value**</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW1964</td>
<td>250-290</td>
<td>1</td>
<td>Linear</td>
<td>13.3±2.31</td>
</tr>
<tr>
<td>UW1965</td>
<td>260-340</td>
<td>0.72±0.16</td>
<td>Linear</td>
<td>7.03±2.95</td>
</tr>
<tr>
<td>UW1966</td>
<td>270-340</td>
<td>1.50±0.12</td>
<td>linear</td>
<td>8.48±1.85</td>
</tr>
</tbody>
</table>

*Refers to slope ratio between the first and second glow growth curves. A glow refers to luminescence as a function of temperature; a second glow comes after heating to 450°C. **g-value is the fading rate expressed as % per decade, where a decade is a power of 10.

Table 3. Equivalent dose values for TL, IRSL, and OSL.

<table>
<thead>
<tr>
<th>Sample</th>
<th>TL</th>
<th>IRSL</th>
<th>OSL</th>
<th>TL</th>
<th>IRSL</th>
<th>OSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW1964</td>
<td>2.24±0.16</td>
<td>0.95±0.54</td>
<td>1.11±0.03</td>
<td>2.12±0.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UW1965</td>
<td>3.45±0.71</td>
<td>1.58±0.76</td>
<td>1.53±0.07</td>
<td>2.72±0.47</td>
<td>1.25±0.22</td>
<td>0.59±0.05</td>
</tr>
<tr>
<td>UW1966</td>
<td>2.04±0.28</td>
<td>None</td>
<td>4.88±0.37</td>
<td>2.17±0.19</td>
<td>1.15±0.08</td>
<td></td>
</tr>
</tbody>
</table>

*Due to a 2nd glow growth curve with a large negative intercept (not expected from current understanding), the additive dose intercept was used for equivalent dose.

Table 4 gives the ages calculated separately for TL, IRSL, and OSL for each sample. For samples with evidence of fading of the TL signal, the correction procedure of Huntley and Lamothe (2002) was applied. In some cases, this correction did not produce a significantly older age, although part of the reason for this may be low precision in the fading data. No fading tests were done for either IRSL or OSL (because of exorbitant amount of machine time required), so no correction can be applied to them. The IRSL signal mainly comes from feldspars, which often fade, so the IRSL ages must be considered a minimum. The weak IRSL, and therefore feldspar, signal suggests that the OSL signal probably comes mainly from quartz and does not fade, as mentioned earlier.

Table 4. Age calculations for TL, IRSL, and OSL for Pine Snake site samples.

<table>
<thead>
<tr>
<th>Sample</th>
<th>TL age (ka)</th>
<th>IRSL age (ka)</th>
<th>OSL age (ka)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW1964</td>
<td>2.52±0.98</td>
<td>0.58±0.05</td>
<td></td>
</tr>
<tr>
<td>UW1965</td>
<td>0.58±0.14</td>
<td>0.41±0.20</td>
<td>0.51±0.04</td>
</tr>
<tr>
<td>UW1966</td>
<td>0.81±0.16*</td>
<td></td>
<td>1.57±0.15</td>
</tr>
</tbody>
</table>

* Corrected for fading using Huntley and Lamothe (2002) method. Other TL ages reflect either no measured fading or a correction that was not significantly different from the uncorrected age. ** Sample fades, but correction produced infinite value.
Table 4 shows that the OSL age is typically younger than, or equivalent in value to, the TL and IRSL ages. It is clearly younger for two samples from the Pine Snake site, and for UW1965, it is probably younger because the TL age is underestimated due to insignificant fading correction because of poor precision. On one sample (UW1966), the OSL age is older, even when fading of the TL signal is considered.

The younger OSL ages are unusual. The OSL is usually older, if anything, because of fading for TL and IRSL. A possible reason is the low original firing temperature of the pottery. It is well known in the case of light exposure that the traps associated with TL and IRSL do not bleach as rapidly as they do for OSL. It is possible the original firing of the pottery was not sufficient to deplete the TL and IRSL signals to the same extent as the OSL signal. In other words, the TL and IRSL still contain a residual signal from the raw material. That would make the OSL ages the most likely ages for the manufacture of the pottery, but OSL is also known to contain slower bleaching components, so it is possible that a residual is present even with the OSL.

Assuming the OSL is the best estimate in most cases, Table 5 gives the final ages for the Pine Snake samples. Some additional comments: the OSL age for UW1966 seemed unreasonably old, so the TL was taken as the best estimate.

Table 5. OSL and TL final age estimates for Pine Snake site samples.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Age (ka)</th>
<th>% error</th>
<th>Calendar age (years AD)</th>
<th>Basis for age*</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW1964</td>
<td>0.58±0.05</td>
<td>8.4</td>
<td>1430 ± 50</td>
<td>OSL</td>
</tr>
<tr>
<td>UW1965</td>
<td>0.51±0.04</td>
<td>7.7</td>
<td>1490 ± 40</td>
<td>OSL</td>
</tr>
<tr>
<td>UW1966</td>
<td>0.53±0.08</td>
<td>15.1</td>
<td>1470 ± 80</td>
<td>TL</td>
</tr>
</tbody>
</table>

* OSL/TL refers to a weighted average of the two ages
** negative value reflects a BC age

The ages for samples from Pine Snake are all considerably older than expectations, as they range from A.D. 1380-1550 at one standard deviation and A.D. 1330-1630 at two standard deviations, as compared to the post-A.D. 1650 temporal estimate derived from the analysis of the recovered ceramics from the site (see below). Insufficient heating may be causing the age overestimation. Many of the ceramics were reported as “soft” by the students preparing them for measurement. I do not consider this a fully satisfactory explanation (the last batch of Caddo ceramics we processed [from the Lang Pasture site in Anderson County, Texas, see Feathers 2011] also had poor plateaus indicative of low heating, but the OSL and TL agreed for most of them and the ages were not known to be overestimates), but I can think of no other reason why the OSL ages should be younger. A possible test could be coarse-grain analysis on UW1964, the sample of burned earth from the hearth feature. Coarse grains of quartz were isolated from this sample. It should be possible to measure only the fast component of these quartz grains – the ones most likely reset to zero – to see if an age more in line with expectations can be obtained.

**RECOVERED ARTIFACTS**

More than 580 artifacts are in the assemblage of recovered material culture remains from the Pine Snake site. The majority of the artifacts are ceramic sherds (n=462) from plain, utility ware, and fine ware vessels. There are also engraved ceramic elbow pipe sherds (n=3) and burned clay pieces (n=64) in the collection. Lithic artifacts include seven arrow points or arrow point preforms, a flake tool, a mano fragment, 47 pieces of lithic debris, and one core.

Plotting the distribution of artifacts recovered in situ at the site, with one exception (a single sherd at 22 cm bs), all of these artifacts (n=45) are found between 24-36 cm bs. The highest densities of artifacts by depth occur between 27-28 cm bs (18%), 30 cm bs (11%), 32 cm bs (11%), and 35-36 cm bs (27%). These artifacts are at depths that indicate they are from the large hearth or in deposits immediately above and/or coeval with
the hearth (i.e., they are in deposits raked out of the hearth and deposited adjacent to it). Mussel shell pieces are particularly abundant below 31 cm bs, in the lower part of the basin hearth.

Ceramic Sherds

A total of 462 ceramic sherds were noted in the various positive shovel tests and excavated units at the site. This comprised 157 plain rim, body, and base sherds and 305 decorated rim and body sherds, among them several Patton Engraved sherds, including a rim from ST 778 (10-20 cm bs). The plain to decorated sherd ratio is 0.52, consistent with an Historic Caddo occupation in the upper Neches River basin (Perttula and Nelson 2007:Table 4; Walters and Perttula 2012:Table 31) as well as the latest Frankston phase (ca. A.D. 1600-1650) Caddo ceramic assemblages (see below).

Most of the decorated sherds have brushing on them, either as the sole form of decoration (n=253), or in combination with punctated (n=3) and incised (n=4) lines; these are all from utility ware jars (i.e., cooking jars). The brushed sherds that were noted include vertical brushing on the rim (n=5); horizontal brushing on rims (n=4); horizontal brushing on the rim and vertical brushing on the body (n=1); parallel brushed (n=208); overlapping brushed (n=12); vertical brushed on the body (n=18); and opposed brushing (n=5). Overall, 85% of the decorated sherds from the site have brushed marks on either the rim and/or the body of utility ware jars; this is one of the highest proportion of brushed sherds documented to date in any Caddo site in the upper Neches River basin other than a series of historic Caddo sites on nearby Stone Chimney Creek (see also Perttula and Nelson 2007:Table 4; Walters and Perttula 2012:Table 31).

Other decorated utility ware sherds include brushed-punctated sherds. These include vessels with a tool punctated rim and horizontal brushing on the body (n=2), as well as one body sherd with parallel brushing, and a row of tool punctates pushed through the brushing, and parallel brushed-overlapping and/or diagonal incised lines over the brushing (n=2). There are also two Spradley Brushed-Incised body sherds, a new utility ware ceramic type documented in Historic Caddo contexts in the Neches-Angelina river basin (Marceaux 2011). These sherds have parallel brushing overlain with closely-spaced perpendicular incised lines.

Other utility ware sherds are present at the Pine Snake site, although in low proportions (as is also the case at the Kah-hah-ko-wha site [41CE354], see Perttula and Nelson [2007:Table 5]). There are five sherds (including two rims) from LaRue Neck Banded jars, and two body sherds with closely spaced pinched rows from Killough Pinched jars.

A Maydelle Incised rim with triangular incised zones filled with punctations was found in ST 554 (20-40 cm bs), and there are two body sherds with tool punctated rows, and five body sherds with parallel or opposed incised lines. Another body sherd has a vertical appliqued fillet and opposed incised lines, and one body sherd has a straight appliqued fillet. A third appliqued sherd in the decorated sherd assemblage has a straight appliqued fillet with a row of tool punctations placed adjacent to the fillet.

There are a number of rim (n=3) and body sherds (n=6) with horizontal or parallel grooved ridges in the Pine Snake utility wares. Very similar decorated sherds have been recovered at several other historic Caddo sites in the Angelina and Neches River basins in East Texas—including at the Deshazo site (41NA27) (Fields 1995:199-200 and Figure 75d-e)—and this kind of grooved utility ware has recently been dubbed Lindsey Grooved because of its abundance at the Lindsey site (41CE293) (Marceaux 2011). Although categorized as “ridged” pottery at the Deshazo site, Fields (1995:199-200) describes the decorative technique as “the manipulation of the vessel surface to form shallow horizontal grooves alternating with mounded ridges. The grooves are trough shaped and the ridges are not appliqued.” To avoid confusion with the Belcher Ridged type, and its very different form of ridged decoration, we have chosen to emphasize the horizontal grooves as the defining criteria for this new Caddo utility ware type.

In the fine wares at the Pine Snake site, there are five Patton Engraved rim and body sherds. These
are all apparently from Patton Engraved, var. Allen vessels (see Perttula 2008:Figure 2) with horizontal rows of engraved lines with triangular tick marks.

There are 13 other fine ware sherds recovered in the investigations. These include a bottle sherd with opposed engraved lines; two sherds with multiple curvilinear engraved lines; two possible carinated bowl sherds with part of a scroll element; two possible Poynor Engraved, var. Hood sherds with hatched panel dividers (see Perttula 2008:Figure 1); a body sherd with opposed engraved lines; and a rim to an inverted rim carinated bowl (likely a Patton or Poynor Engraved vessel, see Suhm and Jelks 1962) with one horizontal engraved line showing on it. Two other rims have a single horizontal engraved line under the lip, and one of these is also lip notched; this is a rare form of lip treatment in the upper Neches River basin Caddo ceramic tradition (Perttula 2011). Another sherd from a carinated bowl has a single horizontal engraved line above the carination, and horizontal brushing on the vessel body.

The last fine ware engraved sherd from the Pine Snake site is a Hume Engraved, var. Allen sherd (see Perttula 2008:Figure 2). This sherd is from a bowl or carinated bowl with at least one horizontal engraved line that has a series of hatched pendant triangles.

As previously mentioned, the Pine Snake site has one of the highest proportions of brushed sherds in any documented Caddo ceramic assemblage in this part of the upper Neches River basin (Table 6), and thus it falls into the Group I assemblages, the youngest Caddo sites in our present sample along with the ceramic sherd assemblage from the nearby Kah-Hah-Ko-Wha site (41CE354) and several sites on Stone Chimney Creek (41CE421 and 41CE429). The Group I sites are all identified as having Historic Caddo Allen phase components.

Table 6. Comparative sherd assemblage data from Lake Palestine Caddo sites, nearby Caddo sites, and the Pine Snake site.

<table>
<thead>
<tr>
<th>Site</th>
<th>No. of Dec. Sherds</th>
<th>%Brushed</th>
<th>%bone-temper</th>
<th>%Wet-paste decorations</th>
<th>P/DR</th>
<th>Brushed/Wet paste ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YOUNGEST SITES: GROUP I, Allen phase</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41CE421</td>
<td>2353</td>
<td>89.5</td>
<td>5.4</td>
<td>7.8</td>
<td>0.28</td>
<td>8.5</td>
</tr>
<tr>
<td>41CE429</td>
<td>465</td>
<td>87.7</td>
<td>0.8</td>
<td>9.7</td>
<td>0.22</td>
<td>9.07</td>
</tr>
<tr>
<td>Pine Snake*</td>
<td>305</td>
<td>85.2</td>
<td>5.7</td>
<td>8.8</td>
<td>0.51</td>
<td>9.63</td>
</tr>
<tr>
<td>41CE354*</td>
<td>474</td>
<td>82.7</td>
<td>3.1</td>
<td>8.9</td>
<td>0.20</td>
<td>8.14</td>
</tr>
<tr>
<td><strong>GROUP II, latest Frankston phase, ca. A.D. 1560-1650</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41CE324</td>
<td>188</td>
<td>81.9</td>
<td>3.2</td>
<td>7.3</td>
<td>0.48</td>
<td>11.0</td>
</tr>
<tr>
<td>Debro</td>
<td>311</td>
<td>80.0</td>
<td>?</td>
<td>10.3</td>
<td>0.14</td>
<td>7.75</td>
</tr>
<tr>
<td>William</td>
<td>525</td>
<td>75.8</td>
<td>?</td>
<td>16.2</td>
<td>0.44</td>
<td>4.68</td>
</tr>
<tr>
<td>Sherman</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GROUP III, Frankston phase, ca. A.D. 1480-1560</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest Drive</td>
<td>1693</td>
<td>68.6</td>
<td>?</td>
<td>21.9</td>
<td>0.56</td>
<td>3.12</td>
</tr>
<tr>
<td>Halbert</td>
<td>1757</td>
<td>65.8</td>
<td>2.6</td>
<td>26.3</td>
<td>0.70</td>
<td>2.51</td>
</tr>
<tr>
<td>Woldert</td>
<td>1730</td>
<td>62.7</td>
<td>0.0</td>
<td>28.8</td>
<td>0.72</td>
<td>2.19</td>
</tr>
<tr>
<td>Ferguson</td>
<td>4116</td>
<td>60.8</td>
<td>&lt;1.0</td>
<td>27.9</td>
<td>0.61</td>
<td>2.17</td>
</tr>
<tr>
<td><strong>GROUP IV, earliest Frankston phase, ca. A.D. 1400-1480</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomato Patch</td>
<td>912</td>
<td>49.2</td>
<td>?</td>
<td>41.7</td>
<td>1.50</td>
<td>1.21</td>
</tr>
<tr>
<td>Lang Pasture</td>
<td>2435</td>
<td>35.9</td>
<td>6.7</td>
<td>38.0</td>
<td>1.40</td>
<td>0.91</td>
</tr>
<tr>
<td>Mitchell, D</td>
<td>54</td>
<td>32.1</td>
<td>0.0</td>
<td>33.3</td>
<td>1.37</td>
<td>1.50</td>
</tr>
</tbody>
</table>
Table 6. Comparative sherd assemblage data from Lake Palestine Caddo sites, nearby Caddo sites, and the Pine Snake site, cont.

<table>
<thead>
<tr>
<th>Site</th>
<th>No. of Dec. Sherds</th>
<th>%Brushed</th>
<th>%bone-temper</th>
<th>%Wet-paste decorations</th>
<th>P/DR</th>
<th>Brushed/Wet paste ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP V, Middle Caddo period, ca. A.D. 1200-1400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41SM404</td>
<td>446</td>
<td>16.0</td>
<td>8.5</td>
<td>60.7</td>
<td>1.73</td>
<td>0.26</td>
</tr>
<tr>
<td>White Mule</td>
<td>1404</td>
<td>18.5</td>
<td>1.5</td>
<td>63.7</td>
<td>2.61</td>
<td>0.29</td>
</tr>
<tr>
<td>41HE139</td>
<td>40</td>
<td>17.5</td>
<td>8.1</td>
<td>65.0</td>
<td>2.51</td>
<td>0.33</td>
</tr>
<tr>
<td>OLDEST SITE: GROUP VI, Early Caddo period, ca. A.D. 1000-1200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitchell, A-C</td>
<td>56</td>
<td>1.3</td>
<td>12.0</td>
<td>65.7</td>
<td>1.71</td>
<td>0.03</td>
</tr>
</tbody>
</table>

*sites with Patton Engraved sherds

Sources: Anderson et al. 1974; Perttula 2009, 2011; Perttula and Middlebrook 2009; Walters and Perttula 2012

The Pine Snake ceramics are tempered with grog or crushed sherds/fired clay (Table 7). Grog is a temper in each of the sherd analyzed in detail, regardless of whether the sherd is from a plain ware, utility ware, or fine ware vessel.

Table 7. Temper and paste attributes of the Pine Snake ceramics.

<table>
<thead>
<tr>
<th>Temper-paste</th>
<th>Utility ware</th>
<th>Fine ware</th>
<th>Plain ware</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>grog</td>
<td>26</td>
<td>3</td>
<td>9</td>
<td>38</td>
</tr>
<tr>
<td>grog-sandy paste</td>
<td>12</td>
<td>-</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>grog-hematite</td>
<td>12</td>
<td>1</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>grog-hematite-sandy paste</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>grog-bone</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>grog-bone-sandy paste</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>grog-bone-organics-sandy paste</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>grog-organics-sandy paste</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>total with grog</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>87</td>
</tr>
<tr>
<td>total with bone</td>
<td>1.8%</td>
<td>0.0%</td>
<td>17.4%</td>
<td>5</td>
</tr>
<tr>
<td>total with hematite</td>
<td>31.6%</td>
<td>42.9%</td>
<td>21.7%</td>
<td>26</td>
</tr>
<tr>
<td>total with organics</td>
<td>0.0%</td>
<td>14.3%</td>
<td>4.3%</td>
<td>2</td>
</tr>
<tr>
<td>total with sandy paste</td>
<td>31.6%</td>
<td>42.9%</td>
<td>34.8%</td>
<td>29</td>
</tr>
<tr>
<td>Totals</td>
<td>57</td>
<td>7</td>
<td>23</td>
<td>87</td>
</tr>
</tbody>
</table>
Less than 6% of the sherds from the site (with the highest proportions found in the plain wares) are from vessels with bone temper inclusions (see Table 7); the limited use of bone as a temper is characteristic of the upper Neches River basin Caddo ceramic tradition (Perttula 2011; see Table 6). Crushed pieces of hematite or ferruginous sandstone are also regularly used (29.9%) as a temper in the Pine Snake ceramics, especially so in the fine wares. Two sherds (2.3%) have charred organic remains in the paste, suggesting they are from vessels where the clay paste was not well-cleaned before firing and/or that they are from low-fired vessels where the organic materials in the paste were not completely combusted during firing.

More than 33% of the sherds from the Pine Snake site are from vessels that have been made with a naturally sandy clay. Each of the different ceramics wares at the site relied on roughly comparable proportions of sandy clays (i.e., sandy paste, 31.6-42.9%), with their greatest use seen in the engraved fine wares (see Table 7).

The majority of the sherds from the Pine Snake site are from vessels fired in a low oxygen or reducing environment (Table 8). The sherds fired in this manner comprise between 57.9% (utility wares) and 71.5% (fine wares). Plain wares were generally fired in the same manner as the fine wares, as 69.5% of the plain sherds are from vessels fired in a reducing environment.

Table 8. Firing conditions in the Pine Snake site ceramic sample.

<table>
<thead>
<tr>
<th>Firing Condition</th>
<th>Utility ware</th>
<th>Fine ware</th>
<th>Plain ware</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidizing</td>
<td>14.0%</td>
<td>14.3%</td>
<td>0.0%</td>
<td>9</td>
</tr>
<tr>
<td>Incompletely oxidized</td>
<td>21.1%</td>
<td>14.3%</td>
<td>30.4%</td>
<td>19</td>
</tr>
<tr>
<td>Reducing</td>
<td>5.3%</td>
<td>28.6%</td>
<td>13.0%</td>
<td>8</td>
</tr>
<tr>
<td>Reducing, but</td>
<td>52.6%</td>
<td>42.9%</td>
<td>56.5%</td>
<td>46</td>
</tr>
<tr>
<td>cooled in open air</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sooted, smudged,</td>
<td>7.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>4</td>
</tr>
<tr>
<td>reheated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>57</td>
<td>7</td>
<td>23</td>
<td>87</td>
</tr>
</tbody>
</table>

In particular, the highest proportion of sherds are from vessels fired in a low oxygen environment, but then the vessels were pulled from the fire and allowed to cool in the open air. Depending upon the ware, between 42.9-56.5% of the sherds from the site are from vessels fired in this manner; plain wares were most commonly fired this way. About 23% of the sherds are from incompletely oxidized vessels (see Table 8); that is, the vessels were not fired a sufficient duration to completely oxidize the paste. Almost 5% of the sherds analyzed in detail for firing conditions are from utility ware vessels that have been either sooted, smudged, or reheated, leaving a thin dark reduced band along one or both vessel sherd surfaces.

**Instrumental Neutron Activation Analysis of Selected Sherds**

Six ceramic sherds and one ceramic elbow pipe sherd from the Pine Snake site (Table 9) were submitted to the Archaeometry Laboratory at the Research Reactor Center at the University of Missouri-Columbia for instrumental neutron activation analysis (INAA) (Ferguson 2009a). The purpose of these analyses is to determine, in so far as is possible, the production locale of the analyzed sherds, and identify any ceramic sherds that are from vessels made from non-local clay sources (i.e., are from a trade vessel). In the analysis, Ferguson (2009a)
projected the new sherd samples from the Pine Snake site against the sub-regional groups developed in the latest reworking of the Caddo ceramic database. The Pine Snake site is in ceramic compositional sub-regional group 8, primarily comprised of sherds from sites in the upper Neches River basin; each of the samples from the Pine Snake site have been compared to the current compositional group structure.

Table 9. Samples submitted for instrumental neutron activation analysis from the Pine Snake site.

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Site Name</th>
<th>Region No. (River Basin)</th>
<th>Description</th>
<th>Age (A.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TKP896</td>
<td>Pine Snake 8 (Neches)</td>
<td>elbow pipe rim</td>
<td>1650-1720</td>
<td></td>
</tr>
<tr>
<td>TKP897</td>
<td>Pine Snake 8 (Neches)</td>
<td>parallel brushed sherd</td>
<td>1650-1720</td>
<td></td>
</tr>
<tr>
<td>TKP898</td>
<td>Pine Snake 8 (Neches)</td>
<td>Maydelle Incised rim</td>
<td>1650-1720</td>
<td></td>
</tr>
<tr>
<td>TKP899</td>
<td>Pine Snake 8 (Neches)</td>
<td>parallel incised body sherd</td>
<td>1650-1720</td>
<td></td>
</tr>
<tr>
<td>TKP900</td>
<td>Pine Snake 8 (Neches)</td>
<td>parallel brushed sherd</td>
<td>1650-1720</td>
<td></td>
</tr>
<tr>
<td>TKP901</td>
<td>Pine Snake 8 (Neches)</td>
<td>brushed-punctated sherd</td>
<td>1650-1720</td>
<td></td>
</tr>
<tr>
<td>TKP902</td>
<td>Pine Snake 8 (Neches)</td>
<td>Lindsey Grooved sherd</td>
<td>1650-1720</td>
<td></td>
</tr>
</tbody>
</table>

Sub-region 8 INAA samples consist of a core group (n=111), Group 1 (n=7), Group 2 (n=12), and 17 unassigned samples. The Pine Snake sherd samples are good matches with the sub-region 8 core group (see Ferguson 2009a:Figure 3), strongly suggesting that the sherds are from vessels and pipes made from local clay sources.

Ceramic Pipe

A large section of a ceramic elbow pipe, made from local clays (see above) was noted at 28 cm bs in ST 778 at the southern end of the Pine Snake site (see Figures 1 and 2). This pipe is very similar to other Late Caddo and Historic Caddo elbow pipes documented in the upper Neches River basin (probably Var. B), as it has four horizontal engraved lines on the stem, as do several other varieties of elbow pipes from this region (see Perttula 2011). The bowl and lower stem sections of the pipe fragment have a series of concentric engraved circles.

Other pipe sherds were recovered from Units 782 (26 cm bs) and 784 (10-20 cm bs). In the case of Unit 782, a large section (three conjoined sherds) of an elbow pipe stem was found. This bone-tempered stem had four horizontal engraved lines below the stem lip, as well as at least seven vertical engraved lines that extend down the stem towards the pipe bowl. This is an example of a Var. C elbow pipe (Perttula 2011:Figure 6-23). The Unit 784 pipe sherd has at least two horizontal engraved lines encircling the pipe stem below the lip.

Burned Clay

About 64 pieces of burned clay were noted in ST 778 (20-40 cm bs) and three excavation units (Units 781 and 786, between 20-35 cm bs). These may be part of the clay lining of the basin-shaped hearth exposed in this small excavation.

Chipped Stone Tools

An interesting assortment of chipped stone tool fragments and lithic debris were noted in the shovel tests excavated at the Pine Snake site. Chipped stone tools noted in the investigations include several arrow points or arrow point fragments—Perdiz arrow points (n=3, ST 554, 0-20 cm bs, gray chert, ST 778, 0-10 cm bs, dark gray chert, ST 778, 10-20 cm bs, gray chert); a contracting stem arrow point preform of white
novaculite (ST 558, 20-40 cm bs); a possible Bassett point fragment of gray chert (ST 778, 20-30 cm b); arrow point tip and blade fragments (n=2, ST 556, 40-60 cm, quartzite, ST 778, 30-40 cm bs, gray chert)—and a distally-retouched flake tool of gray chert (ST 565, 0-20 cm bs).

**Ground Stone Tools**

A single ferruginous sandstone mano fragment (with grinding on both surfaces) was found in Unit 785 between 20-30 cm bs. This two-sided mano is at least 40 mm in length, 52 mm in width, and 18 mm in thickness.

**Lithic Debris**

The lithic debris from the site includes flakes from several different raw materials: gray chert (n=31), brownish-gray chert (n=1), dark gray chert (n=3), honey-colored chert (n=1), a translucent brown chert (n=1), dark brown chert (n=1), black chert (n=2), a glassy black siliceous material (obsidian, n=2, ST 778, 10-20 cm bs and Unit 785, 10-20 cm bs), and quartzite (n=5). These flakes are the product of the resharpening or final pressure-flaking of completed or near-completed tools that must have been brought to the site, except for the quartzite pieces; the latter raw material occurs as pebbles in local stream gravels, and they were reduced through knapping to obtain flakes for tool use or arrow point manufacture. There is a small tested quartzite pebble from Unit 784 (10-20 cm bs); it is 46 mm in length, 29 mm in width, and 28 mm in thickness.

Chert comprises about 85% of the lithic debris at the site, all from non-local raw material sources. These include Central Texas sources 150 miles or more to the west (i.e., the gray, brownish-gray, dark gray, honey-colored, translucent brown, and dark brown cherts; several flakes have a limestone-covered cortex) or Ouachita Mountains sources (i.e., the black chert) more than 100 miles to the north.

The obsidian (Texas Obsidian Project No. 234a-c) is from a long-distance non-local source, namely from the Obsidian Ridge (Cerro de Toledo rhyolite) source in the Jemez Mountains of northern New Mexico (Thomas R. Hester, April 27, 2009 personal communication). According to Ferguson (2009b), the obsidian pieces were analyzed by the University of Missouri Research Reactor Center with a hand-held portable Bruker XRF:

the instrument has a rhodium-based X-ray tube which we operate at 40 kV and a thermoelectrically cooled silicon detector. We calibrated the instrument using a suite of 45 well-known obsidian sources with data from previous XRF and NAA measurements. Your samples were counted for three minutes to measure the minor and trace elements present. The elements measured include Mn, Fe, Zn, Ga, Pb, Th, Rb, Sr, Y, Zr, and Nb… The resulting data were compared to our database of obsidian sources using both hierarchical cluster analysis and bivariate plots. Due to the small size of the artifacts, the concentrations of lower atomic weight elements are inflated with the smallest samples, thus the source assignment was based primarily on elements Rb, Sr, Y, Zr, and Nb.

The mean values in parts per million (ppm) for these elements are: Rb (196.3 ± 5.6 ppm), Sr (5.67 ± 0.44 ppm), Y (47 ± 2.67 ppm), Zr (153.7 ± 10.23 ppm), and Nb (71.3 ± 2.23 ppm).

**ANIMAL AND PLANT REMAINS**

Animal bone pieces (n=8) were noted in several shovel tests, including ST 576 (0-20 cm bs) in the northern area and ST 550 (0-20 cm bs), 555 (0-15 cm bs), and 558 (20-40 cm bs; among them deer teeth) in the southern ceramic concentration (see Figure 1). ST 558 (20-40 cm bs) also had a mussel shell fragment. Burned animal bone, wood charcoal, nutshell, and mussel shell fragments were also noted between 10-40 cm bs in ST 778. They are also relatively abundant in the 1 x 1 m excavation units placed in and around the Feature 1 hearth. These remains have not been studied to date.
SUMMARY AND CONCLUSIONS

The Pine Snake site is one of several well-preserved Historic Caddo Allen phase settlements that have been recently identified in a small portion of the Flat Creek valley in the upper Neches River basin (Perttula 2009; Perttula and Nelson 2007, 2009a, 2009b), as well as in nearby Stone Chimney Creek (Walters and Perttula 2012). It is apparent from the number of sites that have been documented in this area that there was a considerable density of Caddo residential settlements on these Neches River tributaries in the late 17th-early 18th century, which is not generally the case in other parts of the upper Neches that have been closely examined by archaeologists. Test excavations at the Kah-Hah-Ko-Wha (41CE354) and Pine Snake sites have recovered important information on the domestic character of these Historic Caddo settlements, particularly their material culture: including the kinds of ceramic vessels and pipes that were made, decorated, and used during each occupation, the access of these Caddo to exotic lithic raw materials for tool manufacture, and the range of animals, wild plant foods, and domesticated plant foods (see Perttula and Nelson 2007:117-124) that comprised their diet.

Unfortunately, these sites are in an area slated for development by a private landowner, and they are not currently protected from future development. Hopefully, a plan can be developed that is agreeable to the private landowner that will insure the long-term protection and preservation of these heretofore unique and significant Caddo archaeological resources.

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Ten fine-screen samples were obtained from the Feature 1 hearth and Post holes 1-7 at the Pine Snake site. The three from Feature 1 (Units 781-783, 30-35 cm bs) are from 40 x 40 cm areas; each contained 9.5 liters of feature sediments. The fine-screen samples from the post holes ranged from 1.3-11.4 liters in size, depending upon the diameter and depth of each of the post holes. A total of 23.5 liters of post hole sediment fill was taken from the post holes.

The fine-screen samples from the Pine Snake site contain sherds (n=8), burned clay pieces (> n=520), lithic debris (n=3), a ground stone mano (n=1), a single fire-cracked rock, charred plant remains (i.e., wood charcoal and charred nutshells, > n=907), animal bones (n=124), and small pieces (and one valve from Post hole 7) of mussel shell (n=16) (Table 10). With the exception of Post hole 7, the other post holes contain only a low assortment of ceramic sherds, charred plant remains (n=55, 6% of the remains), and animal bones (Table 10).

Table 10. Recovery of artifacts from fine-screen samples at the Pine Snake site.

<table>
<thead>
<tr>
<th>Artifact category</th>
<th>P1*</th>
<th>P2</th>
<th>P3</th>
<th>P6</th>
<th>P7</th>
<th>U781</th>
<th>U782</th>
<th>U783</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain sherd</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decorated sherd</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burned clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100+</td>
<td>120+</td>
<td>200+</td>
<td>520+</td>
</tr>
<tr>
<td>Lithic debris</td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ground stone tool</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Fire-cracked rock</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
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<tr>
<td>Plant remains</td>
<td>8</td>
<td>29</td>
<td>18</td>
<td>200+</td>
<td>52</td>
<td>400+</td>
<td>200+</td>
<td>907+</td>
<td></td>
</tr>
</tbody>
</table>
Table 10. Recovery of artifacts from fine-screen samples at the Pine Snake site, cont.

<table>
<thead>
<tr>
<th>Artifact category</th>
<th>P1*</th>
<th>P2</th>
<th>P3</th>
<th>P6</th>
<th>P7</th>
<th>U781</th>
<th>U782</th>
<th>U783</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal bone</td>
<td>6</td>
<td>1</td>
<td>9</td>
<td>29</td>
<td>47</td>
<td>32</td>
<td>124</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mussel shell</td>
<td>2</td>
<td></td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>11</td>
<td>1</td>
<td>37</td>
<td>20</td>
<td>314+</td>
<td>206+</td>
<td>651+</td>
<td>340+</td>
<td>1580+</td>
</tr>
</tbody>
</table>

*Post holes 4 and 5 did not contain any artifacts

All four decorated sherds are body sherds from utility ware jars that have brushed bodies. Three of the four sherds are from vessels tempered with grog, and the remaining sherd has both grog and crushed pieces of ferruginous sandstone/hematite.

Evidence of chipped stone tool manufacture is limited in these fine-screen samples. This consists of three pieces of lithic debris, one each of petrified wood (a cortical flake), a cortical flake of dark gray chert, and a non-cortical flake of gray chert. The latter two flakes are likely from completed or near completed tools made of non-local lithic raw materials; such cherts may have been available in gravel sources in the Trinity or Brazos River basins to the west of the Pine Snake site.
INTRODUCTION

In this article, we report on new radiocarbon dates obtained from five Caddo sites in East Texas. The radiocarbon samples are charred organic remains scraped off of one surface of whole vessels or sherds. These samples are from the Johns (41CP12), Shelby Mound (41CP71), Gilbert (41RA13), Henry Spencer (41UR315), and Henry Williams (41UR318) sites. All of the dates are calibrated using OxCal v4.1.7 (Bronk Ramsey 2012), with atmospheric data from Reimer et al. (2009).

THE DATES

The new date from the Johns site, a Late Caddo, Titus phase cemetery in the Big Cypress Creek drainage (Perttula et al. 2010), is on organic residues scraped from the interior surface of Vessel 3 in Burial 16. This is a large grog-tempered jar with closely-spaced horizontal incised lines on the rim, while the vessel body has diagonal brushing marks. The 2-sigma (95.4% probability) calibrated age range of the organic residue on the vessel is A.D. 1461-1635, with a median calibrated age of A.D. 1558 (Figure 1).

Figure 1. Calibrated age ranges of Johns (41CP12) Vessel 3, Burial 16 (AMS-001187).
The Shelby Mound site (41CP71) is a Late Caddo, Titus phase mound center, community cemetery, and large village on Greasy Creek in the Big Cypress Creek drainage (Perttula et al. 2012a). Organic residue was collected from a medium-sized jar with an incised rim and appliqued lug handles. There are four sets of appliqued nodes on the body (Figure 2).

The 2-sigma calibrated age ranges of the organic residue with the highest probabilities are A.D. 1512-1602 and A.D. 1616-1665 (Figure 3). The median calibrated age is A.D. 1572.

Charred organic residues were taken from a plain grog-tempered body sherd recovered in Feature B3 at the Gilbert site (41RA13). The Gilbert site is an mid-18th century Caddo site on Lake Fork Creek in the upper Sabine River basin (Blaine 1992; Jelks 1967; Perttula 2012).

Figure 2. Incised-appliqued jar from the Shelby Mound site (#241 in Margaret Hinton collection).

Figure 3. Calibrated age ranges of Shelby Mound (41CP71) Vessel #241 (AMS-001429).
The organic residue on the sherd has 2-sigma age ranges of A.D. 1642-1678 and A.D. 1765-1800 (Figure 4), with a median calibrated age of A.D. 1745. The stable carbon isotope value of -12.1 o/oo on the organic residue indicates that the residue came from maize remains charred on the vessel, likely a jar.

There are three new radiocarbon dates from the Henry Spencer site, primarily a Late Caddo, Titus phase cemetery (Perttula et al. 2012b), on a tributary to Little Cypress Creek. The first date is organic residue from an incised-punctated jar dubbed Spencer Incised-Punctated (Figure 5). The 2-sigma calibrated age ranges of the organic residue with the highest probabilities are A.D. 1445-1524 and A.D. 1570-1631, with a median calibrated age of A.D. 1498 (Figure 6).

Figure 4. Calibrated age ranges of the Gilbert (41RA13) sherd sample (AMS-001432).

Figure 5. Incised-punctated jar, Burial 33, Vessel 186, from the Henry Spencer site.
Figure 6. Calibrated age ranges of Burial 33, Vessel 186 organic residue from the Henry Spencer site (AMS-001185).

The second new radiocarbon from the Henry Spencer site is on organic residue from a medium-sized jar with appliqued-punctated and incised decorative elements (Vessel 7, Burial 2) (Figure 7). The 2 sigma-calibrated age ranges of the organic residue on this vessel are A.D. 1278-1315 and A.D. 1355-1389, with a median calibrated age of A.D. 1311. Based on other vessels recovered from this burial (Perttula et al. 2012b:20-25), this date appears to be anomalously older than expected, by perhaps 150-200 years or more.

Figure 7. Appliqued-punctated and incised jar, Burial 2, Vessel 7, from the Henry Spencer site.
The third new radiocarbon date from the Henry Spencer is from a Pease Brushed-Incised jar (Vessel 87) from Burial 18 (Figure 9). The calibrated age ranges on the vessel organic residue with the highest probabilities are A.D. 1449-1524 and A.D. 1570-1631, with a calibrated median age of A.D. 1507 (Figure 10).

The final new radiocarbon date is from the organic residue scraped from a Harleton Appliqued jar (Figure 11) in Burial 20 (Vessel 2003.08.1042) at the Henry Williams site (41UR318). Henry Williams is a large Late Caddo habitation and cemetery locale on Gum Creek in the Little Cypress Creek basin (Perttula et al. 2012c). It is only a few miles from the Henry Spencer site.

The 2-sigma calibrated age ranges for the organic residue on this vessel are A.D. 1341-1395 and A.D. 1285-1328, with a median calibrated age of A.D. 1354 (Figure 12). Based on other vessels recovered in the cemetery, this date appears to be anomalously older than expected, by perhaps 150-200 years or more.
Figure 10. Calibrated age ranges of Burial 18, Vessel 87 organic residue from the Henry Spencer site (AMS-001431).

Figure 11. Harleton Appliqued jar from Burial 20 at the Henry Williams site (41UR318).
SUMMARY

The seven new radiocarbon dates from these five Caddo sites in East Texas add to the ever increasing corpus of radiocarbon dates obtained from Caddo sites in the region (Selden and Perttula 2012). It was expected based upon the stylistic analysis of ceramic vessels from cemeteries at the Johns, Shelby Mound, Henry Spencer, and Henry Williams sites, as well as previously obtained radiocarbon dates from the Shelby Mound (Perttula et al. 2012a:Table 8) and Henry Spencer (Perttula et al. 2012b:Table 18 and Figure 309a-b), that the six organic residue samples from these four sites would fall within the dated range of the Titus phase, ca. A.D. 1430-1680. The median calibrated ages of four of the samples are consistent chronologically with a Titus phase age, in that they range from A.D. 1498-1572. The other two organic residue samples, however, one from the Henry Spencer site and the other from the Henry Williams site, have calibrated mean ages of A.D. 1311 and A.D. 1354, respectively. Since these organic residues are from vessels in burials in cemeteries that have strong Titus phase associations, we have concluded that these calibrated age ranges are anomalously old.

The seventh, and final, calibrated date has been obtained from a sherd in a midden feature at the mid-18th century Gilbert site. The median calibrated age of the organic residue from the sherd is A.D. 1745, fully meeting age expectations for the sample based on other artifacts recovered from the site, especially many European trade goods.

ACKNOWLEDGMENTS

We appreciate the permission of the Northeast Texas Community College, Tommy Johns, the Gregg County Historical Museum, and Jay Blaine to document the vessels and/or sherds from these five East Texas sites.
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Selden, R. Z., Jr. and T. K. Perttula
Analysis of a Surface Collection from the L. A. Hale (41TT12) Mound Site, Titus County, Texas

Timothy K. Perttula

INTRODUCTION

This article, and the three that follow in this volume, are summaries of artifact surface collections obtained by Robert L. Turner, Jr. at four sites in the Big Cypress Creek basin in the Post Oak Savanna and Pineywoods of Northeast Texas (Figure 1). The first surface collection is from the L. A. Hale Mound site (41TT12) on Blundell Creek, a southward-draining tributary to Big Cypress Creek.

Figure 1. Location of sites collected by Robert L. Turner, Jr. in the Big Cypress Creek basin in Northeast Texas.
According to Thurmond (1990:187), the principal component at the L. A. Hale Mound site is an Early Caddo (ca. A.D. 900-1200) mound center with extensive midden deposits. There are six mounds at the site, two large platform mounds (Mounds 1 and 2) and four low mounds that cover occupational deposits and burned house structures. There are also four large midden areas adjacent to the earthen mounds as well as at least one borrow pit (Thurmond 1990:Figure 24). In addition to the Early Caddo component, Thurmond (1990:187) has recognized Late Paleoindian, Early Archaic, Middle Archaic, Late Caddo Titus phase, and an early historic Anglo-American occupation from material culture remains recovered in excavations conducted at the site in 1934 by A. T. Jackson (1934) at The University of Texas and a 1980 surface collection by Susan Lisk of The University of Texas at Austin. Turner’s collection adds additional information on the occupational history of the site. The exact location of the surface collection area at the site is not known.

LITHIC ARTIFACTS

The lithic artifacts from the L. A. Hale Mound site in the Turner collection include fire-cracked rock (n=1, quartzite), lithic debris (n=1, non-local dark gray chert), one flake tool (bilateral, non-local gray chert), three biface fragments (quartzite, n=2, and dark gray chert, n=1), a dart point, and a large broken ferruginous sandstone biface. The dart point is a complete Woodland period Gary, var. Camden specimen made from a heat-treated quartzite (Figure 2a). It is 6.7 mm thick, and has a narrow stem width (11.5 mm).

The ferruginous sandstone biface fragment is a thick percussion-chipped piece with cortex remnants on one chipped surface (see Figure 2b). The biface was broken in manufacture by a lateral fracture.

Figure 2. Lithic artifacts from the L. A. Hale Mound site: a, Gary point; b, ferruginous sandstone biface.
CERAMIC ARTIFACTS

The Turner collection from the L. A. Hale Mound site has 58 sherds, 43 plain body and base sherds, and 15 decorated rim and body sherds. The plain/decorated sherd ratio is 2.87. The plain sherds are from relatively thick vessels: 8-9 mm for body sherds and 11-15 mm for base sherds. Approximately 64% of the sherds are from grog-tempered vessels, and the remaining 36% are from bone-tempered vessels.

The 15 decorated sherds include four fine ware sherds, one from a bowl or carinated bowl with a red slip on both vessel surfaces (Figure 3a) and three rim and body sherds from carinated bowls (Figure 3b-d). These include a Holly Fine Engraved rim (direct profile and a rounded lip) with an excised triangle (Figure 3d), another rim (direct profile and a rounded lip) with horizontal, cross-hatched, and diagonal lines (Figure 3b), and a body sherd with diagonal engraved lines (Figure 3c).

The utility ware sherds (n=11) are primarily from jars with incised lines on the rim (Figure 4a-f). The other utility ware sherd is a bone-tempered rim sherd (direct profile and a rounded lip) with rows of tool punctations (Figure 5).

The one incised rim sherd (direct profile and a rounded lip) has cross-hatched and diagonal incised lines (see Figure 4d). Body sherds have widely-spaced parallel incised lines (n=4) (see Figure 4a, e), horizontal incised lines on a collared rim, possibly from a Coles Creek Incised, var. Chase barrel-shaped jar (see Figure 4f), sherds with opposed incised lines (n=3, see Figure 4b), and a body sherd with a straight incised line.

MISCELLANEOUS ARTIFACTS

In addition to ceramic and lithic artifacts, three pieces of daub and a single piece of burned animal bone (unidentified to species) were recovered in the Turner surface collection.
CONCLUSIONS

A small surface collection from the L. A. Hale Mound primarily reflects the fact that the primary component at the site dates from the Early Caddo period (ca. A.D. 900-1200). Diagnostic ceramic sherds from this component include a Holly Fine Engraved rim sherd and a possible Coles Creek Incised, var. Chase body sherd. There are unidentified engraved fine wares from carinated bowls as well as a red-slipped bowl or carinated bowl sherd, and incised and tool punctated utility wares. The lithic artifacts include a ca. A.D. 200-700 Gary, var. Camden dart point, indicative of some use of the L. A. Hale Mound site during the Woodland period and a large ferruginous sandstone biface, which may be from a limited Middle or Late Archaic period use.

ACKNOWLEDGMENTS

I would like to thank Robert L. Turner, Jr. and Bo Nelson for the opportunity to study the surface collections from the L. A. Hale Mound site, as well as the Linebarger, Chasteen, and Sam Roberts site collections discussed in articles to follow in this volume. Lance Trask prepared the maps and artifact figures for each of the four articles.

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The Linebarger Site on Dry Creek, Camp County, Texas

Timothy K. Perttula

INTRODUCTION

The Linebarger site (41CP493) is an ancestral Caddo site on Dry Creek in Camp County (see Perttula et al. 2010:Figure 6), not far upstream from the Tuck Carpenter site and large Late Caddo Titus phase cemetery (Turner 1978, 1992). At least four ancestral Caddo burials are known to have been excavated at the Linebarger site in the 1960s, and Perttula et al. (2010:Figures 306-307) documented two vessels and a large chipped biface from burial contexts in the Tommy Johns collection. The Robert L. Turner Jr. surface collection came from an unspecified habitation area at the site.

The first documented vessel was a small inverted rim carinated bowl with a typologically unidentified engraved motif (horizontal engraved rim panel with a series of unique elements, including vertical engraved lines, ovals, semi-circles, and diagonal engraved lines, without apparent rhyme or pattern), and the other was a small tool punctated jar with rim peaks and lug handles. The biface, made from a dark grayish-brown Central Texas chert, was well knapped with small retouch/pressure flakes along both edges of the piece; there is no evidence of polish on either face. The biface has basal notches and a short expanding stem (20.8 mm in stem width and 11.8 mm in stem length). The biface is 174.5 mm in length, 72.0 mm in width, and only 7.6 mm in thickness.

LITHIC ARTIFACTS

The lithic artifacts in the Linebarger site collection include one quartzite fire-cracked rock, 13 pieces of lithic debris, and two chipped stone tools. The chipped stone tools include an end scraper made from a non-local dark grayish-brown chert and a dart point (i.e., Gary point) preform made on a heat-treated local quartzite.

The lithic debris is from the manufacture of chipped stone tools made from both local and non-local raw materials. The local materials (primarily from stream gravels in the Big Cypress Creek basin) include heat-treated and non-heat-treated quartzite (n=6), yellow chert (n=1), and red chert (n=1). Non-local lithic raw materials, from Red River gravels and/or Ouachita Mountains sources in southeastern Oklahoma, include red jasper (n=2), gray novaculite (n=1), siliceous shale (n=1), and dark gray chert (n=1).

CERAMIC ARTIFACTS

The Turner collection from the Linebarger site has 85 vessel sherds and a rim from an elbow pipe. The vessel sherds are divided into 42 plain (10 base and 32 body sherds) and 43 decorated sherds; the plain to decorated sherd ratio is 0.98. Approximately 90% of the sherds are from grog-tempered vessels and the remainder are from bone-tempered vessels.

Fine ware sherds comprise 30% of the decorated sherds. Two are interior/exterior red-slipped bowl or carinated bowl sherds (Figure 1a-b). The rim sherd has a rim peak and an interior thickened profile (Figure 1b). The remainder are sherds.

Figure 1. Red-slipped rim and body sherds.
from engraved bottles (Figure 2a, c) and carinated bowls (Figure 2b, d-f).

Two of the engraved sherds are from bottles (see Figure 2a, c). These have straight lines and spurs or curvilinear engraved lines; one bottle sherd has a red pigment rubbed in the engraved lines (see Figure 2a). Carinated bowl sherds have concentric semicircular and/or diagonal motifs (see Figure 2b, d, f, n=3), semicircular and vertical engraved lines with spurs (n=1), slanted scrolls (cf. Ripley Engraved, see Figure 2e, n=1), nested triangles (cf. Ripley Engraved, var. Cash or var. Williams, n=1), and horizontal engraved lines (n=3), including two rims with a horizontal engraved line under the lip. These rims have a direct profile and rounded, exterior folded lips.

The incised sherds (n=10, 23% of the decorated sherds and 33% of the utility wares) include two rims and eight body sherds. One rim has diagonal incised lines (Figure 3a), while the other, probably from a Maydelle Incised jar (Figure 3e), has diagonal opposed incised triangles. Incised elements on the body sherds include parallel lines (n=5, Figure 3d), opposed incised lines (n=2, Figure 3c), and overlapping incised lines (n=1, Figure 3b).

Eight sherds have brushed decorations (18.6% of the decorated sherds and 26.7% of the utility wares). Five have parallel brushing marks (Figure 4b-c, e) likely oriented vertically on jar bodies), one has opposed brushing marks (Figure 4d), and another has vertical brushing marks. Another body sherd, possibly from a Pease
There are eight punctated body sherds (18.6% of the decorated sherds and 26.7% of the utility wares), six with tool punctates (Figure 5a-d) and two with fingernail punctates (Figure 5e). The punctations occur in continuous horizontal rows across the vessel surface, likely on both the rim and portions of the bodies of jars.

The four incised-punctated sherds (9.3% of the decorated sherds and 13.3% of the utility wares) have two distinct motif elements: (1) tool punctated rows and horizontal/parallel incised lines either above or below the punctations (n=2, Figure 6a, c), and (2) incised triangles filled with linear or circular tool punctations (n=2, Figure 6b).

There also is a post-A.D. 1350-1450 elbow pipe rim sherd in the collection. It is grog-tempered, and has a direct rim and a flat lip.
MISCELLANEOUS ARTIFACTS

Miscellaneous artifacts in the Turner collection from the Linebarger site include an unburned deer bone and a single piece of daub.

CONCLUSIONS

The small surface collection obtained by Robert L. Turner, Jr. from the Linebarger site includes 16 lithic artifacts, 85 vessel sherds, one elbow pipe rim sherd, a deer bone, and a piece of daub. The vast majority of these artifacts are likely from ancestral Caddo habitation deposits associated with a cemetery of unknown size. The one Gary point preform suggests a very limited use of the site sometime in the Woodland period.

The decorated vessel sherds from the site include a range of sherds from both fine ware bottles and utility ware jars. Several of the engraved carinated bowl sherds have decorative elements and motifs consistent with ca. 14th and 15th century Caddo wares in the Big Cypress Creek basin, including several sherds comparable to defined varieties of Ripley Engraved. However, the common occurrence of red-slipped sherds (4.7% of the decorated sherds) and only a moderate quantity of brushed sherds (18.6%), including a possible Pease Brushed-Incised sherd, are similar to nearby Middle Caddo components at sites such as Harold Williams (41CP10, Turner and Smith 2003) and Polk Estates (41CP245, Nelson and Perttula 2006) that have radiocarbon dates that range from A.D. 1300-1460 and OCR dates that range from A.D. 1191-1410. Thus, the Linebarger site likely is contemporaneous with these ancestral Caddo sites in the middle reaches of the Big Cypress Creek basin.

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The Chasteen Site (41UR18) on Big Cypress Creek, Upshur County, Texas

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INTRODUCTION

The Chasteen site (41UR18), also known as the W. S. Chastain site (Thurmond 1990:212 and Figure 27) appears to be an early Titus phase (ca. A.D. 1450-1550) mound center and village (with an associated cemetery) on an upland landform overlooking Big Cypress Creek. The small mound (18 m in diameter and 1.5 m in height) at the Chasteen site, apparently constructed over an important building, is part of a larger complex of Titus phase mound centers at this locale, including the Harroun (41UR10), Camp Joy (41UR144), and the Dalton (41UR11) sites (Perttula 2012:Figure 13-2).

The village deposits at the Chasteen site are estimated to cover 3-4 acres around the mound, and contain numerous ceramic sherds and concentrations of daub from ancestral Caddo house structures contemporaneous with the house mound (Thurmond 1990:212). Other artifacts in the village indicate some very limited use of the upland in Late Archaic and Early Caddo periods. The Robert L. Turner, Jr. surface collection from the site came from a midden area within the village.

LITHIC ARTIFACTS

Only one lithic artifact is in the surface collection from the Chasteen site. This is a multi-platform flake core on a heat-treated quartzite.

CERAMIC ARTIFACTS

There are 61 ceramic sherds in the Turner surface collection from the Chasteen site, including 33 plain rim and body sherds and 28 decorated sherds. The plain to decorated sherd ratio is 1.18. As with many Late Caddo Titus phase ceramic assemblages, the vast majority of the sherds in the surface collection are from grog-tempered vessels (98%); the one remaining sherd is bone-tempered.

Ten of the decorated sherds (36%) are from engraved or red-slipped fine ware vessels, primarily carinated bowls. The red-slipped body sherd has a slip only on the exterior vessel surface. The carinated bowl and compound bowl sherds have horizontal engraved lines with open and hatched pendant triangles on them (Figure 1a-c). These are likely from Ripley Engraved vessels.

Figure 1. Engraved compound bowl and carinated bowl sherds: a, compound bowl; b-c, carinated bowl sherds.
Other engraved rim sherds have horizon-
tal engraved lines under the lip (n=2) (direct profiles and rounded, exterior folded lips). Two body sherds have hatched triangle and hatched divider elements from different Ripley Engraved vessels.

The two bottle body sherd have either curvilinear engraved lines or curvilinear engraved lines with open and hatched spurs and triangular elements (Figure 2a). This sherd is likely from a Ripley Engraved bottle.

The 18 decorated sherds from utility ware vessels are from tool punctated (10.7% of the decorated sherds and 16.7% of the utility ware sherds) (Figure 3a, e), incised (3.6% of the decorated sherds and 5.6% of the utility ware sherds) (Figure 4b), neck banded (La Rue Neck Banded, 3.6% of the decorated sherds and 5.6% of the utility ware sherds) (Figure 3d), and appliqued-incised (3.6% of the decorated sherds and 5.6% of the utility ware sherds) vessels (Figure 3c). The appliqued-incised body sherd is likely from a Harleton Appliqued jar, while the incised sherd is a rim (everted profile and a rounded lip) with closely-spaced horizontal lines.
Two of the punctated sherds are rims (direct and everted rim profiles and rounded lips). One has a row of tool punctations on a collar below the lip (see Figure 3a), while the other has rows of tool punctations (see Figure 3e). The third punctated sherd is a body sherd with a row of tool punctations on it.

Most of the utility ware sherds, however, have brushed decorations, either as the sole decoration (36% of the decorated sherds and 56% of the utility ware sherds) (Figure 4a, c-e), or in combination with incised (3.6% of the decorated sherds and 5.6% of the utility ware sherds) or punctated (3.6% of the decorated sherds and 5.6% of the utility ware sherds) elements (see Figure 3b). The brushed sherds include a rim with horizontal brushing marks, eight body sherds with parallel brushing marks, and another body sherd with overlapping brushing.

One rim (everted rim profile and a rounded lip) from a peaked rim jar has horizontal brushing on the rim and a row of tool punctations under the vessel lip (see Figure 3b). A body sherd in the surface collection is decorated with parallel brushed marks and incised lines.

**MISCELLANEOUS ARTIFACTS**

Miscellaneous artifacts from midden deposits at the Chasteen site include one mussel shell valve fragment, five animal bones (one burned), 17 pieces of wood charcoal, and 25 pieces of daub. The frequency of daub suggests that there were burned Caddo structures in the area of the surface collection.

**CONCLUSIONS**

The Robert L. Turner, Jr. surface collection from a midden area at the Chasteen site is primarily from a Late Caddo Titus phase habitation deposit in the village area. The Titus phase nature of the ceramic assemblage is indicated by the occurrence of sherds from Ripley Engraved carinated bowls, compound bowls, and
bottles, as well as Harleton Appliqued and La Rue Neck Banded utility ware cooking jars. Brushed vessel sherds are common in the assemblage, with 36% of the decorated sherds having brushing marks, and this is also consistent with a Titus phase ceramic assemblage. The proportional representation of brushed sherds in this small surface collection suggests that the occupation here took place prior to ca. A.D. 1550, during the early part of the Titus phase.

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Analysis of Surface Collections from Areas A and B at the Sam Roberts Site (41CP8) on Prairie Creek, Camp County, Texas

Timothy K. Perttula

INTRODUCTION

The Sam Roberts site is a large ancestral Caddo mound center and habitation site on the floodplain of Prairie Creek, an eastward-flowing tributary to Big Cypress Creek, as well as on an upland landform south of the creek (Figure 1). Robert L. Turner, Jr.’s surface collections came from what he labeled Area A (in a plowed field in the floodplain) and Area B (in the uplands), several hundred meters apart. His notes with the collection also indicated that Caddo vessels had been plowed up in another cultivated field well to the east of Area A in the Prairie Creek floodplain.

The two Turner surface collection areas appear to correspond to two of the five distinct subareas (A-E) identified by Thurmond (1990:Figure 17). Thurmond’s Area A is the same as Turner’s, and Thurmond (1990:144) describes it as a “dense concentration of occupation debris on a floodplain rise adjacent to Prairie Creek, associated with a dark brown greasy soil. Large, dark outlines associated with concentrations of wattle-impressed daub may mark the locations of structures.” Area A has a Late Caddo Titus phase component. Thurmond’s (1990:146) Area B is the same as Turner’s Area B, and this area is marked by an apparent Early or Middle Caddo settlement.

Figure 1. Map of the Sam Roberts site and surface collection areas A and B.
Although unnoted by Turner, there was a Late Caddo, Titus phase mound and a midden deposit about 200 m west of Area A, also in the floodplain of Prairie Creek (Thurmond’s Area E). The mound (15.2 m in diameter and 1.1 m in height) was built over a burned circular structure (Thurmond 1990:144; Tunnell 1959). Two radiocarbon dates on burned structural materials have median calibrated ages of A.D. 1567 and A.D. 1681 (Perttula 2012; Perttula and Selden 2011); these dates, along with the brushed and brushed-punctated sherds recovered in the excavations, indicate that the Area E mound was built during Titus phase times, along with a number of other mounds in the Big Cypress Creek basin (Perttula 2012:Figure 13-2). Thurmond’s Area D may be at the same location where Turner noted vessels had been plowed up (see Figure 1); this area also has Titus phase occupational remains. Thurmond’s Area C is just east of Area B, and also represents an Early to Middle Caddo habitation area with substantial amounts of ceramic sherds (Thurmond 1990:146). Finally, the recovery of Gary dart points from Area A indicates that there was a limited Woodland period use in this part of the Sam Roberts site.

AREA A ARTIFACTS

Lithic Artifacts

A small assemblage of lithic artifacts are in the Area A surface collection. These include 24 pieces of lithic debris, three tested pebbles, a ferruginous sandstone mano fragment (one grinding surface), a greenish-gray siliceous shale celt bit fragment, and three quartzite fire-cracked rocks. The celt can be readily associated with the Late Caddo, Titus phase occupation, but it is unclear if the other lithic artifacts are also part of that component.

The lithic debris includes pieces from both local and non-local lithic raw materials. The local lithic debris (88%) is comprised of quartzite (n=15), petrified wood (n=1), red chert (n=3), and brown chert (n=2). The non-local lithic debris (12%) is from Red River gravel or Ouachita Mountains sources: gray novaculite (n=2) and dark gray chert (n=1).

Ceramic Artifacts

A total of 95 ceramic sherds are in the Area A surface collection, 37 plain rim, body, and base sherds, and 58 decorated sherds. The plain to decorated sherd ratio is 0.64. Approximately 92% of the sherds are from grog-tempered vessels, and the remainder are from bone-tempered vessels.

The fine wares from Area A include both red-slipped (Figure 2a, n=2) and engraved (Figure 2b-e) rim and body sherds (n=12). The fine wares comprise 24% of the decorated sherds from this part of the site. The red-slipped body sherds have a slip on both interior and exterior surfaces, suggesting they are from bowls and/or carinated bowls. The identified engraved sherds are from carinated bowls.

One engraved rim (direct profile and a rounded, exterior folded lip) has a horizontal line under the lip, while two others (also with direct profiles and rounded, exterior folded lips) have portions of Ripley Engraved scroll elements (see Figure 2d-e). Body sherds have portions of curvilinear engraved (n=2, see Figure 2b) and parallel-curvilinear lines (n=1, see Figure 2c), straight (n=2) or horizontal (n=2) engraved lines, one carinated bowl body sherd with both horizontal and diagonal lines, and a body sherd with vertical engraved lines (possibly part of a scroll divider element).

There are 44 utility ware sherds in the surface collection from Area A. Three (6.8% of the utility ware sherds) are body sherds from jars with rows of tool punctations (Figure 3a-b). One body sherd has a small remnant of an appliqued ridge (probably from the body of a jar) (Figure 3c).
Figure 2. Red-slipped and engraved carinated bowl sherds: a, red-slipped body; b-c, carinated bowl body; d-e, carinated bowl rims.

Figure 3. Punctated and appliqued body sherds: a-b, tool punctated; c, appliqued ridge.
There are nine rim and body sherds with incised decorative elements (20% of the utility wares). The two rims (with direct or everted rim profiles and rounded lips) have diagonal incised lines (Figure 4a), and are likely from Maydelle Incised jars. Body sherds have parallel (n=5, Figure 4b-c), straight (n=1), or curvilinear (n=1) incised lines.

The remainder of the utility wares from Area A have brushing marks, either as the sole decoration (n=22, 50% of the utility wares), or in combination with incised (n=7, 16% of the utility wares) or punctated (n=2, 4.5% of the utility wares) decorative elements. Sherds with brushing represent 70% of the utility wares, and 53% of all the decorated sherds from Area A.

The one brushed rim (direct profile and a rounded, exterior folded lip) has horizontal brushing marks (Figure 5a), probably from a Bullard Brushed jar. Brushed body sherds have parallel (n=19, Figure 5b, e), opposed (n=1), and overlapping (n=1, Figure 5f) marks. The brushed-incised sherds are all body sherds with parallel brushing marks and incised lines (Figure 5c). One brushed-punctated sherd has horizontal brushing marks on the lower part of the rim and vertical brushing on the body, with a row of tool punctations pushed through the brushing below the rim-body juncture (Figure 5d). One other brushed-punctated body sherd simply has a row of tool punctations pushed through an area with parallel brushing marks.
Miscellaneous Artifacts

The miscellaneous artifacts in the Turner collection from Area A at the Sam Roberts site consist of four pieces of daub.

AREA B ARTIFACTS

Lithic Artifacts

Only three lithic artifacts are in the Area B surface collection. These are a heat-treated quartzite tested pebble, a quartzite mano with smoothing on both grinding surfaces, and a ferruginous sandstone pitted stone. The centrally-placed pit is 13 mm in diameter and ca. 1 mm in depth.

Ceramic Artifacts

Turner collected 97 ceramic sherds from Area B at the Sam Roberts site. This includes 70 plain rim, body, and base sherds and 27 decorated sherds. The plain to decorated sherd ratio is 2.59. More than 85% of the sherds are from grog-tempered vessels, and the remaining 15% are from bone-tempered vessels.

Two of the plain sherds are grog-tempered plain loop handles (Figure 6a-b). These were likely attached to one of the jars that had been broken and discarded in Area B.

The fine ware sherds from Area B include red-slipped (n=2) as well as engraved (n=6) rim and body sherds, as well as one red-slipped rim with a hatched engraved design on the interior thickened vessel lip (Figure 7d) and a red-slipped body sherd with parallel engraved lines (Figure 7b). The fine ware sherds comprise 30% of the decorated sherds from this part of the Sam Roberts site. The red-slipped sherds, both rims (probably from bowls or carinated bowls), have a slip on both interior and exterior surfaces, and one rim has a scalloped lip (Figure 7a).

The non-red slipped engraved sherds include a bottle sherd with a hatched triangle element and parallel engraved lines (see Figure 7e), and three body sherds with single straight engraved lines.
The five tool punctated sherds include two rims (Figure 8a) and three body sherds (Figure 8b-d). These represent 26% of the utility wares and 19% of all the Area B decorated sherds. The rims have direct profiles and rounded lips. Decorative elements consist of rows of punctations made with different wood tools, including one with teardrop-shaped punctations (Figure 8b).

Sherds with incised line decorations are the most common of the decorated sherds in the Area B assemblage, accounting for 63% of the utility wares and 44% of all the decorated sherds. The incised sherds include six rims (Figure 9a-b, e) and six body sherds (Figure 9c-d). The rims have direct profiles and round or flat lips. Decorative elements include cross-hatched (n=1), horizontal (n=2), diagonal opposed (n=2), and vertical (n=1) incised lines. Body sherds have cross-hatched (n=1), diagonal opposed (n=1), opposed (n=1), parallel (n=1), and straight (n=2) incised lines.
Incised-punctated body sherds comprise 10.5% of the utility wares in Area B and 7.4% of all the decorated sherds from this area. They have curvilinear or straight incised zones filled with tool punctations (Figure 10a-b).

**Miscellaneous Artifacts**

Miscellaneous artifacts in the Turner collection from Area B at the Sam Roberts site consist of two unburned animal bones and two mussel shell fragments. These must have come from a midden area in Area B.

**CONCLUSIONS**

The surface collections obtained by Robert L. Turner, Jr. from the Sam Roberts site are from ancestral Caddo occupations from two different time periods. The Area A occupation dates to the Late Caddo Titus phase, while the Area B occupation may date to the early part of the Middle Caddo period (ca. A.D. 1200-1400), based on the relative proportions of red-slipped sherds in the assemblage.

The Area A ceramic assemblage has a low plain to decorated sherd ratio (0.63), Ripley Engraved carinated bowl rim sherds, Maydelle Incised rim and body sherds, and a predominance of brushed utility wares (53% of all the decorated sherds). Conversely, red-slipped and red-slipped engraved sherds were notable in Area B, and red-slipped sherds are a conspicuous feature of some Middle Caddo sites in the Big Cypress Creek basin (Perttula and Ellis 2012:Table 8-24). There are no brushed utility wares in the Area B ceramic assemblage—a sure indication of a Caddo occupation that likely predates A.D. 1250, after which brushed sherds are ubiquitous in Big Cypress Creek basin sites—and the plain to decorated sherd ratio is a much higher 2.59, indicating an assemblage with lower proportions of decorated sherds, and/or a lower proportion of vessel surfaces covered with decorations. The Area B assemblage is dominated by vessel sherds with relatively simple or geometric incised decorations, perhaps from Canton Incised, Davis Incised, and Dunkin Incised vessels. Zoned incised-punctated sherds are also present in Area B, but absent in the Area A ceramic assemblage.

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The Sam D. Carpenter Garden Plot Site (41CP496),
Camp County, Texas

Timothy K. Perttula

INTRODUCTION

Robert L. Turner, Jr. obtained a surface collection of ancestral Caddo material culture remains from the Sam D. Carpenter Garden Plot site (41CP496) some unknown number of years ago. With records provided by Turner, Bo Nelson has recently recorded the site, and provided the artifacts from the surface collection for analysis.

The site is located in the uplands (330 ft. amsl) on the west side of the Big Cypress Creek valley, about 2 km west of the modern channel of Big Cypress Creek (Figure 1). The Sam D. Carpenter Bottom site (41CP495), another Caddo site, is about 1 km to the east. Prairie Creek lies several kilometers to the south, while Dry Creek is a comparable distance to the north of the site.

Figure 1. The location of the Sam D. Carpenter Garden Plot site in East Texas.
The ceramic artifacts in the collection include 83 plain rim, body, and base sherds and 142 decorated utility ware and fine ware rim and body sherds. The plain to decorated sherd ratio is a low 0.58, consistent with a Late Caddo period site in the Big Cypress Creek basin. The two plain rim sherds have rounded lips and direct or everted rim profiles; one is from a bowl with an orifice diameter of at least 15.0 cm.

The 142 decorated sherds are divided into 47 fine ware sherds (engraved, engraved/red-slipped, and red-slipped) and 95 utility ware sherds (wet paste decorations, including brushed, punctated, incised, appliqued, and various combinations of decorative techniques). More than 98% of the sherds in the assemblage are grog-tempered. There are only two bone-tempered sherds (from red-slipped and engraved vessels), and one shell-tempered sherd in the collection. The shell-tempered sherd may be from a red-slipped Avery Engraved vessel made in the middle Red River valley by McCurtain phase Caddo groups, and traded/exchange with the Titus phase Caddo community living in this part of the Big Cypress Creek basin.

Approximately 26% of the fine ware sherds (and 8.4% of all the decorated sherds) in the Sam D. Carpenter Garden Plot site surface collection are red-slipped. This includes one bottle sherd with an exterior red slip and 11 body sherds (one bone-tempered) from carinated bowls and bowls with interior and exterior red-slipped surfaces. Four sherds have engraved elements and interior/exterior red-slipped sherds. One is the previously mentioned shell-tempered vessel body sherd with a single straight engraved line, another

Figure 2. Engraved and red-slipped compound bowl sherds from the Sam D. Carpenter Garden Plot site: a, red-slipped rim; b-c, engraved and red-slipped rim sherds.

CERAMIC ARTIFACTS
is a body sherd that has a single horizontal engraved line, and a third has parallel engraved lines. The fourth red-slipped engraved sherd consists of several conjoined rim sherds from a red-slipped and widely-spaced horizontal engraved compound bowl with a direct rim, and a rounded, exterior folded and scalloped lip (Figure 2a-c).

Four of the fine ware sherds (8.5% of the fine ware sherds) are from bottles (Figure 3a-d). These are from Ripley Engraved bottles with curvilinear lines and/or open or hatched pendant triangles. Three of the engraved bottle sherds have a red pigment rubbed in the engraved lines (Figure 3a, c-d).

The remainder of the fine wares (n=27, 57% of the fine wares and 19% of all the decorated sherds from the site) are from carinated bowls and compound bowls (Figure 4a-i). The rims are direct in profile, with rounded, exterior folded lips (Figure 4c, f, i). The one compound bowl sherd in this group has broadly-spaced horizontal engraved lines on the upper rim panel (Figure 4i).

The carinated bowl rim and body sherds are from Ripley Engraved vessels that have primarily slanting scroll elements (see Figure 4c, e-f, h), and scroll and circle motifs (see Figure 4d), but one sherd may have an interlocking horizontal scroll motif (see Figure 4b). Other elements include hatched, excised, and cross-hatched scroll fill zones and brackets (see Figure 4a, g), probably also part of unidentifiable scroll motifs. There are no identifiable excised pendant triangles or engraved diamond elements in the Ripley Engraved sherds from the Sam D. Carpenter Garden Plot fine wares.
Seven engraved body sherds have a single straight line, and three other body sherds have diagonal opposed engraved lines. Only two (7.4%) of the non-red-slipped engraved sherds and non-bottle sherds have a pigment rubbed in the engraved lines: one sherd with an excised oval has a white pigment (see Figure 4g) and a red pigment on a body sherd with a single straight engraved line.

Two body sherds (2% of the utility wares) are from Harleton Appliqued vessels with curvilinear appliqued fillet elements (Figure 5a). Another body sherd has a curvilinear appliqued fillet and vertical brushing (Figure 5b), while a second body sherd has a straight appliqued fillet and parallel brushing. One body sherd has parallel brushed and incised marks on either side of a straight appliqued fillet. The brushed and appliqued body sherds comprise 3% of the utility wares.

Sherds with incised decorations are common in the utility wares from the Sam D. Carpenter Garden Plot site (26% of the utility wares and 18% of all the decorated sherds from the site): there are 23 body sherds (Figure 6a-b, d-e), one lower rim sherd (Figure 6f), and one rim sherd (Figure 6c). The rim sherd has a direct profile and a rounded, exterior thickened lip with horizontal and diagonal incised lines, while a lower rim and body sherd from a Maydelle Incised vessel has diagonal opposed incised lines. Four body sherds also have diagonal opposed incised lines (Figure 6b); one body sherd has concentric incised circles (Figure 6a); there are 12 body sherds with parallel incised lines (Figure 6d-e); five body sherds with straight incised lines; and one body sherd with a broad horizontal incised line.

Three utility ware sherds in the collection have incised-punctated decorations (3% of the utility wares). One has tool punctated rows on either side of a straight incised line, and the two others have tool punctated rows on the lower rim and either vertical or diagonal incised lines on the vessel body.

There are eight punctated sherds (8% of the utility wares) in the decorated sherd assemblage from the site. Seven of the eight have tool punctated rows (Figure 7a-c, e-g) on the rim (cf. Mockingbird Punctated jars) and rim-body juncture, while one sherd has a zone of fingernail punctates.

Three sherds (3% of the utility wares), including one rim (see Figure 7d), have brushed-punctated decorations. Two rims have horizontal brushing marks as well as a
row of tool punctations under the vessel lip, while the one lower rim-body sherd has horizontal brushing on the lower rim, and vertical brushing on the body, with a tool punctated row pushed through the brushing (see Figure 7f).

Brushed rim and body sherds (n=42) comprise 44% of the utility wares from the Sam D. Carpenter Garden Plot site ceramic assemblage, and 30% of all the decorated sherds from the site. They include an everted rim with horizontal brushing marks (Figure 8a), 39 parallel brushed body sherds (brushing is likely oriented vertically on these jar sherds) (Figure 8b-f), and two body sherds with overlapping brushing marks. These are likely from Bullard Brushed jars, as well as Karnack Brushed-Incised vessels.

Ten body sherds (11% of the utility wares) have brushed and incised decorative elements. Nine have parallel brushed-incised lines, while the other has horizontal brushing on the lower rim and diagonal brushed-incised lines on the vessel body.

The brushed (n=42), brushed-punctated (n=3), brushed-incised (n=10), brushed-appliqued (n=2), and brushed-appliqued-incised (n=1) rim and body sherds together comprise 61% of the utility ware sherds from the site, and 41% of all the decorated sherds in the assemblage. This high proportion of brushed utility ware sherds may be indicative of the decorated sherd assemblages in eastern Titus phase sites in the Big Cypress Creek basin (Perttula and Sherman 2009:400).

Figure 7. Punctated and punctated-brushed rim and body sherds: a-c, e, g, punctated; d, f, brushed-punctated.

Figure 8. Brushed rim and body sherds: a, horizontal brushed rim; b-f, parallel brushed body sherds.
LITHIC ARTIFACTS

There are two lithic artifacts in the surface collection from the Sam D. Carpenter Garden Plot site. The first is a gray novaculite drill pit fragment, while the other is a piece of flaked hematite/red ochre, probably a fragment of a pigment stone.

MISCELLANEOUS ARTIFACTS

Miscellaneous artifacts in the surface collection include six pieces of deer bone, five unburned and one burned, one piece of burned turtle bone, as well as a piece of an unburned mussel shell valve. The preservation of these materials on the surface suggests that there are probably buried midden deposits on the site.

CONCLUSIONS

The Sam D. Carpenter Garden Plot site (41CP496) appears to be a single component Late Caddo period, Titus phase domestic site located in an upland setting overlooking the Big Cypress Creek valley. A moderate sample of plain and decorated sherds from bowls, carinated bowls, compound bowls, bottles, and jars were collected from the surface of the site by Robert L. Turner, Jr., and they provide an indication of the composition of Titus phase domestic assemblages in the region; the vessels are almost exclusively tempered with grog. Utility wares comprise almost 67% of the decorated sherds, with the remainder of the decorated sherds from engraved, engraved/red-slipped, and red-slipped fine ware sherds. Plain ware rims indicate that plain vessels are also part of the assemblage.

The utility wares are dominated by jars with brushed bodies and rims (likely from Bullard Brushed and Karnack Brushed-Incised vessels) as well as jars with incised decorations, including diagonal opposed motifs from Maydelle Incised jars. A few sherds are from Harleton Appliqued vessels. The utility wares as a whole more closely resemble eastern Titus phase sites in the Big Cypress Creek heartland (Fields and Gadus 2012:71; Perttula and Sherman 2009) because of the quantities of brushed sherds and the absence of neck banded utility wares. The fine wares, on the other hand, from the Sam D. Carpenter Garden Plot site are more like western Titus phase sites in the Big Cypress Creek heartland because red-slipped sherds are common in the assemblage, and the Ripley Engraved carinated bowl sherds have scroll and scroll and circle motifs, while sherds with pendant triangle elements (i.e., excised pendant triangles and central diamonds) are absent (Perttula and Sherman 2009:400). The absence of Ripley Engraved sherds with the pendant triangle motif also suggests that the site dates sometime prior to ca. A.D. 1600, after which this motif became more prevalent in Titus phase ceramic assemblages (see Perttula 1992:Appendix 1). The one obvious trade ware sherd in the surface-collected assemblage is a shell-tempered, red-slipped engraved body sherd that may be from a Red River McCurtain phase Caddo fine ware vessel.

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Aboriginal Ceramic Sherds from 41MA30 in the Navasota River Basin in Madison County, Texas

Timothy K. Perttula

INTRODUCTION

Aboriginal ceramic sherds from three sites (41MA27, 41MA29, and 41MA30) in the Navasota River basin in the Prairie Savannah of Texas provided the opportunity to investigate their spatial and temporal nature, and to establish with a reasonable certainty their origins, ethnic affiliations, as well as relationships to other ceramic assemblages in the general region (Perttula 2012). A second collection of nine ceramic sherds is available from 41MA30, and this article describes the analysis of these additional sherds, and then summarizes the character of the larger assemblage (n=30 sherds) as a whole.

METHODS OF SHERD ANALYSIS

The analysis of the second collection of ceramic sherds from 41MA30 is based on differences in temper, type of sherd (i.e., rim, body, or base), rim and lip form (cf. Brown 1996:Figure 2-12), decoration (if present, including the identification of motifs and elements), surface treatment (smoothing, burnishing, or polishing; see Rice 1987), and firing conditions (cf. Teltser 1993). Temper is the deliberate and indeterminate materials found in the paste (Rice 1987:411), including a variety of tempers (grog or crushed sherds, burned bone, etc.). Sherd cross-sections were inspected macroscopically and with a 10X hand lens to determine the character of the paste and its inclusions. Determining the firing conditions was based on the identification of the firing core in the sherd cross-sections and the identification of oxidation patterns as defined in Teltser (1993:535-536 and Figure 2a-h). Finally, wall thickness was recorded in millimeters (mm), using a vernier caliper, along the mid-section of the sherd.

SECOND SHERD COLLECTION FROM 41MA30

The second collection from the site includes nine body sherds (Table 1). Five are from plain sandy paste Goose Creek Plain, var. unspecified vessels (cf. Aten 1983; Aten and Bollich 2011), probably simple jars and bowls. Another sandy paste sherd has bone temper and is decorated with a series of horizontal and diagonal incised lines above a possible carination of a carinated bowl. The other three sherds have a silty to clayey paste, two with grog temper added to the paste, and the third sherd (from a relatively thin-walled bowl) having no temper. One of the grog-tempered sherds is from a jar with overlapping brushing marks on the exterior vessel surface. This latter sherd may be from a vessel obtained in trade/exchange with a neighboring Caddo group sometime after ca. A.D. 1250.

SUMMARY OF THE CERAMIC ASSEMBLAGE FROM 41MA30

The ceramic assemblages from 41MA30 now includes 30 sherds (Table 2). Few of the sherds (10%) have decorations, and most of the sherds are from vessels that have a sandy paste (70%) and no temper inclusions. A few sandy paste sherds (10%) have bone temper inclusions, 3.3% have no temper and a clayey-silty paste, while another 16.6% of the sherds are from vessels that have a silty or clayey paste with bone and/or grog fragments used as a temper in vessel manufacture.
Table 1. Second collection of sherds from 41MA30.

<table>
<thead>
<tr>
<th>Sherd type</th>
<th>Paste</th>
<th>Temper</th>
<th>ST</th>
<th>FC</th>
<th>Thickness (mm)</th>
<th>Decoration</th>
</tr>
</thead>
<tbody>
<tr>
<td>body</td>
<td>SP</td>
<td>-</td>
<td>-</td>
<td>G</td>
<td>8.6</td>
<td>plain</td>
</tr>
<tr>
<td>body</td>
<td>SP</td>
<td>-</td>
<td>I SM</td>
<td>G</td>
<td>7.0</td>
<td>plain</td>
</tr>
<tr>
<td>body</td>
<td>SP</td>
<td>-</td>
<td>E SM</td>
<td>F</td>
<td>8.6</td>
<td>plain</td>
</tr>
<tr>
<td>body</td>
<td>SP</td>
<td>-</td>
<td>E SM</td>
<td>H</td>
<td>5.9</td>
<td>plain</td>
</tr>
<tr>
<td>body</td>
<td>SP</td>
<td>-</td>
<td>E SM</td>
<td>F</td>
<td>7.3</td>
<td>plain</td>
</tr>
<tr>
<td>body</td>
<td>SP</td>
<td>bone</td>
<td>I/E B</td>
<td>G</td>
<td>8.8</td>
<td>horizontal-diagonal incised lines</td>
</tr>
<tr>
<td>body</td>
<td>silty-clayey</td>
<td>grog</td>
<td>I/E SM</td>
<td>G</td>
<td>7.1</td>
<td>plain</td>
</tr>
<tr>
<td>body</td>
<td>silty-clayey</td>
<td>grog</td>
<td>I SM</td>
<td>G</td>
<td>7.5</td>
<td>overlapping brushed</td>
</tr>
<tr>
<td>body</td>
<td>silty-clayey</td>
<td>-</td>
<td>-</td>
<td>F</td>
<td>5.4</td>
<td>plain</td>
</tr>
</tbody>
</table>

SP=sandy paste; ST=surface treatment; I=interior; E=exterior; SM=smoothed; B=burnished; FC=firing condition; B=fired and cooled in low oxygen; F-H=fired in a reducing environment and cooled in the open air

Table 2. Ceramic assemblage from 41MA30.

<table>
<thead>
<tr>
<th>Site</th>
<th>No. of Sherds</th>
<th>No. Decorated</th>
<th>SP b/SP</th>
<th>No Temper</th>
<th>g</th>
<th>b-g</th>
</tr>
</thead>
<tbody>
<tr>
<td>41MA30</td>
<td>30</td>
<td>3</td>
<td>21</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Percentage 10% 70% 10% 3.3% 13.3% 3.3%

SP=sandy paste; b=bone-tempered; g=grog-tempered

The sherds from the 41MA30 ceramic assemblage include one plain grog-tempered bowl rim (direct rim and a rounded lip, 6.7 mm in thickness), with smoothed interior and exterior surfaces, 26 body sherds, and three base sherds. Approximately 80% of the 41MA30 sherds have a sandy paste, ranging from a fine to coarse paste. Three of the sandy paste sherds (either fine or coarse paste) also have bone temper inclusions. Four sherds have grog temper and a clayey or silty paste, and one clayey-silty paste body sherd has no temper. Finally, one body sherd with a clayey or silty paste has fine grog and bone temper inclusions. The sherds are from vessels fired predominantly in a low oxygen or reducing environment (83%). Four other sherds (sandy paste only) are from incompletely oxidized vessels, and one is from a vessel that was fired and cooled in an oxidizing environment (sandy paste sherd). Of the reduced fired vessel sherds, the majority of them had been fired in a reducing environment but cooled in the open air, leaving thin lighter oxidized bands at one or both surfaces of the vessel core (cf. Teltser 1993:Figure 2f-h). Four of the bone-tempered, grog-tempered, or grog-bone-tempered sherds (44%) are from vessels fired in this manner compared to 57% of the sandy paste sherds. The majority of the tempered vessels were fired and cooled in a low oxygen or reducing environment.
The sherds are from moderately thick vessels, probably mostly jars and simple bowls. Sandy paste body sherds are 7.24 ± 0.85 mm thick (range from 5.3-9.1 mm), but there is considerable variability in vessel wall thickness within this ceramic group. Sandy paste base sherds are 10.8 ± 0.93 mm in thickness. The bone-sandy paste sherds are 7.25 ± 0.35 mm. The one grog-tempered rim is 6.7 mm in thickness. The grog and grog-bone-tempered body sherds range from 6.4-7.5 mm thick, with a mean thickness of 6.9 ± 0.50 mm. The sherds are from vessels that were regularly smoothed on either interior (57%) and/or exterior (43%) surfaces.

There are three decorated sherds from 41MA30. They include a jar body sherd (bone-tempered and fine sandy paste) with a single straight incised line that is adjacent to a tool punctated-filled zone (this zone may have been triangular in shape, with incised lines creating the triangle that was filled with punctations); a possible carinated bowl with a simple incised decoration on the rim panel; and a brushed body sherd.

CONCLUSIONS

41MA30 has ceramic sherds that appear to be part of an aboriginal ceramic tradition localized in the east-central part of the state of Texas (see Perttula and Ellis 2013). This tradition is recognized by a preponderance of plain sandy paste pottery (Goose Creek Plain, var. unspecified), and this plain sandy paste pottery represents a distinctive aspect of the material culture remains of the inland Mossy Grove Culture defined by Story (1990:258 and Figure 39). These sites are found in the Brazos, Trinity, and Neches-Angelina river basins in Southeast, East central, and East Texas.

The earliest ceramics in the region were non-tempered and plain sandy paste jars and bowls with burnished and/or floated surfaces, most likely related to Goose Creek Plain and Bear Creek Plain sandy paste ceramics found on sites in inland and coastal settings in Southeast and East Texas. This kind of pottery has been made from as early as ca. 2000-2100 years ago (Perttula and Ellis 2013). Plain sandy paste bone-tempered wares in the region are documented as early as A.D. 70 in the Trinity River basin (Walker County) and by ca. A.D. 400 in the Navasota River basin (Grimes County). Eventually, after ca. A.D. 400, potters that made these sandy paste wares began to occasionally decorate them with incised and punctated design elements, or they applied a thin red wash or slip to one or both vessel surfaces. The majority of the sherds from 41MA30 were very likely made and used locally in this ca. 600 year interval of the Woodland period.

More dramatic changes in the aboriginal ceramics in the region occurred after ca. A.D. 900/1000, when vessels began to be made with grog, bone, and hematite temper mixtures. Vessels generally had a sandy paste, but in other instances, clayey or silty pastes were chosen for use in vessel manufacture, as with a few sherds from 41MA30. Different vessel forms came into use alongside jars and bowls of various sizes and volumes, including bottles and carinated bowls. At this same time, decorated grog, bone, and grog- and bone-tempered vessels from local sites had styles/decorative elements closely resembling Caddo pottery made in East Texas, as well as Southeast Texas coastal pottery (see Aten 1983).

The grog- and bone-tempered brushed sherd from 41MA30 represents a second and even later Late Prehistoric use, as well as evidence of the widespread distribution of prehistoric Caddo pottery in parts of the Post Oak Savanna. Much of the Caddo pottery found in Prairie Savanna sites was likely made in East Texas by Caddo potters, and the vessels were probably the product of periodic trade between Caddo and non-Caddo peoples. In certain circumstances, however, some of the Caddo pottery found in the region was probably made by Caddo peoples who at certain times in the past (particularly after ca. A.D. 1300/1400) established permanent settlements in parts of the Trinity and Navasota River basins. Engraved, brushed, incised, incised-punctated, and punctated sherds from grog-tempered, bone-tempered, and sandy paste sherds occur in Post Oak Savanna sites that date from between ca. A.D. 1200-1400. The brushed sherd in the 41MA30 collection would not be out of place in an assemblage of decorated and grog-tempered Caddo pottery found in East Texas (i.e., the Neches River basin) on sites dating after A.D. 1250.
ACKNOWLEDGMENTS

I want to thank Bill Moore for the opportunity to analyze the second collection of prehistoric ceramic sherds from 41MA30.

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Analysis of a Collection of Early Caddo Artifacts from the Davis-McPeek Mound Site (41UR4/99), Upshur County, Texas

Timothy K. Perttula

INTRODUCTION

The Davis-McPeek site (41UR4/99) is an Early Caddo (ca. A.D. 900-1200) mound and associated village on an alluvial terrace along Little Cypress Creek, in western Upshur County in East Texas (Figure 1). The site, with one known mound, has been known since the early 1930s, and in the early 1960s Buddy Jones conducted archaeological investigations in the mound (Davis et al. 1971). A small collection of ancestral Caddo artifacts from that work are curated at the Gregg County Historical Museum (GCHM, Longview, Texas), and this article provides an analysis of this collection.
AVAILABLE INFORMATION ABOUT THE DAVIS-MCPEEK SITE

A. T. Jackson of The University of Texas at Austin first recorded the Davis-McPeek site in 1931, although a Mr. H. M. Prince had dug a burial with pottery vessels at the site sometime before 1930. In 1939, A. M. Woolsey of the federal Works Progress Administration-University of Texas Project investigations in East Texas re-recorded the site and obtained a small surface collection of ceramic sherds (n=35). Woolsey noted that the mound stood 4.6 m in height and was 15.2 x 9.2 m in length and width, and that the mound was constructed of sand (Nelson and Perttula 1993:53).

At the 7th Caddo Conference in 1963, Buddy Calvin Jones reported on his investigations at the site, which he called the Spencer Davis Mound. The mound was divided by a north-south property line fence, with the eastern half of the mound owned by J. Davis and the western half owned by E. L. Spencer (Figure 2). Notes on file at the GGHM indicate that Jones excavated about half of the western side of the mound (on the Spencer property) (Figure 2). He also excavated one Caddo burial that was under the mound fill. The burial was oriented roughly east-west, and there were two pottery vessels at the western end of the burial pit, probably by the feet of the deceased individual. The vessels were of the Crockett Curvilinear Incised and Holly Fine Engraved types (Davis et al. 1971:103); the vessels have not yet been identified in the GCHM vessel collections. Jones also indicated that vessels of the types Dunkin Incised, Crockett Curvilinear Incised, and Weches Fingernail Impressed had been removed from the mound by other individuals (Davis et al. 1971:103).

Jones’ notes on his mound excavations indicate that the mound stood approximately 2.4 m in height in the early 1960s. The profile in his excavation area showed a 30-35 cm thick A-horizon atop the mound, followed by several mound fills, namely: a 25-40 cm zone of a yellowish-red clay; 25-30 cm of a white sand; 50 cm of a yellowish sand; and a basal fill (ca. 85 cm thick) of a yellowish sand with gray, yellow, white, orange, and dark yellow clay lens, charcoal fragments, and a few sherds. The sherds to be discussed below came from this basal mound deposit, and were likely incorporated in sediments (from nearby habitation deposits) gathered up on the site with which to construct the mound.

Following Jones’ work, Bob D. Skiles of the Wood County Archaeological Survey relocated the mound in 1979, along with an associated midden deposit (earlier noted by Woolsey, see Nelson and Perttula 1993:Figure 1). He made a surface collection from the midden, and this included an Alba point, a Red River long-stemmed pipe sherd, and eight
ceramic sherds. These included a Coles Creek Incised rim, and a Spiro Engraved bowl sherd, as well as other incised and punctated body sherds and an incised jar handle.

Finally, in 1993, Nelson and Perttula (1993), along with Mike Turner, investigated the site, now named the Davis-McPeek mound after the current landowners. Thirteen shovel tests were excavated on two alluvial terrace knolls north of the mound itself (Nelson and Perttula 1993:Figure 2). These shovel tests encountered two probable house areas on the knolls with concentrations of sherds, lithic debris, and daub in a ca. 50 cm thick archaeological deposit. The southern concentration, about 15 m northeast of the mound, had a notable daub concentration covering ca. 50 m² area, likely marking the location of an Early Caddo house.

The 1993 shovel testing and an associated surface collection recovered 728 prehistoric artifacts from the site, including daub (n=488), plain and decorated sherds (n=76, with a plain to decorated sherd ratio of 5.33), lithic debris (n=107), chipped stone tools (n=3, including an Alba arrow point), animal bones (n=32), and charcoal and charred nutshells (n=22). The few decorated sherds are incised and punctated, including diagonal and horizontal incised rims and fingernail and tool-impressed punctations. Two of the sherds are from the rim of plain bowls with inverted rim profiles.

**ARTIFACT COLLECTION**

There is a small collection of Caddo ceramic sherds and lithic artifacts in the Buddy Jones collection from the Davis-McPeek site. Although they have no specific provenience, they came from excavations Buddy Jones completed in the western half of the mound at the site in the early 1960s, near a burial he uncovered at the base of the mound.

There are 40 ceramic sherds in the Jones collection from the site. The sherds include six decorated body sherds (none of them brushed, lending credence to the likelihood that the ceramic assemblage predates ca. A.D. 1250), five plain rim sherds, 25 plain body sherds, and four base sherds. The plain to decorated sherd ratio is a high 5.67; however, this is not significantly different from the plain to decorated sherd ratio in the 1993 assemblage reported by Nelson and Perttula (1993). More than 92% of the sherds are grog-tempered, 5% are grog-bone-tempered, and 2.5% are bone-tempered. Four of the plain rim sherds are from bottles, while the other is from a carinated bowl with a direct profile and a rounded lip.

The six decorated sherds are from Early Caddo fine wares and utility wares. The fine wares include a bottle sherd from a Holly Fine Engraved bottle with fine line concentric semi-circles, and another bottle sherd with a straight engraved line. Two of the utility ware sherds have straight or closely-spaced parallel incised lines. One body sherd is identified as banded punctated, a variety of utility ware commonly found on Early Caddo sites in northwest Louisiana and East Texas (see Girard 2012; Perttula 2011) with small triangular punctates on either side of a straight incised line. The last decorated sherd is from a Weches Fingernail Impressed, var. Weches (see Stokes and Woodring 1981:Figures 22n-q and 23a) jar. It has horizontal and vertical incised lines above a row of crescent-shaped punctations.

The lithic artifacts from the excavations include only a single cortical piece of petrified wood lithic debris and a quartzite fire-cracked rock.

**SUMMARY AND CONCLUSIONS**

The small collection of ceramic and lithic artifacts from the Davis-McPeek site in the Buddy Jones collection at the GCHM provides further evidence of the character of the Early Caddo ceramic assemblage at the site, and the fact that mound construction and domestic occupation were contemporaneous here. Jones’ excavations revealed that the mound at the site was built from both sand and clay fills, sometimes intermixed, and ceramic sherds and charcoal fragments were present in the lowermost mound fill deposits. Jones also excavated a single sub-mound burial feature at the Davis-McPeek site, and this individual was accompanied
by two pottery vessels. The vessels and the sherds in various collections from the site are consistent with a ca. A.D. 900-1200 Caddo occupation in East Texas, with types identified including Holly Fine Engraved, Spiro Engraved, Crockett Curvilinear Incised, Coles Creek Incised, Dunkin Incised, and Weches Fingernail Impressed. Alba arrow points and a Red River long-stemmed pipe sherd are also part of the Early Caddo material culture assemblage at the Davis-McPeek mound site and village.

ACKNOWLEDGMENTS

I appreciate the assistance of Patti Haskins, Curator at the Gregg County Historical Museum, in facilitating the study of the artifact collection from the Davis-McPeek site in the Buddy Jones collection. Lance Trask prepared the figures for the article.

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Stokes, J. and J. Woodring
Additional Ancestral Caddo Ceramic and Lithic Artifacts from the Three Mounds Creek Site, Gregg County, Texas

Timothy K. Perttula

INTRODUCTION

The Three Mounds Creek site is an ancestral Caddo multiple mound center along a southern-flowing tributary to the Sabine River in the Longview, Texas area. Buddy Jones recorded the site in 1956, and noted that it had three mounds. His notes fail to describe the mounds in any fashion, nor their relationship to each other or the landform they were built on, and no map is available that shows the location of the three mounds with respect to where he collected artifacts from the site.

In April 1956, Jones excavated a 9.5 x 12 ft. (2.9 x 3.6 m) unit at the site, in an old cotton field. It is unknown if this unit was placed in one of the three mounds, or what the vertical, horizontal, or depositional context of the artifacts was from the site. Perttula (2012) described a collection of 264 artifacts from that work that are in the Gregg County Historical Museum (GCHM), and these were primarily ceramic sherds (n=242, 92%). Two additional collections from the site (accession nos. 2003.08.3123 and 2003.08.3124) were subsequently identified in the GCHM, and these were analyzed in January 2013. The results of those analyses are presented in this article.

ARTIFACT COLLECTIONS

The remaining two GCHM collections from the Three Mounds Creek site include 10 dart points, two arrow point fragments, and 247 ceramic sherds. Together with the animal bone and mussel shell fragments described by Perttula (2012:Table 1), as well as lithic debris, and the abundance of ceramic sherds, this suggests that Jones’ excavation may have been placed in a domestic habitation area at the site.

Ceramic Sherds

The additional ceramic sherds include 211 plain rim, body, and base sherds, and 36 decorated sherds. Approximately 78% of the sherds are from grog-tempered vessels, and the remainder are from vessels tempered with burned bone (Table 1).

The 35 decorated sherds from Caddo vessels are primarily from utility ware jars (n=33, 94%), with only two fine ware sherds (n=2, 6%). Many of the utility ware sherds are body sherds with brushing marks (see Table 1). Utility ware rims include: horizontal brushed (n=1, everted rim jar); closely-spaced horizontal incised lines (n=1, bowl with a rounded and exterior folded lip); diagonal incised lines (n=1, everted rim jar with a 22 cm orifice diameter); and an everted rim jar sherd with tool punctate-filled incised triangles. Brushed sherds comprise 49% of the decorated sherd assemblage in the two collections. One lower rim-body sherd has diagonal incised lines on the rim that are pitched from right to left, a row of linear tool punctations at the rim-body juncture, and diagonal incised lines on the body that are pitched from the left to right. A body sherd has a curvilinear incised zone filled with circular tool punctations.

Both fine ware sherds are from bottles with engraved lines. One sherd has horizontal lines with large pendant triangles whose apexes point towards each other. A similar sherd was identified in the first collection analyzed by Perttula (2012:35). This engraved decorative element on bottles is one of the consistently
occurring elements in a Middle Caddo period (ca. A.D. 1200-1450) style zone that has been recognized in Caddo communities in the Angelina, Sabine, and Big Cypress stream basins (Hart and Perttula 2010:203-207).

Table 1. Ceramic sherds from additional collections at the Three Mounds Creek site.

<table>
<thead>
<tr>
<th>Sherd type</th>
<th>Grog-tempered</th>
<th>Bone-tempered</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>plain rim</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>plain body</td>
<td>144</td>
<td>37</td>
<td>181</td>
</tr>
<tr>
<td>plain base</td>
<td>17</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>brushed</td>
<td>10</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>incised</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>incised-punctated</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>punctated</td>
<td>3</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>engraved</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>dentate stamped</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>192</td>
<td>55</td>
<td>247</td>
</tr>
</tbody>
</table>

Together, all three collections from the Three Mounds Creek site at the GCHM have 66 decorated sherds (Table 2). Utility wares account for 95.5% of the assemblage, with very few fine wares. Brushed and brushed-incised sherds comprise 56% of the utility wares, and 53% of all the decorated sherds, with the remainder of the utility ware sherds from jars decorated with incised, punctated, and incised-punctated elements. The few engraved fine wares are only from bottles.

Table 2. Summary of the decorated Caddo sherds from the Three Mounds Creek site in the Buddy Jones Collection.

<table>
<thead>
<tr>
<th>Decorative Method</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utility Wares</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brushed</td>
<td>34</td>
<td>51.5</td>
</tr>
<tr>
<td>Brushed-Incised</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Incised</td>
<td>14</td>
<td>21.2</td>
</tr>
<tr>
<td>Punctated</td>
<td>7</td>
<td>10.6</td>
</tr>
<tr>
<td>Incised-Punctated</td>
<td>7</td>
<td>10.6</td>
</tr>
<tr>
<td><strong>Fine Wares</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engraved</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>66</td>
<td>100.0</td>
</tr>
</tbody>
</table>

There are also two Woodland period decorated sherds in the Three Mounds Creek collection. The first is a rocker stamped sherd, with rows of rocker stamping; is not large enough to determine if the stamping is zoned by incised lines (cf. varieties of Marksville Stamped, including var. Troyville) or not (cf. Indian Bay Stamped, Tchefuncte Stamped, or Chevalier Stamped) (see Brown 1998:33-34). The second sherd is a
grog-tempered body sherd with parallel rows of dentate stamps, likely an unidentified variety of Marksville Stamped. The rocker stamped sherd and the dentate stamped sherd point to a pre-A.D. 850 Woodland period use of the Three Mounds Creek site, as do the Woodland period Gary dart points in the collection.

Lithic Artifacts

Lithic artifacts from the ancestral Caddo occupation of the site include a triangular-shaped arrow point preform of yellowish-brown chert and an unidentified stemmed arrow point fragment of a local quartzite. There are also 10 miscellaneous Late Archaic and Woodland style dart points in the collection.

SUMMARY AND CONCLUSIONS

The main component at the Three Mounds Creek site likely dates from the late 13th century to the mid-15th century A.D. This is based on the relative proportions of brushed sherds in the overall decorated sherd assemblage and the two engraved bottle sherds with pendant triangles. Because brushed vessels continued to be made by Caddo groups living in the Sabine River basin into the 17th century, it may well have been occupied that late. Most likely, however, given the ages of the many other known sites in this part of the Sabine River basin, it seems probable that the Three Mounds Creek site was occupied at the same time (ca. A.D. 1300 to at least the mid-A.D. 1500s) as the premier Caddo mound center in this part of the Sabine River basin—the Pine Tree Mound site (41HS15, Fields and Gadus 2012). It may have been a subsidiary mound in a larger political community in this locale.

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