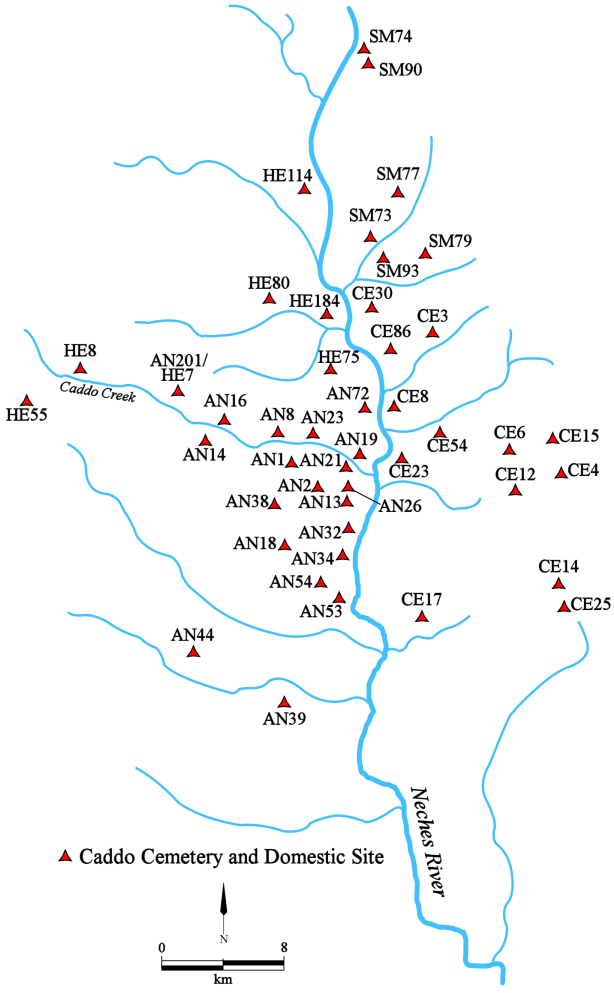
Caddo Archeology Journal



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CONTENTS

From the Editor

The current volume contains several full length articles, short current reports of research, and a report of 2019 activities from the Caddo Conference.

The recent addition of the Current Research has been well-received and several contributions are included in this volume. Contributions to this section were compiled by Timothy K. Perttula and represent some of the current projects of Caddo researchers.

I am grateful to reviewers who allocated time and effort to review the articles in the current volume and I look forward to submissions for the next volume.

Duncan P. McKinnon, Editor

The *Caddo Archeology Journal* is devoted to the anthropology, history, geography, and current activities of the Caddo Nation, an American Indian group with a historical range covering the four-state area of Texas, Louisiana, Arkansas, and Oklahoma. The *Caddo Archeology Journal* began as the *Caddoan Archeology Newsletter* in 1989 and in 1996 the name changed to simply *Caddoan Archeology*. In 2003 the name of the journal was changed to *Caddoan Archeology Journal*, and in 2006 the name was changed again to *Caddo Archeology Journal*.

Timothy K. Perttula was founder and editor from 1989 until 1993 when Lois Albert became editor. Perttula resumed his editorial role in 2002 until George A. Avery became editor in 2010. Duncan P. McKinnon is the current editor beginning in 2016. Stephen F. Austin State University is currently publishing the journal. The *Caddo Archeology Journal* is published once a year in the Spring.

Members of the Caddo Conference Organization receive a copy of the journal and access to digital copies on the Caddo Conference Organization website (http://www.caddoconference.org/). Print backorders can be ordered by contacting the journal editor or at the Caddo Conference Organization meeting.
The *Caddo Archaeology Journal* publishes:

- Articles directly related to the interpretation and evaluation of Caddo archeology and history that provide relevant consideration of an issue or theoretical position.

- Preliminary, review, and updated regional summaries of anthropological and historical work conducted within the Caddo region or has linkages to Caddo studies.

- Technical and methodological reports that are comprehensible to most readers and provide new insights into evaluating Caddo archeology.

- Book reviews related to Caddo publications on history, geography, ethnography, anthropology, and current activities of Caddo Nation.

Information for Authors

Articles should not exceed 10,000 words in length, including references. Reports should not exceed 5,000 words including references.

Please submit the following to dmckinnon@uca.edu
- a PDF file of the complete submission (following American Antiquity style)
- OR a Word file containing the complete paper (i.e., including abstract, tables and figures)
- OR a Word file containing the text, references, table and figure captions, plus an individual file of each figure (600 dpi) and/or table. Excel file of tables is preferred.

After submission, papers will be sent out to a minimum of two reviewers. Reviewer comments are requested within 30 days.

The Ancestral Caddo Ceramic Vessel Sherd and Ceramic Pipe Sherd Assemblage from the A. C. Saunders Site (41AN19) in the Upper Neches River Basin, Anderson County, Texas

Timothy K. Perttula
Archeological & Environmental Consultants, LLC

Introduction and Site Setting

The A. C. Saunders site (41AN19) is an important ancestral Caddo settlement in the upper Neches River basin in Anderson County in East Texas (Figure 1a). The site is one of only a few ancestral Caddo sites with mound features in the upper Neches River basin, particularly those that are known to date after ca. A.D. 1400, but this part of the upper Neches River basin, including its many tributaries, such as Caddo Creek just to the south and west (see Perttula and Walters 2016), was widely settled by Caddo farmers after that time. These Caddo groups left behind evidence of year-round occupied settlements with house structures, middens, and outdoor activity areas, impressive artifact assemblages, as well as the creation of numerous cemeteries (Figure 1b), most apparently the product of use by families or lineage groups.

What makes the A. C. Saunders site unique in upper Neches River basin Caddo archaeology are the two mound features there, situated on a broad upland

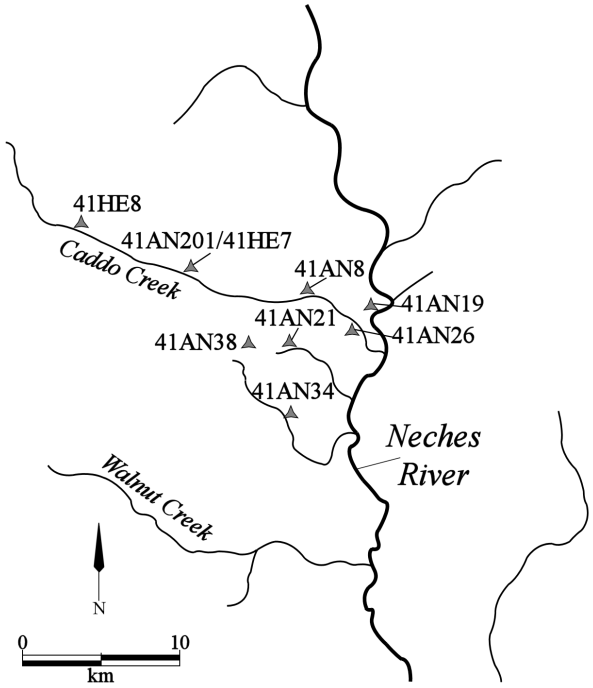

Figure 1a. The A. C. Saunders site in the upper Neches River basin: important excavated Caddo sites in the Caddo Creek valley and surrounding drainages in Anderson and Henderson counties, Texas.

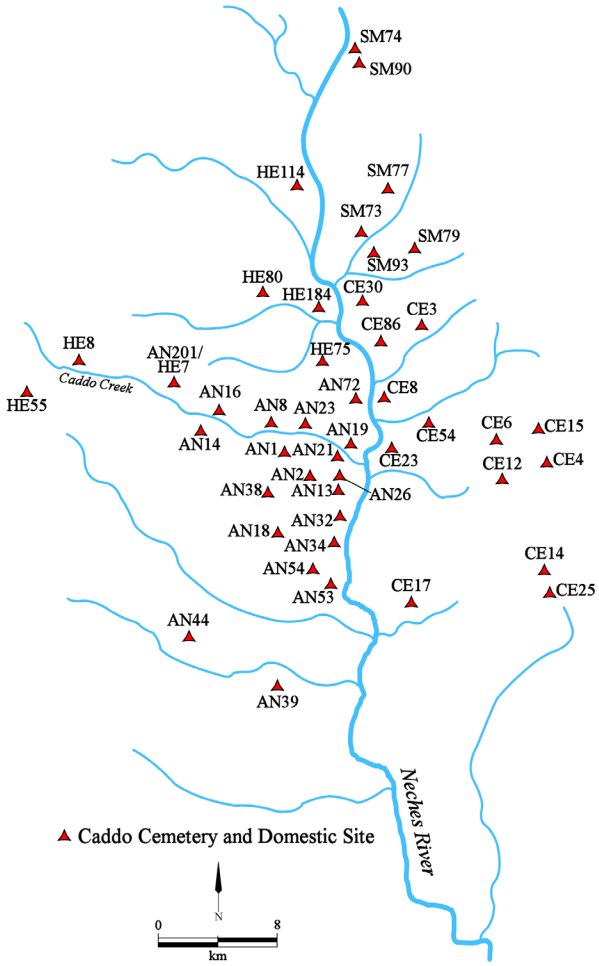

Figure 1b. Known Caddo cemetery and domestic sites in the upper Neches River basin.

landform less than a mile west of the Neches River and a comparable distance north of the confluence of Caddo Creek with the Neches River (see Figure 1a). The first mound (Feature 1) is an ash mound that has been linked with the use of fire temples and perpetual fires by the *xinesi* of Hasinai Caddo groups in historic times (Jackson 1936; Kleinschmidt 1982, 1984; Perttula 1992; Wyckoff and Baugh 1980). The second mound, not far to the southeast, is a thick midden mound (Feature 2) that accumulated over a large structure. The concentrated midden accumulation near the ash mound suggests it may represent the remains of multiple feasting events (e.g., Kassabaum 2019) and other ritual activities where large amounts of food were consumed, clay pipes were smoked, and cooking and serving vessels were used, and thus the discarded fragments of these activities creating the midden deposits. These items constitute a discrete and substantial corpus of material culture remains that have played a large role in defining and framing the archaeological character of what has come to be known as the Late Caddo period Frankston phase (ca. A.D. 1400-1680); the A. C. Saunders site is the quintessential Frankston phase site in East Texas. As such, these material culture remains curated at the Texas Archeological Research Laboratory at The University of Texas at Austin - in particular the large number of ceramic vessel sherds and ceramic pipe sherds from the A. C. Saunders site - warrant continued archaeological study as a means to better understand the stylistic and technological character of the ceramic vessels and pipes made and used by ancestral Caddo peoples in the upper Neches River basin (Perttula 2011, 2013, 2019).

University of Texas Archaeological Investigations in 1931 and 1935

UT archaeologists completed excavations at the A. C. Saunders site in 1931 and 1935 (Jackson 1935, 1936). This work focused solely on the two mounds (Figure 2), with no investigations done to identify non-mound habitation areas or associated cemetery areas.

Feature 1, Ash Mound

The larger of the two mounds, the Feature 1 ash mound or ash heap (Jackson 1936:135), sits at the northern end

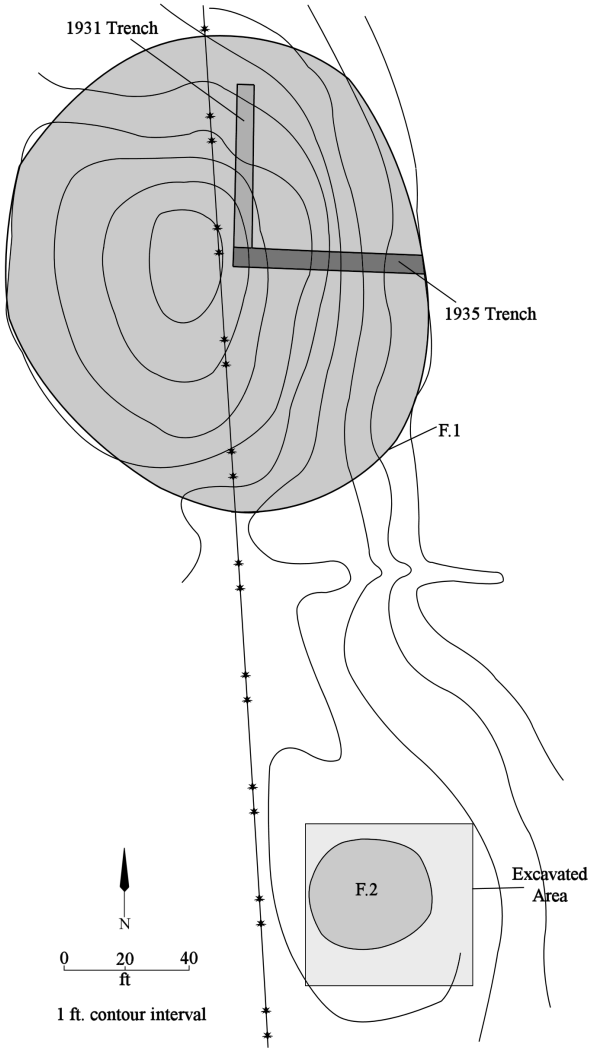

Figure 2. Plan map of the A. C. Saunders site.

of the site (see Figure 2). It is ca. 152 x 123 ft. in length and width (46.3 x 37.5 m), and stands 7 ft. (2.13 m) in height (Figures 3 and 4). The mound was constructed on a low natural rise (Jackson 1936:135). Two trenches were excavated in Feature 1, a north-south trench in 1931 and an east-west trench in 1935 (see Figure 2).

According to Jackson (1936:135) the mound, which was almost devoid of artifacts, had several fill zones, the latter two with much ash, including:

- Zone 1, 0-8 inches, sandy loam A-horizon;
- Zone 2, 8-20 inches, "red sand, intermixed with red clay, some charcoal and a small amount of ashes;" no evidence of a structure
- Zone 3, 20-26 inches, "white ash, containing a few lumps of charcoal and red clay;" an

Figure 3. Looking at Feature 1 Ash Mound at the A. C. Saunders site, 1935.

Figure 4. 1981 view north at Feature 1. Pete Thurmond stands on the crest of the mound along the property line.

Figure 5. 1935 excavations in the Feature 2 midden mound at the A. C. Saunders site.

- Zone 4, 26-62 inches, "brownish-black ash containing much hard-packed red sand that has the appearance of clay."

Below these mound zones were two natural soil zones, a red sand (62-80 inches) and a red clay (81 inches+), presumably the B-horizon.

Feature 2, Midden Mound

The Feature 2 midden mound was approximately 125 ft. (38.1 m) south-southeast of Feature 1 (see Figure 2). The midden mound, which was 60 x 50 ft. in length and width (18.3 x 15.2 m) and stood 2.6 ft. in height (0.8 m), was totally excavated in 1935 (Figure 5) in a ca. 55 ft. square unit, with organically-enriched midden deposits with ash removed in three 10 inch levels (Jackson 1936:136, 153). Directly beneath the midden deposits was evidence that a large circular structure (Feature 3), marked by an arc of 99 post holes identifying the outer wall of the Structure (Figures 6 and 7), stood here and was subsequently buried by the midden mound deposits. Several interior post holes may represent the center post (12 inches and diameter and 2.5 ft. in depth) as well as various internal partitions.

The post holes were encountered between 22-25 inches (ca. 58-66 cm bs), and were filled with "red sandy soil, ashes and some charcoal" (Jackson 1936:153). They ranged in diameter from 5.5-15 inches, and sometimes occurred as alternate large and small post holes. In addition to the Feature 3 post hole arc, there is a small portion of another circular arc of post holes (Feature 9) in the eastern area of the excavations (see Figure 7). Jackson (1936:154) also recognized features (Features 4-8) with concentrated ash deposits that he considered to be hearths. One, Feature 4, was within Feature 3, and another was within the Feature 9 post hole arc (Feature 8), while Feature 7 was just outside of Feature 3 (see Figure 7). Features 5 and 6, however, are amidst the Feature 3 wall of post holes, and must postdate the use of Feature 3 (see Jackson 1936:154).

The midden deposits above Feature 3 contained an abundance of ceramic sherds, estimated at 600 lbs in weight (Jackson 1936:139), as well as ca. 400 lbs of well-preserved animal bone and mussel shell (Figures 8 and 9). Only a small portion of these remains were retained by The University of Texas archaeologists, unfortunately, including only 527 mussel shell valves (Neck 1982) and 151 animal remains (Kleinschmidt 1982:266-271).

Based on differences in the depth of recovered artifacts, Jackson (1936) noted certain notable changes in the character of the ceramic vessel sherds and ceramic pipe sherds at the A. C. Saunders site that likely have chronological significance in Late Caddo period Frankston phase sites in the upper Neches River basin. These include:

a. effigy bowl sherds (Jackson 1936:Plate 29:1) occur throughout the midden deposits;
b. pedestal base vessel sherds were most common in the uppermost midden deposits;
c. pigments rubbed in the engraved lines of vessel sherds were found only in the upper midden deposits;
d. vessels with handles (see Jackson 1936:Plate 27) were most common in the upper and middle portions of the midden mound;

Figure 6. Post hole arc of the Feature 3 structure at the A. C. Saunders site.

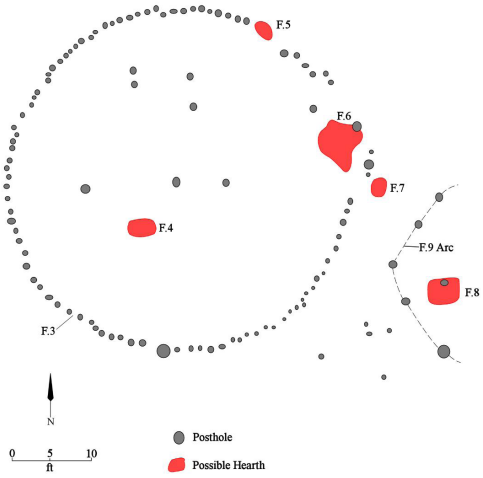

Figure 7. Plan map of Feature 3 underneath the midden mound.

Figure 8. Pile of animal bones from Feature 2 midden mound at the A. C. Saunders site.

e. Neches style (see Jackson 1933) pipes with punctated decorative elements occur only in the uppermost midden deposits; incised elbow pipes are dominant in the middle part of the midden deposits; and plain elbow pipes were found only in the lowermost part of the midden (Jackson 1936:136, 139 and Plate 28:1).

E. B. Sayles (1935) completed limited test investigations in Feature 2 at the A. C. Saunders site in 1933. This was apparently part of his archaeological survey of Texas done on behalf of the Gila Pueblo in Globe, Arizona. Kleinschmidt (1982:35-36) provides an inventory of the materials collected by Sayles, which were first held by the Arizona State Museum, but were eventually returned to TARL in the 1980s.

Kleinschmidt Survey Investigations in 1978 and 1981

Kleinschmidt relocated the A. C. Saunders site in 1978, as well as the locations of Features 1 and 2, and visited the site again in 1981 to record its surface character. Feature 1 is bisected by a north-south property fence, and there is a ca. 150 x 100 m area south and east of Feature 1 that had ancestral Caddo artifacts on the site surface (Figure 10); a much smaller surface scatter of artifacts was noted well to the east of Features 1 and 2. The area of Feature 2, to the southeast of Feature 1, is marked by a depressed area representing the non-backfilled excavation area around the midden mound.

Remote Sensing Investigations at the A. C. Saunders Site in 2005

The Texas Archeological Research Laboratory at The University of Texas completed a magnetometer survey of ca. 4 acres of the A. C. Saunders site in December 2005 (Hudler et al. 2018). The work was done on the western half of the site, west of Features 1 and 2, the portion owned by The Archaeological Conservancy. During the work, eight circular features (Magnetic features 1-8) were identified that may be remnants of arcs of post holes from ancestral Caddo structures. These circular magnetic features range from 13.5-20 m in diameter (Hudler et al. 2018:Figures 4-9).

Kleinschmidt (1982) Ceramic Analyses

The primary focus of Kleinschmidt's (1982) analysis of the ceramic vessel sherds from Feature 2 at the A. C. Saunders site was to determine vessel batches, i.e., "a sherd or sherds from a single vessel" (Kleinschmidt 1982:97). This approach was designed to "determine the occurrence of types at the site. In addition, details on the variation in form, decoration, and other attributes can be studied more accurately for the individual vessel groups, and then be compared to the information from whole vessel collections from cemeteries in the study area" (Kleinschmidt 1982:97). He relied on bowl and jar rims and bottle bodies in the assemblage of 6998 vessel sherds to identify 1291 vessel batches (Kleinschmidt

Figure 9. Selected mussel shell valves and animal remains in the TARL collections from the A. C. Saunders site.

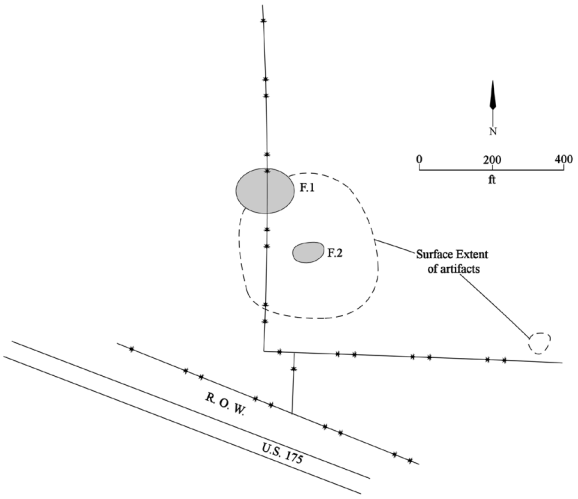

Figure 10. Kleinschmidt's (1982) map of the A. C. Saunders site showing the locations of Features 1 and 2, and the surface extent of artifacts around the two features.

Type	No. of vessels	Percent of Total Vessels
Fine ware		
Poynor Engraved, PO	273	21.2
Poynor Engraved, PP	8	0.6
Patton Engraved	1	0.1
Hume Engraved	2	0.2
Engraved	297	23.0
Effigy bowl*	7	0.5
Utility ware		
Killough Pinched	11	0.9
La Rue Neck Banded	31	2.4
Maydelle Incised	139	10.8
Bullard Brushed	231	18.0
Pinched	9	0.7
Ridged	4	0.3
Punctated	39	3.0
Fingernail Impressed	111	8.6
Incised	91	7.1
Plain ware	36	2.8
Totals	1291**	100.0

Table 1. Vessel batches in the Feature 2 ceramic vessel sherd assemblage.

*Hood Engraved (Perttula 2011)
**Kleinschmidt neglected to include at least one vessel batch based on the recovery of three red-slipped sherds

Decorative method	No. of sherds	Vessel batch count
Utility ware		
Brushed	4321	232
Incised	356	230
Fingernail Impressed	227	111
Punctated	138	39
Pinched	47	20
Neck Banded	40	31
Ridged*	8	4
Fine ware		
Engraved	665	588
Red-slipped	3	1**
Plain ware	1203	36
Totals	6998	1291**

Table 2. Sherd counts and vessel batch counts for the Feature 2 ceramic vessel assemblage at the A. C. Saunders site.

*included below as grooved pottery sherds
**does not include at least one red-slipped vessel batch

1982:Table 4), and redefined Poynor Engraved, the principal fine ware in the assemblage, as two varieties: PO and PP. The tabulation of vessel batches is provided in Table 1. The most common identified types in the A. C. Saunders assemblage are Poynor Engraved (PO variety), Bullard Brushed, Maydelle Incised, and La Rue Neck Banded. More than 45 percent of the vessel batches could not be identified to a defined type.

Based strictly on sherd counts (n=6998) as tabulated by Kleinschmidt, more than 60 percent of the sherds are from brushed vessels (Table 2), but the proportion of brushed vessels in the vessel batches is only 18 percent. Other utility wares are less common in the sherd counts, but both incised (Maydelle Incised) and fingernail impressed sherds are well represented in the vessel batches (18 and 8.6 percent, respectively).

The fine ware sherds, including both engraved and red-slipped sherds, represent approximately 10 percent of the sherds from the A. C. Saunders site, but more than 45 percent of the vessel batches (see Table 2). Clearly, the fine wares were an integral part of the vessel assemblage produced and in use during the ancestral Caddo occupation of the site in Late Caddo period Frankston phase times.

Plain wares are rare in the vessel batches at the site, as they represent only 2.8 percent of the vessel batch assemblage (see Table 2). Plain sherds account for about 17 percent of the sherds, but most of these most likely are from the undecorated portions of utility ware and fine ware vessels.

The vessels at the A. C. Saunders site, according to Kleinschmidt (1982:Table 15), were tempered most commonly with grog or crushed sherds (88.6 percent). Another 10.1 percent were tempered with grog and bone (5.2 percent), grog and hematite (4.7 percent), or grog-hematite-bone (0.1 percent). Approximately 1.2 percent of the vessels were tempered with hematite, and 0.1 were tempered with burned bone and hematite. As a group only 5.5 percent of the vessel batches have burned bone inclusions and 6.2 percent have crushed pieces of hematite added as temper.

Another important aspect of Kleinschmidt's (1982) analysis of the A. C. Saunders ceramic vessel sherds was to codify decorative motifs for the engraved wares, most notably the Poynor Engraved, PO and PP varieties; the latter has decorative features of both Poynor Engraved and Patton Engraved; Perttula (2011) later linked the PP variety of Poynor Engraved with Poynor Engraved, *var. Freeman*, likely representing the latest Poynor Engraved vessels made and used in the upper Neches River basin. Kleinschmidt also identified distinctive motifs for Patton Engraved, Hume Engraved, and effigy bowls (later defined as Hood Engraved, see below).

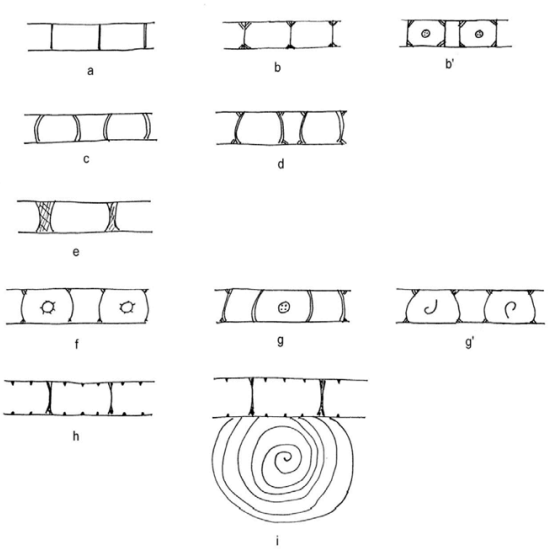

Figure 11. Defined varieties of Poynor Engraved: a-b', *var. Blackburn*; c-d, *var. Cook*; e, *var. Hood*; f-g', *var. Lang*; h-i, *var. Freeman*.

Current Analysis of the Caddo Ceramic Vessels and Vessel Sherds

In the upper Neches River basin after ca. A.D. 1400/1450, the principal fine wares in ancestral Caddo Frankston phase contexts are several varieties of Poynor Engraved bowls and carinated bowls (see Perttula 2011:Figures 6-64 and 6-65) (Figures 11 and 12), including regional varieties codified first by Kleinschmidt (1982:Figures 19-20), followed by Poynor Engraved bottles of various forms, Patton Engraved (dating mainly after ca. A.D. 1680, in Allen phase contexts) (Figure 13a-d), three varieties of Hood Engraved effigy ware vessels (Perttula 2011:271), with or without tail riders, and beaker-shaped Hume Engraved bottles (Figure 13e-g). There are also defined local varieties of Poynor Engraved first recognized at the

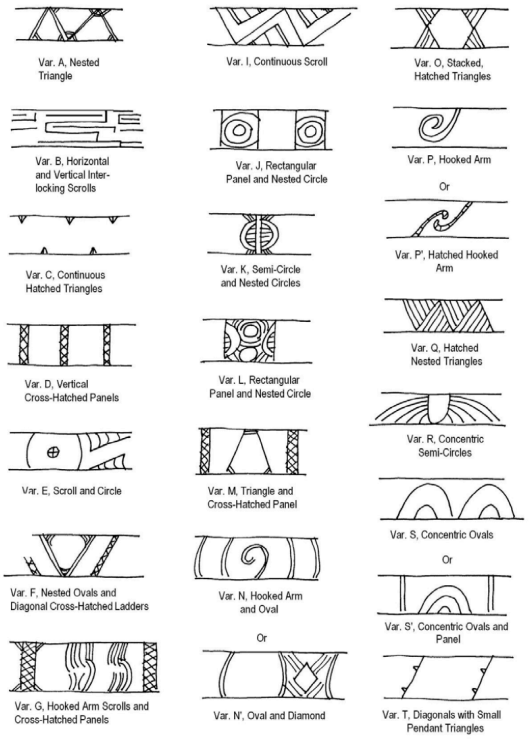

Figure 12. Regional varieties of Poynor Engraved in the upper Neches River basin.

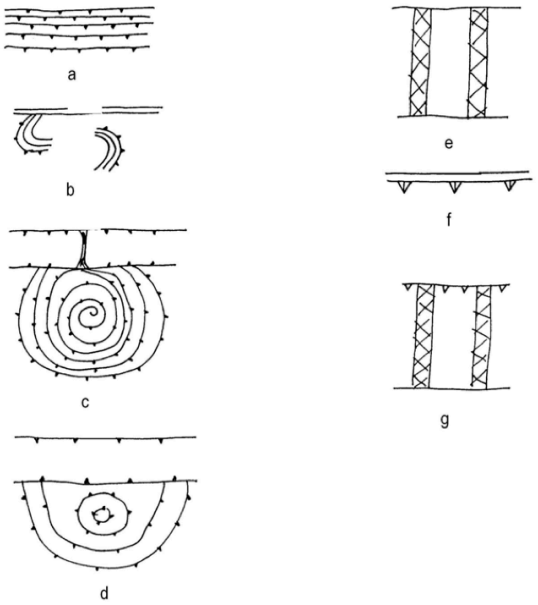

Figure 13. Defined varieties of Patton Engraved and Hume Engraved: a, Patton Engraved, *var. Allen*; b, Patton Engraved, *var. Patton*; c, Patton Engraved, *var. Freeman*; d, Patton Engraved, *var. Fair*; e, Hume Engraved, *var. Hume*; f, Hume Engraved, *var. Allen*; g, Hume Engraved, *var. unspecified*.

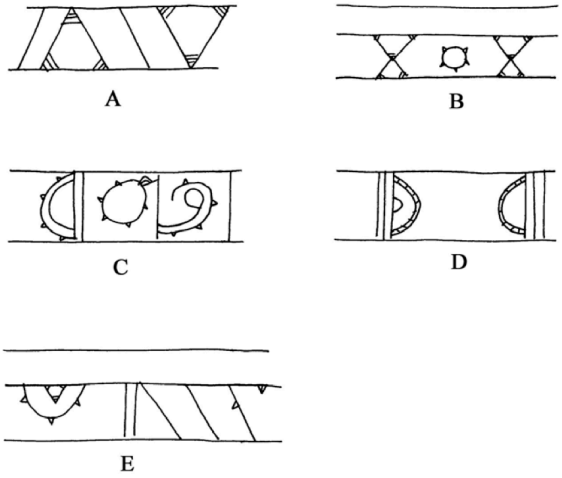

Figure 14. Local varieties of Poynor Engraved at the Lang Pasture site (41AN38): a, local variety 1; b, local variety 2; c, local variety 3; d, local variety 4; e, local variety 5.

Lang Pasture site (41AN38, see Perttula 2011:223 and Figure 6.29) (Figure 14a-e).

More than 460 vessels documented from post-A.D. 1400 ancestral Caddo sites and burial features in the upper Neches River basin (Perttula 2011:Table 6-35) are primarily fine wares (73 percent), followed by utility wares (14.9 percent), and plain wares (11.8 percent). Kleinschmidt's (1982:Table 4) sorting of the sherds from the A. C. Saunders site into vessel batches from the Feature 2 midden mound presents a very different assemblage of wares when compared to burial funerary offerings: 45.6 percent fine wares (Figure 15), 51.7 percent utility wares, and only 2.8 percent plain wares.

Among the utility wares in Frankston phase contexts, the major types include Bullard Brushed, Killough Pinched, Maydelle Incised, punctated jars, and brushed-punctated jars of unidentified types. Most of the plain wares are simple bowls, carinated bowls, and several forms of bottles.

Figure 15. Selected Poynor Engraved vessel sections from the A. C. Saunders site.

Feature 1 ceramic vessel sherds

UT excavations in Feature 1 recovered only eight ceramic vessel sherds, among them a grog-tempered strap handle (23.0 mm in width) decorated with circular punctations. One sherd is an undecorated grog-hematite-tempered body sherd, four others are parallel brushed body sherds tempered with grog (n=3) and grog-hematite (n=1), and there are two engraved fine ware

sherds, likely from Poynor Engraved, *var. Cook* vessels (see Figure 11c-d); one is from a grog-tempered vessel and the other is from a bone-tempered vessel. The grog-tempered Poynor Engraved, *var. Cook* body sherd has closely-spaced curvilinear engraved lines, while the second body sherd (from a carinated bowl) has a single horizontal engraved line above the carination along with a single curvilinear engraved line extending onto the rim panel; the body of the carinated bowl sherd has horizontal brushing marks.

Whole Vessel from Feature 2 excavations

The one whole ceramic vessel from the A. C. Saunders site was found in Feature 2 midden deposits, ca. 3 m east of the entrance to the large Caddo structure under the Feature 2 midden mound. According to Jackson (1936:139), the vessel was found at ca. 28 cm bs. It does not appear to be the case that the vessel is associated with an ancestral Caddo burial feature, and Jackson (1936:139) noted that it "is one of the very few whole vessels found in East Texas not with a grave."

SITE NAME OR SITE NUMBER: A. C. Saunders

VESSEL NO.: 18, Feature 2 midden

VESSEL FORM: Carinated bowl

NON-PLASTICS AND PASTE: grog

RIM AND LIP FORM: Direct rim and rounded lip

CORE COLOR: A (fired and cooled in an oxidizing environment)

INTERIOR SURFACE COLOR: brown; fire clouds on the base

EXTERIOR SURFACE COLOR: brown; fire clouds on the body and base

WALL THICKNESS (IN MM): rim, 5.6 mm

INTERIOR SURFACE TREATMENT: burnished

Ceramic Vessel Sherds in Feature 2

In this current analysis of the ceramic vessel sherds from the A. C. Saunders site, no attempt is made to sort the sherds into vessel batches - unless actual sherd refits can be identified - but solely to identify the attributes of each sherd that are of particular interest in stylistic and technological studies of upper Neches River ancestral Caddo ceramics: namely decorative methods and elements, temper, and sherd type (rim, body, and base). These attributes should be sufficient to sort the sherds into ceramic wares, identify and recognize decorative methods and elements as well as defined types and varieties, and quantify the use of different combinations of temper inclusions among the plain, utility, and fine ware sherds. Such data will also be employed in broader regional comparisons of the A. C. Saunders ceramic assemblage with other reported upper Neches River basin sites (see Perttula and Walters 2016:Table 22).

The reconstructed manufacturing process of ancestral Caddo ceramic vessels, particularly utility ware, indicate that:

EXTERIOR SURFACE TREATMENT: burnished
HEIGHT (IN CM): 5.1

ORIFICE DIAMETER (IN CM): 7.9

DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): 7.9

BASE DIAMETER (IN CM) AND SHAPE OF BASE: 3.7 cm, circular and flat

ESTIMATED VOLUME (IN LITERS): 0.2

DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): The rim panel has four to five alternating sets of excised brackets and curvilinear excised zones that have created negative oval-shaped zones (Figure 16).

PIGMENT USE AND LOCATION ON VESSEL: none

TYPE AND VARIETY (IF KNOWN): Poynor Engraved, *var. Hood*

Figure 16. Poynor Engraved, *var. Hood* carinated bowl (No. 18) from Feature 2 at the A. C. Saunders site.

> Caddo pottery…represents an ancient tradition of vessel making that pretty much had all the bugs worked out of it. Even vessels that show poor artisanship exhibit good "engineering": During the rough stages of work, potters thinned vessels on the inside by scraping hem with gourd pieces or other sizeable but thin objects, and then evened up the surfaces by rubbing them, apparently with a stone. Finally, they smoothed the vessels with bundles of grass, pieces of hide, or wet brushes that were not too coarse. In their shaping of vessels, Caddo potters certainly did not mess about with the flat end of sticks…or with bunches of sharp twigs. Furthermore, the rims of most Caddo vessels (except for sharp-rimmed bottles) were made thick enough to stand up under ladle banging, and I have seen no evidence of sloppily repaired greenware cracks or greenware rim peeling. In fact, Caddo potters habitually made an effort to eradicate coil joins and tool marks except inside some narrow-mouthed jars and bottles…All these thinning and smoothing techniques are advanced and quite satisfactory (Johnson 1992:18).

A total of 7347 ceramic sherds have been recovered from Feature 2 at the A. C. Saunders site from plain ware, utility ware, and fine ware vessels (Table 3); of these, approximately 82 percent (n=6001) are from a known arbitrary provenience level (see Appendix 1) in Feature 2. The plain rim, body, and base sherds comprise approximately 21 percent of the vessel sherd assemblage, and the fine ware sherds account for another 8.4 percent of the assemblage. Utility ware sherds are by far the most common in Feature 2 at the site, representing approximately 70 percent of the ceramic wares. The plain to decorated sherd ratio for the Feature 2 assemblage is a low 0.28.

By the proportion of rim sherds - a better measure of the relative frequency of the three wares in the assemblage as a whole - utility ware rims comprise 56 percent of the sample of 687 rims (see Table 3). Fine ware rims account for another 29 percent of the rim assemblage, and plain ware rims (Figure 17a-c) represent only 14.6 percent of the rim assemblage. By both measures (i.e., total sherds and total no. of rim

Ware	Rim	Body	Base	N
Plain	101*, ***	1235	244	1580
Utility	386*	4750	13**	5149
Fine	200	418	-	618
Totals	687	6403	257	7347+

Table 3. Ceramic wares in the A. C. Saunders site assemblage, Feature 2.

*includes sherd handles
** pedestal base legs
***also includes all effigy head, tab tail, and tail rider sherds in the assemblage. +does not include 114 surface damaged body and base sherds.

Temper	Plain ware	Utility ware	Fine ware	N
Grog	393	947	463	1803
Grog-bone	35	89	39	163
Grog-hematite	76	119	124	319
Grog-hematite-bone	3	11	9	23
Bone	5	10	6	21
Bone-hematite	4	7	4	15
Totals	516	1183	645	2344

Table 4. Use of tempers in the ceramic wares at the A. C. Saunders site.

sherds), utility wares are the principal ceramic ware made and used at the A. C. Saunders site, followed by fine wares and plain wares. In the rim sherds from known provenience levels (n=426, see Appendix 1), 50.0 percent are from utility wares (especially from Maydelle Incised and Bullard Brushed jars), another 32.9 percent are from fine wares (especially from Poynor Engraved vessels), and 17.1 from plain wares.

Approximately 32 percent of the ceramic vessel sherds from the A. C. Saunders site were examined for temper inclusions in the clay paste (Table 4). The sherds are from vessels tempered almost exclusively with grog (i.e., fired clay and/or crushed sherds). Between 98.3-98.6 percent of the sherds by ware have grog temper inclusions. Other temper inclusions, such as burned bone and hematite, were commonly added to the grog-tempered paste, and with regularity in the case of hematite in all three wares (11.7-21.1 percent). The few sherds in the different wares that have crushed and burned bone range from 9.1 percent in the plain wares, 9.9 percent in the utility wares, and 9.0 percent in the fine wares (Table 4).

There is only moderate variability in temper-paste use between the different wares in the A. C. Saunders ceramics, as there are only six temper-paste combinations here (see Table 4), as low as the temper-paste combinations in early Historic Caddo sites in the upper Neches River basin (see Perttula 2007), but much less diverse than the 31 temper-paste combinations at the ca. A.D. 1150-1430 Mawi haia ina site (41RK170) reported by Perttula and Nelson (2003), for example, in the Angelina River basin in East Texas. This suggests that the A. C. Saunders site ceramics are a product of a ceramic vessel making tradition that was standardized in manufacturing and vessel engineering, and "pretty much had all the bugs worked out of it" (Johnson 1992:18). The heavy use of grog temper in this ceramic assemblage is completely consistent with other upper

Figure 17. Examples of plain rim sherds from Feature 2 at the A. C. Saunders site: a, lip notched; b, carinated bowl; c, bottle rim and neck.

Neches River basin Caddo sites, where grog tempered sherds comprise more than 90 percent of all the sherds from Caddo occupations dating after ca. A.D. 1450.

The very high frequency of grog-tempered pottery at the site is thought to represent a specific attempt on the part of the Caddo potters to slow the oxidation process of the ceramic vessels during firing. This would have created darker-colored vessels in the reducing environment (or lighter tan, orange, and brown colors in oxidizing environments), while allowing them to be fired longer, and producing a harder ceramic vessel (Rice 1987:354; Teltser 1993:532, 540). Since grog has expansion coefficients comparable to the coefficients of the clay paste - especially with the finely crushed grog pieces as seen in the fine wares - this would have further contributed to the ability of fired vessels to withstand heat-related stresses, as well as increasing their flexural strength (Rice 1987:362).

The addition of burned bone as a temper in the vessels was rare in most post-A.D. 1400 Caddo sites in the upper Neches River basins. The adding of crushed and burned bones to the paste of ceramic vessels may also have been an attempt (although only an occasional attempt) to give vessels tempered with coarse particles like bone the ability to withstand thermal shock.

The use of hematite as a temper may have served the same purpose as feldspars, which are often found together in the paste of Caddo vessels (Reese-Taylor 1995); the practice of ancestral Caddo potters using hematite as a temper began in the Woodland period in East Texas (see Robinson 2017:28). The occurrence of fine grains of these minerals in the paste would have enhanced a vessel's ability to bind, melt, and fuse the paste constituents during firing at lower temperatures (less than 1300 degrees F), resulting in a dense, hard body, and a reduced vessel porosity (Rice 1987:96). Its coarse texture and large grain size when added to the clay recipe may have also helped in holding the clay paste together. Also, the addition of a coarse temper like hematite would have aided a vessel's ability to withstand thermal shock.

The use of hematite as a temper, and its regular occurrence in the paste of the ceramic vessels (particularly the fine wares) at the A. C. Saunders site, further suggests that the majority of the ceramic vessels at the site were made from local clays. Hematite tends to be depleted from west to east and at farther reaches from East Texas stream headwaters (Perttula 1999:296), and enriched in deposits closer to western stream headwaters. The A. C. Saunders site is near the headwaters of the Neches River in the upper Neches River basin.

Petrographic analysis of six plain sherds from the A. C. Saunders site by Barkwill-Love (2012:376-377) disclosed that they were from vessels with grog temper. Other minerals in the paste include quartz, mica (muscovite), polycrystalline quartz, feldspar, clay pellets, bone, tourmaline, and chert. These sherds are included in her Group 11 (lightly grog-tempered, lightly sandy paste), Group 12 (lightly grog-tempered, sandy paste), Group 13 (lightly bone and grog-tempered, lightly sandy paste), and Group 14 (moderately grog-tempered, lightly sandy paste) (Barkwill-Love 2012:387-389).

In the discussions that follow of the results of the ceramic analysis of all the decorated sherds from the A. C. Saunders site, I focus on the various decorative methods recognized in both the utility ware and fine ware (Table 5), principally on those from the recognized 10 inch arbitrary levels (i.e., ACS 1, ACS 2, and ACS 3, see Appendix 1). In examining proportional similarities and differences in the frequencies of the different decorative methods by level, there are general differences from the bottom to the top of the Feature 2 deposits; more specific differences will be discussed further below. First, in the bottom level of Feature 2 (ACS 3), rim sherds with brushed decorative elements are more common (19.2 percent) than in later levels compared to upper levels (11.9-17.9 percent), as are fingernail punctated (13.5 percent, Saunders Punctated) and tool punctated (11.5 percent, Mann Punctated) rim sherds, as well as Hood Engraved rim sherds (3.8 percent). In the ACS 2 level of Feature 2, appliqued rim sherds are most common here than in the other levels, as are grooved, incised, incised-punctated, and La Rue Neck Banded rim sherds. In the uppermost level (ACS 1), Killough Pinched rim sherds are most abundant (4.2 percent), as are red-slipped rim sherds, and Poynor Engraved vessel rims (21.4 percent). The frequency of Poynor Engraved rim sherds increases from 13.5 percent in ACS 3 to 18.4 percent in ACS 2.

Decorative method	Rim	Body	Percent	N
Utility Ware				
Appliqued	6	9	0.3	15
Appliqued-brushed	-	1	Trace	1
Appliqued-punctated	-	1	Trace	1
Brushed	63	2711	48.1	2774
Brushed-appliqued	3	4	0.1	7
Brushed-incised	19	1441	25.4	1460
Brushed-incised-appliqued	-	3	0.1	3
Brushed-pinched	1	1	Trace	2
Brushed-punctated	20	83	1.8	103
Brushed-punctated-appliqued	1	-	Trace	1
Brushed-punctated-incised	3	29	0.6	32
Incised	94	184	4.8	278
Incised-appliqued	-	7	0.1	7
Incised-brushed	2	20	0.4	22
Incised-brushed-punctated	1	5	0.1	6
Incised-pinched	1	1	Trace	2
Incised-punctated	12	55	1.2	67
Grooved	5	6	0.2	11
Grooved-brushed	1	3	0.1	4
Grooved-brushed-punctated	-	1	Trace	1
Grooved-incised	-	1	Trace	1
Grooved-punctated	1	-	Trace	1
Neck Banded	9	16	0.4	25
Neck Banded-brushed	2	1	0.1	3
Neck Banded-brushed-incised	-	2	Trace	2
Neck Banded-punctated	-	1	Trace	1
Pinched	32	44	1.3	76
Pinched-appliqued	1	-	Trace	1
Pinched-brushed	1	3	0.1	4
Pinched-incised	1	-	Trace	1
Pinched-punctated	3	-	0.1	3
Punctated, fingernail	55	83	2.4	138
Punctated, fingernail-appliqued	1	-	Trace	1
Punctated, tool	43	52	1.6	95
Sub-total, Utility Ware	386	4763	89.3	5149
Fine Ware				
Engraved	186	345	9.2	531
Engraved-appliqued	-	6	0.1	6
Engraved-brushed	5	47	0.9	52
Engraved-brushed-incised	-	8	0.1	8
Engraved-excised punctated	3	1	0.1	4
Engraved-red-slipped	5	6	0.2	11
Red-slipped	1	5	0.1	6
Sub-total, Fine Ware	200	418	10.7	618
Totals	586	5181	100.0	5767

Table 5. Summary of the decorative methods in the A. C. Saunders site ceramic assemblage.

Figure 18. Appliqued sherds from Feature 2: vertical appliqued fillets; appliqued-punctated.

Decorative method and elements	Rim	Body	N
Appliqued			
appliqued node	1	1	2
appliqued node/nodes on lug handle	2	-	2
appliqued node beneath the lip	1	-	1
appliqued node and vertical appliqued ridges	1	-	1
vertical appliqued fillets	-	1	1
curvilinear appliqued ridges	-	2	2
horizontal-vertical appliqued ridges	-	1	1
parallel appliqued ridges	-	2	2
straight appliqued ridge	-	2	2
vertical appliqued ridges	1	-	1
Appliqued-Brushed			
oval-shaped appliqued ridge above vertical brushed-incised marks and lines	-	1	1
Totals	6	10	16

Table 6. Decorative methods and elements in the appliqued and appliqued-brushed utility wares at the A. C. Saunders site.

Our concern is particularly in identifying and tabulating the different decorative elements on the rim and body sherds from utility ware and fine vessels (see below). The discussion begins with the sherds from vessels that have appliqued decorative elements on them. Rim and body sherds with appliqued elements have nodes and/or appliqued ridges or fillets (Figure 18a), while the one appliqued-brushed body sherd has appliqued ridges above vertical brushed-incised marks and lines on the vessel body (Table 6).

Sherds with appliqued elements are rare in the Feature 2 assemblage, comprising about 0.3 percent; in ACS 2, applique sherds comprise only 0.6 percent of the decorated sherds from the site. Most of the appliqued elements are likely embellishments on utility ware jars with other primary decorative elements, including Killough Pinched and Bullard Brushed jars.

One body sherd from a vessel of undefined type has appliqued-punctated elements (Table 7; see Figure 18b). This has zones defined by semi-circular

Decorative method and elements	Rim	Body	N
Appliqued-Punctated			
semi-circular and vertical appliqued ridges-tool punctate-filled zones	-	1	1
Totals	-	1	1

Table 7. Decorative methods and elements in the appliqued-punctated utility wares at the A. C. Saunders site.

and vertical appliqued ridge elements filled with tool punctated rows.

Sherds with brushed elements are by far the most common of the decorated sherds in the Feature 2 assemblage. About 48 percent of the decorated rim and body sherds have brushed marks (Table 8). These sherds are from Bullard Brushed jars mostly covered with brushing marks on the rim and body (see Suhm and Jelks 1962:Plate 11). By vertical provenience, brushed rim and body sherds are proportionally most abundant in the lower levels of Feature 2, in ACS 3 (57 percent), but still comprise between 47-48 percent in ACS 2 and ACS 1 (see Appendix 1).

Bullard Brushed rim sherds at the A. C. Saunders site commonly have vertical brushing marks (Figure 19a-b), and it is suspected that much of the brushing on vessel bodies is also vertically oriented, although this is difficult to determine on body sherds (see Table 8). Nevertheless, 23 percent of the Bullard Brushed rims have diagonal brushed marks and another 22 percent have horizontal brushed marks

A few Bullard Brushed jar sherds (0.1 percent of the decorated sherd assemblage) also have appliqued elements added to the brushed areas on the rim and body (Table 9). These rim sherds have horizontal-diagonal-opposed, vertical, and vertical diagonal brushed marks and curvilinear or vertical appliqued ridges (Figure 20b-c) or appliqued nodes (Figure 20a).

There are a few brushed-appliqued sherds in the assemblage with provenience information (see Appendix 1). They are present only in ACS 2 (0.1 percent) and ACS 3 (0.2 percent) of the decorated sherds.

Rim and body sherds with brushed-incised marks and lines (Table 10) are primarily from Bullard Brushed vessels. They differ from the Bullard Brushed sherds in that a different tool was used to mark the wet body of vessels, leaving not just brushed marks

Decorative method and elements	Rim	Body	N
Brushed			
curvilinear brushed marks	-	1	1
diagonal brushed marks	15	13	28
diagonal opposed brushed marks	-	1	1
horizontal brushed marks	14	16	30
horizontal-diagonal brushed marks	-	6	6
horizontal-overlapping brushed marks	2	-	2
horizontal-vertical brushed marks	2	1	3
opposed brushed marks	-	112	112
overlapping brushed marks	-	29	29
parallel brushed marks	-	2447	2447
vertical brushed marks	29	84	113
vertical-horizontal overlapping brushed marks	1	-	1
vertical-opposed brushed marks	-	1	1
Totals	63	2711	2774

Table 8. Decorative methods and elements in the brushed utility wares at the A. C. Saunders site.

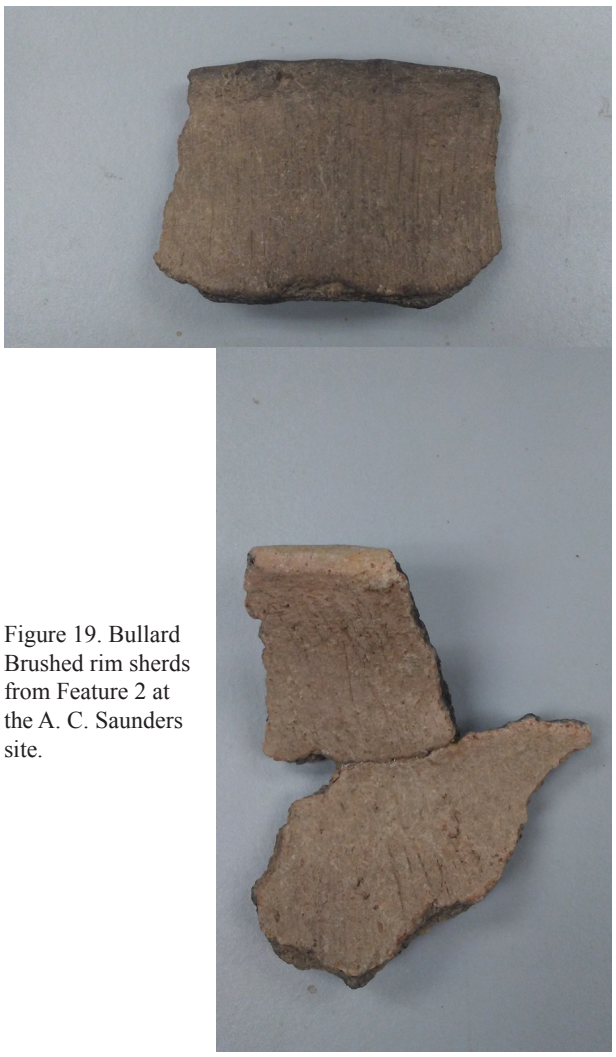

Figure 19. Bullard Brushed rim sherds from Feature 2 at the A. C. Saunders site.

Figure 20. Brushed-appliqued rim sherds in Feature 2 at the A. C. Saunders site.

Figure 21. Brushed-incised rim and body sheds from Feature 2 at the A. C. Saunders site.

Decorative method and elements	Rim	Body	N
Brushed-appliqued			
horizontal-diagonal brushed marks-circular appliqued ridge	-	1	1
horizontal-diagonal-opposed brushed marks-curvilinear appliqued ridge	1	-	1
parallel brushed marks-circular appliqued ridge	-	1	1
parallel brushed marks-straight appliqued ridge	-	1	1
vertical brushed marks-vertical appliqued fillet	-	1	1
vertical brushed marks-large appliqued node below the lip	1	-	1
vertical-diagonal brushed marks-large appliqued node	1	-	1
Totals	3	4	7

Table 9. Decorative methods and elements in the brushed-appliqued utility wares at the A. C. Saunders site.

(i.e., marks made with grass switches) but also incised lines (i.e., sticks or combs affixed to grass switches) intermixed with the brushed marks (Figure 21a-b). A number of these sherds have brushed-incised lines that were oriented vertically on the rim (26 percent) and body, but horizontal (32 percent), diagonal (26 percent), opposed (11 percent), and opposed diagonal (5 percent) elements are also present in this class of utility ware (Table 10).

The brushed-incised sherds comprise 25.3 percent of the decorated sherds in Feature 2 (see Table 5). By depth in the midden mound, they are most abundant in the top mound level (ACS 1), at 30 percent, and account for 26 percent of the decorated sherds in ACS 2 and only 19 percent in ACS 3.

About 14 percent of the brushed-incised rim and body sherds in the assemblage, see Table 10) are distinctive in that they have brushed marks that are overlain with incised lines pitched in different directions. These sherds may be from early varieties of Spradley Brushed-Incised (see Marceaux 2011:140 and Figure 5.2), a utility ware found on Historic Caddo

Decorative method and elements	Rim	Body	N
Brushed-Incised			
diagonal brushed-incised marks and lines	4	7	11
diagonal-opposed-overlapping brushed-incised marks and lines	1	1	2
diagonal brushed marks-overlying diagonal incised lines	-	1	1
diagonal brushed marks-overlying diagonal opposed incised lines	-	1	1
diagonal incised lines-vertical brushed-incised marks and lines	-	1	1
horizontal brushed-incised marks and lines	3	18	21
horizontal brushed-incised marks and lines-vertical brushed marks	-	2	2
horizontal brushed-overlapping vertical incised lines	1	-	1
horizontal-diagonal brushed-incised marks and lines	2	-	2
horizontal incised line-vertical brushed-incised marks and lines	-	1	1
opposed brushed-incised marks and lines	1	200	201
opposed brushed-incised marks and lines-diagonal incised lines	1	-	1
opposed diagonal brushed marks with overlying diagonal incised lines-horizontal incised line at rim-body juncture	1	-	1
overlapping brushed-incised marks and lines	-	147	147
parallel brushed-incised marks and lines	-	807	807
parallel brushed marks-opposed brushed-incised marks and lines	-	1	1
parallel brushed marks and overlying cross-hatched incised lines	-	2	2
parallel brushed marks and overlying curvilinear incised lines	-	2	2
parallel brushed marks-overlying diagonal opposed incised lines	-	1	1
parallel brushed marks-overlying horizontal incised line	-	1	1
parallel brushed marks-overlying horizontal-diagonal incised lines	-	1	1
parallel brushed marks-overlying opposed incised lines	-	10	10
parallel brushed marks-overlying parallel incised lines	-	183	183
parallel brushed marks-overlying straight incised line	-	3	3
parallel brushed-incised marks and lines-diagonal opposed incised lines	-	1	1
vertical brushed-incised marks and lines	4	46	50
vertical brushed marks-cross-hatched incised lines-vertical brushed marks	-	1	1
vertical brushed-diagonal opposed brushed-incised marks and lines	-	1	1
vertical brushed marks-horizontal brushed-incised marks and lines	1	-	1
vertical brushed marks-horizontal incised line at rim-body juncture-diagonal opposed incised lines-vertical brushed body	-	1	1
vertical brushed marks and vertical incised lines through the brushing	-	1	1
Brushed-Incised-Appliqued			
opposed brushed-incised marks and lines-appliqued node	-	1	1
parallel brushed marks-appliqued node	-	1	1
vertical brushed-incised marks and lines below a small appliqued node	-	1	1
Totals	19	1444	1463

Table 10. Decorative methods and elements in the brushed-incised and brushed-incised-appliqued utility wares at the A. C. Saunders site.

Allen phase sites in the Neches-Angelina river basins in East Texas. As defined on those sites, Spradley Brushed-Incised sherds have parallel brushing elements with overlapping straight incised lines that are opposed or perpendicular to the brushing.

Only three body sherds from Bullard Brushed vessels have brushed-incised-appliqued decorative elements (see Table 10); only one has a vertical provenience: ACS 2. These sherds have appliqued nodes in proximity to brushed marks oriented in opposed, parallel, and vertical directions.

Both brushed-pinched sherds are from Bullard Brushed vessels (see Suhm and Jelks 1962:21). The one rim has horizontal brushed marks and an attached handle with vertical pinched ridges (Table 11). The other is a body sherd with pinched ridges pushed through parallel brushed marks.

The brushed-punctated rim and body sherds comprise between 1.1-2.0 percent of the decorated sherds in ACS 1-ACS 3, with the greatest percentage in ACS 2. They are from Bullard Brushed vessels (see Suhm and Jelks 1962:21). The brushed-punctated rim sherds most commonly have diagonal, horizontal, and vertical brushed marks, with rows of punctations (typically tool punctations) either beneath the lip (Figure 22c), on a collar at the lip (Figure 22d), at the rim-body juncture, or in rows pushed through the brushing. Other rim sherds are from Mann Punctated vessels that have punctated rows on the rim and brushed marks are confined to the vessel body (Figure 22a-b). Body sherds have brushed marks with different orientations below the rim-body juncture.

One distinctive brushed-punctated-appliqued rim sherd is in the assemblage (Figure 23a). It has a tool punctated row below the lip, a semi-circular appliqued ridge on the rim, and diagonal brushed marks on the vessel body. Approximately 0.6 percent of the rim and body sherds in the assemblage have brushed-punctated-incised elements (see Table 11). Two of the rims (one of which also has a lug handle) have tool punctated rows and are from Mann Punctated vessels (Figure 23b), while the third, from a Bullard Brushed vessel, has horizontal brushed-incised marks and lines with tool punctated rows pushed through the brushing. Vessel bodies have either brushed-incised marks and lines or brushed/brushed-incised marks and lines with punctations (almost always tool punctations rather than fingernail punctations) pushed through the brushing; the rim-body juncture commonly has a horizontal row of punctations dividing the rim from the vessel body.

Decorative method and elements	Rim	Body	N
Brushed-Pinched			
horizontal brushed marks-vertical pinched ridges on handle	1	-	1
parallel brushed marks-pinched ridges through the brushing	-	1	1
Brushed-Punctated			
diagonal brushed marks-tool punctated row below lip	1	-	1
diagonal brushed marks-circular tool punctated rows	1	-	1
diagonal-opposed brushed marks with tool punctated row through the brushing-tool punctated row below the lip	1	-	1
horizontal brushed marks-tool punctated row at rim-body juncture	-	6	6
horizontal brushed-tool punctated row	-	2	2
horizontal brushing marks-circular tool punctated rows pushed through the brushing-diagonal brushed marks	-	1	1
horizontal brushing marks-fingernail punctated row pushed through the brushing	2	-	2
horizontal brushed marks-tool punctated row pushed through the brushing	-	1	1
horizontal brushed marks-tool punctated rows pushed through the brushing-diagonal brushed body	1	-	1
overlapping brushed marks-tool punctated row	-	1	1
parallel brushed marks-fingernail punctated row pushed through the brushing	-	2	2
parallel brushed marks-tool punctated row	-	2	2
parallel brushed marks-tool punctated rows pushed through the brushing	-	17	17
parallel brushed-incised marks and lines-fingernail punctated row through the brushing	-	2	2
vertical brushed marks-circular tool punctated row	-	1	1
vertical brushed marks-fingernail punctated row through the brushing	1	1	2
vertical brushed marks-fingernail punctated rows pushed through the brushing	1	1	2
vertical brushed marks-tool punctated row below lip	1	-	1
vertical brushed marks-tool punctated rows at mid-rim	1	-	1
vertical brushed marks-tool punctated row pushed through the brushing	1	2	3
vertical brushed marks-tool punctated rows pushed through the brushing	2	-	2
vertical brushed marks-three tool punctated rows pushed through the brushing	1	-	1
vertical brushed marks-vertical tool punctated rows pushed through the brushing	-	1	1
vertical brushed marks-tool punctated row at rim-body juncture	1	-	1
vertical brushed marks-tool punctated row at rim-body juncture-vertical brushed body	1	1	2
fingernail punctated row below the lip-vertical brushed marks	1	-	1
fingernail punctated row at rim-body-juncture-diagonal and opposed brushed marks on body	-	1	1
fingernail punctated rows above diagonal brushed body	-	1	1
fingernail punctated row-vertical-diagonal brushed marks	-	1	1
fingernail punctated row at the rim-body juncture-horizontal brushed body	-	1	1
tool punctated row at rim-body juncture-diagonal brushed body	-	5	5
tool punctated row-diagonal brushed marks	-	3	3
4+ tool punctated rows above diagonal brushed marks	-	1	1
tool punctated rows above diagonal brushed marks	-	3	3
10 tool punctated rows-horizontal brushed marks on the body	1	-	1
tool punctated rows above horizontal brushed marks	-	2	2
tool punctated row at rim-body juncture-horizontal-overlapping brushed body	-	2	2
tool punctated row at rim-body juncture-opposed brushed body	-	1	1
5+ tool punctated rows on the rim-overlapping brushed marks on the body	-	1	1
tool punctated row at rim-body juncture-overlapping brushed body	-	1	1
tool punctated row-parallel brushing marks	-	1	1
tool punctated row beneath the lip-vertical brushed marks	1	-	1
tool punctated row at rim-body juncture-vertical brushed body	-	12	12
3+ tool punctated rows on the rim-horizontal-vertical brushed body	-	2	2
4+ tool punctated rows above vertical brushed marks	-	1	1
tool punctated rows above vertical brushed marks	1	3	4
Brushed-Punctated-Appliqued			
tool punctated row below the lip-semi-circular appliqued ridge-diagonal brushed marks	1	-	1
Brushed-Punctated-Incised			
diagonal brushed marks-tool punctated row-horizontal-diagonal brushed-incised marks and lines	-	1	1
diagonal brushed-incised marks and lines-tool punctated row at rim-body juncture	-	1	1
horizontal brushed marks-diagonal opposed incised lines-overlapping brushed marks-circular punctated zone pushed through the brushing	-	1	1
horizontal brushed marks with overlying vertical incised lines-tool punctated row-horizontal brushed-incised marks and lines	-	1	1
horizontal-vertical brushed-incised marks and lines and fingernail punctated row pushed through the brushing	-	1	1
horizontal brushed-incised marks and lines-tool punctated row at rim-body juncture	-	3	3
horizontal brushed-incised marks and lines-tool punctated rows pushed through brushed-incised marks and lines	1	-	1
parallel brushed-incised marks and lines-fingernail punctated rows through the brushing	-	2	2
parallel brushed-incised marks and lines-tool punctated row pushed through the brushed-incised marks and lines	-	2	2
vertical brushed-incised marks and lines-tool punctated row . pushed through the brushed-incised marks and lines	-	1	1
diagonal opposed incised lines-tool punctated row at rim-body juncture-vertical brushed-incised marks and lines	-	1	1
horizontal incised line at rim-body juncture-diagonal brushed body-tool punctated row through the brushing	-	1	1
tool punctated row-diagonal brushed-incised marks and lines	-	1	1
tool punctated row at rim-body juncture-diagonal and overlapping brushed-incised marks and lines on body	-	1	1
tool punctated row above horizontal brushed-incised marks and lines	-	1	1
tool punctated row at rim-body juncture-horizontal brushed-incised marks and lines on body	-	2	2
4 tool punctated rows-lug handle-horizontal brushed-incised marks and lines on the body	1	-	1
tool punctated row-parallel brushed-incised marks and lines	-	1	1
5 tool punctated rows on the rim-vertical brushed-incised marks and lines on the body	1	-	1
3+ tool punctated rows and horizontal incised line on rim-vertical brushed-incised body	-	1	1
tool punctated row at rim-body juncture-vertical brushed-incised marks and lines on body	-	5	5
tool punctated rows above vertical brushed-incised body	-	1	1
tool punctated row at rim-body juncture-horizontal incised line-vertical brushed body	-	1	1
Totals	25	113	138

Table 11. Decorative methods and elements in the brushed-pinched, brushed-punctated, brushed-punctated-appliqued, and brushed-punctated-incised utility wares at the A. C. Saunders site.

The majority of the rim and body sherds with incised line elements in the A. C. Saunders decorated sherd assemblage are from Maydelle Incised vessels (see Suhm and Jelks 1962:Plate 52). These have a variety of incised decorative elements on the rim, principally diagonal, diagonal opposed (Figure 24a-b, e), horizontal-diagonal, horizontal-vertical, and vertical incised lines (Figure 24d) (Table 12). A number of rim sherds have horizontal incised lines, some broadly-spaced (Figure 24c), and these may be from effigy bowls (see Suhm and Jelks 1962:47) comparable to Hood

Figure 22. Brushed-punctated rim sherds from Feature 2 at the A. C. Saunders site.

Figure 23. Brushed-punctated-appliqued and brushed-incised-punctated rim sherds from Feature 2 at the A. C. Saunders site.

Engraved vessels (see below), except that the decorative element is several horizontal incised lines on the rim.

The sherds with incised decorative elements are equally common throughout the midden levels. The incised sherds represent between 4.6-4.7 percent of the decorated sherds in ACS 1, ACS 2, and ACS 3, respectively.

The incised-appliqued sherds in the assemblage are body sherds (see Table 12) from Maydelle Incised vessels. They have diagonal, diagonal opposed, parallel, and vertical incised lines in combination with appliqued nodes, ridges, and fillets (Figure 25a). The incised-brushed rim and body sherds (comprising 0.4 percent of the decorated sherds in the assemblage) are also primarily from Maydelle Incised vessels with incised elements on the rim and brushed or brushed-incised bodies (Figure 25b; see also Table 12).

Only 0.1 percent of the decorated sherds in the A. C. Saunders assemblage have incised-brushed-punctated decorative elements (see Table 12). These are from Maydelle Incised vessels that have diagonal, diagonal opposed, diagonal-horizontal, horizontal, and horizontal-curvilinear incised lines above bodies with brushed marks, as well as zones (see Figure 25c) or rows of tool or fingernail punctations.

Incised-punctated sherds represent 1.2 percent of the Feature 2 decorated sherds (see Table 5). By vertical provenience, sherds with these decorative elements are most common in ACS 2 and ACS 3 (0.8-1.2 percent) compared to only 0.5 percent in ACS 1 (see Appendix 1). The incised-punctated sherds are from Maydelle Incised vessels (see Suhm and Jelks 1962:103). The vessels have diagonal opposed (Figure 26a, c), horizontal (Figure 26d), horizontal-diagonal (Figure 26b), horizontal-vertical, and triangular incised lines with zones filled with punctations or one or more rows of tool or fingernail punctations.

Two sherds have incised-pinched decorative elements (see Table 12). Both have vertical pinched lug handles, but the rims on these vessels have either diagonal opposed incised lines (Maydelle Incised) or a

Figure 24. Incised rim sherds from Feature 2 at the A. C. Saunders site: a-b, d-e, Maydelle Incised rim sherds; c, horizontal incised rim.

Figure 25. Incised-appliqued, incised-brushed, and incised-punctated-brushed sherds from Feature 2 at the A. C. Saunders site.

A small number of rim and body sherds (n=18, 0.3 percent) have grooved decorative elements, either as the sole decorative element or in combination with brushed (Figure 27), brushed-punctated, incised, and punctated elements (Table 13); by depth, they are restricted to ACS 1 and ACS 2 in Feature 2 (see Appendix 1). They may represent early varieties of Lindsey Grooved, an Allen phase utility ware type comprised of large bowls or jars with direct or slightly everted rims. The rims have shallow horizontal grooves (Marceaux 2011:140-141). Lindsey Grooved vessels also occur in conjunction with appliqued, brushed, incised, or punctated elements, typically either at the rim-body juncture or on the vessel body

Decorative method and elements	Rim	Body	N
Incised			
circle el.	-	1	1
cross-hatched incised lines	3	20	23
cross-hatched-diagonal incised lines	-	1	1
cross-hatched incised lines-horizontal incised line-diagonal incised lines	-	1	1
curvilinear incised lines	-	1	1
curvilinear incised lines-circle incised el.	-	1	1
curvilinear-vertical incised lines	1	-	1
diagonal incised lines	24	8	32
diagonal incised lines, broad line	1	-	1
diagonal incised lines-overlying horizontal incised line	-	1	1
diagonal opposed incised lines	8	15	23
diagonal-vertical incised lines	1	-	1
horizontal incised line below the lip	9	-	9
horizontal incised line above the rim-body juncture	-	1	1
horizontal incised line at rim-body juncture	-	2	2
horizontal incised line/lines	15	-	15
horizontal incised line, broad line	3	1	4
horizontal incised lines, closely-spaced	1	-	1
horizontal incised lines, widely-spaced	6	-	6
horizontal-cross-hatched incised lines-diagonal incised lines on the body	-	1	1
horizontal-diagonal incised lines	8	11	19
horizontal-diagonal incised lines, broad line	-	1	1
horizontal-diagonal-circular incised lines	-	1	1
horizontal-diagonal opposed incised lines	3	2	5
horizontal-diagonal-vertical incised lines	-	1	1
horizontal-vertical incised lines	2	3	5
horizontal-vertical-rectangular incised lines	1	-	1
opposed incised lines	-	5	5
parallel incised lines	-	67	67
parallel incised lines, broad line	-	6	6
set/sets of closely-spaced parallel incised lines	-	9	9
sets of parallel incised lines	-	2	2
widely-spaced parallel incised lines	-	2	2
parallel-overlapping incised lines	-	1	1
straight incised line	-	11	11
straight incised line, broad line	-	4	4
vertical incised lines	7	4	11
vertical incised lines, broad line	1	-	1
Incised-Appliqued			
diagonal incised lines-large appliqued node	-	1	1
diagonal opposed incised lines-vertical appliqued fillet	-	1	1
diagonal opposed incised lines-vertical appliqued ridge	-	3	3
parallel incised lines-straight appliqued ridge	-	1	1
vertical incised lines-horizontal appliqued ridge	-	1	1
Incised-Brushed			
diagonal incised lines-vertical brushed marks	-	1	1
diagonal opposed incised lines on rim-vertical brushed body	1	1	2
diagonal opposed incised lines-vertical brushed-incised marks and lines	-	1	1
horizontal incised line-diagonal brushed marks on the body	-	2	2
horizontal incised line-diagonal brushed-incised marks and lines on the body	-	2	2
horizontal incised lines-horizontal brushed marks	-	1	1
horizontal incised line below lip-vertical brushed rim	1	-	1
horizontal incised lines-vertical brushed body	-	4	4
horizontal-diagonal incised lines-diagonal brushed body	-	1	1
horizontal-diagonal incised lines-vertical brushed body	-	2	2
horizontal-diagonal opposed incised lines-horizontal brushed body	-	1	1
horizontal-vertical incised lines-vertical brushed-incised marks and lines	-	1	1
parallel incised lines above parallel brushed marks	-	1	1
vertical incised lines-horizontal brushed-incised marks and lines	-	1	1
vertical-diagonal incised lines-horizontal-diagonal brushed marks on the body	-	1	1
Incised-Brushed-Punctated			
diagonal incised lines-tool punctated row-horizontal brushed body	-	1	1
diagonal incised lines-tool punctated-filled zone-overlapping brushed marks on the body	-	1	1
diagonal-horizontal incised lines-vertical brushed-incised marks on body-diagonal fingernail punctated row on body	-	1	1
diagonal-opposed incised lines-tool punctated row at rim-body juncture-vertical brushed body	-	1	1
horizontal incised lines-fingernail punctated zone-diagonal brushed body	-	1	1
horizontal-curvilinear incised lines-triangle el. filled with tool punctations-diagonal brushed body	1	-	1
Incised-Pinched			
diagonal opposed incised lines-vertical pinched lug handle	-	1	1
horizontal incised line-vertical pinched lug handle	1	-	1
Incised-Punctated			
curvilinear incised lines-fingernail punctations between	-	1	1
diagonal-horizontal incised lines-tool punctated-filled triangle el.-tool punctated rows on the body	-	1	1
diagonal opposed incised line-hatched incised triangular zone-triangular tool punctated zones	-	1	1
diagonal opposed incised lines-triangular tool punctated zone	1	5	6
horizontal incised line-rows of fingernail punctations	-	1	1
horizontal incised line below lip-2+ circular tool punctated rows	1	2	3
horizontal incised lines-tool punctated-filled zone	-	1	1
horizontal incised lines-tool punctated row at rim-body juncture	1	-	1
horizontal-diagonal incised lines-linear tool punctated-filled triangle el.	1	-	1
horizontal-diagonal incised lines-tool-punctated-filled triangle el.	1	-	1
horizontal-vertical incised lines above fingernail-punctated row	1	-	1
incised triangle el. filled with circular punctations	-	1	1
incised triangle el. filled with tool punctations	4	7	11
linear tool punctated rows-broad parallel incised lines	-	1	1
parallel incised lines-circular tool punctated rows	-	2	2
parallel incised lines-large linear tool punctated-filled zone	-	4	4
parallel incised lines-fingernail punctated rows between the lines	-	1	1
parallel incised lines-tool punctated row between lines	-	1	1
parallel incised zone with fingernail punctations	-	1	1
parallel incised zone with tool punctations	-	1	1
rectilinear incised zone filled with circular punctations	-	1	1
straight incised line-fingernail punctated row	-	1	1
straight incised line-diagonal linear tool punctated rows	-	1	1
straight incised line-fingernail punctated rows	-	1	1
straight incised line-linear tool punctated rows	-	1	1
straight incised line-tool punctated row/rows	-	2	2
tool punctated row below the lip-horizontal incised lines	2	-	2
vertical incised lines-fingernail punctated rows	-	1	1
vertical incised lines below fingernail punctated row at rim-body juncture	-	1	1
vertical incised lines either side of a tool punctated row	-	1	1
vertical incised panel filled with tool punctations	-	2	2
Totals	110	272	382

Table 12. Decorative methods and elements in the incised, incised-appliqued, incised-brushed, incised-brushed-punctated, incised-pinched, and incised-punctated utility wares at the A. C. Saunders site.

Figure 26. Maydelle Incised rim and body sherds with incised-punctated elements.

La Rue Neck Banded jars (see Suhm and Jelks 1962:93 and Plate 47) is a rare utility ware type at the A. C. Saunders. The few rim and body sherds comprise 0.5 percent of the decorated sherds in the assemblage (Table 14; see also Table 5). Although La Rue Neck Banded sherds occur in all levels in Feature 2, they are most abundant in ACS 2 (see Appendix 1).

Figure 27. Grooved-brushed body sherd from Feature 2 at the A. C. Saunders site.

Decorative method and elements	Rim	Body	N
Grooved			
horizontal grooved ridges	5	1	6
parallel grooved ridges	-	4	4
straight grooved ridge	-	1	1
Grooved-Brushed			
horizontal grooved-vertical brushed body	1	1	2
parallel grooved-parallel brushing marks	-	1	1
straight groove and parallel brushing marks	-	1	1
Grooved-Brushed-Punctated			
tool punctated row at rim-body juncture-short diagonal grooves-vertical brushed body	-	1	1
Grooved-Incised			
straight grooved ridge-straight incised line	-	1	1
Grooved-Punctated			
horizontal grooved-fingernail punctated row	1	-	1
Totals	7	11	18

Table 13. Decorative methods and elements in the grooved, grooved-brushed, grooved-brushed-punctated, grooved-incised, and grooved-punctated utility wares at the A. C. Saunders site.

The sherds from Feature 2 are from jars that have horizontal rows of neck banding (i.e., crimping of the neck clay coils, Suhm and Jelks 1962:93) (Figure 28a). They also have brushed and brushed-incised marks and lines on the vessel body below the neck bands (Figure 28b), as well as a row of tool punctations at the rim-body juncture, below the neck bands on the upper part of the rim (Figure 28c).

Rim, body, and pedestal leg sherds in the A. C. Saunders ceramic vessel assemblage with pinched decorative elements are from Killough Pinched jars (see Suhm and Jelks 1962:91 and Plate 46). These jars often have lug handles and strap handles with vertical pinched ridges, and a number have ring bases with four vertical pinched legs (see Suhm and Jelks 1962:Plate 46a-c). Sherds with pinched decorative elements comprise only

Figure 28. La Rue Neck Banded sherds from Feature 2 at the A. C. Saunders site.

Decorative method and elements	Rim	Body	N
Neck Banded			
horizontal neck bands	9	-	9
parallel neck bands	-	16	16
Neck Banded-Brushed			
horizontal neck band below lip-vertical brushed marks	1	-	1
horizontal neck bands-vertical-diagonal brushed marks	1	1	2
Neck Banded-Brushed-Incised			
horizontal neck bands-vertical brushed-incised marks and lines	-	2	2
Neck Banded-Punctated			
neck banded rows above tool punctated row	-	1	1
Totals	11	20	31

Table 14. Decorative methods and elements in the neck banded, neck banded-brushed, neck banded-brushed-incised, and neck banded-punctated utility wares at the A. C. Saunders site.

Decorative method and elements	Rim	Body	N
Pinched			
circular pinched ridge, lug handle	1	-	1
concentric circular pinched ridges	-	1	1
concentric curvilinear pinched ridges	-	1	1
curvilinear pinched ridges	-	4	4
curvilinear opposed pinched ridges	-	3	3
diagonal pinched ridges	1	2	3
horizontal pinched ridges, strap handle	3	-	3
horizontal-diagonal opposed pinched ridges	-	1	1
horizontal-vertical pinched ridges	-	1	1
opposed pinched ridges	-	2	2
parallel pinched ridges	-	13	13
straight pinched ridge	-	1	1
vertical pinched ridges	6	3	9
vertical pinched ridges, set of	1	-	1
vertical pinched ridges, pedestal legs	-	12	12
vertical pinched ridges, lug handle	1	-	1
vertical pinched ridges, strap handle	19	-	19
Pinched-Appliqued			
horizontal pinched ridges-vertical appliqued ridges	1	-	1
Pinched-Brushed			
horizontal pinched ridges-horizontal-diagonal brushed body	-	1	1
parallel pinched ridges-opposed brushed marks	-	1	1
pinched rows on rim collar-vertical brushed marks	1	-	1
vertical pinched ridges-horizontal brushed marks	-	1	1
Pinched-Incised			
vertical pinched ridges-incised appliqued lug handle	1	-	1
Pinched-Punctated			
fingernail punctated rows-pinched lug handle	1	-	1
vertical pinched ridges-fingernail punctated rows	1	-	1
vertical pinched ridges-horizontal tool punctated rows on the body	1	-	1
Totals	38	47	85

Table 15. Decorative methods and elements in the pinched, pinched-appliqued, pinched-brushed, pinched-incised, and pinched-punctated utility wares at the A. C. Saunders site.

1.5 percent of the decorated sherds in the assemblage, and by vertical provenience sherds with pinched decorations are most common in ACS 2 and ACS 3 (see Appendix 1).

The sherds with only pinched elements tend to have vertical pinched ridges on the rim and likely on the body (Figure 29a), although there are rim sherds with diagonal pinched ridges in the assemblage (see Table 15). Other body sherds have curvilinear, concentric circular (Figure 29b-c), curvilinear opposed (Figure 29d), opposed, horizontal-diagonal opposed, and horizontal-vertical pinched ridges on the vessel body. Lug handles, strap handles, and pedestal legs (Figure 30a-c) on the Killough Pinched vessels have vertical pinched ridges.

Other Killough Pinched sherds have different decorative elements (see Table 15), including a rim sherd with horizontal pinched ridges as well as vertical appliqued ridges (see Figure 29e). A few others (n=3)

Figure 29. Killough Pinched rim and body sherds from Feature 2 at the A. C. Saunders site.

Figure 30. Killough Pinched ring bases with vertical pinched legs.

have brushed marks on the vessel body along with pinched ridges, and one rim has a rim collar with pinched rows above vertical brushed marks. Another rim has vertical pinched ridges as well as an incised lug handle, two other Killough Pinched rim sherds have vertical pinched ridges with rows of punctations on the vessel body (see Table 15). A Saunders Punctated rim sherd in the assemblage has a pinched lug handle (see Table 15).

The punctated rim and body sherds (and one punctated-appliqued rim sherd) from Feature 2 at the A. C. Saunders site are from two newly defined utility ware types: Saunders Punctated and Mann Punctated. Saunders Punctated vessels have rows (primarily in horizontal rows) of fingernail punctations on the rim and/or at the rim-body juncture (Table 16 and Figure

Decorative method and elements	Rim	Body	N
Fingernail Punctated			
fingernail punctated row/rows	43	76	119
fingernail punctated row below the lip	4	-	4
fingernail punctated row at rim-body juncture	2	1	3
diagonal fingernail punctated rows	2	-	2
horizontal-vertical fingernail punctated rows	-	2	2
single fingernail punctation	-	2	2
vertical fingernail punctated rows	4	1	5
widely-spaced fingernail punctated rows	-	1	1
Fingernail Punctated-Appliqued			
fingernail punctated row-appliqued node below the lip	1	-	1
Tool Punctated			
circular punctated row below the lip	1	-	1
circular punctated row/rows	-	3	3
circular punctated rows on strap handle	1	-	1
2+ circular tool punctated rows	4	2	6
diagonal tool punctated rows	1	-	1
4 diagonal tool punctated rows	1	-	1
horizontal tool punctated rows	22	-	22
horizontal-vertical tool punctated rows	1	-	1
4+ tool punctated rows on the rim	2	-	2
tool punctated row at rim-body juncture	-	2	2
tool punctated row/rows	-	32	32
tool punctated row beneath the lip	3	-	3
parallel sets of tool punctations	-	1	1
vertical tool punctated rows	4	-	4
horizontal rows of linear tool punctations	2	11	13
opposed linear tool punctated rows	-	1	1
vertical rows of linear tool punctations	1	-	1
Totals	99	135	234

Table 16. Decorative methods and elements in the punctated and punctated-appliqued utility wares at the A. C. Saunders site.

31a-c), and this type has been defined based on the many fingernail punctated sherds at the A. C. Saunders site. One Saunders Punctated rim has a row of fingernail punctations along with an appliqued node below the lip (Table 16).

Mann Punctated sherds have rows of tool punctations (Figure 32a-b) - sometimes punctations made with a circular-shaped tool (Figure 32d) or linear tool punctations (Figure 32c) (see Table 16). Mann Punctated was first defined based on several tool punctated jars (and one bottle) identified in a recent examination of the large vessel assemblage (n=197) from the A. S. Mann site (41AN201) in the Caddo Creek valley a few miles west of the A. C. Saunders site. The rows are most commonly horizontal in orientation, but there are also rims with diagonal, horizontal-vertical, opposed, and vertical rows (see Table 16).

The Saunders Punctated and Mann Punctated rim and body sherds comprise 2.4 percent and 1.7 percent, respectively, of the decorated sherds in

Figure 31. Saunders Punctated rim sherds from Feature 2 at the A. C. Saunders site.

Feature 2. By provenience, Saunders Punctated sherds are more common in ACS 2 and ACS 3 levels, with the exception of rims with handles, present only in the upper midden mound levels (ACS 1, see Appendix 1). Mann Punctated sherds, including one rim with a handle, are more common in ACS 3 than the other midden mound levels (see Appendix 1).

The fine ware sherds from Feature 2 at the A. C. Saunders site include rim and body sherds with engraved, engraved-appliqued, engraved-brushed, engraved-brushed-incised, engraved-excised, engraved-slipped, and slipped decorative elements (Table 17). These fine wares comprise 10.7 percent of the decorated sherds in the A. C. Saunders assemblage (see Table 5), primarily with only engraved elements. By provenience, fine ware sherds are most abundant in ACS 1 (10.5

Figure 32. Mann Punctated rim sherds from Feature 2 at the A. C. Saunders site.

Decorative method and elements	Rim	Body	N
Engraved			
circle engraved el.	-	2	2
circle el. with excised pendant triangles	1	-	1
circle el. with hatched pendant triangles	-	1	1
circle el. with bisecting engraved with hatched pendant triangles	-	1	1
concentric circle el.	-	3	3
concentric curvilinear engraved lines	-	2	2
concentric semi-circle el.	1	-	1
curvilinear engraved line/lines	2	17	19
widely-spaced curvilinear engraved lines	1	3	4
set/sets of closely-spaced curvilinear engraved lines	2	31**	33
sets of closely-spaced curvilinear engraved lines-semi-circles with hatched pendant triangle el.	1	-	1
sets of closely-spaced curvilinear engraved lines-hatched pendant triangle el.	3	2	5
set of closely-spaced curvilinear engraved lines-triangle el.	-	1	1
sets of closely-spaced curvilinear engraved lines-hatched pendant triangle el.-cross-hatched engraved zone	1	-	1
set of closely-spaced curvilinear engraved lines-vertical engraved line	1	-	1
cross-hatched curvilinear zone	-	1	1
cross-hatched engraved zone	-	4	4
cross-hatched engraved zone-closely-spaced vertical engraved lines	-	1	1
cross-hatched triangle el.	-	1	1
cross-hatched vertical bracket el.	-	7	7
cross-hatched vertical bracket el. with hatched pendant triangles	-	1	1
cross-hatched vertical column	-	5	5
curvilinear engraved line-circle el.	1	-	1
sets of curvilinear engraved lines-circle el. with excised pendant triangles	-	1	1
curvilinear engraved line-cross-hatched engraved zone	-	1	1
curvilinear engraved lines and curvilinear hooked arm el.	1	1	2
curvilinear engraved line/lines and excised curvilinear zone	-	2	2
curvilinear engraved line and excised pendant triangles	-	3	3
curvilinear engraved lines and hatched triangle el.	-	2	2
curvilinear cross-hatched zone	-	1	1
curvilinear hatched zone-cross-hatched engraved zone	-	1	1
curvilinear-diagonal engraved lines	-	1	1
curvilinear-diagonal engraved lines and cross-hatched zone	-	1	1
curvilinear-straight engraved lines	-	1	1
curvilinear engraved lines-closely-spaced vertical engraved lines	-	1	1
diagonal engraved lines-hatched pendant triangle el.	1	-	1
diagonal opposed engraved lines	-	2	2
diagonal opposed hatched triangle el.	1	-	1
excised bracket el.	4	12	16
excised bracket el.-closely-spaced curvilinear engraved lines	1	-	1
excised circle el.	-	1	1
excised curvilinear zone	-	21	21
excised pendant triangle	-	2	2
row of excised pendant triangles	-	2	2
excised horizontal zone	1	8	9
excised horizontal zone below the lip	3	-	3
hatched bracket el.	7*	7	14
hatched nested triangles	-	4	4
hatched triangle el.	-	2	2
hatched triangle and negative oval el.	1	-	1
hatched pendant triangle el.	2	4	6
horizontal engraved line below the lip	48	1	49
horizontal engraved line	-	9	9
2-4 horizontal engraved lines	10	1	11
horizontal engraved lines, closely-spaced	-	1	1
horizontal engraved lines, widely-spaced	-	1	1
horizontal engraved line below lip and at carina	3	-	3
horizontal engraved line above carina	-	11	11
horizontal engraved line at carina	3	27	30
horizontal engraved line-concentric circle el.	-	1	1
horizontal engraved line-cross-hatched bracket el.	-	1	1
horizontal engraved line-curvilinear engraved line	-	2	2
horizontal engraved line-curvilinear engraved lines with small excised pendant triangles	-	1	1
horizontal engraved line-closely-spaced curvilinear engraved lines-hatched pendant triangle	1	1	2

Table 17. Decorative methods and elements in the fine wares (engraved, engraved-appliqued, engraved-brushed, engraved-brushed-incised, engraved-excised, engraved-slipped, and slipped) at the A. C. Saunders site.

Decorative method and elements	Rim	Body	N
horizontal engraved line-closely-spaced curvilinear engraved lines-circle el. with excised pendant triangles	1	-	1
horizontal engraved line-curvilinear excised zone	-	2	2
horizontal engraved line and curvilinear hatched bracket el.	1	2	3
horizontal engraved lines and set/sets of curvilinear engraved lines	37*	17	54
horizontal engraved line-closely-spaced curvilinear engraved lines-hatched and cross-hatched pendant triangle el.	1	-	1
horizontal engraved line-curvilinear engraved line with excised pendant triangle	-	1	1
horizontal engraved line-curvilinear engraved lines with excised pendant triangles	-	1	1
horizontal engraved line-curvilinear engraved lines with hatched pendant triangle	-	1	1
horizontal engraved lines-sets of closely-spaced curvilinear engraved lines-hatched pendant triangle el.	6	-	6
horizontal engraved lines and cross-hatched engraved vertical zone/column	2	1	3
horizontal-diagonal engraved lines-concentric circle el.	-	1	1
horizontal engraved line-excised bracket el.	4	9	13
horizontal engraved line-excised pendant triangle	-	1	1
horizontal engraved lines-hatched bracket el.-upper and lower rows of excised pendant triangles	1	-	1
horizontal engraved lines-hatched pendant triangle el.-circle el. with hatched triangles	1	-	1
horizontal engraved lines-hatched diagonal column	-	1	1
horizontal engraved line below the lip-diagonal hatched column	1	-	1
horizontal engraved line-hatched pendant triangle el.	2	2	4
horizontal-diagonal engraved lines	3	13	16
horizontal-diagonal excised zone	-	1	1
horizontal-diagonal engraved lines-excised zone	-	1	1
horizontal-diagonal opposed engraved lines	1	1	2
horizontal lines-diagonal opposed triangle el.	-	1	1
horizontal-closely-spaced vertical engraved lines	1	1	2
horizontal-vertical engraved lines	3	1	4
horizontal-vertical hatched engraved zones	-	1	1
horizontal-vertical-and curvilinear engraved lines	4	-	4
horizontal-vertical-diagonal engraved lines	-	1	1
horizontal-vertical engraved lines-pendant triangles on horizontal lines	1	1	2
negative oval el.-curvilinear excised zone	-	1	1
nested triangle el.	1	1	2
opposed closely-spaced curvilinear engraved lines	-	1	1
opposed curvilinear engraved lines	1	4	5
opposed curvilinear engraved lines and hatched triangle el.	2	-	2
opposed curvilinear engraved lines and cross-hatched vertical column	1	-	1
parallel engraved lines	-	9	9
set of closely-spaced parallel engraved lines	-	11	11
parallel engraved lines, widely-spaced	-	2	2
scroll engraved el. with negative oval el.	3	3	6
scroll excised el. with negative oval el.	-	1	1
stacked cross-hatched engraved triangle el.	1	-	1
straight engraved line	-	9	9
straight engraved line, broad line	-	1	1
straight engraved line-excised pendant triangle (bottle)	-	1	1
vertical engraved column with diagonal hatched lines	-	1	1
vertical engraved column with hatched engraved lines	-	1	1
vertical engraved column with horizontal hatched lines	-	4	4
vertical engraved column with hatched pendant triangle el.	-	1	1
vertical engraved column with inner cross-hatched zone	-	1	1
vertical engraved column with excised and negative oval elements	-	1	1
vertical excised zone	1	-	1
vertical engraved line/lines	2	1	3
set of closely-spaced vertical engraved lines	1	4	5
sets of closely-spaced vertical engraved lines and engraved rectangle el.	1	-	1
vertical engraved lines-excised pendant triangle	1	1	2
vertical engraved lines with large excised triangular zones	-	1	1
vertical-curvilinear engraved lines-hatched pendant triangle el.	-	1	1
vertical-diagonal engraved lines	-	1	1
vertical-horizontal engraved lines	-	1	1
Engraved-appliqued			
excised brackets-circular appliqued node	-	1	1
horizontal engraved line-appliqued node	-	1	1
horizontal engraved line-circle el.-appliqued node	-	1	1
horizontal engraved line-concentric circle el.-appliqued node	-	1	1
vertical engraved lines-excised pendant triangles-vertical appliqued ridge	-	1	1
vertical engraved line-hatched triangle element-vertical appliqued ridge	-	1	1
Engraved-brushed			
curvilinear engraved line-horizontal brushed body	-	1	1
curvilinear engraved lines-hatched triangle el., horizontal brushed body	1	-	1
curvilinear engraved lines-hatched and cross-hatched triangle el.-horizontal brushed body	1	-	1
curvilinear hatched brackets-negative ovals; horizontal brushed body	1	-	1
hatched bracket el.-diagonal opposed brushed body	-	1	1
hatched bracket el.-horizontal brushed body	-	1	1
hatched triangle el.-horizontal brushed body	-	1	1
horizontal engraved line-diagonal brushed marks	-	1	1
horizontal engraved lines, closely-spaced-diagonal brushed body	-	1	1
horizontal engraved line above carina-diagonal brushed marks on the body	-	1	1
horizontal engraved line at carina-horizontal-diagonal brushed marks on the body	-	1	1
horizontal engraved line-horizontal brushed marks	-	5	5
horizontal engraved line at carina-horizontal brushed marks on body	-	6	6
horizontal engraved line above carina-horizontal brushed marks on body	-	5	5
horizontal engraved line above carina-overlapping brushed marks	-	2	2
horizontal engraved line at carina-vertical brushed marks	-	1	1
horizontal-curvilinear engraved line-excised pendant triangles on lines-diagonal brushed body	-	2	2
horizontal-closely-spaced curvilinear engraved lines-diagonal brushed body	-	2	2
horizontal and closely-spaced curvilinear engraved lines-horizontal brushed body	-	9	9
horizontal and closely-spaced curvilinear engraved lines-vertical brushed body	-	1	1
horizontal-diagonal engraved lines-closely-spaced curvilinear engraved lines-horizontal brushed body	1*	-	1
horizontal-diagonal engraved lines-horizontal and diagonal brushed marks on body	-	1	1
horizontal-diagonal engraved lines-vertical brushed body	-	1	1
horizontal-diagonal opposed engraved lines-horizontal brushed body	-	1	1
horizontal-vertical engraved lines-horizontal brushed body	-	2	2
opposed curvilinear engraved lines-negative ovals-hatched triangle el.-diagonal brushed body	1	1	2
Engraved-brushed-incised			
horizontal engraved lines-diagonal brushed-incised marks and lines on the body	-	1	1
horizontal engraved line above carina-diagonal brushed-incised marks and lines	-	2	2
horizontal engraved line above carina-diagonal-horizontal brushed-incised marks and lines on body	-	1	1
horizontal engraved line at carina-overlapping brushed-incised marks and lines	-	1	1
horizontal engraved line at carina-vertical brushed-incised marks and lines	-	1	1
horizontal and closely-spaced curvilinear engraved lines-horizontal brushed-incised marks and lines on the body	-	1	1
horizontal-diagonal engraved line-vertical brushed-incised marks and lines	-	1	1
Engraved-excised punctated			
engraved circle with excised punctations	-	1	1
closely-spaced curvilinear engraved lines-engraved circle with excised punctations	1	-	1
closely-spaced curvilinear-vertical engraved lines-engraved circle with excised punctations	1	-	1
horizontal engraved line-circle el. with excised punctations	1	-	1
Engraved-red-slipped and black-slipped			
curvilinear bracket el.-ext. red-slipped	-	1**	1
int. curvilinear engraved line-int./ext. red-slipped	-	1	1

horizontal engraved line below the lip; int./ext. black-slipped	1	-	1
horizontal engraved line below the lip; int./ext. red-slipped	2	-	2
horizontal engraved line below the lip; ext. red-slipped	1	-	1
horizontal engraved line-closely-spaced curvilinear engraved lines-ext. red-slipped	-	1	1
horizontal engraved line-excised bracket el.-ext. red-slipped	-	1	1
parallel engraved lines, closely-spaced, int./ext. red-slipped	-	1	1
rectilinear el. with SZ element outlined by excised areas-int./ ext. red-slipped	1	-	1
vertical-curvilinear engraved lines-ext. black-slipped	-	1	1
Red-slipped			
ext. red-slipped	1	1	2
int./ext. red-slipped	-	4	4
Totals	200	418	618

Table 17. Decorative methods and elements in the fine wares (engraved, engraved-appliqued, engraved-brushed, engraved-brushed-incised, engraved-excised, engraved-slipped, and slipped) at the A. C. Saunders site.

*includes lip-notched rims
**one sherd is from a bottle

percent of the decorated sherds with a known ACS 1 provenience), in the topmost deposits in the Feature 2 midden mound, with lesser amounts in ACS 2 (9.9 percent), and ACS 3 (8.7 percent). Where fine ware types can be identified in the sample (a major challenge in itself given the varying size of the sherds, the unclear nature of the engraved elements, and the number of rim sherds), defined, regional, and local carinated bowl varieties of Poynor Engraved (see Figures 11-12, and 14; see also Perttula 2011) dominate the assemblage, with a few other sherds from Hood Engraved, Hume Engraved (see Figure 13e-g), and Patton Engraved (see Figure 13a-d) vessels. A few other sherds are from Poynor Engraved, *var. unspecified* bottles (see Suhm and Jelks 1962:Plate 63).

Sherds with engraved-appliqued elements comprise 1.0 percent of the fine ware sherds from the A. C. Saunders site (see Table 5 and 17). The engraved-appliqued body sherds are among the most distinctive of the fine wares in the Feature 2 assemblage. These have either appliqued nodes or vertical appliqued ridges adjacent to or surrounded by engraved elements (Figure 33a-b). By provenience, engraved-appliqued sherds are present only in the middle (ACS 2) and top (ACS 1) levels of the midden mound.

A number of sherds from engraved carinated bowls, likely all Poynor Engraved vessels, have brushed marks on the vessel body (see Table 17). These sherds account for almost 10 percent (n=60) of the fine wares

Figure 33. Engraved-appliqued body sherds in Feature 2 at the A. C. Saunders site.

in the assemblage, and they are most abundant in ACS 1 at the top of Feature 2. The rim sherds are from Poynor Engraved, *var. Cook* (n=3) (see Figure 35b, below) and Poynor Engraved, *var. Hood* (n=2) (see Figure 36d, below) vessels. The vessel bodies have horizontal (n=36), diagonal (n=9), diagonal opposed (n=1), horizontal-diagonal (n=2), overlapping (n=3), and vertical (n=5) brushed or brushed-incised marks and lines.

Sherds with engraved-slipped elements (with either a red or black slip) or simply with a red slip represent approximately 2.8 percent of the fine wares in the Feature 2 assemblage (see Tables 5 and 17). They are most abundant in ACS 1 in the top level of the midden mound. Several are from Poynor Engraved, *var. Hood* (n=2) and Poynor Engraved, *var. Cook* (n=1) vessels, and those with a horizontal engraved line below the lip (see Table 17) may be from unidentified varieties of Poynor Engraved or Hood Engraved vessels). One of the black slipped body sherds with vertical and curvilinear engraved lines may be from a Poynor Engraved bottle (see Suhm and Jelks 1962:Plate 63a, c-g).

The red-slipped sherds (n=6) have a hematite-rich clay slip that has been appliqued to the interior

and/or exterior vessel surface (see Table 17). The body sherds may be from vessels with engraved elements on the rim, but one rim sherd with an exterior red slip is from a vessel decorated only with a slip. Red-slipped vessels of any kind are rare in upper Neches River basin sites (Anderson et al. 1974; Kleinschmidt 1982; Perttula 2011, 2013; Shafer 1981).

Hood Engraved, *var. Hood* (see Perttula 2011:271) effigy bowl rim and lower rim sherds (n=11) are present in all levels of the Feature 2 assemblage at the A. C. Saunders site, and are most common in ACS 3. Hood Engraved vessels have 2-4 widely-spaced horizontal engraved lines on the rim (Figure 34a-b; see also Table 17).

Another fine ware type in the Feature 2 assemblage is Hume Engraved (see Figure 13e-g). The sherds are from bottles with vertical columns on the vessel body filled with hatched or cross-hatched lines (n=13, see Figure 34c; see also Suhm and Jelks 1962:83). Hume Engraved sherds with known provenience are present in all three Feature 2 levels (see Appendix 1).

One body sherd in the assemblage is from a Patton Engraved, *var. Fair* vessel (see Figure 13d). This Historic Caddo period Allen phase type and variety has curvilinear engraved lines on the vessel body with small excised triangles on the engraved lines. This sherd indicates a very minor use of the A. C. Saunders site after ca. A.D. 1680.

Poynor Engraved is the principal fine ware in Frankston phase sites in the upper Neches River basin. Distinctive engraved rim panels (see Suhm and Jelks 1962:123 and Plate 62) on carinated bowls mark the many different defined, regional, and local varieties of the type (see Figures 11, 12, and 14) as defined by Perttula (2011:226, 261-269). On Poynor Engraved bottles, the rim panels are turned vertically on the vessel body.

The defined varieties of Poynor Engraved include *var. Blackburn* (see Figure 11a-b), *var. Cook* (see Figure 11c-d), *var. Hood* (see Figure 11e), *var. Lang* (see Figure 11f-g'), and *var. Freeman* (see Figure 11h-i). A few sherds with concentric circle elements (see Table 17) can be included in *var. Anderson*, a new Poynor Engraved variety identified in the assemblage of vessels from the nearby A. S. Mann site (41AN201).

Figure 34. Hood Engraved and Hume Engraved sherds from Feature 2 at the A. C. Saunders site.

Poynor Engraved, *var. Blackburn* sherds (Figure 35a) have rectangular panels, while *var. Cook* sherds have panels filled with ovals defined by sets of vertically-arcing engraved lines. The ovals commonly have hatched triangle attachments at the tops and bottoms of the panel (Figure 35b-e).

Figure 35. Poynor Engraved, *var. Blackburn* and *var. Cook* sherds from Feature 2 at he A. C. Saunders site.

Figure 36. Poynor Engraved, *var. Hood* sherds from Feature 2 at the A. C. Saunders site.

Poynor Engraved, *var. Hood* rim panels have brackets (i.e., hour glass-shaped dividers) filled with closely-spaced hatched or cross-hatched engraved lines. These brackets create a series of negative ovals within the rim panel (Figure 36a-d).

The defining part of the engraved motif on Poynor Engraved, var. Lang vessels is the small central circles within a set of semi-circles on the rim panel. The small central circles may have spurs or be filled with small excised punctations (Figure 37a-b).

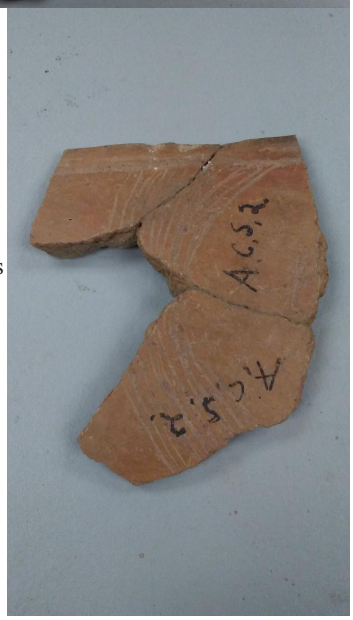

Figure 37. Poynor Engraved, *var. Lang* sherds from Feature 2 at the A. C. Saunders site.

The last currently defined variety is Poynor Engraved, *var. Freeman*. This variety has bracket dividers as well as hatched/excised pendant triangles at the top and bottom of each rim panel (Figure 38); vessel bodies may be filled or have concentric semi-circles that end with a hooked arm element (see Figure 11i). This variety shares these features with Patton Engraved, *var. Freeman* (see Figure 12c), except the concentric semi-circles on this Patton Engraved variety have excised tick marks. The stylistic links between Poynor Engraved, *var. Freeman* and Patton Engraved, *var. Freeman* suggests that Poynor Engraved, *var. Freeman* is the latest defined Poynor Engraved variety, dating from ca. A.D. 1560-1680, while Patton Engraved, *var. Freeman* is likely the oldest variety of Patton Engraved in the upper Neches River basin.

Other less well-defined varieties of Poynor Engraved include regional varieties B, C, D, E (Figure 39a), I, N (Figure 39b-c), Q (Figure 39d), R, and S' (see Figure 12) as well as *Local Variety 3* (Figure 39e; see

Figure 38. A Poynor Engraved, *var. Freeman* rim sherd from Feature 2 at the A. C. Saunders site.

also Figure 14c). *Var. C* has continuous upper and lower rows of hatched triangles on the rim panel; *var. D* has vertical cross-hatched panels; *var. E* has scroll elements and *var. I* has continuous scroll elements; var. N has open hooked arms and ovals; *var. Q* has hatched nested triangle elements; *var. R* has concentric semi-circles; and *var. S'* has concentric ovals and vertical panels. Local (i.e., to the upper Neches River basin) variety 3 of Poynor Engraved has panels with curvilinear and hooked arm elements with open pendant triangles, circles with pendant triangles, and concentric semi-circles with pendant triangles on the outer concentric circle line.

The identified Poynor Engraved, *var. unspecified* bottle sherds in the Feature 2 decorated sherd assemblage have vertical engraved lines on the vessel body with triangular-shaped excised zones (Figure 40a) and excised pendant triangles (Figure 40b-c). The exterior surface of these reduced fired bottle sherds is well burnished.

One rim sherd in Feature 2 is from a Ripley Engraved, *var. Diana* or *var. Pine Tree* carinated bowl (Figure 41; see Fields 2019:Figure 12-6). It has a rectilinear motif with an SZ element outlined by excised areas; the vessel also has interior and exterior red-slipped surfaces. Ripley Engraved is the principal fine ware type in Late Caddo period Titus phase ceramic assemblages made by potters in the Big Cypress Creek and Sabine River basins in East Texas, and this one sherd represents evidence of contact/trade between the ancestral Caddo living at and using the A. C. Saunders site and Titus phase Caddo peoples. According to Fields (2019:Table 12-2), these varieties are not common in Titus phase sites, accounting for between 3.3 and 0.8

Figure 39. Regional and local varieties of Poynor Engraved in Feature 2 at the A. C. Saunders site.

Figure 40. Poynor Engraved, *var. unspecified* bottle sherds from Feature 2 at the A. C. Saunders site.

Figure 41. Ripley Engraved, *var. Diana* or *var. Pine Tree* rim sherd in Feature 2 at the A. C. Saunders site.

percent of identified Ripley Engraved varieties in a sample of 870 vessels. The Ripley, *var. Diana* vessels are most abundant at the Pine Tree Mound site (41HS15) in the middle Sabine River as well as the headwater areas in Hopkins and Franklin counties (Fields 2019:Figure 12-7 and Table 12-3. Ripley Engraved, *var. Pine Tree* vessels are found almost exclusively at the Pine Tree Mound site.

The three most common varieties by vertical levels in Feature 2 are *var. Cook*, *var. Hood*, and *var. Blackburn* (Table 18). Proportionally, *var. Blackburn* and *var. Cook* are most abundant in the lower deposits in Feature 2, while *var. Hood* is best represented in ACS 2 and ACS 1, the middle and upper midden levels in Feature 2. In a sample of more than 130 Poynor Engraved vessels from burial features in the upper Neches River basin (Perttula 2011:Table 6-37), the *var. Blackburn* and *var. Cook* vessels are most abundant in ca. A.D. 1400-1560 contexts, while *var. Hood* is most common in ca. A.D. 1480-1560 contexts, as is *var. Lang*, as well as to a lesser degree in ca. A.D. 1560-1680 contexts. *Var. Freeman* vessels in the burial feature sample are restricted to ca. A.D. 1560-1680 contexts. These numbers indicate that Feature 2 primarily accumulated between ca. A.D. 1400-1560, but there is evidence from the changing proportion of these principal varieties that the uppermost levels of the midden mound accumulated after ca. A.D. 1560 until perhaps the early 17th century. The low frequency of *var. Freeman* sherds in the assemblage indicates that the occupation likely did not extend much into the latest sub-phase (ca. A.D. 1560-1680) of the Frankston phase.

Other early Poynor Engraved varieties at the A. C. Saunders site are *var. E*, *var. S'*, and *Local Variety 3* (see Table 18). In ACS 2, other Poynor Engraved varieties that are relatively common are *var. I*, *var. N*, and *var. R*; these occur in ca. A.D. 1480-1560 and post-A.D. 1560 burial features (see Perttula 2011:Table 6-37). *Var. D* and *var. Q* are proportionally most abundant in ACS 1, the top midden deposits (see Table 18). These varieties have been found in burial features dating from ca. A.D. 1480-1560 in the upper Neches River basin (see Perttula 2011:Table 6-37).

Variety	ACS 1		ACS 2		ACS 3		N
	No.	%	No.	%	No.	%	
var. Blackburn	8	8.3	6	9.5	2	16.7	16
var. Cook	37	38.5	23	36.5	6	50.0	66
var. Freeman	2	2.1	2	3.2	-	-	4
var. Hood	26	27.1	16	25.4	1	8.3	43
var. Lang	2	2.1	2	3.2	-	-	4
var. B	1	1.0	-	-	-	-	1
var. C	1	1.0	1	1.6	-	-	2
var. D	5	5.2	1	1.6	-	-	6
var. E	1	1.0	1	1.6	1	8.3	3
var. I	-	-	2	3.2	-	-	2
var. N	2	2.1	5	7.9	-	-	7
var. Q	3	3.1	-	-	-	-	3
var. R	-	-	1	1.6	-	-	1
var. S'	-	-	-	-	1	8.3	1
Local Variety 3	-	-	2	3.2	1	8.3	3
Totals	96		63		12		171

Table 18. Vertical provenience of recognized varieties of Poynor Engraved in Feature 2 at the A. C. Saunders site.

Hood Engraved effigy bowl sherds

Ceramic effigy vessels are a very rare vessel form found on Caddo sites, as they comprise about 1 percent of the more than 3100 Caddo vessels currently in the TARL whole vessel collections. Three different effigy bowl shapes have been identified in East Texas Caddo vessel assemblages. The differences primarily resolve around the character of the effigy head (both bird and abstract forms) as well as the nature of any other appendages, such as tab tails and tail riders. The effigy bowls themselves are simple in form, with rounded body wall contours (see Suhm and Jelks 1962:Plate 24).

The majority of the Caddo effigy vessels found in East Texas come from ancestral Caddo sites of Frankston (ca. A.D. 1400-1680) and Allen phase (ca. A.D. 1680-1830) in the upper Neches River basin (Suhm and Jelks 1962:Plate 24). Mark Parsons, an East Texas Caddo archaeologist, referred to this area as "Effigy Land." This is an area that was heavily populated by Caddo peoples, and there are now known many Caddo settlements and cemeteries preserved in the regional archaeological record Both Hood Engraved, *var. Hood* and Hood Engraved, *var. Allen* effigy vessels have been recovered from upper Neches River basin Caddo cemeteries and Hood Engraved, *var. Hood* vessels from Frankston phase contexts have a broader distribution in the basin than do the Hood Engraved, *var. Allen* effigy vessels with tail riders known from Allen phase cemeteries (Perttula and Selden 2015:Figure 2a-b).

Effigy bowl sherds from Hood Engraved vessels, not including rim sherds with widely-spaced horizontal engraved lines, are well represented (n=31) in the ceramic vessel sherds from the A. C. Saunders

Figure 42. Effigy heads at the A. C. Saunders site: a, 15 inches bs; b, EH #9; c, 14 inches bs; d, 30 inches bs; e, 14 inches bs.

Figure 43. Hood Engraved effigy tail rim sherd, ACS 2.

site. These include "highly conventionalized" bird effigy heads (n=13, see Suhm and Jelks 1962:47) (Figure 42a-e), effigy appendages of uncertain kind (n=3), tab tails (at the opposite end of the vessel from the effigy head) (n=5) (Figure 43; see also Suhm and Jelks 1962:Plate 24b-c, g)), tab tails with visible tail rider attachments (n=3) (Figure 44a), and standing zoomorphic tail riders (n=7) of different forms with heads, and with eyes, ears, and mouths depicted on them, probably from dogs or bears (Figure 44b-d, see also Suhm and Jelks 1962:Plate 24a, d, f, k). The effigy vessel sherds with tail riders are from Hood Engraved, var. Allen effigy bowls, while the other effigy bowls are from Hood Engraved, *var. Cook* and *var. Hood* vessels (Perttula 2011:271).

One notched bird head effigy has closely-spaced curvilinear engraved lines on it (see Figure 42b), and another effigy appendage has horizontal, curvilinear, and curvilinear hatched engraved lines, elements common on Poynor Engraved, *var. Cook* non-effigy vessels. The one clear Hood Engraved, *var. Cook* effigy bowl tab tail sherd (from ACS 2) in the collection has an engraved triangle element on the tab tail with diagonal and diagonal opposed hatched corners, forming a negative oval; the negative oval element is also seen on Poynor Engraved, *var. F* vessels (Perttula 2011:Figure 6-65).

Effigy bowl sherds are present throughout the Feature 2 deposits in levels ACS 1-ACS 3 (Table 19), as Jackson had noted in the 1930s, suggesting their manufacture and use throughout much of the Frankston phase and on into the post-A.D. 1680 Allen phase. The effigy bowl sherds are most common in ACS 1 and ACS 2 deposits. Sherds with tail riders or tab tails with tail rider attachments are most prevalent in the uppermost midden deposits.

Figure 44. Tab tail with tail rider attachment and zoomorphic tail rider sherds: a, 5 inches bs; b, 5 inches bs; c, 11 inches bs; d, 25 inches bs.

Pigment Use on Ceramic Vessel Sherds

Red (*hatinu*) ochre and white (*hakaayuh*) kaolinite clay pigments were often added to the decorations on ancestral Caddo ceramic bottles and carinated bowls; green (*hasahkuh*) pigments (see Fields and Gadus 2012:Table 6-3) have also been documented on some

Effigy sherd groups	ACS 1 0-10 inches	ACS 2 10-20 inches	ACS 3 20-30 inches	N
Effigy head	2	5	1	8
Effigy appendage	-	1	1	2
Tab tail	-	2	-	2
Tab tail with tail rider attachment	2	-	1	3
Tail rider	3	1	2	6
Totals	7	9	5	21

Table 19. Vertical provenience of Hood Engraved effigy bowl sherds in Feature 2 at the A. C. Saunders site.

Type and Vessel Form	Red pigment	White pigment	N
Hume Engraved, *var. unspecified*, Bw	-	1	1
Hume Engraved, *var. unspecified*, Bt	1	-	1
Poynor Engraved, *var. Blackburn*, CB	1	-	1
Poynor Engraved, *var. Cook*, BW	-	1	1
Poynor Engraved, *var. Cook*, CB	2	1	3
Poynor Engraved, *var. Freeman*, CB	1	-	1
Poynor Engraved, *var. Hood*, CB	3	1	4
Poynor Engraved, *var. C*, CB	1	-	1
Poynor Engraved, *var. D*, CB	1	-	1
Poynor Engraved, *var. N*, CB	2	-	2
Poynor Engraved, *var. Q*, CB	1	-	1
Poynor Engraved, *var. unspecified*, CB	1	1	2
Poynor Engraved, *var. unspecified*, Bt	5	1	6
Unidentified fine ware, CB	7	3	10
Totals	26	9	35

Table 20. Use of clay pigments on engraved fine ware sherds at the A. C. Saunders site.

Bt=bottle; BW=bowl; CB=carinated bowl

engraved vessels (see Chafe [2018] for a dictionary of Caddo words). A previous study of clay pigment use in the upper Neches River basin determined in a temporal series of Late Caddo Frankston phase fine ware vessels that they are dominated by vessels with a red clay pigment, at least from ca. A.D. 1400-1560 (see Perttula 2017:Table 4). In those assemblages, 92.5 percent of the fine ware vessels with pigment have a red clay pigment, and this includes bottles, bowls, and effigy bowls. After ca. A.D. 1560, only 36 percent of the vessels with pigment have a red clay pigment, and instead use of a white clay pigment predominates; most of these vessels are carinated bowls (Perttula 2011:279-280).

At the A. C. Saunders site, only a small proportion of the engraved fine ware sherds are from vessels that have had a red or white clay pigment

rubbed in the engraved lines: approximately 5 percent of the engraved fine ware assemblage (Table 20). These include certain bowls, carinated bowls, and bottles. Most of the sherds with pigment are from Poynor Engraved vessels (n=23, 66 percent), primarily from *var. Cook* and *var. Hood* vessels, as well as Poynor Engraved, *var. unspecified* bottles, and 5.7 percent are from Hume Engraved bowls and bottles.

Lug and Strap Handles

Appliqued lug handle (n=43) (Figure 45a-b) and strap handle (n=42) (Figure 45c-d) sherds are common features of the plain ware and utility ware vessels in Feature 2 at the A. C. Saunders site; the handles are typically attached on the rim at opposed rim peaks. Although most of the handle sherds do not have a specific vertical provenience, those that do suggest that handled vessels were much more common in the 0-10 inch (ACS 1, n=13) and 10-20 inch (ACS 2, n=15) levels than they are in ACS (20-30 inches, n=6).

The lug handles and strap handles come in different sizes, likely related to the size of the vessels on which they were attached. Lug handles are generally smaller than strap handles, ranging primarily from 22-37 mm and 41-48 mm in length (but ranging to 75 mm in length) and 9-27 mm in width, while strap handles are primarily 49-62 mm in length (but ranging to 86 mm in length) and 21-45 mm in width.

Another difference between lug handles and strap handles at the A. C. Saunders site is that lug handles are primarily plain (65 percent), while only 11.9 percent of the strap handles are plain. The decorated lug handles and strap handles have a range of decorative elements (Table 21). The most common decorative elements on both types of handles are vertical pinched ridges, and all told, 73.4 percent of the lug handles and 70.3 percent of the strap handles have pinched decorative elements (Figure 46a-e).

Between 13.4-18.9 percent of the lug and strap handles have punctated rows, whether with fingernails or tool punctations (Figure 47a-b) (see Table 21). Only one of the decorated handles (1.9 percent), namely a strap handle, have brushed marks, 3.8 percent have appliqued nodes at the top of the handles (see Figure 45a), and 5.8 percent have incised decorative elements (Figure 47c).

Figure 45. Examples of handles on utility ware vessels: a-b, lug handles; c-d, strap handles.

Ceramic Sherds with Drilled Holes

Ceramic sherds with drilled holes, otherwise known as spindle whorls, are present in the ancestral Caddo ceramic assemblage from Feature 2 (Midden Mound) at the A. C. Saunders site (Figure 48a-d). The spindle whorls would have been affixed on a spindle to help

Decorative elements	Lug handle	Strap handle	N
appliqued nodes	6.7	2.7	2
vertical brushed marks	-	2.7	1
diagonal incised lines	6.7	-	1
horizontal incised lines	-	2.7	1
vertical incised lines	-	2.7	1
circular punctated rows	-	2.7	1
fingernail punctated rows	6.7	-	1
tool punctated rows	6.7	16.2	7
circular pinched ridge	6.7	-	1
horizontal pinched ridges	-	8.1	3
vertical pinched ridges	66.7	62.2	33
Total decorated handles	15	37	52

Table 21. Decorative elements on lug handles and strap handles at the A. C. Saunders site.

maintain its rotary motion during spinning activities. These sherds have been deliberately modified from either body or base sherds from previously broken ceramic vessels; several of the spindle whorls have visible decorative elements from those broken vessels, including brushed (Figure 48a) and engraved decorations. Spindle whorls represent evidence of textile manufacture/weaving (cf. Alt 1999) from various vegetable fibers by the Caddo peoples living at the site, among them hemp, slippery elm, mulberry, milkweed, and nettle, as well as the bark of trees.

The 29 circular-shaped spindle whorls occur throughout the Feature 2 deposits, although slightly more common in ACS 1 (0-10 inches bs) and ACS 2 (10-20 inches bs) (Table 22). About 76 percent of the spindle whorls are from grog-tempered vessels; 14 percent are from grog-hematite-tempered vessels, 7 percent are from grog-bone-tempered vessels, and 3.4 percent are from bone-tempered vessels. The spindle whorls are made from both body (62 percent) and base (38 percent) sherds; thicker sherds were preferred for spindle whorl use.

The spindle whorls have drilled holes that fall in three groups based on drilled hole diameters: 6.9-11.7 mm (see Figure 48a and 48d), 13.3-16.0 mm (see Figure 48c), and 17.7-37.0 mm (see Table 22 and Figure 48b). These size differences indicate that spindles of different sizes were employed by the ancestral Caddo peoples living at the A.C. Saunders site to manufacture textile and cloth.

Figure 46. Strap handles with pinched ridges at the A. C. Saunders site.

Figure 47. Punctated or incised strap handles at the A. C. Saunders site.

Figure 48. Selected ceramic spindle whorls from Feature 2 at the A. C. Saunders site: a-b, unknown depth; c, ACS 2 (20 inches); d, ACS 3 (27 inches).

1978 Surface Collection of Ceramic Vessel Sherds

Kleinschmidt collected a small number of ceramic vessel sherds (n=25) from the surface of the A. C. Saunders site in 1978. Ten of the sherds are plain rim or body sherds tempered with grog, grog-hematite, and bone-hematite. There are also grog-tempered body sherds from utility ware vessels with parallel brushed (n=7) and parallel brushed-incised marks and lines (n=2), grog-hematite-tempered body sherds with parallel (n=2) or opposed (n=1) brushing marks, a grog-hematite-tempered body sherd with parallel brushed-incised marks, and lines, and a grog-hematite La Rue Neck Banded body sherd. One grog-tempered fine ware sherd has a red slip on interior and exterior vessel surfaces.

Ceramic Pipes and Pipe Sherds from Features 1 and 2

Ceramic pipes and pipe sherds are common artifacts found in upper Neches River basin Caddo sites, especially those sites occupied after ca. A.D. 1400 like the A. C. Saunders site (Gilmore 1974:Table 68; Jackson 1933, 1936; Kleinschmidt 1982:53, 60, 63, and 76).

Provenience	Sherd Type	Temper	Hole Diameter (mm)	Decorative el.
ACS 1	body	grog-hematite	11.7	Parallel brushed
ACS 1	body	grog	10.8	Parallel brushed
ACS 1	base	grog	10.3	Plain
ACS 1	base	grog-hematite	11.0	Plain
ACS 2	body	grog	8.1	Engraved-brushed
ACS 2	body	grog	9.0	Plain
ACS 2	body	grog	16.0	Plain
ACS 2	base	grog	8.6	Plain
ACS 2	base	grog-hematite	15.2	Plain
ACS 3	body	grog	10.3	Plain
ACS 3	base	grog	11.5	Plain
ACS 3	base	grog	8.9	Plain
UNK	body	grog	10.8	Engraved
UNK	body	grog	9.6	Parallel brushed
UNK	body	grog-hematite	6.9	Parallel brushed
UNK	body	grog	9.4	Overlapping brushed
UNK	body	grog	11.0	Overlapping brushed
UNK	body	grog	14.6	Plain
UNK	body	grog	14.6	Plain
UNK	body	grog	16.0	Plain
UNK	body	grog	17.7	Plain
UNK	body	grog	13.3	Plain
UNK	body	grog	10.9	Plain
UNK	body	grog-bone	13.3	Plain
UNK	base	grog-bone	19.8	Plain
UNK	base	grog	15.4	Plain
UNK	base	grog	9.9	Plain
UNK	base	grog	25.7	Plain
UNK	base	bone	37.0	Plain

Table 22. Spindle whorls from the Feature 2 excavations at the A. C. Saunders site.

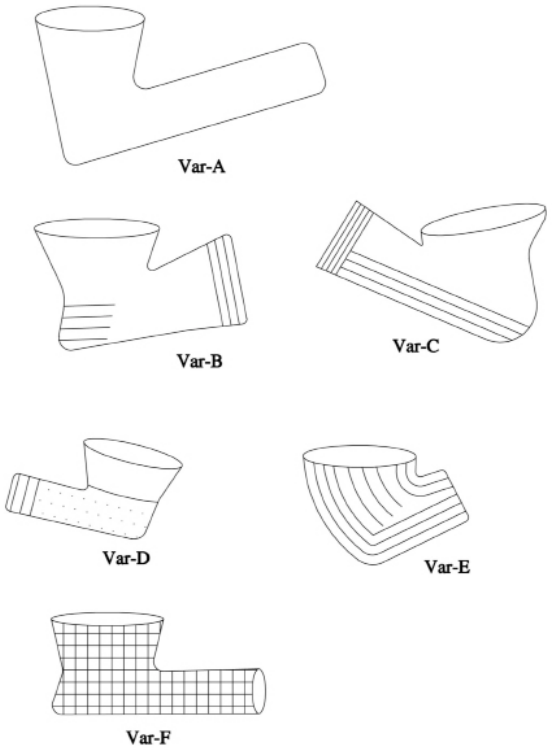

Figure 49. Elbow pipe varieties A-F in the upper Neches River basin.

Ceramic pipes and pipe sherds are relatively abundant in both domestic and mortuary archeological deposits in ancestral Caddo sites in the region; the ceramic pipes from A. C. Saunders are found in mound contexts in Features 1 and 2. The prevalence of clay pipes in both domestic and mortuary contexts throughout the upper Neches River basin indicate the ritual activities associated with pipe smoking - and the smoking of tobacco (see Rafferty and Mann 2005; Winter 2000) - were actually part of daily life and the every-day ceremonies that the Caddo carried out in interacting with the spirits and souls around them. Pipes were probably smoked on a daily basis by adult members of farmsteads and communities - mainly adult males, but not always - and when the pipes broke, they were discarded in nearby middens. Pipes were made locally for daily use, and for use in mortuary rituals.

An examination of the clay elbow pipes from sites in the upper Neches River basin (see Perttula 2011), including from cemeteries of known age, indicates the following stylistic and morphological trends (Figures 49 and 50):

Figure 50. A sample of incised and incised-punctated elbow pipe sherds from the A. C. Saunders site. From Texas Beyond History website.

- the earliest elbow pipes (Var. A) are plain L-shaped forms;
- flaring bowl forms are stylistically sequent, with distal stem knobs; these pipes (Var. B) have three engraved or deep incised lines on the stem and short lines on the lower bowl; some examples have pedestal bases;
- Var. C pipes have engraved/incised lines on the stem, and lines on the pipe that extend along the entirety of the stem and basal portions of the bowl;
- In Var. D pipes, the parallel engraved or incised lines extending along the stem and the lower body are replaced by long rows of small punctations;
- Var. E elbow pipes are the first forms that are completely covered with decoration, in this case curvilinear incised lines;
- cross-hatched engraved elbow pipes (Var. F), and
- pipes with a variety of incised-punctated decorations (Var. G). Jackson (1933:75) refers to these as Neches pipes, usually with rows of punctations on the stem, heel, and bowl, or covering the entire pipe; this is the latest elbow pipe form at the A. C. Saunders site according to Jackson (1936). This variety may also have rows of raised bands of punctations, forming a collar at the stem (Shafer 1981:Figure 9e) (Figure 51).

There are four ceramic elbow pipe sherds from the Feature 1 (Mound 1) excavations at the A. C. Saunders site. Two stem and basal stem pipe sherds have decorative elements and the other two (a stem and a bowl) are undecorated. Three of the four pipe sherds are from pipes tempered with grog, and the other pipe sherd has both grog and hematite temper.

The decorated pipe sherds from Feature 1 are from Var. B elbow pipes (see Figure 49): one has three horizontal engraved lines on the upper stem and the other has three horizontal incised lines on the basal stem. These pipes are 5.4-5.6 mm in thickness, and the orifice diameter on the upper stem rim is 18.8 mm. The plain stem sherd is 6.6 mm in thickness and has a 22.1 mm orifice diameter at the flat lip. The plain bowl sherd has a rounded lip, is 4.5 mm in thickness, and its orifice diameter is 41.1 mm.

Figure 51. Var. G pipes from the A. C. Saunders site.

The A. C. Saunders artifact assemblage from Feature 2 (Midden Mound) at TARL has one complete ceramic pipe and 89 stem and bowl sherds. These pipes are from several of the defined pipe varieties in the upper Neches River basin (see Figure 49). The pipes were commonly burnished or smoothed and manufactured with grog temper (76 percent, especially the platform pipes and Var. A pipes), although 17 percent are tempered with grog and crushed burned bone (especially Var. C pipes), another 4.5 percent are tempered solely with burned bone (all from unidentified pipe varieties), and 1.1 percent of the pipe sherds are tempered with either grog-hematite or bone-hematite (both from unidentified pipe varieties).

Two of the pipe sherds in the assemblage are part of two different circular platform pipes (Table 23). One is at least 55 mm in length (Figure 52a). A 24-mm high bowl sits on the platform. The 10-mm wide platform on one platform pipe has a series of upper and lower large excised triangles pendant from a single engraved line that encircles the outer platform edge, while the other has hatched engraved triangles on either

No.	Depth (inches bs)	Temper	ST	L	TH	Bowl Height	Stem OD	Bowl OD	
Platform pipe									
64	-	grog	B	55+	-	24.0	-	-	platform width is 10 mm; upper and lower platform surfaces have sets of large excised pendant triangles from platform-encircling engraved line
	30	grog	B	-	-	-	-	-	platform width is 16 mm; either side of platform has horizontal hatched pendant triangles
Var. A									
31	-	grog	SM	plain stem and lower bowl					
35	-	grog	B	70.5+	2.1	-	15.5	-	plain stem and rounded lip
36	27	grog	SM	76.0+	3.1	-	19.0	-	plain stem and lower stem/bowl, rounded lip
37	20	grog	-	-	6.3	-	19.5	-	plain stem body
41	-	grog	B	-	5.9	plain stem body sherd			
61	-	grog	SM	74.0	-	-	21.0	-	plain stem and lower bowl; flat distal knob on the lower stem
102	-	grog	SM	64.0	2.5	-	18.0	-	plain stem and lower bowl
Var. B									
9	17	grog-bone	B	-	5.2	-	25.0	-	four horizontal incised lines on the stem
12	16	grog	-	-	5.4	-	24.0	-	four horizontal incised lines on the stem and horizontal incised lines on the distal stem knob
13	-	grog	SM	-	5.9	-	22.0	-	five horizontal incised lines on the stem
18	22	grog-bone	-	-	3.9	-	-	-	3+ horizontal engraved lines on the stem
33	-	grog	B	three horizontal engraved lines on the stem					
53	4-10	grog	B	-	5.5	-	24.5	-	4+ horizontal engraved lines on the stem
54	4-10	grog	B	-	4.7	-	25.0	-	five horizontal incised lines on the stem
62	-	grog	B	40.0	-	16.0	-	-	two horizontal engraved lines on the bowl
66	16	grog	-	42.0	3.8	22.0	18.0	-	three horizontal incised lines on the lower bowl and stem
ACS	7	grog-bone	B	-	4.1	21.8	-	-	6+ horizontal incised lines on basal stem and bowl
ACS	10	grog-bone	SM	-	4.8	-	20.9	27.9+	
ACS	-	grog	SM	-	3.6	-	17.9+	-	four horizontal incised lines on basal stem
ACS	-	grog	SM	-	3.2	-	19.0	36.3	three horizontal incised lines on basal stem
ACS	-	grog	B	-	3.1	-	19.0	-	4+ horizontal engraved lines on basal stem and bowl
ACS	-	grog	SM	-	3.9	-	17.9+	-	three horizontal incised lines on basal stem and bowl
ACS	-	grog	B	-	-	-	18.2	-	2+ horizontal engraved lines on basal stem and bowl
Var. C									
14	13	grog-bone	-	-	5.4	-	22.0	-	four horizontal incised lines on the stem, and four vertical incised lines on the lower stem, as well as adjacent tool punctated row
20	-	grog-bone	B	-	5.4	-	21.7+	-	four horizontal incised lines on the stem and vertical incised lines on the lower stem
24	-	grog-bone	SM	-	5.7	-	25.2	-	two horizontal incised lines on the stem and vertical incised lines on the lower stem
35	-	grog-bone	B	-	5.6	-	-	-	two horizontal lines on the stem and vertical incised lines on the lower stem
60	25	grog	B	five horizontal incised lines on the stem and three vertical incised lines on the lower stem					
Var. D									
21	12	grog-bone	SM	-	5.0	-	23.0	-	five horizontal incised lines on the stem and 2+ vertical tool punctated rows on the lower stem
Var. G									
17		grog	SM	-	3.9	-	-	-	two circular punctated rows beneath the lip, three horizontal incised lines below, then 10+ rows of punctations on lower stem
22	-	grog	B	-	5.1	-	21.0	-	two horizontal engraved lines on stem with two vertical rows of circular punctations on lower stem
26	-	grog	B	three rows of circular punctations on the lower stem					
28	-	grog	B	-	5.7	-	-	-	four rows of tool punctations on the stem
33	-	grog	B	-	5.6	-	-	-	diagonal rows of circular punctations on the stem
34	7	grog	B	-	6.3	-	-	-	1+ row of tool punctations on stem body
50	4-10	grog	B	58.0	4.1-6.8	33.0	27.0	41.0	Circular punctated rows on the bowl lip, at the base of the stem and bowl, and five rows on the stem below the lip
100	-	grog	SM	56.0	5.6	-	25.0	-	collared stem has three tool punctated rows, and the lower body-stem has two sets of three horizontal tool punctated rows
101	-	grog-bone	B	58.0	5.7	three tool punctated rows on the stem and 4+ tool punctated rows on the lower bowl			
103	-	grog	SM	53.0+	-	-	22.0	-	the collared stem has diagonal circular punctations and the remainder of the stem and lower bowl has three horizontal rows of circular punctations, one row of which turns into a single horizontal incised line at the distal knob
ACS	-	grog	SM	2+ circular punctated rows on the stem; collar at the stem					
ACS	-	grog	SM	-	4.1	-	-	-	three circular tool punctated rows on the stem
ACS	-	grog-bone	SM	-	4.0	-	-	-	three circular tool punctated rows on basal stem
ACS	-	grog-bone	B	-	-	-	22.0	-	two circular tool punctated rows on the basal stem
Unidentified Var.									
10	12	grog	SM	-	7.0	-	26.5	-	collar on stem with two deep horizontal incised lines
11	-	grog	B	-	6.7	-	27.8	-	two horizontal engraved lines on the stem collar
19	-	grog	B	-	7.2	-	-	-	horizontal engraved line and diagonal hatched triangle element
23	14	grog	B		4.8	-	21.5	-	two sets of three horizontal incised lines on stem collar; stem body is plain
27	-	grog	B	-	6.9	-	-	-	two horizontal engraved lines on the stem
28	-	grog	B	-	4.5	-	22.5+	-	three horizontal engraved lines on the stem
29	-	grog	SM	-	5.9	-	-	-	four horizontal engraved lines on the stem
30	-	grog-bone	SM	-	3.9	plain lower stem			
31	-	grog-bone	-	-	4.5	-	-	-	horizontal hatched triangle element
32	-	grog	B	-	5.0	-	-	-	diagonal opposed engraved lines on the stem
38	-	grog	SM	-	4.1	-	17.0	-	plain stem and flat lip
39	16	grog	B	-	3.2	-	14.0	-	plain stem body
40	-	grog	B	-	2.8	-	-	-	plain stem body
52	4-10	grog	B	43.0+	5+ hatched engraved pendant triangles on the pipe body				
56	4-10	grog	B	Plain bowl rim					
60	13	grog	SM	47.0	6.0	-	19.0	-	lower bowl has horizontal and vertical engraved lines with a white pigment; the

Table 23. Ceramic pipes and pipe sherds from Feature 2 at the A. C. Saunders site.

No.	Depth (inches bs)	Temper	ST	L	TH	Bowl Height	Stem OD	Bowl OD
				stem has four rows of diagonal circular punctations or four concentric circles				
ACS	8	bone	B	-	4.0	-	-	-
				plain elbow pipe bowl rim				
ACS	8	grog	B	-	3.9	-	-	25.9+
				lip notched elbow pipe rim				
ACS	0-10	grog	SM	-	5.1	-	25.0	-
				six horizontal incised lines on the stem				
ACS	0-10	grog	B	-	2.8	-	-	-
				plain elbow pipe bowl rim				
ACS	12	grog	B	-	3.3	-	-	27.4+
				plain elbow pipe bowl rim				
ACS	13	grog	B	-	3.3	-	-	-
				plain elbow pipe bowl rim				
ACS	15	grog	SM	-	6.6	-	29.0	-
				2+ horizontal engraved lines on the stem				
ACS	15	grog	B	-	3.6	-	-	-
				plain elbow pipe bowl rim				
ACS	16	grog	B	-	6.1	-	28.0	-
				3+ horizontal engraved lines on the stem				
ACS	16	bone	B	-	3.3	-	-	-
				plain elbow pipe bowl rim				
ACS	23	grog	B	-	3.1	-	-	33.2+
				plain elbow pipe bowl rim				
ACS	25	grog	B	-	2.4	-	-	-
				plain elbow pipe bowl rim				
ACS	26	grog	B		3.6	-	-	33.9+
				plain elbow pipe bowl rim				
ACS	36	grog	B	-	2.4	-	-	-
				plain elbow pipe bowl rim				
ACS	-	bone	B	-	5.1	-	-	-
				horizontal engraved line on stem with open pendant triangles				
ACS	-	grog	B	-	2.4	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	5.2	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	3.3	-	-	37.0+
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	5.4	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	4.0	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog-hematite	B	-	2.7	25.4+	14.6	-
				plain elbow pipe bowl rim				
ACS	-	grog-bone	B	-	3.3	-	-	-
				plain elbow pipe bowl rim				
ACS	-	bone-hematite	B	-	4.0	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	4.6	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	3.6	-	-	24.0+
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	4.0	-	-	-
				plain elbow pipe bowl rim				
ACS	-	grog	B	-	3.4	-	-	-
				plain elbow pipe bowl rim				
ACS	-	bone	B	-	3.7	-	-	25.0+
				plain elbow pipe bowl rim				

Table 23. Ceramic pipes and pipe sherds from Feature 2 at the A. C. Saunders site.

ST=surface treatment; L=length (in mm); TH=thickness (in mm); OD=orifice diameter (in mm); B=burnished; SM=smoothed

side of the platform (Figure 52b). This latter platform pipe is from 30 inches bs in ACS 3.

The remainder of the ceramic pipes and pipe sherds are from elbow pipes. This includes sherds from defined Var. A (n=7), Var. B (n=16), Var. C (n=5), Var. D

Figure 52. Platform pipes from Feature 2 at the A. C. Saunders site: a, no. 64; b, ACS 3 (30 inches bs).

(n=1), and Var. G (n=14). Another 45 sherds cannot be assigned to a defined Upper Neches River basin elbow pipe variety (see Table 23).

The Var. A elbow pipe sherds have plain stems and bowls (Figure 53a-b). They range from at least 64-76.0 mm in length, have smoothed exterior surfaces, and have rounded lips; one Var. A pipe has a flat distal knob (Figure 53a).

Var. B elbow pipes all have between two to six horizontal incised (60 percent) or engraved (40 percent) lines on the stem (Figure 54a, c-e), and several examples also have horizontal incised lines on the lower bowl and stem or the distal stem knob, or engraved lines on the pipe bowl (Figure 54b). These pipes tend to be smoothed or burnished on their exterior surfaces. Thickness and stem orifice diameters suggest the Var. B pipes were made in several sizes, ranging from 3.8-5.9 mm in thickness on the stem and have 18.0-25.0 mm flat stem base diameters (see Table 23).

The Var. C elbow pipe sherds are commonly tempered with grog and bone (80 percent, see Table 23), and also burnished on their exterior surface. Four of the Var. C pipe sherds have two to five horizontal incised lines on the stem as well as vertical incised lines on the lower stem. One pipe sherd has both horizontal and

Figure 53. Var. A pipe sherds from the A. C. Saunders site: a, No. 61; b, No. 102.

vertical incised lines on the stem as well as a row of tool punctations adjacent to the vertical incised lines on the lower stem (Figure 55).

The one Var. D elbow pipe sherd in the A. C. Saunders assemblage is grog-bone-tempered and smoothed on its exterior surface. The stem is decorated with five horizontal incised lines while the lower stem has at least two vertical rows of tool punctations (see Table 23).

The Var. G elbow pipes and pipe sherds are commonly grog-tempered (73 percent) or grog-bone-tempered (27 percent) and have burnished exterior surfaces (see Table 23). They have several different decorative element combinations, including incised or engraved lines on the stem (sometimes collared) between punctated rows beneath the lip (Figure 56a) or with rows of circular punctations on the lower stem (Figure 56b). Other Var. G pipes have punctated rows on the stem (Figure 56d) or on the lower stem (Figure 56c), or have tool punctated rows on both the stem and lower stem (Figure 56e-f), which sometimes has a collar.

The one complete Var. G elbow pipe (Figure 57) is grog-tempered and burnished, and decorated on the bowl, the stem, and the lower stem. There are small circular punctated rows on the bowl

Figure 54. Var. B. pipe sherds from the A. C. Saunders site: a, No. 9; b, No. 62; c, ACS 1 (7 inches bs); d, ACS 1 (10 inches bs); e, ACS.

Figure 55. Var. C pipe sherd (no. 14) from the A. C. Saunders site.

Figure 56. Var. G elbow pipe sherds from the A. C. Saunders site: a, incised-punctated decorative elements (no. 17) on the collared stem;

Figure 56. Var. G elbow pipe sherds from the A. C. Saunders site: b, incised-punctated elements (no. 22) on the stem; c, punctated rows of lower stem (no. 26); d, tool punctated rows on stem (no. 28); e, tool punctated rows on the stem and lower stem (no. 100).

Figure 56. Var. G elbow pipe sherds from the A. C. Saunders site: f, tool punctated rows on collared stem and lower stem (no. 103).

Figure 57. Var. G pipe (no. 50) with punctated rows on the collared bowl rim, at the stem, and at the lower stem.

lip, five rows of circular punctations at the base of the stem and bowl, and five rows of circular punctations on the stem below the lip. Several of these circular punctations have a kaolin-rich clay pigment rubbed in the punctations (see Figure 56).

About half of the pipe sherds that cannot be assigned to an elbow pipe variety simply are small plain stem and stem body sherds (see Table 23), as well as plain bowl sherds that could be from Var. A-C pipes. Others have horizontal engraved or incised lines on the stem (sometimes collared) (Figure 58a), and these may be from Var. B. or Var. C pipes. Others have horizontal and diagonal engraved lines on the stem (Figure 58b), engraved-punctated elements, or diagonal opposed engraved lines on the stem (Figure 58c). Others have hatched pendant triangle elements (Figure 58d) or open pendant triangles (see Table 23). One elbow pipe bowl rim sherd has lip notches (see Table 23).

The most unique unassigned elbow pipe has horizontal-vertical engraved lines on the lower stem/bowl (Figure 58e-f) and different decorative elements on either side of the stem. One side has four engraved concentric circles (Figure 58e), and the other side of the stem has four diagonal rows of tool punctations (Figure 58f).

Of the elbow pipe sherds that have a vertical provenience, 33 percent are from ACS 1 (0-10 inches bs), 44 percent are from ACS 2 (10-20 cm bs), and 22 percent are from ACS 3 (20-30 cm bs). Only pipe varieties B and G are represented in the ACS 1 pipes, Var. G only in ACS 1, and Var. B in all three levels in Feature 2. This suggests that Var. G is the youngest elbow pipe form, followed by Var. B. Elbow pipe varieties A, C, and D occur in only deeper ACS 2 and ACS 3 levels (Table 24) at the A. C. Saunders site, and the one platform pipe sherd with vertical provenience comes from ACS 3, indicating it occurred among the earliest ceramic pipes (Vars. A, C, and D) made and used at the A. C. Saunders site.

Ceramic Bead

A single large ceramic bead was recovered in the Feature 2 excavations at the A. C. Saunders site. The bead is tubular-shaped, 54.2 mm in length and 30.0 mm in diameter, with a 10.5 mm diameter hole at either flattened end (Figure 59a-b). The bead has an exterior smoothed surface.

Ceramic beads as ornaments are rare in the Caddo archaeological record in East Texas and Northwest Louisiana (see Sitters and Perttula 2019:Table 4), and besides the clay bead from the A. C. Saunders site, only 14 other sites have been identified in the published literature. The 24 beads from these sites are both tubular and disc-shaped, and are plain, except for the large "egg-shaped" bead from the Pine Tree Mound site (41HS15) with four sets of incised circles on the body (Fields and Gadus 2012:544-545 and Figure 6.75a- d).

The ceramic beads occur in Formative Caddo (ca. A.D. 850-1000), Middle Caddo (ca. A.D. 1200-1400), and Late Caddo (ca. A.D. 1400-1680) period assemblages in East Texas, almost always in habitation contexts, and most commonly in Late Caddo period components. The A. C. Saunders ceramic bead is from a Late Caddo period Frankston phase component (the Feature 2 midden mound). More than half of the ceramic

Figure 58. Pipe sherds that cannot be assigned to a defined Upper Neches River basin elbow pipe variety: a, engraved lines on the stem collar (no. 11); b, horizontal and diagonal engraved lines on the stem (no. 19); c, diagonal opposed engraved lines on the stem (no. 32); d, hatched pendant triangle elements on the lower stem (no. 52); e, horizontal-vertical-and concentric circle engraved elements on the stem and lower stem/bowl (no. 60); f, opposite side of no. 60 stem with diagonal tool punctated rows and horizontal-vertical engraved lines on the lower stem/bowl; g, plain elbow pipe bowl (ACS 3, 23 inches bs)

Variety	ACS 1 0-10 inches	ACS 2 10-20 inches	ACS 3 20-30 inches	N
A	-	1	1	2
B	4	3	1	8
C	-	1	1	2
D	-	1	-	1
G	2	-	-	2
Platform	-	-	1	1
Unknown	6	10	4	20
Totals	12	16	8	36

Table 24. Elbow pipe varieties by depth in Feature 2.

Figure 59. Ceramic bead (#29) from the A. C. Saunders site: a, side view; b, view of hole opening at one end.

beads are from Late Caddo period contexts. Spatially, the beads are found on sites in the Red River (n=2), Sabine River (n=3), upper and lower Sulphur (n=4), Big Cypress (n=2), and the Neches-Angelina River (n=4) basins.

Summary and Conclusions

The A. C. Saunders site (41AN19) is an important ancestral Caddo settlement and mound center on the Neches River in the upper Neches River basin. The mound center was constructed on an upland landform near, but on the west side of, the Neches River, in the upper part of the river basin, and near the confluence of Caddo Creek with the river. The small Feature 1 mound (2.2 m in height and 26 x 33 m in length and width) found there, and excavated in the 1930s by The University of Texas (Jackson 1936; Kleinschmidt 1982), had a thick (1.06 m) and virtually culturally sterile ash deposit and fill zones, and probably represents a Caddo fire temple used by the social and political elite. The site may have been the nexus of ritual and feasting activities for a Caddo community living in this part of the upper Neches River basin.

South of the mound about 40 m away was a large and thick (up to 79 cm thick) midden mound deposit (Feature 2) that covered an important circular structure with a possible entrance on its eastern side, based on its impressive size (14 x 13.2 m) and several large interior hearths and interior support posts. The structure was apparently built and dismantled in the 16th century, based on a seriation of Frankston phase ceramic assemblages from other upper Neches Caddo sites (see Perttula 2011) - but not by radiocarbon dates as of yet - then overlain by likely redeposited midden deposits. There were also two hearths excavated just outside the eastern walls of the structure, suggesting some outdoor cooking activities may have taken place there during the occupation.

The Feature 2 midden deposits contained an abundance of Caddo artifacts from apparent residential or domestic settlements in the area, including fragments from more than an estimated 1000 ceramic vessels (see Kleinschmidt 1982). These vessels are dominated by fine ware Poynor Engraved bowls from a number of defined varieties, engraved effigy bowls, and utility ware jars of the Bullard Brushed, Killough Pinched, Maydelle Incised, Saunders Punctated, Mann Punctated, and LaRue Neck Banded types. The remainder of the material culture assemblage included numerous decorated elbow pipes of several varieties, Perdiz arrow points, stone drills, mussel shell digging tools, an assortment of bone tools (awls, needles, and beamers), and shell columnella beads.

The two mounds at the site - Feature 1 (ash mound and possible fire temple) and Feature 2 (midden mound) - were excavated by University of Texas archaeologists under the direction of A. T. Jackson in 1931 and 1935. A substantial assemblage of ceramic vessel sherds and ceramic pipe sherds were recovered from the archaeological deposits (and are now curated at the Texas Archeological Research Laboratory at The University of Texas at Austin), and this restudied and reanalyzed assemblage dates to some part of the Late Caddo period Frankston phase (ca. A.D. 1400-1680) in the upper Neches River basin (Figure 60).

In this detailed analysis of the ceramic vessel sherds and pipe sherds from Feature 2 at the A. C.

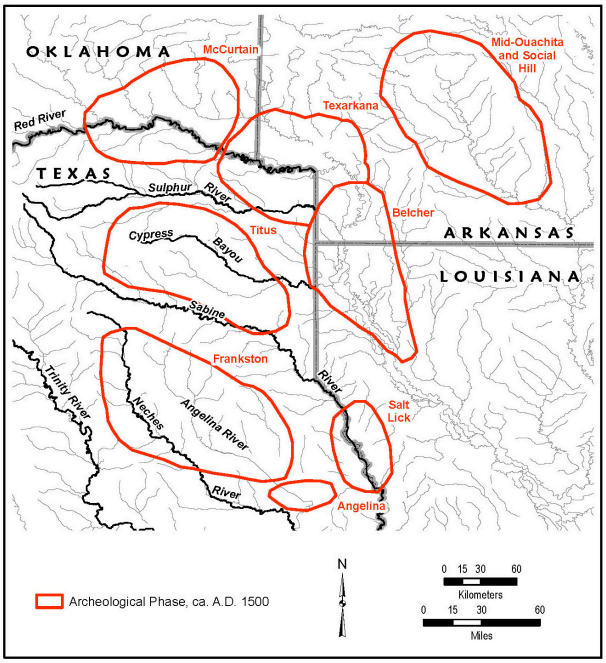

Figure 60. The spatial extent of Late Caddo period phases in the southern Caddo area, including the Frankston phase.

Saunders site, a total of 7347 ceramic sherds have been recovered in this midden mound at the A. C. Saunders site from plain ware, utility ware, and fine ware vessels; of these, approximately 82 percent (n=6001) are from a known arbitrary level (ACS 1-ACS 3, 10 inch thick levels) in Feature 2. The plain rim, body, and base sherds comprise approximately 21 percent of the vessel sherd assemblage, and the fine ware sherds account for another 8.8 percent of the assemblage. Utility ware sherds are by far the most common in Feature 2 at the site, representing approximately 70 percent of the ceramic wares. The plain to decorated sherd ratio for the Feature 2 assemblage is a low 0.27.

Defined utility ware types identified in the ceramic vessel sherds (from jars) include Bullard Brushed, Killough Pinched, La Rue Neck Banded, Lindsey Grooved, and Maydelle Incised, as well as sherds from two new types: Mann Punctated (with tool punctated elements on the rim and /or body), and Saunders Punctated (with fingernail punctated elements on the rim and/or body). Based on the number of rim sherds, the most common utility wares are Maydelle Incised (n=64), Bullard Brushed (n=56), Saunders Punctated (n=38), and Mann Punctated (n=26).

The fine ware sherds are from carinated bowls primarily from a number of varieties of Poynor Engraved (n=68 rim sherds), particularly *var. Cook* (n=32 rim sherds) and *var. Hood* (n=13 rim sherds), as well as Hood Engraved and Hume Engraved vessels. The predominance of *var. Cook* and *var. Hood* vessels suggests that Feature 2 at the A. C. Saunders site accumulated from some time in the 15th century to the mid-late 16th century (see Perttula 2011:Table 6-37). Hood Engraved effigy bowls were also most commonly manufactured by Caddo potters during that era in the upper Neches River basin.

The sherds from the A. C. Saunders site are from vessels tempered almost exclusively with grog (i.e., fired clay and/or crushed sherds). Between 98.3-98.6 percent of the sherds by ware have grog temper inclusions. Other temper inclusions, such as burned bone and hematite, were commonly added to the grog-tempered paste, and with regularity in the case of hematite in all three wares (11.7-21.1 percent). The few sherds in the different wares that have crushed and burned bone range from 9.1 percent in the plain wares, 9.9 percent in the utility wares, and 9.0 percent in the fine wares.

In addition to the 7300+ sherds from plain ware, utility ware, and fine ware vessels, there are other distinctive characteristics of the Frankston phase assemblage at the A. C. Saunders site. These include strap and lug handles (n=85) on utility ware jars, pedestal legs and bases (n=13) from Killough Pinched jars, spindle whorls (n=29), and one ceramic bead.

The A. C. Saunders artifact assemblage from Feature 2 has one complete ceramic pipe and 89 stem and bowl sherds. These pipes are from several defined pipe varieties in the upper Neches River basin (see Perttula 2011). Two of the pipe sherds in the assemblage are part of two different circular platform pipes that have either a series of upper and lower large excised pendant triangles or hatched engraved triangles on either side of the platform.

The remainder of the ceramic pipes and pipe sherds are from elbow pipes, including sherds from Var. A (n=7), Var. B (n=16), Var. C (n=5), Var. D (n=1), and Var. G (n=14), the Neches pipe (Jackson 1933). Another 45 sherds cannot be assigned to a defined Upper Neches River basin elbow pipe variety.

The Var. A elbow pipe sherds have plain stems and bowls. They range from at least 64-76.0 mm in length, have smoothed exterior surfaces, and have

rounded lips; one Var. A pipe has a flat distal knob. Var. B elbow pipes have between two to six horizontal incised or engraved lines on the stem, and several examples also have horizontal incised lines on the lower bowl and stem or the distal stem knob, or engraved lines on the pipe bowl. Four of the Var. C pipe sherds have two to five horizontal incised lines on the stem as well as vertical incised lines on the lower stem. One pipe sherd has both horizontal and vertical incised lines on the stem as well as a row of tool punctations adjacent to the vertical incised lines. The one Var. D elbow pipe sherd in the A. C. Saunders assemblage is grog-bone-tempered and smoothed on its exterior surface. The stem is decorated with five horizontal incised lines while the lower stem has at least two vertical rows of tool punctations.

The Var. G elbow pipes and pipe sherds have several different decorative element combinations, including incised or engraved lines on the stem between punctated rows beneath the lip or with rows of circular punctations on the lower stem. Other Var. G pipes have punctated rows on the stem or on the lower stem, or have tool punctated rows on both the stem and lower stem. The one complete Var. G elbow pipe is decorated on the bowl, the stem, and the lower stem. There are small circular punctated rows on the bowl lip, five rows of circular punctations at the base of the stem and bowl, and five rows of circular punctations on the stem below the lip. Several of these circular punctations have a kaolin-rich clay pigment rubbed in the punctations.

Upper Neches River Basin Ceramic Assemblages

Recent analyses of the character of ancestral Caddo ceramic sherd assemblages in the upper Neches River basin in East Texas have indicated several temporal changes in the proportion of brushed sherds in decorated sherd assemblages; the percentage of other wet paste decorations (i.e., incised, incised-punctated, punctated, etc.) on sherds; changes in the ratio of plain to decorated sherds (P/DR); and the ratio of brushed sherds to other wet paste decorated sherds (Table 25). These analyses have led to the recognition of six temporal sequent groups of assemblages in the upper Neches River basin that can be seriated (see O'Brien and Lyman 1999), including several sites dating from as early as ca. A.D. 1000-1200 in the Early Caddo period (Group VI) to

Site	No. of Dec. Sherds	%Brushed	%bone-temper	%Wet-paste decorations	P/DR	Brushed/Wet paste ratio
YOUNGEST SITES: GROUP I, Allen phase, ca. post-A.D. 1680						
41CE421*	1805	88.1	5.4	7.8	0.28	8.50
41CE429*	465	87.7	0.8	9.7	0.22	9.07
Pine Snake* (41CE467)	305	85.2	5.7	8.8	0.51	9.63
41CE354*	474	82.7	3.1	8.9	0.20	8.14
GROUP II, latest Frankston phase, ca. A.D. 1560-1680						
41HE22	228	85.5	?	7.5	0.62	11.5
41AN1	295	83.1	5.1	7.1	0.19	7.21
41CE324	188	81.9	3.2	7.3	0.48	11.0
A. C. Saunders	**5767**	**76.0**	**9.0**	**9.2**	**0.28**	**8.21**
Attaway (41HE13)	814	84.4	?	10.6	1.71	8.0
Debro	311	80.0	?	10.3	0.14	7.75
41SM91	191	75.9	0.7	14.7	0.51	5.18
41AN21*	133	75.9	1.1	17.1	0.30	5.32
William Sherman (41CE30)	525	75.8	?	16.2	0.44	4.68
41AN8*	98	70.4	3.3	18.3	0.55	3.83
41AN2*	152	67.8	11.5	17.8	0.41	3.81
GROUP III, Frankston phase, ca. A.D. 1480-1560						
Forest Drive	1693	68.6	?	21.9	0.56	3.12
Halbert (41AN70)	1757	65.8	2.6	26.3	0.70	2.51
Woldert	1730	62.7	0.0	28.8	0.72	2.19
Ferguson (41AN67)	4116	60.8	<1.0	27.9	0.61	2.17
Caney Creek No. 2 (41SM429)	258	59.7	1.7	43.5	0.84	1.37
Black Fork Creek No. 2 (41SM446)	1274	59.8	2.4	56.6	0.88	1.06
GROUP IV, earliest Frankston phase, ca. A.D. 1400-1480						
41SM87	176	56.2	1.8	34.1	1.24	1.65
41HE4/55**	70	51.4	?	40.0	1.54	1.29
Caney Creek No. 1, Area A (41SM416A)	166	51.2	2.2	51.1	1.22	1.00
41SM90	85	50.6	2.9	31.8	2.20	1.60
Tomato Patch	912	49.2	?	41.7	1.50	1.21
41HE338	194	47.4	2.5	38.9	1.05	1.23
41SM89	136	39.0	10.4	44.1	1.96	0.88
41SM88	95	37.9	?	49.5	1.53	1.31
Henderson Co. site*** (no trinomial)	116	37.1	5.4	41.4	1.21	0.90
Lang Pasture (41AN38)	2435	35.9	6.7	38.0	1.40	0.91
41AN7	119	35.3	3.5	35.3	2.11	1.0
Mitchell, D	54	32.1	0.0	33.3	1.37	1.50
41HE337	149	35.6	5.6	46.3	2.25	0.76
GROUP V, Middle Caddo period, ca. A.D. 1200-1400						
41SM73	165	26.1	?	72.7	2.61	0.37
M. S. Roberts (41HE8)	270	21.1	14.1	63.0	1.90	0.34
41SM404	446	16.0	8.5	60.7	1.73	0.26
White Mule	1404	18.5	1.5	63.7	2.61	0.29
41HE139	40	17.5	8.1	65.0	2.51	0.33
41AN159	23	13.0	13.9	65.2	3.39	0.20
41SM273, Z1/2	256	10.9	28.8	70.0	3.97	0.16
41SM273, Z3	155	9.7	32.3	73.5	3.80	0.13
OLDEST SITE: GROUP VI, Early Caddo period, ca. A.D. 1000-1200						
Mitchell, A-C	56	1.3	12.0	65.7	1.71	0.03
41SM87	36	0.0	?	69.4	4.44	0.00

Table 25. Comparative sherd assemblage data from ancestral Caddo sites in the upper Neches River basin, including the A. C. Saunders site.

P/DR=plain to decorated sherd ratio
*sites with Patton Engraved sherds
**site is in the adjoining Coon Creek/Catfish Creek drainage in the Trinity River basin
***unrecorded site in the Caddo Creek valley
?=information not provided in Anderson et al. (1974)

Historic Caddo Allen phase ceramic assemblages (Group I) that date after ca. A.D. 1680.

These groups seem to reflect temporal changes due to the high frequency of Late Caddo Frankston phase decorated types, such as Poynor Engraved, Maydelle Incised, Bullard Brushed, Hume Engraved, and engraved effigy vessels, that are found in the Groups II-IV sites (corresponding to the early, middle, and late parts of the Frankston phase) - as well as Patton Engraved sherds from sites in Group I - and the occurrence of Early and Middle Caddo period types such as Canton Incised, Dunkin Incised, Holly Fine Engraved, and Pennington Punctated-Incised in the Group V and VI upper Neches River sites (see Table 25).

This particular seriation, focusing on the three different temporal groupings of Frankston phase sites and one group of Allen phase sites, is also supported by differences in: (a) the proportions of vessels of Poynor Engraved varieties, Patton Engraved, engraved effigy vessels, Maydelle Incised, La Rue Neck Banded, and Bullard Brushed in upper Neches River Caddo burials (see Perttula 2011), (b) differences in the relative frequencies of common vessel forms in Poynor and Patton Engraved vessels (Kleinschmidt 1982:Figure 24), as well as (c) the occurrence of European trade goods. The Group I-IV Caddo sites are part of an upper Neches River cluster that represented a conglomeration of constituent groups (i.e., groups related by kinship and close interaction and cultural transmission of knowledge and practices) that shared a broadly similar socio-political organization through time and space (see Story and Creel 1982:30-34).

Using these sherd assemblage metrics to assess the temporal placement of the Caddo occupation in Feature 2 at the A. C. Saunders site indicates that the occupation may well date to the middle and latter part of the Late Caddo period, ca. A.D. 1480-1560 and post-ca. A.D. 1560, given the relatively high proportion of brushed sherds and the proportion of other decorated wet paste sherds, or in Group IV (see Table 25). The common occurrence of Poynor Engraved, *var. Hood* (most common between ca. A.D. 1480-1560 and A.D. 1560-1680) and *var. Cook* (most common between ca. A.D. 1400-1480 and ca. A.D. 1480-1560) are generally consistent with the temporal estimate for use of the A. C. Saunders site by ancestral Caddo peoples (see Perttula 2011:Table 6-37). Poynor Engraved, represented by many sherds in the assemblage, is a Frankston phase (ca. A.D. 1400-1680) type, developed in a stylistic tradition with distinctive fine ware and utility ware ceramics that extends back some amount of time before A.D. 1400 at several sites in the upper Neches River basin (Perttula 2011:281). Given these archaeological findings and the overall character of the sherd metrics summarized in Table 25, it can be suggested that the Caddo occupation of the A. C. Saunders site may well have begun in the 15th century, and likely ended sometime in the early 17th century. Clearly, a well-controlled series of calibrated radiocarbon dates are needed from Feature 2 deposits at the site to definitively establish its age, and thus clarify its relationship to other sites along Caddo Creek and in the upper Neches River basin.

In conclusion, the ceramic assemblage from the A. C. Saunders site is part of an ancestral Caddo ceramic tradition that extends over a ca. 140 x 80 km area of the upper Neches River basin (Figure 61), from Prairie Creek sites to the north (see Perttula 2018) above Lake Palestine, to the Lake Palestine area as well as the

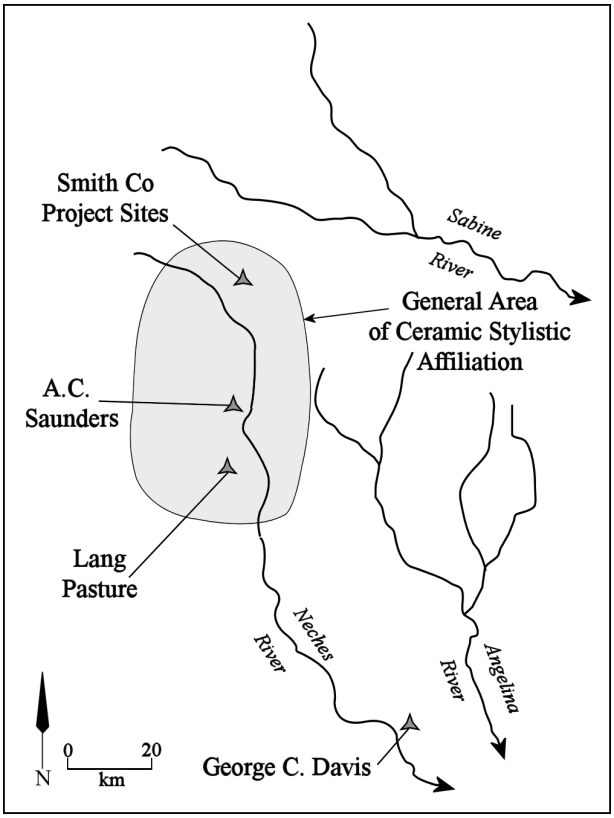

Figure 61. Upper Neches River basin Frankston phase ceramic tradition and general area of ceramic stylistic affiliation.

Lang Pasture site to the south (41AN38, see Perttula 2011). The detailed analysis of the ceramic artifacts from the site clearly indicate that the assemblage is the product of the manufacture and use of ancestral Caddo vessels (and elbow pipes) specific to the post-A.D. 1400 Frankston phase of the Late Caddo period in this part of the Neches River basin. The principal technique used in the manufacture of Caddo ceramics was the building of vessels using coils, beginning at the flat disk-shaped base and working up the vessel body. Using the coiling method, coils of clay, in the form of ropes, rolls, or fillets, were built up to create the desired size and height of the vessel. Coiling is a technique especially suited to the construction of large, sturdy vessels, such as storage jars (Rice 1987:128), but in the case of Caddo potters, coiling of plastic clays led to the manufacture of a wide variety of vessel forms of varying sizes. In particular, the use of different proportions of (a) tempers, (b) firing conditions, (c) surface treatments in the sherds, (d) vessel and rim forms, as well as (e) the kinds and ranges of decorative methods and elements identified in the sherds from manufactured plain, utility, and fine ware vessels all are evidence that the ceramic vessels and vessel sherds recovered from the A. C. Saunders Caddo occupation is affiliated with an upper Neches River basin ceramic tradition during the Frankston phase.

Utility ware vessels in Frankston phase sites were used for cooking, storage, and other culinary activities; they tend to have a coarse paste, relatively thick body walls (when compared to fine wares), smoothed interior surfaces, and are decorated with wet-paste designs (i.e., decorations were made with tools and fingers prior to the vessel being fired, when the vessel had a wet exterior surface). Thicker body walls on utility ware vessels were likely related to the performance needs of the cooking pot to withstand thermal shock and cracking during use. Typical utility vessel shapes included small to large jars, as well as a variety of conical and simple bowl and bottle forms, most of the latter in the earlier Caddo ceramics being plain and unpolished. The utility vessels have carbon encrustations, food residues, and soot stains, suggesting they were employed by the Caddo over open fires as cooking pots. Some of these kinds of vessels were used primarily for storage (those with large orifice diameters and vessel volumes) of foodstuffs and liquids. Fine wares are engraved and very rarely red-slipped vessels that were used for food service and to hold liquids, as well as for other purposes (effigy vessels and other vessel forms may have held pigments or tobacco). They tend to have fine pastes, with finely crushed tempers, are frequently burnished on interior and/or exterior vessel surfaces (except the bottles, which were burnished on exterior surfaces only), and have relatively thin body walls compared to the utility wares. There is an impressive diversity of vessel forms among the Caddo fine wares in Frankston phase sites. This includes carinated bowls, deep compound bowls, double and triple vessels (conjoined or fused bowls and bottles, and bottles), ollas, zoomorphic and anthropomorphic effigy bowls and bottles, ladles, platters, rim-peaked jars, and gourd and box-shaped bowls. Plain wares have technological attributes common to both utility wares and fine wares, except that the plain ware vessels remain undecorated. The common occurrence of plain bowls and bottles in East Texas Caddo plain ware assemblages suggests that they were mainly used for food service and to hold liquids, as with the fine wares.

It is with the recognition of the stylistic character of the utility ware and fine ware sherds from the A. C. Saunders site and other sites in the upper Neches (see Table 25) that it becomes apparent that there are certain shared and distinctive stylistic motifs and decorative patterns on ceramic vessels from closely related communities and constituent groups in the upper Neches River basin that had developed their own ethnic and stylistic expressions and ceramic practices. Late Caddo (ca. A.D. 1400-1680) period ceramics in this part of East Texas are stylistically heterogeneous, but these assemblages of fine ware, utility ware, and plain wares are part of, and associated with, recognizable and relatively geographically coherent socio-political entities that arose out of earlier and distinctive archaeological traditions of the Caddo peoples. Caddo groups of varying sizes, complexity, and local history were widely distributed across both major and minor streams in the area. For want of a better term, these socio-political groups and communities are recognized as part of the Frankston and post-A.D. 1680 Allen phases in the Neches-Angelina river basins (see Figure 60).

In the upper Neches River basin after ca. A.D. 1400, the principal fine wares are several varieties of Poynor Engraved bowls and carinated bowls (see Perttula 2011), followed by Poynor Engraved bottles

of various forms, Hood Engraved effigy ware vessels, with or without tail riders, and beaker-shaped Hume Engraved bottles. Among the utility wares in Frankston phase contexts, the major types include Bullard Brushed, Maydelle Incised, Killough Pinched, and punctated jars of the Mann Punctated and Saunders Punctated types. Most of the plain wares are simple bowls, carinated bowls, and several forms of bottles.

Stylistic expressions, and variations in that expression, in material culture, dress, body ornamentation, food practices, etc. are measures of social identity. But the recognition of style in archaeological materials is more than "the *material correlate*" [emphasis in the original] of social affiliation" (Wobst 1999:120), because patterns of style reflect variability in both individual choices as well as social group membership. Consequently, the existence and pervasiveness of styles in material culture, in particular the existence of local styles of ceramic decoration in upper Neches River basin Caddo sites and assemblages reflect the strength of interaction between individuals (individual potters), the form of cultural transmission (i.e., from parent to child; from a teacher to a pupil; from older to younger members of a social group; or between unrelated individuals, see McClure 2007:Table 1), and the ability of styles to be inherited from one generation to the next. Ceramic practice among Caddo potters would have dictated the range of acceptable variation in stylistic choices that were maintained for generations in upper Neches River basin communities.

Styles of decoration on Caddo pottery vessels in upper Neches River basin communities changed more rapidly than did functional forms of tools and pottery vessels. Stylistic traits have a relatively rapid turn-over because of their use in generating and reinforcing cultural identity, their selectively neutral character (i.e., stylistic elements have no differential effect on survival), and the potential high variation between individuals and groups in learning and replicating specific shared styles. This is particularly the case if Caddo potters were producing vessels independently rather than in craft workshops, the amalgamation of the work of individual potters in a community together comprising a ceramic tradition at any one moment in time.

The decorative, technological, and formal attributes of sherds and whole vessels chosen and manufactured by a potter or group of potters when they made pottery vessels are a reflection of ceramic practice within a distinctive social community or network of socially related individuals (see Eckert 2008:2-3, 10-13). As Stark (2006:22) noted, "people reproduce their cultural and social positions through daily practice, that daily practice is structured by basic organizational principles," and that daily practice is expressed through tendencies and trends (habitus) "that develop as a practical solution to a particular demand within the framework of certain environmental and cultural conditions" (Eckert 2008:10).

The choices and tendencies exhibited in the manufacture and decoration of ceramics by Caddo potters in the upper Neches River basin between ca. A.D. 1400-1680, during the Frankston phase, particularly as seen at the A. C. Saunders site, indicate that the particulars of ceramic practice and technical choice that have been identified in a temporally (and socially) related group of ancestral Caddo sites help to recognize socially defined groups that closely interacted, transmitted "knowledge among individuals creating pottery" (McClure 2007:486) as a means of social learning, and this knowledge of manufacture and decoration choices was inherited by other descendant potters in groups in the upper Neches River basin. Ceramic practices shared or not shared by women potters in these upper Neches River basin communities reflect the learning of their craft from other women in their Caddo communities, and that "patterns in local pottery styles, both technological and decorative, result from potters making different decisions throughout the production process but using a similar set of tools and techniques available to other potters within an area" (Eckert 2008:2).

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Appendix I, Provenience of Ceramic Vessel Sherds by Level in Feature 2 at the A. C. Saunders Site (41AN19)

This appendix is a tabulation of the sherds recovered in arbitrary levels employed by University of Texas archaeologists in the excavation of Feature 2 at the A. C. Saunders site. Sherds without a vertical provenience are not included herein.

ACS 1 (0-10 inches below surface)

Description	Rim	Body	Base	N
Plain	26	515	111	652
Effigy appendage	7	-	-	7
Appliqued	-	1	-	1
Appliqued strap handle	1	-	-	1
Appliqued-brushed-incised	-	1	-	1
Appliqued-incised	-	3	-	3
Brushed	18	1114	-	1132
Brushed-incised	6	718	-	724
Brushed-incised-punctated	-	20	-	20
Brushed-punctated	6	32	-	38
Fingernail punctated	16	20	-	36
Fingernail punctated-incised handle	1	-	-	1
Fingernail punctated-pinched handle	1	-	-	1
Grooved	1	1	-	2
Grooved-punctated	1	-	-	1
Incised	33	81	-	114
Incised-pinched handle	1	-	-	1
Incised-punctated	2	10	-	12
Neck banded	1	3	-	4
Neck banded-brushed	1	1	-	2
Pinched	2	12	-	14
Pinched handle	3	-	-	3
Pinched-brushed	1	2	-	3
Pinched-fingernail punctated	1	-	-	1
Tool punctated	12	25	-	37
Engraved	36	88	-	124
Engraved-appliqued	-	2	-	2
Engraved-brushed	-	21	-	21
Engraved-red-slipped	2	1	-	3
Hood Engraved	3	-	-	3
Hume Engraved	-	2	-	2
Poynor Engraved, *var. Blackburn*	3	5	-	8
Poynor Engraved, *var. Cook*	19	18	-	37
Poynor Engraved, *var. Freeman*	1	1	-	2
Poynor Engraved, *var. Hood*	8	18	-	26
Poynor Engraved, *var. Lang*	1	1	-	2
Poynor Engraved, *var. B*	-	1	-	1
Poynor Engraved, *var. C*	-	1	-	1
Poynor Engraved, *var. D*	-	5	-	5
Poynor Engraved, *var. E*	-	1	-	1
Poynor Engraved, *var. N*	1	1	-	2
Poynor Engraved, *var. Q*	-	3	-	3
Poynor Engraved, *var. unspecified*	3	5	-	8
Red-slipped	1	2	-	3
Totals	219	2735	111	3065

ACS 2 (10-20 inches below surface)

Description	Rim	Body	Base	N
Plain	23	381	85	489
Plain pedestal leg	-		4	4
Effigy appendage	8	-	-	8
Appliqued	1	3	-	4
Appliqued handle	3	-	-	3
Appliqued-incised	-	2	-	2
Appliqued-punctated-brushed	1	-	-	1
Brushed	6	779	-	785
Brushed-appliqued	-	2	-	2
Brushed-incised	3	427	-	430
Brushed-incised-appliqued	-	1	-	1
Brushed-incised-punctated	1	3	-	4
Brushed-punctated	6	27	-	33
Fingernail punctated	13	32	-	45
Grooved	2	-	-	2
Grooved-brushed	1	2	-	3
Incised	28	47	-	75
Incised-pinched handle	2	1	-	3
Incised-punctated handle	1	-	-	1
Incised-punctated	6	13	-	19
Neck banded	2	6	-	8
Neck banded-brushed-incised	-	1	-	1
Neck banded-punctated	-	1	-	1
Pinched	1	10	-	11
Pinched-brushed	-	2	-	2
Pinched handle	3	-	-	3
Pinched pedestal leg	-	-	2	2
Pinched-tool punctated	1	-	-	1
Tool punctated	8	16	-	24
Engraved	16	67	-	83
Engraved-appliqued	-	1	-	1
Engraved-brushed	-	8	-	8
Hood Engraved	3	1	-	4
Hume Engraved	-	1	-	1
Poynor Engraved, *var. Blackburn*	4	2	-	6
Poynor Engraved, *var. Cook*	9	14	-	23
Poynor Engraved, *var. Freeman*	-	2	-	2
Poynor Engraved, *var. Hood*	4	12	-	16
Poynor Engraved, *var. Lang*	2	-	-	2
Poynor Engraved, *var. C*	1	-	-	1
Poynor Engraved, *var. D*	1	-	-	1
Poynor Engraved, *var. E*	-	1	-	1
Poynor Engraved, *var. I*	-	2	-	2
Poynor Engraved, *var. N*	2	3	-	5
Poynor Engraved, *var. R*	1	-	-	1
Poynor Engraved, *local variety 3*	1	1	-	2
Poynor Engraved, *var. unspecified*	-	1	-	1
Red-slipped	-	1	-	1
Totals	164	1873	91	2128

Appendix I, Provenience of Ceramic Vessel Sherds by Level in Feature 2 at the A. C. Saunders Site (41AN19)

ACS 3 (20-30 inches below surface)

Description	Rim	Body	Base	N
Plain	4	157	20	181
Effigy appendage	5	-	-	5
Appliqued	-	2	-	2
Brushed	6	350	-	356
Brushed-appliqued	1	-	-	1
Brushed-incised	1	117	-	118
Brushed-incised-punctated	1	3	-	4
Brushed-pinched ridge	1	-	-	1
Brushed-punctated	-	7	-	7
Fingernail punctated	5	14	-	19
Fingernail punctated handle	1	-	-	1
Fingernail punctated-pinched handle	1	-	-	1
Grooved	1	1	-	2
Grooved-incised	-	1	-	1
Incised	8	21	-	29
Incised-punctated	1	4	-	5
Neck banded	-	1	-	1
Neck banded-brushed-incised	-	1	-	1
Pinched	1	6	-	7
Tool punctated	5	6	-	11
Tool punctated handle	1	-	-	1
Engraved	9	23	-	32
Engraved-brushed	-	6	-	6
Engraved-red-slipped	-	1	-	1
Hood Engraved	2	-	-	2
Hume Engraved	-	1	-	1
Poynor Engraved, *var. Blackburn*	1	1	-	2
Poynor Engraved, *var. Cook*	4	2	-	6
Poynor Engraved, *var. Hood*	1	-	-	1
Poynor Engraved, *var. E*	-	1	-	1
Poynor Engraved, *var. S'*	1	-	-	1
Poynor Engraved, *local variety 3*	-	1	-	1
Totals	61	727	20	808

Current Research:

Selected Historic Caddo Allen Phase Vessels from the Deshazo Site (41NA13/27) on Bayou Loco, Nacogdoches County, Texas

Timothy K. Perttula
Archeological & Environmental Consultants, LLC

Continuing with the on-going study of ancestral Caddo ceramic vessels from East Texas Caddo sites, I document three ceramic vessels and a fourth ceramic vessel section from excavations at the Deshazo site (41NA13/27) by The University of Texas at Austin (UT) in 1975-1976. The Deshazo site is the best studied Allen phase settlement (Story 1982, 1995) in East Texas, and the archaeological investigations there indicates it was a small centralized hamlet of an affiliated group with a series of circular structures and an associated household or family cemetery. Most sites of the Allen phase were apparently occupied for only short periods of time, perhaps an average of 20 to 40 years, based on an analysis of structure rebuilding episodes at the Deshazo site (Good 1982:67-69).

The Deshazo site is situated just north of El Camino Real de los Tejas, on an alluvial fan near Bayou Loco, now submerged under the waters of Lake Nacogdoches (Figure 1). It is likely part of the 18th to early 19th century Hainai Caddo village of Bayou Loco (Prewitt 2019:Figure 4). A contemporaneous Hainai Caddo village was nearby to the west along the Angelina River and Legg Creek, with a Nacogdoche Caddo village on Bayou La Nana to the east. Archaeological investigations indicate it had a series of nine circular structures along with an associated household or family cemetery. The site was apparently occupied for only a short period of time between the late 17th and early 18th century, based on an analysis of structure rebuilding episodes, archaeomagnetic dates, and the size of the family cemetery. An AMS radiocarbon date obtained on a piece of split cane matting that adhered to a European hand bell from Burial 6 (Beta-432143; see Good 1982:Figure 34a) yielded a conventional radiocarbon age of 240 +/- 30 B.P. or A.D. 1710 +/- 30 (Tom Middlebrook, 2018 personal communication), and there are two archaeomagnetic dates from features: A.D. 1715 +/- 31 and A.D. 1710 +/- 34 (Story 1995:237).

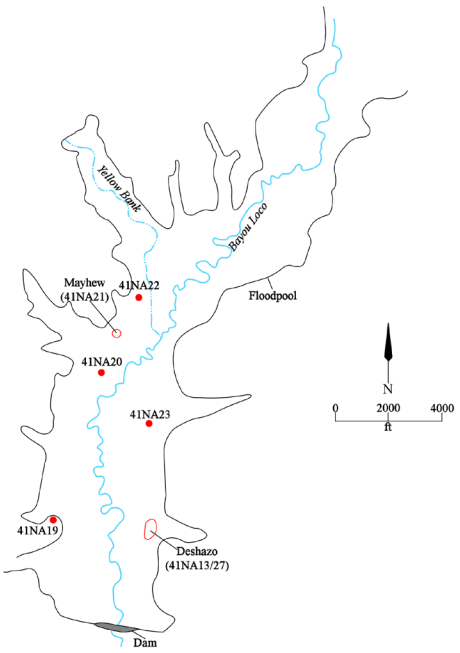

Figure 1. Location of the Deshazo site (41NA13/27) at Lake Nacogdoches, and other sites investigated there by the Texas Archeological Survey in the early 1970s.

The structures occurred in three different clusters, with evidence of structure rebuilding in northern (Structures 4-6) and southern clusters (Structures 1-3, 7, and 9), with an open courtyard or small plaza between them (Figure 2); Structure 8 was on the opposite side of the creek from the main settlement area. A communal trash midden accumulated immediately to the south of the southern cluster of house structures. The structures ranged between 9-12.2 m in diameter, each had a center post, and there were large clay-lined hearths inside as well as immediately outside several of the structures. Three children were buried in pits (Burials 11-13) dug through the floor of two of the structures in the village in Structure 1 (Area D, Unit 1) and Structure 9 (Area D, Unit 9). Each of these vessels had a single ceramic vessel left as a funerary offering.

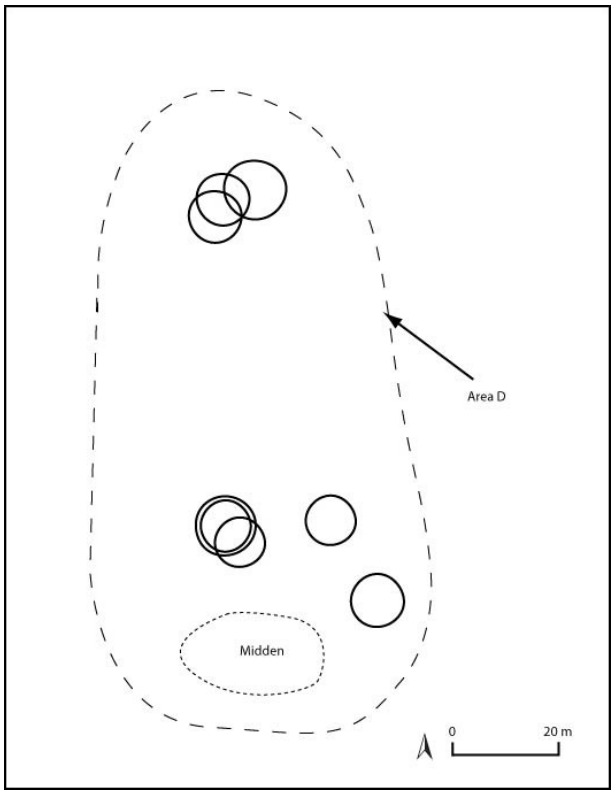

Figure 2. Plan of excavated structures and midden deposits at the Deshazo site (41NA13/27).

These vessels are documented in this article, along with a vessel section found near Hearth 1 in Structure 1 (Area D).

The site had small amounts of European trade goods found to only a limited extent in the village but they are much more common in burial contexts. The family cemetery had 10 adult individuals, buried in an extended position with the deceased's heads facing uniformly towards the northwest. The majority of the European goods used as funerary objects were glass beads (n=4600+) worn as necklaces that accompanied the deceased on the journey to the House of Death. Other funerary offerings included 13 ceramic vessels from burials in the Area A cemetery, several stone tools, a clay pipe, pigments, metal trade goods (iron knives and a bell), and a possible rattle.

Caddo domestic remains at this settlement included an abundance of plain and decorated ceramic fine wares (principally Patton Engraved) and utility wares, the latter usually bone-tempered and with brushed vessel bodies, triangular and stemmed arrow points (including Turney and Perdiz types), elbow pipes (plain and decorated), ground stone tools, and bone tools. These Caddo groups were successful agriculturists and hunters of wild game (see Henderson 1982).

Bob Turner and his father excavated nine burials (Burials 1-9) from Area A at the southern end of the Deshazo site in the late 1930s (Story 1995:1). They recovered 13 ceramic vessels from these burials, and they have been described by Fields (1995:203-208) and documented in detail by Perttula et al. (2010:431-443).

The fine ware vessels from the Area A cemetery include Patton Engraved, *var. Allen* and *var. Patton* bowls and jars (n=2) (see Perttula 2011:Figure 6-66a-b), Taylor Engraved carinated bowls (n=1), Natchitoches Engraved bowls (n=1), a possible Hume Engraved bowl, and unidentified engraved carinated bowls and compound bowls (n=2). The utility wares are incised-brushed jars (n=1), brushed-punctated jars (n=1), punctated jars (n=1), appliqued jars (n=1), and a brushed-appliqued jar (n=1). There is also a plain bowl (n=1).

The four ceramic vessels recovered in the UT archaeological investigations are documented below:

SITE NAME OR SITE NUMBER: Deshazo

VESSEL NO.: Burial 11, Vessel 2 (see Good 1982:Figure 36d and Fields 1995:Figure 76b) in Area D, Unit 1; juvenile burial

VESSEL FORM: Carinated bowl

NON-PLASTICS AND PASTE: hematite

RIM AND LIP FORM: Direct rim and rounded lip

CORE COLOR: A (fired and cooled in an oxidizing environment)

INTERIOR SURFACE COLOR: reddish-brown; fire clouds on the body and base

EXTERIOR SURFACE COLOR: reddish-brown; fire clouds on the base

Figure 3. Plain carinated bowl (Vessel 2) in Burial 11 at the Deshazo site.

WALL THICKNESS (IN MM): rim, 4.4 mm

INTERIOR SURFACE TREATMENT: smoothed

EXTERIOR SURFACE TREATMENT: smoothed

HEIGHT (IN CM): 5.6

ORIFICE DIAMETER (IN CM): 9.5

DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): 9.5

BASE DIAMETER (IN CM) AND SHAPE OF BASE: 5.7 cm, circular and flat

ESTIMATED VOLUME (IN LITERS): 0.3

DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): Plain (Figure 3)

PIGMENT USE AND LOCATION ON VESSEL: none

TYPE AND VARIETY (IF KNOWN): Unidentified plain ware

SITE NAME OR SITE NUMBER: Deshazo

VESSEL NO.: Burial 12, Vessel 9 (see Good 1982:Figure 37a and Fields 1995:Figure 77c); Area D, Unit 1, juvenile burial

VESSEL FORM: Globular carinated bowl

NON-PLASTICS AND PASTE: grog and hematite

RIM AND LIP FORM: Direct rim and rounded lip

CORE COLOR: A (fired and cooled in an oxidizing environment)

INTERIOR SURFACE COLOR: reddish-brown; fire clouds on the body and base

EXTERIOR SURFACE COLOR: reddish-brown

WALL THICKNESS (IN MM): rim, 3.7 mm; body, 6.3 mm; base, 7.6 mm

INTERIOR SURFACE TREATMENT: smoothed

Figure 4. Patton Engraved, *var. Fair* carinated bowl (No. 9) in Burial 12 at the Deshazo site.

EXTERIOR SURFACE TREATMENT: smoothed

HEIGHT (IN CM): 7.0

ORIFICE DIAMETER (IN CM): 10.2

DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): 10.2

BASE DIAMETER (IN CM) AND SHAPE OF BASE: N/A

ESTIMATED VOLUME (IN LITERS): 0.4

DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): The short rim panel on this vessel has upper and lower horizontal engraved lines with tick marks (Figure 4). The vessel body has four sets of concentric engraved circles with tick marks.

PIGMENT USE AND LOCATION ON VESSEL: none

TYPE AND VARIETY (IF KNOWN): Patton Engraved, *var. Fair* (Perttula 2011:Figure 6-66d)

SITE NAME OR SITE NUMBER: Deshazo

VESSEL NO.: Burial 3, Vessel 3 (see Good 1982:Figure 36c and Fields 1995:Figure 76c); Area D, Unit 9, juvenile burial

VESSEL FORM: Goblet jar

NON-PLASTICS AND PASTE: grog and hematite

RIM AND LIP FORM: Direct rim and rounded, exterior folded, lip

CORE COLOR: A (fired and cooled in an oxidizing environment)

INTERIOR SURFACE COLOR: yellowish-brown; fire clouds on the base

EXTERIOR SURFACE COLOR: dark yellowish-brown; fire clouds on the rim and body

WALL THICKNESS (IN MM): rim, 6.9 mm

INTERIOR SURFACE TREATMENT: none

Figure 5. Plain jar (No. 3) from Burial 13 at the Deshazo site.

EXTERIOR SURFACE TREATMENT: none

HEIGHT (IN CM): 7.1

ORIFICE DIAMETER (IN CM): 10.5

DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): 10.0

BASE DIAMETER (IN CM) AND SHAPE OF BASE: 5.1 cm, circular and flat

ESTIMATED VOLUME (IN LITERS): 0.4

DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): Plain (Figure 5)

PIGMENT USE AND LOCATION ON VESSEL: none

TYPE AND VARIETY (IF KNOWN): Unidentified plain ware

SITE NAME OR SITE NUMBER: Deshazo

VESSEL NO.: 58-21 (see Fields 1995:Figure 71); near Hearth 1 in Area D, Unit 1, Structures 1-3 (see Good 1982:Figure 17)

VESSEL FORM: Carinated bowl

NON-PLASTICS AND PASTE: grog

RIM AND LIP FORM: Direct rim and rounded lip

CORE COLOR: A (fired and cooled in an oxidizing environment)

INTERIOR SURFACE COLOR: reddish-brown; fire clouds on the body

EXTERIOR SURFACE COLOR: reddish-brown; fire clouds on the body

WALL THICKNESS (IN MM): rim, 10.5 mm; body, 8.1 mm

INTERIOR SURFACE TREATMENT: smoothed

Figure 6. Brushed-engraved carinated bowl section (58-21) near Hearth 1 in Area D, Unit 1, at the Deshazo site.

EXTERIOR SURFACE TREATMENT: burnished on the body

HEIGHT (IN CM): 13.2+

ORIFICE DIAMETER (IN CM): 22.8+

DIAMETER AT BOTTOM OF RIM OR NECK (IN CM): 22.8+

BASE DIAMETER (IN CM) AND SHAPE OF BASE: N/A

ESTIMATED VOLUME (IN LITERS): 1.8+

DECORATION (INCLUDING MOTIF AND ELEMENTS WHEN APPARENT): The vessel rim has horizontal and overlapping brushed marks. The vessel body has a unique set of non-repetitive engraved elements, including diagonal opposed lines, large semi-circles, diagonal hatched triangles, and diagonal hatched zones (Figure 6).

PIGMENT USE AND LOCATION ON VESSEL: none

TYPE AND VARIETY (IF KNOWN): Unidentified fine ware

The 17 ceramic vessels and vessel sections from the Deshazo site provide an excellent view of the character of an early 18th century Allen phase funerary assemblage in the Angelina River basin in East Texas. The assemblage includes: Patton Engraved, *var. Allen*, *var. Fair*, and *var. Patton* bowls and jars (n=3), a Taylor Engraved carinated bowl, a Natchitoches Engraved bowl, a possible Hume Engraved bowl, a brushed-engraved carinated bowl section of unidentified type, and unidentified engraved carinated bowls and compound bowls (n=2). The fine wares comprise 53 percent of the vessel assemblage from the Deshazo site. The utility wares in burial features include incised-brushed jars (n=1), brushed-punctated jars (n=1), punctated jars (n=1), appliqued jars (n=1), and a brushed-appliqued jar (n=1). The utility wares represent another 29 percent of the Deshazo vessel assemblage. Finally, there are also plain bowls (n=1), carinated bowls (n=1), and jars (n=1) in the assemblage, comprising 18 percent of the funerary vessels at the site.

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Current Research:

Archaeological Investigations at the Shackleford Creek Site (41SM494), Smith County, Texas

Timothy K. Perttula[1] and Bo Nelson[2]
[1]Archeological & Environmental Consultants, LLC
[2]Tejas Archaeology

An archaeological survey in 2018 of the proposed Shackleford Creek Residential Development, a federally permitted project, in the upper Angelina River basin in East Texas by Tejas Archaeology (Nelson and Perttula 2018) identified the ancestral Caddo Shackleford Creek site (41SM494). Because the site was only investigated with a few shovel tests during the archaeological survey, although sufficient to identify the site extent and general characteristics of deposit depth and artifact content, but appeared to contain intact archaeological deposits of ancestral Caddo age, Nelson and Perttula (2018) recommended that the site warranted further evaluation by a plan of test excavations to determine its research potential and eligibility for inclusion in the National Register of Historic Places (NRHP). Tejas Archaeology completed the test excavations in February 2019 (Perttula et al. 2019).

The test excavations at the site first consisted of 15 shovel tests to better define its intra-site character, especially spatial artifact patterning, followed by the excavation of 10 1 x 1 m units in several areas of the site; flotation samples were taken from columns in several levels in several of the units to recover preserved plant remains and faunal remains in context. This work in total indicated that there are vertically and horizontally discrete archaeological deposits in a loamy sand A and E-horizon that ranged from 62-97 cm bs. The Shackleford Creek site covers a ca. 1460 square meters of an upland landform in the upper Angelina River basin in East Texas (Figure 1).

There are two clusters of shovel tests with higher artifact densities identified at the Shackleford Creek site, one in the northern part of the site that is associated with Feature 1, a dark brown and charcoal-flecked anthropogenic deposit (Feature 1), and a second cluster about 10-15 m to the south-southwest. These two clusters likely represent areas of more concentrated activity during the ancestral Caddo occupation at the

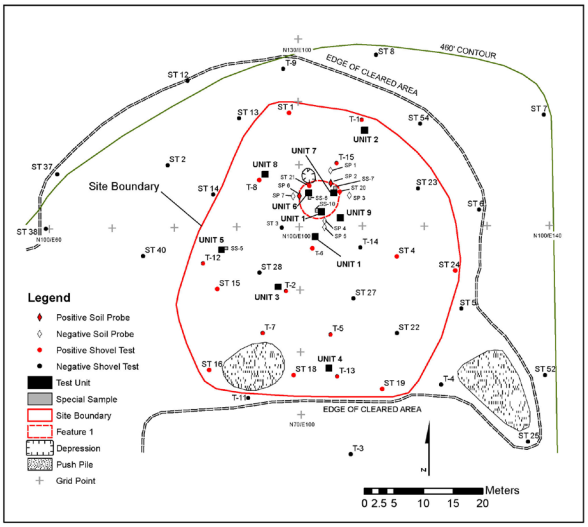

Figure 1. Map of the Shackleford Creek site showing its boundaries, locations of positive and negative shovel tests, shovel probes, 1 x 1 m units, and the extent of Feature 1.

site as well as the discard in these places of more broken artifacts and trash.

Feature 1 was originally considered a midden deposit because of its dark coloring or melanization, but due to the relatively low density of charred plant remains and animal bones in this zone, it is now interpreted as an anthropogenic deposit likely associated with the construction and use of an ancestral Caddo house structure that had received or had accumulated a significant organic contribution, likely from habitation debris in and around the house structure. Feature 1 is ca. 6 m in diameter with deposits that extend from ca. 5-6 cm bs to 37-44 cm bs (Zone 2). The feature has organic remains and discarded artifacts, particularly ceramic vessel sherds, as well as many small pieces of burned clay, that became incorporated in the loamy fine sand E-horizon. A second feature was identified in the test excavations at the Shackleford Creek site. This is a post hole (Feature 2) associated with Feature 1, exposed first

at the base of the Zone 2 deposits, and extending to 102 cm bs. Ancestral Caddo ceramic sherds and pieces of burned clay were in the feature fill.

The archaeological deposits at the Shackleford Creek site include plain (n=187) and decorated ceramic vessel sherds (n=305), ceramic pipe sherds (n=4), burned clay (n=230), daub (n=1), chipped stone tools (n=3), lithic debris (n=59), and a modified red ochre pebble. The plain to decorated sherd ratio of the assemblage is 0.61, consistent with both ca. A.D. 1480-1560 and ca. A.D. 1560-1680 Frankston phase components in the region (see Perttula et al. 2019:Table 15), but the overall stylistic character of the ceramic assemblage suggests that it was most likely accumulated between ca. A.D. 1520-1560. At 2 sigma (95.4 percent probability), the six calibrated radiocarbon dates from the site's archaeological deposits have median probabilities that range from A.D. 1462-1559, and those in stratigraphic order by depth range from A.D. 1506-1559. By calibrated age range, those with the highest probabilities that are in stratigraphic order by depth are A.D. 1448-1524, A.D. 1448-1526, A.D. 1513-1600, A.D. 1539-1635, and A.D. 1544-1634.

The ceramic sherds are from vessels tempered with grog, although burned bone or hematite were also regularly added to the paste of vessels. These sherds are from plain ware, utility ware, and fine ware vessels. The utility wares are from jars that have been decorated on the rim and/or the body with brushed, brushed-incised, brushed-punctated, incised, and punctated elements (Figure 2), while the few fine sherds are from carinated bowls or bottles with engraved or red-slipped decorative elements. Defined utility ware ceramic types present in the assemblage include Bullard Brushed, Killough Pinched, La Rue Neck Banded, Lindsey Grooved, Maydelle Incised, and Saunders Punctated, all known to occur in Frankston phase contexts in the region. The fine ware sherds from the Shackleford Creek site are from Poynor Engraved, *var. Cook* and *var. Hood* vessels (Figure 3).

The plain and decorated pipe sherds in the Shackleford Creek artifact assemblage are from elbow pipes (Figure 4), known to have been produced in the upper Neches and Angelina River basis after ca. A.D. 1400. The recognized varieties from the site - var. C and var. G - are present in large elbow pipe assemblages

Figure 2. Selected decorated brushed and brushed-punctated sherds from the Shackleford Creek site: a, parallel-overlapping brushed marks (Lot 1.1); b, parallel brushed marks (Lot 23.7); c, parallel brushed marks (Lot 24.1); d, brushed-punctated (Lot 29.5).

in the region that date from ca. A.D. 1480-1680 (see Perttula 2011).

The many pieces of small burned clay in the archaeological deposits at the site may be the remnants of the lining of hearths or other features likely present at the site where a clay lining was exposed to heat, and then fragmented and spread into the archaeological deposits. The daub, with small stick impressions, may have come from the burning of some section of a grass-thatched structure on the site.

Chipped stone tools are uncommon in the archaeological deposits at the Shackleford Creek site. They include two Perdiz arrow points, a scraper, and a bilateral flake tool. These tools are primarily made from non-local cherts, most likely obtained from Central Texas sources. The lithic debris (n=59) from the test excavations at the Shackleford Creek site is uniformly small in size (less than 3 mm in length), and most likely is the product of the maintenance and resharpening of chipped stone tools by Caddo knappers that had not

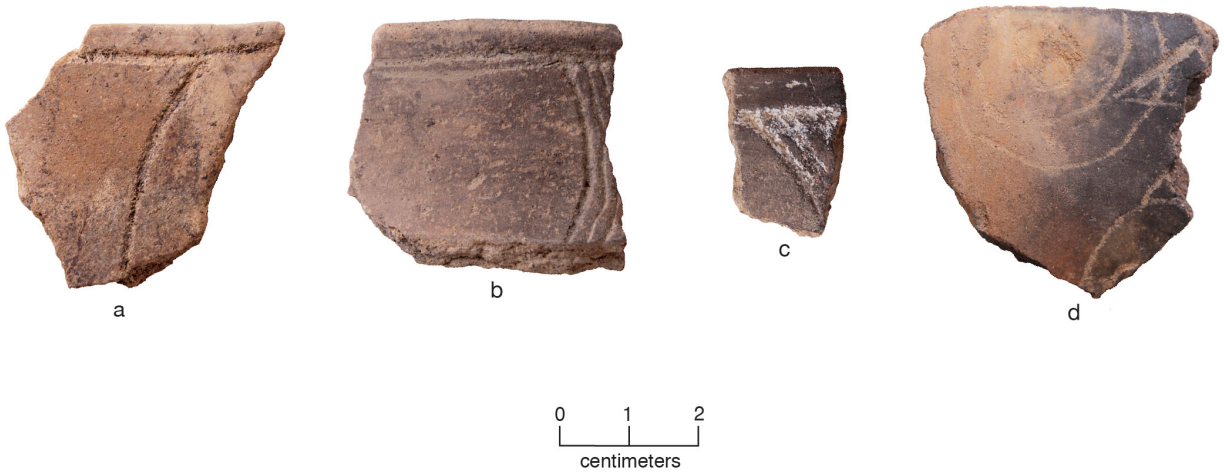

Figure 3. Selected Poynor Engraved sherds from the Shackleford Creek site: a, Poynor Engraved, *var. Cook* (Lot 56.6); b, Poynor Engraved, *var. Cook* (Lot 72.1); c, Poynor Engraved, *var. Hood* (Lot 58.3); d, Poynor Engraved, *var. unspecified* bottle sherd (Lot 33.5).

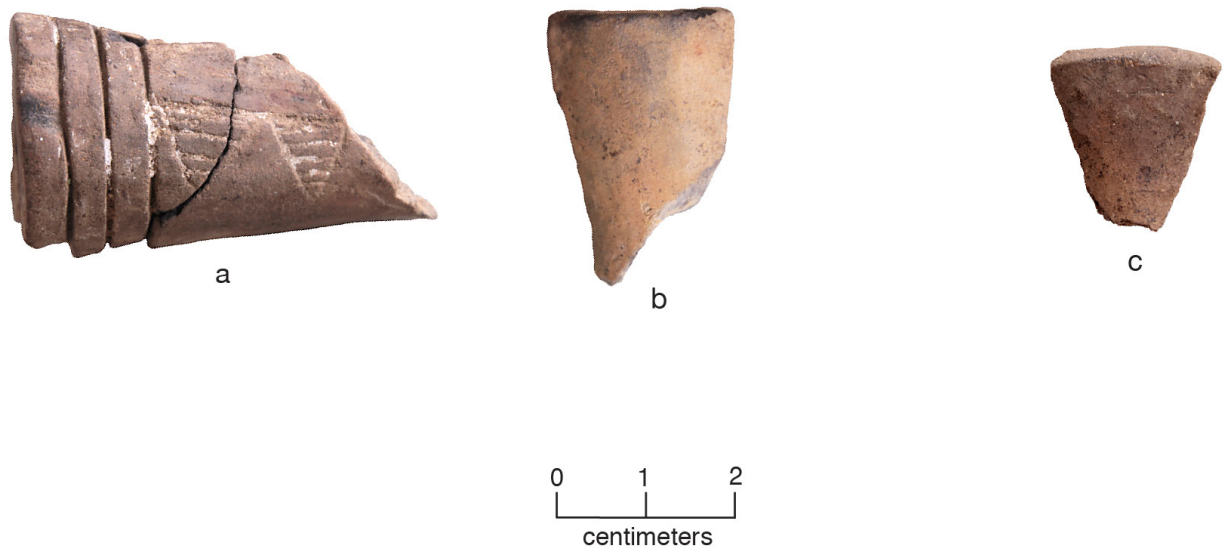

Figure 4. Elbow pipe sherds from the Shackleford Creek site:a, engraved elbow pipe stem rim (Lot 73.1); b, plain elbow pipe stem rim (Lot 74.3); c, plain elbow pipe bowl rim (Lot 61.2).

been made on site, but were brought to the site from elsewhere. Raw materials of non-local origin comprise 77 percent of the lithic debris assemblage knapped at the site.

In addition to material culture remains from the site's preserved ancestral Caddo archaeological deposits, the Shackleford Creek site also contains charred plant remains as well as animal bones in ¼-inch and flotation samples. The charred plant remains (Bush 2019) consist of the near ubiquitous occurrence of domesticated corn (*Zea mays*) cupules and kernels, a major source of food production after ca. A.D. 1300-1400 in East Texas by Caddo peoples (see Perttula et al. 2014; Wilson 2012; Wilson and Perttula 2013), hickory and acorn nutshell, and starchy and oily seeds of chenopods, maygrass, and amaranth; these are from native crops that are part of the Eastern Agricultural Complex (Gremillion 2018:12-37). Other wild plant foods preserved in the archaeological deposits are sumac, blackberry, and elderberry seeds, wild legume or bean seeds, and purslane seeds. Oak and pine wood charcoal is also present. Overall, plant remains recovered at the Shackelford Creek site are

typical of ancestral Caddo farmsteads in the Caddo area, with corn and nutshell well represented but other crops and wild plants relatively scarce. The data for corn cupule dimensions is consistent with the corn grown at other Caddo sites in the area.

The faunal remains from the site are dominated by white-tailed deer and large mammal-sized bone (Corl 2019). The remainder includes turtles, birds, and rabbit- and dog-sized faunal remains, the latter mammals that supplemented their diet. White-tailed deer were a key food resource for those living at the Shackleford Creek site, which is consistent with other ancestral Caddo Frankston phase sites in the upper Neches River basin. Deer were important resources for the Caddo people not just for their meat, but also for their pelts and bones.

We have recommended that the Shackleford Creek site is eligible for inclusion in the NRHP under criteria d because it has "yielded, or may be likely to yield, information important in history or prehistory." Based on the results of the test excavations, the Shackleford Creek site can contribute new and important information on Late Caddo (ca. A.D. 1400-1680) Frankston phase residential settlements or households in the region. Specifically, it contains preserved archaeological deposits and archaeological data from an important property type in the upper Angelina River basin that can address several research issues in "The Development of Agriculture in Northeast Texas before A.D. 1600" (Perttula 1993) historic context developed by the Texas Historical Commission as part of their Preservation Plan for the region.

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Current Research:
Update on the Hodges Collection of Native American Artifacts

Mary Beth Trubitt
Arkansas Archeological Survey

During the 1930s and 1940s, Thomas and Charlotte Hodges of Bismarck, Arkansas, surface collected and excavated artifacts from archaeological sites in Arkansas. Most came from ancestral Caddo sites in the Middle Ouachita River valley in Clark and Hot Spring counties, with a small portion originating from Southeast Arkansas sites. The Hodgeses, along with Vere Huddleston and Robert Proctor of Arkadelphia, were amateur archeologists at a time when there were few professional archeologists working in the state. Philip Phillips of Harvard University photographed some of the Hodges and Huddleston collections during his 1939 Ouachita River Valley survey, and Alex Krieger from the University of Texas photographed artifacts from the Hodges, Huddleston, and Proctor collections, using some to illustrate a typology of Caddo pottery (Suhm and Jelks 1962) that we still employ today.

In 1977, the Joint Educational Consortium, Inc. (JEC), a cooperative venture between Henderson State University (HSU) and Ouachita Baptist University in Arkadelphia, acquired the Hodges Collection (which by that point included Huddleston's collection). Since 1977, it has been curated by the Arkansas Archeological Survey's HSU research station staff. We have inventoried, photographed, and documented objects, published research articles, and created educational exhibits from this large collection (Early 1986). Ann Early was able to use the Hodges catalog and Huddleston's notebooks (plus Phillips's photographs) to link some of the artifacts to known archaeological sites in the Arkansas state site file system. As we have finished detailed documentation of whole and partial ceramic vessels in the collection, we have begun publishing this information in the *Caddo Archeology Journal* (Trubitt 2017, 2019; Trubitt and Evans 2015). The Hodges catalog describes individual artifacts and site locations; Huddleston left more detailed notes that we have used to reconstruct grave lots from sites he collected.

One of the main purposes of our vessel documentation has been to advise the JEC as they consult with the Caddo Nation of Oklahoma about the collection. In the spirit of cooperation, the JEC transferred 59 lots of human bone, and 43 vessels and 70 other artifacts that could reasonably be identified as associated funerary objects, to the Arkansas Archeological Survey's Coordinating Office in Fayetteville in 2017 for Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) documentation. Formal notices of NAGPRA inventory completion have now been published in the Federal Register (2019a, 2019b).

Henderson State University is committed to the on-going stewardship and preservation of this significant historical collection. Using university funding and grants from the Arkansas Natural and Cultural Resources Council, HSU is rehabilitating the historic Caddo Center building on campus. The main hallway is finished as a permanent space for storage and interpretation of the JEC Hodges Collection, and there is a classroom for interpretation, museum studies, and anthropology classes.

In 2019, we moved much of the JEC Hodges Collection artifacts from closed curation to "open curation" in the Caddo Center (Figure 1), using the University of Arkansas Museum Collections Facility in Fayetteville as our model. Open curation (also known as open storage or visible storage), makes the collection more accessible to university students and faculty, local residents, researchers, members of descendant communities, and other interested visitors while maintaining a secure, climate-controlled facility. During the move, we completed a re-inventory of the collection (Table 1). The total artifact count is lower than the 1995 inventory of ca. 50,000 objects, in part because in 2019 we counted "sherd lots" as unreconstructed partial vessels, rather than as individual sherds. In addition, I have used information from Hodges and

Figure 1. Museum studies intern Rae'Shawn Jones installs artifacts in the Caddo Center, March 2019 (Arkansas Archeological Survey photograph).

Huddleston records to identify the context of objects in the collection. Overall, 28 percent of the artifacts can be linked to specific archaeological sites, with 72 percent of unknown provenience. The majority of the whole, partial, and reconstructed pottery vessels have known site provenience, and 3 percent of the vessels have been identified as associated funerary objects, 21 percent as unassociated funerary objects, and 76 percent from unspecified contexts.

Publication of the artifact documentation continues. To date, detailed descriptions of 237 ceramic vessels have been published. John House and I are preparing a journal article that describes 12 vessels, partial vessels, and ceramic effigy fragments in the JEC Hodges Collection from the Menard-Hodges mound site (3AR4) in Arkansas County. An additional 100 or so vessels collected by Huddleston will be described with available information on context in a future paper.

With a small grant from the Arkansas Archeological Survey's Hester Davis Fund, Teka McGlothlin and Sarah Shepard (Arkansas Archeological Survey, Coordinating Office) came to Arkadelphia in November 2019 to use innovative 3D scanning

Figure 2. Teka McGlothlin and Sarah Shepard demonstrate 3D scanning process to Professor David Sesser's museum studies class, November 2019 (Arkansas Archeological Survey photograph).

technology to document a set of effigy vessels in the Hodges Collection for further research and interpretation (Figure 2). The Arkansas Archeological Survey's 3D digital imaging lab has been funded in part by the Roy and Christine Sturgis Charitable and Educational Trust. The team documented 36 of the most unique and fragile objects in the collection with high-resolution 3D models. This work builds on previous 3D scanning of Caddo ceramics from Texas sites by Robert Z. Selden (2016).

Currently, we are preparing grant proposals to fund the development of interpretive materials in several different media. Our goal is to use 21st century technology to engage with students and visitors to the Caddo Center as well as to connect using the Internet with those who cannot travel to Arkadelphia. We plan to explain the significance of the Hodges Collection and use the objects to educate visitors about past and present Caddo Indians.

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Category		Associated Funerary Object	Unassociated Funerary Object	Unknown Context	Total
Ceramic Vessels:	Provenienced	40	288	656	984
	Unknown Prov.	3	3	381	387
	Total	43	291	1037	1371
Other Ceramics:	Provenienced	1	27	6435	6463
	Unknown Prov.	0	0	11558	11558
	Total	1	27	17993	18021
Chipped Stone:	Provenienced	4	10	2642	2656
	Unknown Prov.	0	0	13663	13663
	Total	4	10	16305	16319
Ground Stone:	Provenienced	3	5	181	189
	Unknown Prov.	0	1	1063	1064
	Total	3	6	1244	1253
Animal Bone, Fossils:	Provenienced	5	15	170	190
	Unknown Prov.	0	0	173	173
	Total	5	15	343	363
Shell:	Provenienced	55	15	22	92
	Unknown Prov.	0	0	421	421
	Total	55	15	443	513
Minerals, Historic, Wood:	Provenienced	2	4	180	186
	Unknown Prov.	0	0	512	512
	Total	2	4	692	698
TOTALS:		113	368	38057	38538

Note: Associated Funerary Objects were transferred to ARAS-CO for NAGPRA documentation in 2017.

Table 1. Context of Inventoried Artifacts, JEC Hodges Collection.

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Current Research:

Preliminary Survey of the Eastern Half of the Boxed Spring Site (41UR30)

Cambria Haley and Crystal A. Dozier
Department of Anthropology, Wichita State University

The Boxed Springs site (41UR30) is an Early Caddo site located in East Texas near the Sabine River. This site covers roughly 15.6 acres and contained at least four mounds, middens, and an extended cemetery (Perttula 2011) (Figures 1 and 2). The site's location has been known since the late 1950s, with a series of unconnected avocational and professional archaeological investigations as well as unfortunate looting (Perttula 2011). As one of the few Early Caddo sites in Texas that contain multiple mounds (Perttula 2012, 2017), the Boxed Springs site is poised to provide great insight into Early Caddo mound construction technologies, settlement patterns, subsistence strategies, and trade and exchange.

Professional archaeological investigation at the site, however, has been limited. Avocational excavations were conducted by Buddy C. Jones in 1957 and 1961 and Sam Whiteside, a member of the East Texas Archeological Society, in 1962. Jones's excavations were limited to Mounds C and D; Whiteside excavated into Mound A (Perttula and Wilson 2000). A map of the site was produced by Dr. Dee Ann Story who visited the site in 1982 but did not excavate. Perttula has this map redrawn by Sandra Hannum (see Figure 1), as well as Jones and Whitesides' notes, although information from avocational and visiting archaeologists did not provide scale in order to later locate these features. We utilize Story's designations for the mounds in this report.

In 1988, the site was visited briefly from a crew from the University of North Texas and shortly thereafter at least 150 individuals were disinterred in a looting episode from a cemetery context at the site (Perttula 2011:16; Perttula and Walters 2015). In 2010, a volunteer crew provided the most thorough investigation of the site, including shovel tests, limited unit excavation, and ground penetrating radar, that have provided the best resolution data thus far (Perttula 2011). This survey, however, was limited to the western half of the site due to private landowner access. No professional survey of the eastern half of the site has been previously conducted and many alterations have been made to the landscape due to the construction of several buildings and ponds on the property in the 2000s.

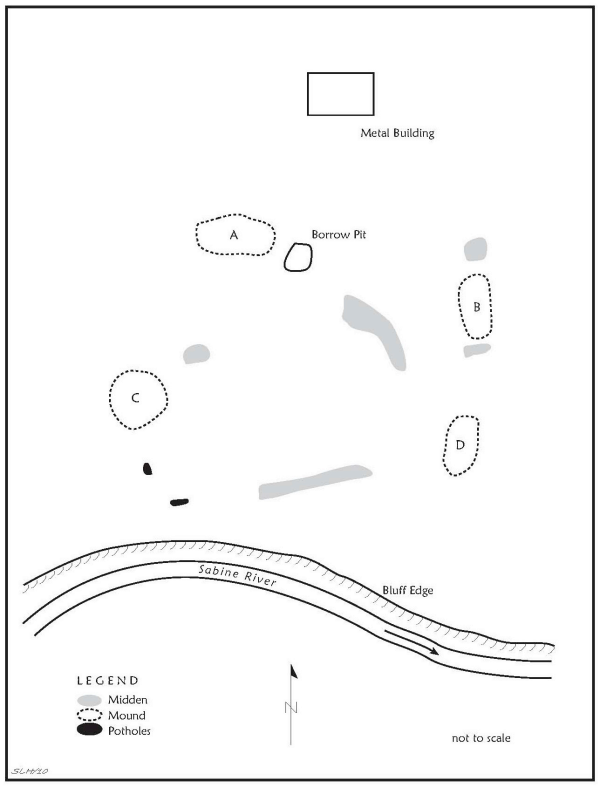

Figure 1. Map of the Boxed Springs site by Dee Ann Story in 1982, and as adapted in Perttula (2011:17).

Since the 2010 survey, the eastern half of the site has acquired new landowners. From the Story map, the metal building still stands, and it is safe to assume that locations to the east of the building are now located on the eastern half of the site, which should include two mounds (Mounds B and D) and several midden areas. In the interest of protecting and promoting the understanding of the Boxed Springs Site, the new landowners invited archaeologists from Wichita State

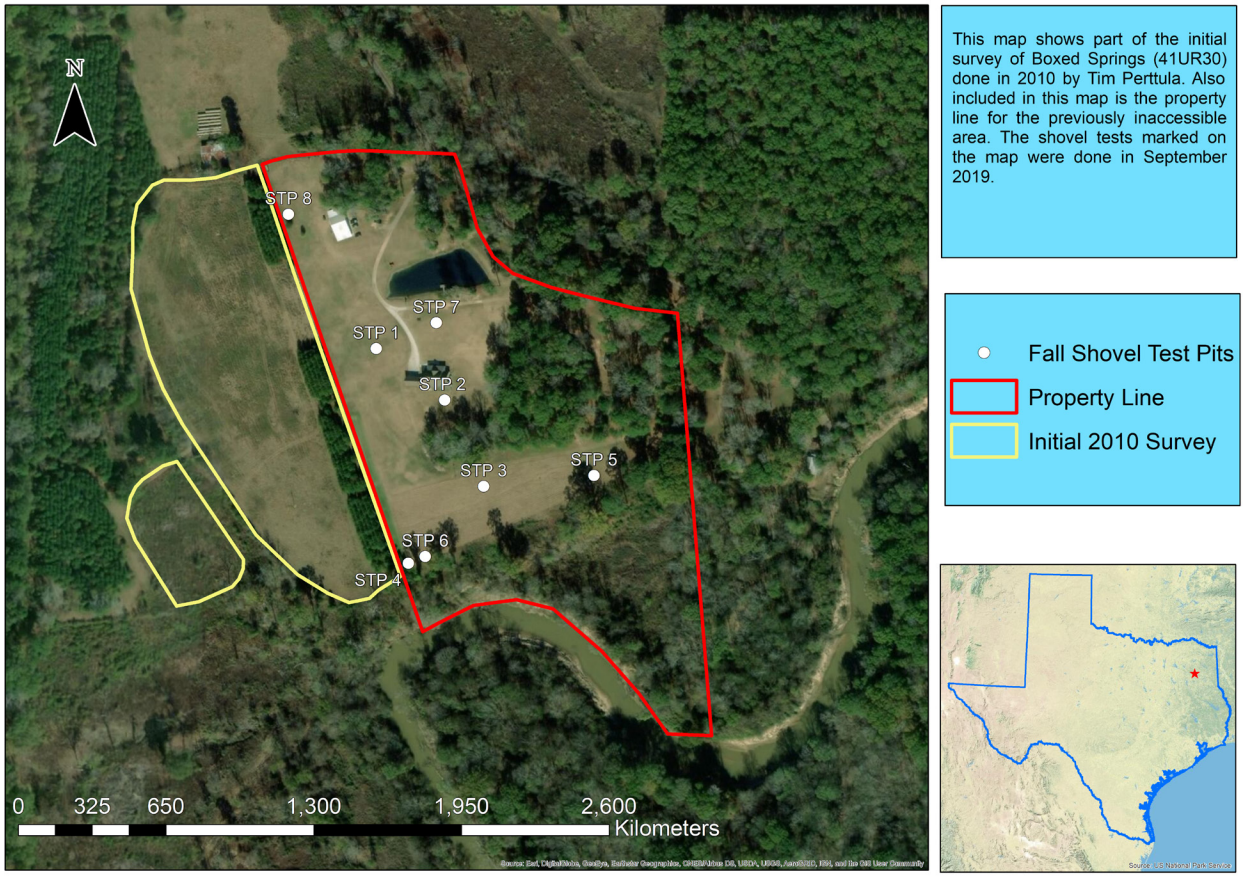

Figure 2. Map of surveyed area at the Boxed Springs site.

University to investigate the property. Over two days in September 2019, a preliminary survey of this new property was conducted.

The goals of the present preliminary survey were simple: (1) to determine the likelihood to recover archaeological materials related to the Early Caddo occupation of Boxed Springs and (2) to assess the presence and/or condition of the proposed two mounds on the property.

Limited non-probabilistic shovel test pitting was chosen to investigate areas previously identified as likely containing mound or midden areas. Ground surface visibility was zero due to a thick low-cut carpet of grasses, limiting the pedestrian surface survey as a means to recover artifacts. Heavy ground cover and modern surface alterations meant that mound locations were not distinct from the rest of the landscape. The survey consisted of eight shovel test pits (STP) across the property (see Figure 2). These pits were 40 cm diameter, dug in 10-centimeter levels to up to 1 meter in depth or terminated at the contact with sterile B-horizon sediment. Levels were screened through ¼-inch mesh. Only diagnostic artifacts or artifacts related to mound construction were collected, such as artifacts found in mound fill or diagnostic ceramics or projectile points. In total, the artifacts from only two shovel test pits were retained. All other artifacts were recorded, photographed, and returned to the STP. Profiles of all the pits were recorded and photographed.

The majority of STP contained cultural materials consistent with an indigenous Caddo occupation. STP 1, 2, and 7 were placed to attempt to locate Mound B; STP 3 and 5 were placed to locate Mound D; STP 4 and 6 were placed to locate a proposed midden area, and STP 8 was included to help establish the extent of cultural material across the northern portion of the property. Only STP 1 and 8 had no cultural materials (Table 1).

Across the site, no cultural material was found beyond 85 cm below the surface. The common soil profile of the site matched Perttula's findings (2011), with a sandy or silty loam A-horizon followed by a

Shovel Test Pit	Depth (cm bs)	Cultural Material
STP 1	0-50	No Cultural Material
STP 2	0-20	1 cultural shatter, slag throughout
STP 2	20-40	1 brown glass
STP 3	20-40	1 flake and 1 plain sherd
STP 3	40-50	1 flake and 1 plain sherd
STP 4	0-75	1 sherd, 1 decorated sherd, 1 piece petrified wood, 1 fire-cracked rock, 2 bones
STP 4	75-80	1 sandstone whetstone
STP 5	0-20	7 plain sherds
STP 5	20-45	6 plain sherds
STP 6	0-10	2 flakes and 1 plain sherd
STP 6	20-30	1 flake
STP 7	0-30	1 clear glass, 1 charcoal, 1 burnt sandstone, burnt soil
STP 7	40-80	3 lithics
STP 8	0-20	1 small piece of fire-cracked rock

Table 1. Artifacts recovered in shovel test pits at the Boxed Springs site.

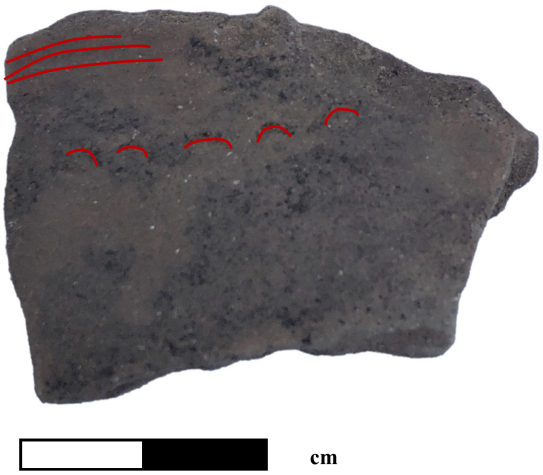

Figure 3. Image of Early Caddo sherd from STP 4. Decorations marked in red for clarity.

silty clay loam B-horizon. Small (< 3 cm^2) undecorated sherds were the most common artifact recovered, followed by lithic flakes. Two notable discoveries were made in this small survey: (1) a diagnostic decorated sherd consistent in style with the Early Caddo occupation, and (2) a STP 7 soil profile that is indicative of Mound B deposits.

One decorated sherd was recovered in STP 4, which was placed near a proposed midden location (Figure 3). The piece has closely incised lines at the rim and a single line of fingernail punctations. The fine grog tempering is consistent with either Weches Fingernail Impressed or Kiam Incised, both Early Caddo period ceramic types (Perttula 2004; Perttula et al. 1995; Suhm and Krieger 1954). This sherd was retained for future study and comparison.

STP 7 provided a completely unique soil profile. The top 30 centimeters contained a heavily mottled silty loam that contained frequent pieces of charcoal, burnt sandstone, and burnt soil. One clear piece of historic glass was found in this level. The following 70 centimeters, however, was a fine, remarkably homogenous, light gray silty sand. The grain and consistency of the sediment was clearly anthropomorphic, as this sand was not found in any other part of the site and this part of the site is far removed from any fluvial action from the Sabine River. Within this fill, three small lithic flakes were recovered up to 85 centimeters below the surface. This sediment continued past 98 centimeters below the surface when the STP had to be terminated. These flakes were collected for further study. The location of this feature in STP 7 broadly matches the location of Mound B.

Both of the goals for this initial survey were partially met. An Early Caddo component in the eastern part of the site was confirmed by the recovery of a single diagnostic sherd, but as the only diagnostic artifact recovered in our very limited work, many questions remain concerning the occupation history of the site. The decorated sherd matches either the Weches Fingernail Impressed or Kiam Incised types, and sherds of both types were found in the 2010 excavations as well as the 1957 investigations, presumably from mound contexts. No radiocarbon samples were taken from this initial survey, and future study of the site will hopefully be able to obtain more data on the precise timing of the site's founding, occupation, use, and abandonment.

The presence of one of the mounds (Mound B) was located due to the obvious mound fill profile seen in STP 7. However, more work will need to be done in order to understand the extent of the mound in terms of its footprint, height, possible alterations, and possible uses. From the one shovel test pit, it is unclear if the top 30 centimeters are part of the mound construction or due to the historic building of the house and stock pond as shown in Figure 2. Whiteside noted that Mound B was a sand fill mound, further supporting our identification of the area of STP 7 as being in Mound B, but he did

not further document the mound. As the only mound at the site to not have received documented avocational excavations, it is especially important to document and preserve Mound B with as little damage as possible.

While Mound B was likely located, Mound D was not identified from this initial survey. Mound D had been excavated in 1957 with a 10 x 5 foot trench - it apparently stood one meter tall with multiple mound fills (Perttula 2011:279); in the Whiteside excavation, Mound D was recorded as only 45 cm tall over a prepared clay floor. Similarly, in the survey of the western half of the site by Perttula and crew, the location of Mound A, which had been damaged by both looters and Sam Whiteside's 1962 excavations, was not apparent in their 2010 survey (Perttula 2011:2).

There is much potential for archaeological research and data recovery at the Boxed Springs site. This small initial survey confirmed an Early Caddo presence in the eastern part of the site and the findings provide clear direction for future research to investigate the mounds and residential features at Boxed Springs.

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Current Research:
A Pilot Study in the Use of pXRF Analysis of Caddo Ceramics

Tom Middlebrook[1] and C. Colleen Hanratty[2]
[1]Texas Archeological Stewardship Network, [2]University of Texas at Tyler

Wilson "Dub" Crook III's (2018) paper presented to the East Texas Archeological Conference concerning the use of X-ray Fluorescence (XRF) in sourcing turquoise artifacts sparked an interest in utilizing pXRF to resolve an old Caddo ceramic research question. While XRF has been used in archaeology for more than 60 years (Shackley 2011:1), and there have been applications in ceramic studies (Shackley 2012; Ownby 2012; Hunt and Speakman 2015; Forster et al. 2011; Speakman et al. 2011; Shugar and Mass 2012), a recent review of the *9th Edition of The Archaeology, Bioarchaeology, Ethnohistory, and History of the Caddo Indian Peoples of Arkansas, Louisiana, Oklahoma, and Texas* (Perttula 2019), a comprehensive bibliography, did not yield a single reference to a pXRF study in Caddo ceramics. This article will summarize: (1) the research question arising from work at the Morse Mound Site (41SY27), (2) an overview of how pXRF works, and (3) the data analysis from this pilot study.

In January and February 2000, archaeologists from the Texas Historical Commission and the Texas Archeological Stewardship Network excavated portions of two Caddo earthen mounds at the Morse Mound site near Center, Texas (Bruseth et al. 2000; Middlebrook 2014). The larger mound (Mound A) was a low conical mound standing 1.0 meter (m) high and 15 m in diameter. Beneath this mound was the posthole outline of a 5.6 m round house containing a central 3.6 m round shaft tomb of an important elite individual. Evidence suggested that the house had been burned and pushed into the pit after interment and partial filling of the pit. The building, perhaps the residence of the deceased elite, and the tomb, were commemorated with the construction of the mound. The acidic soil chemistry at the site led to the complete dissolution of all skeletal and dental remains. Interestingly, most of the perishable materials placed in the grave such as wooden boxes, baskets, matting, arrow shafts, and cordage were replaced by a distinct fine gray silty material. Inside the outline of the Caddo elite's coffin was a 25.6 cm long Anderson knife, two carved stone earspools, and two sets of Bassett points (n=20, and n=15). Just outside the coffin and to the individual's upper left was a small gray silty area containing another quiver of Bassett points (n=8), two carved stone earspools, and a clay pipe. This latter collection may have represented the interment of a second individual or the placement of a sacred bundle. Outside of the coffin and to the interred persons' right side were 11 ceramic vessels: two Glassell Engraved globular bottles with long necks, four Tyson Engraved bowls, a Broaddus Brushed jar, a Belcher Ridged jar, an untyped brushed jar, an untyped pinched jar, and an elongated Hume Engraved bottle. This last vessel was in poor condition due to its very soft surface and could not be fully reconstructed (Figure 1). From the time of its initial assessment, this "Index Vessel" was considered to have been a possible trade item from a Frankston phase Caddo community in the Upper Neches region, some 75 miles to the west. This speculation was based on its distinctive vessel form, engraved decoration, and its soft, orangish exterior surface. All the other fine ware vessels from the Morse Mound site are from vessel types that are known from other Shelby County sites. In order to obtain additional comparative compositional data bearing on the question of the vessel's trade status, all ceramic objects from the Morse Mound shaft tomb were subject to pXRF analysis done at the University of Texas at Tyler in February 2019.

X-ray fluorescence analysis determines the qualitative elemental composition of an object and may provide quantitative data in parts-per-million. Hand-held portable Energy-Dispersive XRF instrumentation has multiple advantages: (1) the potential for being non-destructive to the studied object, (2) minimal preparation to study an object, (3) fast data recovery, (4) ease of use, and (5) cost effectiveness (Shackley 2012:8f). Some

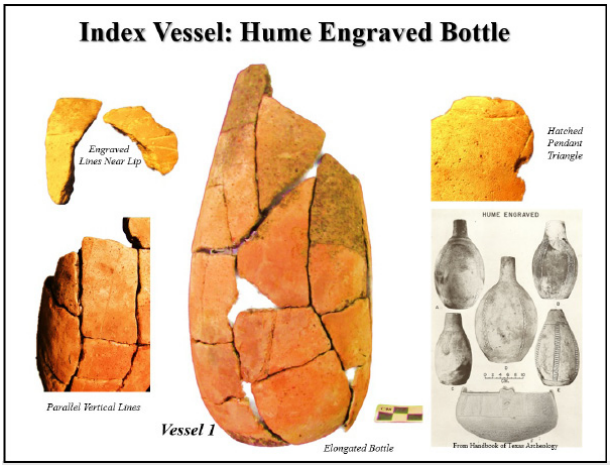

Figure 1. Photos of Vessel 1 (Index Vessel), a Hume Engraved bottle.

limitations of XRF include the need for at least 10 mm^2 surface area to study; a minimum thickness of the object is 2 mm; and it is not useful for the lighter elements (typically pXRF is used for mid-range atomic number Z=14 Silicon and above).

X-radition refers to that part of the electromagnetic spectrum intermediate between ultraviolet and gamma radiation (wavelength = 0.03-3 nm, frequency = $3X10^{16}$ - $3X10^{19}$ Hz) with energies in the range of 100eV to 200keV. The pXRF instrument irradiates the studied object with high energy X-Rays that dislodge electrons from the tightly bond inner shells. When an electron from higher shells drops into the vacated spot to maintain atomic stability, energy is released in the form of an X-ray photon; this is known as X-ray fluorescence. The Kα emission results when an electron fills a spot in the innermost K shell by an electron from the 2p orbital of the second or L shell; Lα refers to an electron falling into the vacancy in the L shell from the third or M shell. In addition to sending a beam of X-rays into the studied object, the pXRF instrument contains a detector that measures the energy (keV) of fluorescent X-ray photons emitted by the electron transitions. The keV of each photon is directly related to the specific element. The detector also measures the emission rates in counts per second (cps), indicating the concentration of the identified element. These two measured factors, energy and emission rates, are the basis of producing an X-ray fluorescence spectrum of any object.

We collected data from each of the Morse Mound ceramic objects with a Burker Tracer III-SD system utilizing a rhodium target X-ray tube as an excitation source and a silicon drift detector with a resolution of approximately 145 eV at 100,000 cps. No filter was used. Data was processed with Bruker's software suite with basic empirical calibration. Data was collected over an area of 10 mm^2 for 60 seconds per sample. Two to four (average three) samples were collected per object, typically from smooth spots on the interior surface, exterior surface, and at a patch of exposed paste. The samples from each ceramic object were averaged for comparison and use in development of scatterplots in Microsoft Excel. Peak counts for Kα (and Lα in the case of Th) were recorded for 24 elements including silicon, chlorine, argon, potassium, calcium, scandium, titanium, vanadium, chromium, manganese, iron, cobalt, zinc, gallium, arsenic, rubidium, strontium, yttrium, zirconium, niobium, ruthenium, rhodium, cesium, and thorium.

Initially, we selected three elements that had clear peaks on the pXRF spectrum to use for comparisons of the ceramic vessels and pipe: potassium (K), Calcium (Ca), and Iron (Fe). While minor or trace elements are most frequently used in sourcing studies of cherts and many other archaeological materials, we decided in this pilot study to use some of the most common elements that perhaps would distinguish various clays. When the three scatterplots were produced (Fe/K, Fe/Ca, K/Ca), the Index vessel (V-1) was an outlier on all the plots. Of all 11 ceramic vessels, V-1 had the lowest average K and Ca content, and the second highest Fe content. Interestingly, two other objects, namely the pipe and the pinched decorated Vessel 9, clustered with V-1 on all three plots. Both of these items also had the reddish-orange color and softer surface that characterized the Index vessel. Both objects may have been produced in the Upper Neches region as well based on style and decoration (Timothy K. Perttula, personal communication, February 2019). Because the production methodology of Caddo fine wares may differ from utility wares, a set of scatterplots for Fe/K, Fe/Ca, and K/Ca were made just looking at the seven fine ware objects. The Index vessel stood out as an outlier in all three cases (Figures 2-4).

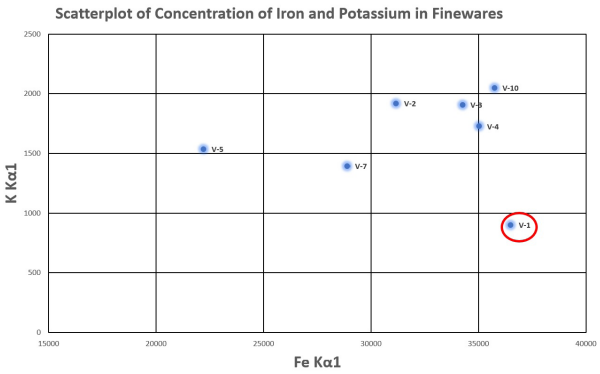

Figure 2. Bivariant Scatterplot of Fe and K concentrations in the fine wares.

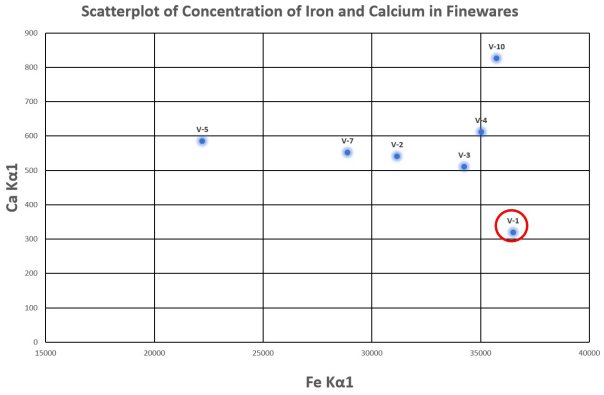

Figure 3. Bivariant Scatterplot of Fe and Ca concentrations in the fine wares.

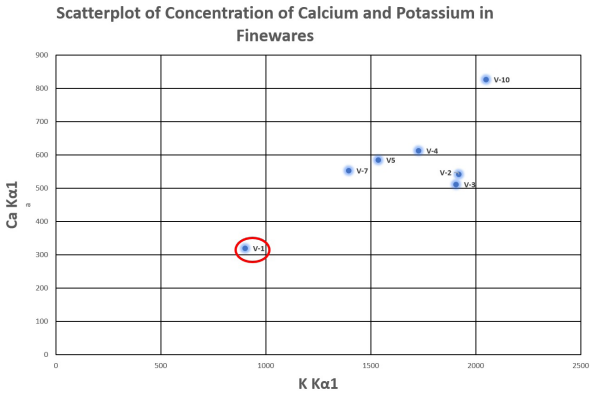

Figure 4. Bivariant Scatterplot of K and Ca concentrations in the fine wares.

Ferguson (2010) reanalyzed the Texas Caddo Neutron Activation Analysis database from nine designated drainage basins in East Texas. (Shelby County sites fall in the study's Region 9, and the Upper Neches sites are within Region 8). His research employed bivariant scatterplots of Fe and 10 other trace elements (cesium, chromium, arsenic, hafnium, titanium, antimony, vanadium, lutetium, cerium, and thorium). Utilizing two elements, namely chromium and arsenic, helpful in analyzing sites within Region 8 in Ferguson's study, we constructed a scatterplot of the seven Morse Mound fine ware vessels to see if trace elements could provide helpful information regarding compositional distinctions between our Index vessel and others thought to be locally made. Again, the data from V-1 was an outlier (Figure 5).

This small pilot study is one of the first to use pXRF in Caddo ceramic research. It proved to be a rapid, non-destructive, and inexpensive method for generating elemental composition data regarding Caddo pottery. The results generally supported the notion that Vessel 1 was not typical of most of the other ceramic items in the Morse Mound shaft tomb and may represent a trade item. The pipe and Vessel 9 appear compositionally similar to the Index vessel and may have derived from a similar production location. Additional pXRF data from known ceramics from the Upper Neches region will be needed to confirm a compositional similarity of Vessel 1 with Frankston phase ceramic assemblages.

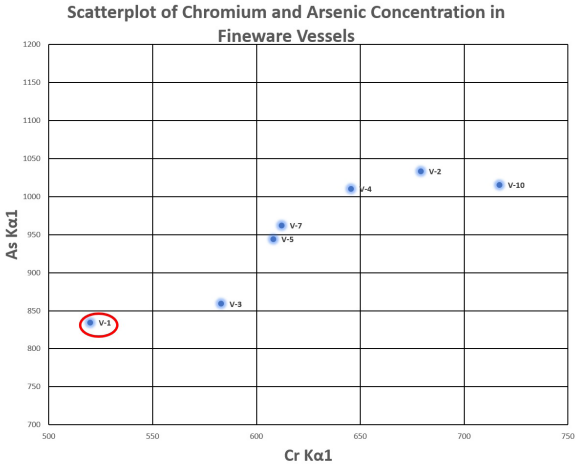

Figure 5. Bivariant Scatterplot of Cr and As concentrations in the fine wares.

The limitations of this study are numerous. In future studies, many more samples or counts from each object would be needed. We propose that six to eight readings be taken for each ceramic item, perhaps dropping the high and low count, and averaging the remaining ones. This seems prudent in complex, tempered, heterogenous objects like Caddo pottery. Beyond the basic counts used for comparison, full quantitative data in parts-per-million need to be recorded. Dub Crook (personal communication, February 24-26, 2019) kindly provided useful feedback shortly after this paper was originally presented. He suggested: (1) longer counts, perhaps 300 seconds; (2) use of freshly broken surface for taking readings in the core of the ceramic objects while also taking into consideration the effects of groundwater deposition on exterior surfaces; (3) focus on minor and trace elements for comparison; and (4) the development of a meaningful regional sherd and clay database for analytic comparison.

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Report:
Abstracts from the 71st Caddo Conference held at University of Central Arkansas

Duncan P. McKinnon
University of Central Arkansas

The 61st Caddo Conference was held on March 21-23, 2019 in the McCastlain Hall Ballroom on the campus of UCA. The Caddo Conference coincided with Arkansas Archeology Month. Funding was provided by UCA Foundation, the Department of Sociology, Criminology, and Anthropology (SCA) at UCA, the Caddo Conference Organization, the Arkansas Archeological Survey, and the Arkansas Archeological Society.

The conference began Friday, March 21st at 9am with several research presentations throughout the day. Twelve presentations and three research posters were presented. Additionally, several book publishers and Caddo artists displayed books and art for sale. There were 45 paid registrants attending the conference. Maximum attendance was during the Saturday afternoon public session, which is estimated around 100 people.

A special Saturday afternoon "Caddo Art and Heritage" session featured Caddo culture, art, and dance. In the session, six contemporary Caddo artists discussed their ceramic, beadwork, and stonework art.

ABSTRACTS for the 61st CADDO CONFERENCE

Drexler, Carl G. (Arkansas Archeological Survey), and Fiona M. Taylor (Arkansas Archeological Survey)
Lost in the Little River Region: Preliminary Notes on Lockesburg Mounds

Nestled between the Great Bend and Middle Ouachita regions of southwest Arkansas, the Little River Region has received comparatively little attention from archeologists. With no summary of its archeological significance published in the past forty-eight years, it comes as no surprise that our understanding of the area is partial, at best. This paper seeks to address that shortfall by presenting some background on a site that has been largely overlooked by archeologists, and which stands to substantially alter how we understand the Caddo presence in the Little River Region. It also adds a dimension to the early history of Caddo Archaeology.

Earles, A. Wayne Tay Sha (Caddo Nation of Oklahoma)
Caddo and Spiro Lithics: Cultural and Contemporary Art

This presentation will begin with some background information, discuss information on my methods and materials, and explain my own inspirations and my hopes for Caddo youth to continue our art. I will be discussing several pieces of art that are currently in the Stephen F. Austin State University/Cole Art Center exhibit, "Caddo Contemporary: Present and Relevant" in Nacogdoches, TX. I will also be discussing several other artworks including both cultural stone art and contemporary stone jewelry with engraved traditional ancient Caddo/Spiro designs.

Early, Ann M. (Arkansas Archeological Survey)
Caddo Pottery Away from Home?: A First look at Caddo Vessels in the Whole Vessel Inventory from NMAI, Gilcrease and the U of A Museum assembled for the Carden Bottoms Project

One task for the Carden Bottoms Research Project undertaken by the Archeological Survey and Indian Nation partners was to photograph and document Carden Bottoms region pottery in three main repositories, the National Museum of the American Indian, the Gilcrease Museum, and the University of Arkansas Museum. Graduate Student Leslie Walker used some of the information for her dissertation, and the database will play in integral part in the full analysis of artifacts recovered during excavation of several houses at the

Carden Bottoms site between 2011 and 2012. I will use the database to compare the range and distribution of Caddo vessels in the whole vessel assemblage and in the domestic features. This is a preliminary look at the actual types of Caddo vessels in the heritage collection.

Renee Erickson (Center for Environmental Management of Military Lands)
An Archaeological Study of the Earspools of the Arkansas River Valley and Surrounding Regions

Archaeologists and collectors have recovered earspools from sites throughout the Arkansas River Valley and surrounding regions. These items vary in form, material type, and decorative motifs. In this paper, I discuss how the differences in the distribution and variability of earspool attributes correspond to the archaeologically defined northern and southern Caddo regions. I identify what chronological variation is present in the earspools and if certain earspool types are diagnostic of Spiro cultural phases. I also examine what the degree of diversity and standardization of earspools with decorative elements indicates about the nature of these items of personal adornment.

Earles, Chad Nish (Caddo Nation of Oklahoma)
Contemporary Caddo Art

Chad "Nish" Earles, visual artist and graphic designer, was born and raised in Oklahoma City and is a member of the Caddo Nation of Oklahoma. Chad enjoys creating artwork in various mediums such as drawing, painting, screen-printing and digital art. After receiving his BFA in Graphic Design from Atlanta College of Art in Georgia, Chad began his career in art and design at award winning design firm Critt Graham + Associates. Working his way up to Senior Designer/Art Director and Web Designer, Chad created a wide variety of projects for nationwide clientele including: Aéropostale, ANN INC. (Ann Taylor and LOFT), The Coca-Cola Company, Kodak, Philips and Wendy's. In 2011, Chad founded Nishology, his signature art and design brand with a mission to perpetuate Caddo art, culture and traditions. Based in his hometown of OKC, Chad is currently participating and exhibiting his artwork at numerous art markets, festivals, museums and cultural events in Oklahoma, New Mexico, Texas, Arkansas and Louisiana.

Earles, Chase Kahwinhut Earles (Caddo Nation of Oklahoma)
Traditional Caddo Pottery

I create my tribe's traditional pottery to help educate and carry on the culture of my people. The once grand and widespread tradition of my people's Caddo pottery has now been reduced to a shadow of its former self and almost even disappeared completely. With the help of the only living Caddo pottery revivalist, I got started down the path of my artistic expression of our tribe's traditional pottery to help current and future generations understand the beauty and craftsmanship and uniqueness of our ancient pottery methods and culture. I will be talking about how I got started creating Caddo pottery and what inspired me. I will discuss how I create my work from hand dug clay and pit firing and the challenges of presenting Caddo pottery to the Native American Art world.

Ford, Paige (University of Oklahoma)
New Approaches to Unanswered Questions: Neosho Phase (AD 1400-1650) Pilot Study Results

The Neosho culture (AD 1400-1650) in northeastern Oklahoma is widely discussed in archaeological literature beginning with Baerreis' (1940, 1941) definition of it as a distinct focus. However, in tracing the intellectual history of research concerning Neosho, it is clear that researchers have struggled in its definition and in clarifying its relationship to preceding and surrounding cultures. In particular, archaeologists have been primarily concerned with questions of origins (where Neosho people came from) and cultural affiliation. Researchers have relied upon similarities in material culture trait lists to argue for Neosho comprising a group of migratory Plains agriculturalists or indigenous descendants of Caddoan-Mississippian peoples in the Arkansas River Valley. Such methods have proven insufficient, and Neosho-related research has been stuck with these unanswered questions. Using social network analyses on ceramic attribute data derived from Neosho and nearby Fort Coffee (AD

1450-1600) sites in Oklahoma, the research presented will demonstrate new approaches that serve to sidestep those unanswered questions and focus instead on the relationships between Neosho peoples and their neighbors during the Late Pre-Contact period.

Halfmoon, Raven (Caddo Nation of Oklahoma)
Raven Halfmoon Artwork

Raven Halfmoon is from Norman, Oklahoma. She attended the University of Arkansas where she earned a double Bachelors Degree in ceramics/painting and cultural anthropology. Her work has been featured in multiple exhibitions throughout the US as well as internationally. In 2017, Raven completed a long-term residency at the Red Lodge Clay Center in Red Lodge, Montana. Raven is currently based in Norman, Oklahoma where she is working to establish her own studio and continues to produce work at the University of Oklahoma. She is represented by Gallery FRITZ in Santa Fe, New Mexico. In this presentation she will be discussing what inspires her and how she creates her work and the challenges she faces in the field of fine art today.

Hammerstedt, Scott W. (Oklahoma Archeological Survey)
Ongoing Fieldwork at the Andrews Site, Sequoyah County, Oklahoma

Since the spring of 2018, Oklahoma Anthropological Society volunteers under my supervision have participated in excavations at the Andrews (34SQ521) in Sequoyah County, Oklahoma. The original surface collections conducted at the site by Society member Mel Phillips as part of his Little Skin Bayou survey suggested that it dated to the Archaic. Subsequently, we conducted geophysical survey and five days of excavations; the results of which indicate that the site may also have a Spiroan component. I discuss preliminary data produced by our remote sensing and limited excavations, and outline our plans for future work in May 2019.

Hawkins, Yonavea (Caddo Nation of Oklahoma)
Bead Work and Caddo - How it came to be...

Though she has a degree in Fine Arts and an advertising/printing back ground as a graphic designer and print buyer, Yonavea started beading cultural items and sewing for herself and family. When asked to participate in her first art market she entered her own pair of Delaware moccasins in the Bead work category at Red Earth. She has since continued to compete in other juried Native American art market competitions with moccasins, beaded cultural items and loomed beaded belts in the Bead work or Cultural categories.

Hazeslip, Lindsey (University of Central Arkansas), Robert Mauldin (University of Central Arkansas), and Duncan P. McKinnon (University of Central Arkansas)
Classification of Caddo Pottery Sherds using SEM-EDS

The purpose of this project is to classify temper from different types of Caddo pottery sherds and determine sub-categories that exist, if any. This project also analyzed red pigment from the surface of Caddo pottery sherds to determine the composition. The pottery sherds are from the Bowman site (ca. A.D. 1100-1500) located on the Red River in southwestern Arkansas and were initially classified based on physical appearance using a light microscope. The sherds were initially divided into categories based on dominant temper: bone, clay, shell and grog. Early Caddo potters used only clay (or a lack of temper), whereas later production included the addition of bone, shell, or grog (ground, previously fired clay). The next step in the project used a scanning electron microscope with an energy dispersive x-ray spectrometer (SEM-EDS) to analyze the pottery sherds in an attempt to verify or modify previous physical classifications. SEM-EDS data indicated the bone-tempered pottery samples contained additional phosphorus and calcium, while the shell-tempered samples contained only additional calcium. SEM-EDS analysis of the red pigment indicated it was red ochre (ferric oxide or iron (III) oxide).

House, John H. (Arkansas Archeological Survey)
Ceramic Variation at Kuykendall Brake

Excavations at the Kuykendall Brake site in Pulaski County, Arkansas in the 1990s exposed remains of a burned late prehistoric/protohistoric structure and accompanying burial feature beneath a small mound. Cultural material left on the structure floor at the time of the structure's destruction by fire include deposits of burned grain and other botanical materials, ground lithic artifacts, and 34 whole or fragmentary pottery vessels. The vessels include jars, bowls, and bottles exhibiting a variety of shapes, decorative treatments, and designs. This group of vessels existed in a single cultural context at a single point time. Results from detailed study of formal variation in this group of vessels may further interpretation of vessels assemblages from other archaeological site contexts in the region and beyond.

Lockhart, Jami J. (Arkansas Archeological Survey)
Updating Maps for Caddo Sites in Arkansas

This presentation will describe an integrated technological methodology being used to supplement archeological maps in our digital site files. Drawing upon information for a number of Caddo sites in Arkansas, enhanced digital methods are used to discover, locate, interpret, and precisely map archeological features in the State.

Middlebrook, Tom (Texas Archeological Stewardship Network), and Colleen Hanratty (University of Texas at Tyler)
A Pilot Study in the Use of pXRF Analysis of Caddo Ceramics

X-Ray Fluorescence analysis has been used in archeology for over fifty years yet there may be no published reports of its use in Caddo ceramic studies based on a review of a recent comprehensive Caddo bibliography. This pilot study employed pXRF data to assess elemental composition of 12 ceramic objects excavated from a shaft tomb in Shelby County, Texas (41SY27) in 2000 by THC archeologists and Stewards. One vessel, a Hume Engraved bottle, appeared to have been a trade item from the Upper Neches Frankston phase some seventy-five miles distant. This vessel yielded pXRF count values that marginally differed from the range of the other ceramic objects when using iron, calcium, potassium, chromium and arsenic comparisons. Limitations and future opportunities with pXRF will be discussed.

Middlebrook, Tom (Texas Archeological Stewardship Network)
The Westerman Mound (41HO15)

George Kegley of THC's Building Commission Survey recorded a 20m X 25m mound on the Grover Westerman place southeast of Kennard, Texas in August 1969. Subsequently Dee Ann Story visited the site in 1970 and 1986 making additional surface collections in the 10 to 15 acre village area around the mound. Tim Perttula's (2015) review of recovered artifacts suggest that the mound may relate to an Early Caddo occupation of similar age as the ones at George C. Davis site 18 miles to the north. Radiocarbon dating of a charred corncob had a median calibrated age of A.D. 1242. A number of sandy paste sherds at the site led Story to speculate that the origins of the site may lie in the Woodland period. This paper will report on recent visits to the site and future plans for limited investigation.

McKinnon, Duncan P. (University of Central Arkansas)
Caddo Ceramic Database: An Update

Over the past several years, I have been synthesizing, with the help of numerous Caddo archaeological researchers, a comprehensive multi-state material culture database to evaluate interregional interaction and community. The database is primarily composed of whole Caddo vessels documented from published excavation summaries, archaeological reports or grey literature, and various photographs taken of private collections. This presentation will provide an update on recent case studies as the database continues to grow.

Mulvihill, Tim, (Arkansas Archeological Survey) George Sabo III (Arkansas Archeological Survey), Jami J. Lockhart (Arkansas Archeological Survey), Jessica Crawford (Arkansas Archeological Survey), and Larry Porter (Arkansas Archeological Survey)
The Preservation of Cavanaugh Mound 3SB3.

Located within the city limits of Fort Smith, Arkansas, Cavanaugh Mound is a late prehistoric platform mound. No formal excavations have ever taken place, but in the past tunnels were dug into the eastern and southern sides of the mound with no reported artifacts. During the 1960s, a large section of the eastern side was removed, causing severe erosion over the years. In 2005, the Archaeological Conservancy acquired the mound and in 2011 the Arkansas Archeological Survey conducted a limited geophysical survey. In 2017, the Conservancy financed the reconstruction of the eastern side to prevent further erosion and the Survey was able to record portions of the east profile of the mound.

Redcorn, Jeri (Caddo Nation of Oklahoma)
What's in a Name? Call it Caddo.

Jeri Redcorn is recognized internationally for reviving the Caddo pottery-making tradition. First Lady Michelle Obama selected Redcorn's "Intertwining Scrolls" pot for display in the Oval Office. The artwork is a traditional Caddo design from more than 300 years ago. The Smithsonian, the Oklahoma Museum of History, Spiro Mounds, and the Bob Bullock Texas State History Museum permanently display her work. Redcorn's honors include Artist in Residence at the Art Institute of Chicago, where she was featured in the video, "Hero, Hawk and Open Hand;" Rockefeller Fellow, Chicago Newberry Library; and John Hay Whitney Fellow, University of Oklahoma. The University of Texas and the University of Oklahoma have included her story on their websites. Redcorn has lectured at the Smithsonian, the Art Institute of Chicago, Yale University, Illinois University, and the White House Institute of Museum and Library Services conference. Her story was shown in "Arkansas's FIRST PEOPLE" on AETN, Arkansas. The documentary is the companion series to WGBH/ PBS, "We Shall Remain." In this presentation Jeri will be addressing the reasons to change Caddo Pottery Type Names to more culturally relevant designations for the Caddo people. This need reflects policies contributing to Caddo loss of homeland, language and culture. Moving forward to bring Caddo history to the present, by the Caddo, for the Caddo of what is important to Caddo Nation.

Sabo III, George (Arkansas Archeological Survey)
The Archeology of Storytelling at the Spiro Ceremonial Center

Storytelling is a powerful instrument for teaching, learning, and creating new knowledge and information among communities around the world, including Native Americans past and present. Storytelling is primarily a dramatic performance that does not often yield a diagnostic material signature; to what extent, then, might such performances be reflected in the archeological record? This presentation explores links between narrative traditions and artistic representation, and reviews recent research and a new digital project about early 15th century storytelling performances at the Spiro Ceremonial Center.

Selden Jr., Robert Z. (Center for Regional Heritage Research, Stephen F. Austin State University)
Ceramic Morphological Organization: Quiddity of Shape for Hickory Engraved Bottles

This study expands upon a previous analysis of the Clarence H. Webb collection, which resulted in the identification of two Caddo bottle shapes used in the manufacture of Hickory Engraved (HE) bottles. The current sample of Caddo bottles adduces three-dimensional meshes from the HE specimens in the Webb collection, as well as 14 new meshes from six sites and one collection; all of which fall under the purview of the Native American Graves Protection and Repatriation Act (NAGPRA). Results confirm that HE bottle shape differs significantly by site in some cases, that the two discrete shapes identified in the previous study persist in this larger sample, and that morphological integration is not significant, meaning that those traits used to characterize bottle shape (rim, neck, body, and base) were not found to vary in a coordinated manner. Thus, while results confirm site-specific differences in shape

and the manufacture of two discrete bottle shapes from two different (north-south) geographies, results do not support the hypothesis that Caddo potters adhered to a template of vessel shape associated with specific decorative motifs for this sample of HE bottles.

Selden Jr., Robert Z. (Center for Regional Heritage Research, Stephen F. Austin State University), John E. Dockall (Prewitt and Associates, Inc.), and Harry J. Shafer (Texas A&M University)
Lithic Morphological Organization: Gahagan Bifaces from Texas and Louisiana

This study is focused upon an analysis of Gahagan biface morphology and enlists the three largest samples of these bifaces, to include that of the type site (Gahagan Mound) as well as the Mounds Plantation and George C. Davis sites. Results indicate a significant difference in Gahagan biface morphology at the Mounds Plantation site when compared with Gahagan bifaces from the Gahagan Mound and George C. Davis sites. A test of morphological integration indicates that the bifaces are significantly integrated, meaning that those traits used to characterize their shape (blade and base) vary in a coordinated manner. Tests for allometry and asymmetry were not significant. Results confirm that Gahagan biface production at Mounds Plantation differs significantly when compared with industries at Gahagan Mound and George C. Davis. Results augment previous inquiries, and provide additional evidence for a north-south divide based upon the morphology associated with communities of practice for Gahagan bifaces. When viewed in concert with similar shifts in Hickory Fine Engraved and Smithport Plain bottle morphology, multiple lines of evidence lend support to an increasingly robust argument for two previously unrecognized and morphologically-unique Caddo communities of practice.

Swift, Catherine (Fairfield Bay Community Education Center)
Myths and Misconceptions of the Edgemont Shelter

The Edgemont Shelter is part of the City of Fairfield Bay's Heritage Center and is identified by the trinomial 3VB06 on the National Register of Historic Places. Commonly known as Indian Rock Cave it contains 11 carved petroglyphs on the Arkansas Archeological Survey's rock art database. Archaeologists have been visiting since the late 1800's and believe the cave was used as a place of celebration and shelter for five tribes, including the Caddo. There are stories about these images and their connection to this revered site, some are true and some are legend.

Tahlate, Alaina (Caddo Nation of Oklahoma)
Caddo Language

I will present a selection of stories from The Caddo Language: A Grammar, Texts, and Dictionary Based on Materials Collected by the Author in Oklahoma Between 1960 and 1970 by the late Dr. Wallace Chafe. There will be a discussion of Hasinai cultural values and worldviews encoded within the language of the texts.

Taylor, Fiona M. (Arkansas Archeological Survey), and Carl G. Drexler (Arkansas Archeological Survey)
An Update on the Holman Springs Site: Past, Present, and Future Research

Excavated in the 1980s by the Arkansas Archeological Society, the Holman Springs is a massive Caddo site and one of a few salt-processing sites in Southern Arkansas. This large collection of archeological material wasn't re-opened until 2015 when the SAU Research Station began a re-boxing initiative. That endeavor eventually led to me beginning a systematic ceramic inventory in 2017, research I am still conducting today. This paper will include an update on my current research, a report on the recent radiocarbon and botanical analyses, as well as our plans to wrap up this site at the 2019 Arkansas Archeological Society Training Program in June.

Trubitt, Mary Beth (Arkansas Archeological Survey), Chelsea Cinotto (Arkansas Archeological Survey), and Rae'Shawn Jones (Henderson State University)
Update on the Hodges Collection of Native American Artifacts at Henderson State University

The Joint Educational Consortium (JEC), made up of Henderson State and Ouachita Baptist universities in

Arkadelphia, Arkansas, acquired the Hodges Collection of Native American artifacts in 1977. Most of the items were collected from archeological sites in the Middle Ouachita River valley by Thomas and Charlotte Hodges in the 1930s and 1940s. The Arkansas Archeological Survey's Henderson State University research station staff curates the collection, and we have inventoried, photographed, and documented objects, published research articles, and created educational exhibits from this large collection. In 2017, human remains and associated funerary objects were transferred from the JEC to the Arkansas Archeological Survey's Fayetteville office for a NAGPRA inventory. Work continues on identifying unassociated funerary objects based on archival records. This year, we are moving the Hodges Collection from closed curation to open storage in the renovated Caddo Center on the Henderson State University campus to make it more accessible to students and faculty, residents of the local area, Caddo Indians, and other visitors.

Williams, Jeffrey M. (Friends of Caddo Mounds State Historic Site), and Victor Galan (Friends of Caddo Mounds State Historic Site)
Koo-Hoot Kiwat: The Caddo Grass House

The traditional Caddo Grass House built in 2016 at Caddo Mounds State Historic Site near Alto, Texas was the subject of a 30-minute PBS special that documented construction from the identification and collection of raw materials through the final thatching. Following the viewing of the documentary, we will describe damage to the structure expressed as a noticeable lean that progressed over the fall of 2018 and the emergency repairs to the structure that were made in the winter of 2018-19. The repairs have distinct features that may be expressed in the archaeological record. This information can be used to aid in interpretation of circular house patterns found throughout traditional Caddo lands.

Caddo Culture Club

2019 Activities Report

Michael Meeks, President

2019 was an eventful year for our small organization, and for the Caddo Tribe as well. We enjoyed gathering for many events and functions throughout the previous twelve months, but none were more memorable than our trip to the Caddo Mounds State Historic Site near Alto, TX, as many might already know. I want to take this opportunity to thank everyone for their continued support of the Caddo Nation and its members, myself included. Your thoughts, prayers, and support have been heard and received by many and for that I am forever grateful. I offer a special thank you to my friends with the Caddo Conference Organization for extending the opportunity of submitting this report.

2019 Caddo Conference

This past March, we all gathered at the University of Central Arkansas in Conway, AR for the 61st Annual Caddo Conference. This year's exhibits featured Caddo artists in various forms. From pottery and beadwork to contemporary sculptures and photography, many different points of view were highlighted, showing that Caddo art is still as relevant as ever. The Caddo Culture Club, in conjunction with the Metro Caddo Culture Club of Oklahoma City, concluded this year's conference with a showcase of traditional Caddo singing and dancing. We look forward to the upcoming Caddo Conference being held in Tyler, TX.

Caddo Culture Day at Caddo Mounds SHS

Every April, the Caddo Culture Club, along with members of the Caddo Nation travel to the annual Caddo Culture Day festival at the Caddo Mounds Historic Site near Alto, TX. For the first half of the festival, our day was dampened by inclement weather and rain, but we were fortunate enough to utilize the inside of the visitor's center for the continuation of our performances. During an exhibition of Caddo singing, we lost electricity in the building. Only moments later our location was struck by a verified F-3 tornado. The visitors center was almost completed leveled, and the traditional Caddo grass house was gone. This became a trying time for everyone involved and we continue to think of those who are still healing from this event, as well as their families. Many thanks to the Caddo and Delaware Nations of Oklahoma for their quick response in providing transportation and other resources for affected tribal members.

Caddo Festival at Sam Noble Museum

Our first gathering after the events at Caddo Mounds brought the first step in a long healing journey. Injuries and scars were still visible throughout the event. We took part in an exhibition of tribal singing and dancing and received a prayer and smudging from a tribal elder. We looked past the trauma that was sustained and used our songs and dances to help provide healing, as our ancestors might have once done, knowing that for many, this was only the first step in healing.

Caddo Culture Club Annual Dance and Murrow Family Annual Powwow

In June, we gathered at the Caddo Tribal dance grounds for our 27th Annual Dance and at the Murrow family dance grounds for their annual powwow. Our event featured the 2017-2019 Delaware Nation Princess, Ms. Angel Kionute, as an honored guest for her devotion to our organization's events. At the Murrow Family Powwow, we took part in three nights of singing and dancing that featured intertribal showcases and exhibitions from members of the Kiowa tribe's Oh-Ho-Mah Society. We are currently underway in the planning process of our 2020 annual dance. We welcome and invite everyone to this event!

Thanksgiving and Christmas Holidays

During the Fall and Winter seasons, we organized a Fall Caddo Social Dance and Holiday toy drive for the community. While Thanksgiving generally carries negative connotations for many First Nations people, we do not let that stop us from having a great feast! At our November Social Dance, we provided a full holiday meal to everyone who was present and spent the greater part of the evening rejoicing in traditional Caddo singing and dancing. This event helped start our holiday toy drive. This year, we provided toys to the Wichita Community Church in Anadarko, OK for their efforts in providing gifts for underprivileged children in the local community.

Grand Reopening at Caddo Mounds

On January 11, 2020 many people returned to the Caddo Mounds Historic Site for their grand reopening. A temporary visitor's center has been reopened and the traditional Snake Woman's garden has been cultivated once again. In honor of their efforts, and as a sign of healing, a cedar tree that is a traditional sign to the Caddo people was planted in the garden. We look forward to returning to Caddo Mounds and one day seeing a new visitors center and Caddo grass house.

Many thanks, again, to the Caddo Conference Organization for their continued support of Caddo culture, heritage, and history.

The Caddo Culture Club is a non-profit organization located in Binger, Oklahoma that works to preserve and teach traditional Caddo singing and dancing. You can find us on Facebook (@CaddoCultureClub) to see our upcoming events and activities or for more information about us!