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Cass Appliqued Jar, 11-BCJ, Gregg County Historical Museum (Article 4, Figure 8)

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# The Sam D. Carpenter Bottom Site (41CP495) in the Big Cypress Creek Basin, Camp County, Texas

*Timothy K. Perttula, with a contribution by LeeAnna Schniebs*

## INTRODUCTION AND SITE SETTING

Robert L. Turner, Jr. obtained a surface collection of ancestral Caddo material culture remains from the Sam D. Carpenter Bottom site (41CP495) an unknown number of years ago. With records provided by Turner, Bo Nelson has recently recorded the site, and provided the artifacts from the surface collection for analysis.

The Sam D. Carpenter Bottom site (41CP495) is situated on a broad and cleared alluvial fan (280 feet amsl) in the Big Cypress Creek valley (Figure 1), with the Prairie Creek valley not far to the south and the Dry Creek valley not far to the north. There are short, intermittent tributaries to the creek on either side of the alluvial fan, and these flow roughly north and northeast to Big Cypress Creek, the current channel of which is ca. 2 km to the northeast. The Sam D. Carpenter Garden Plot site (41CP496), a Caddo site of similar age and character, is about 1 km to the west (Perttula 2013).

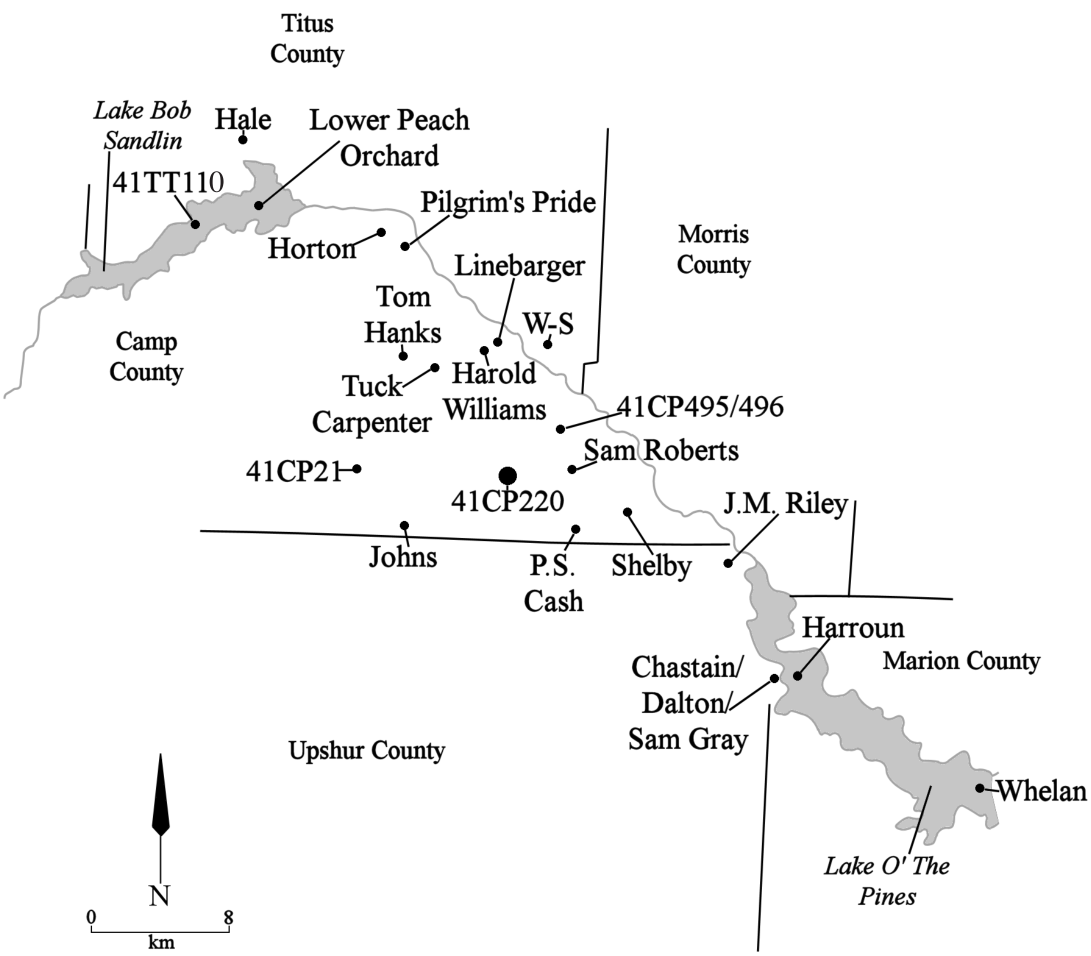


Figure 1. The general location of the Sam D. Carpenter Bottom site in the Big Cypress Creek basin, camp County, Texas.

## ARTIFACTS

The vast majority of the artifacts collected from the Sa, D. Carpenter Bottom site are ceramic sherds (n=1539) from plain wares, utility wares, and fine ware vessels, and there is also a single clay elbow pipe sherd. Lithic artifacts in the collection include several Late Caddo style arrow points, biface fragments, lithic debris and cores, as well as a few ground stone tools. Finally, there are well-preserved faunal remains and mussel shell fragments from the site, and their occurrence is indicative of the preservation of prehistoric midden deposits.

### *Ceramic Sherds*

The ceramic assemblage at the Sam D. Carpenter Bottom site is extensive, given that it was gathered from a general surface collection (Table 1). The plain sherds comprise approximately 50% of the assemblage, 38% are from the decorated portion of utility ware vessels, and 11.5% are from slipped and engraved fine ware vessels.

**Table 1. Ceramic Assemblage from the Sam D. Carpenter Bottom site.**

| Ware | Rim | Body | Base | N | Percent |
|---|---|---|---|---|---|
| Plain | 26 | 704 | 45 | 775 | 50.3 |
| Utility | 62 | 524 | - | 586 | 38.2 |
| Fine | 35 | 143 | - | 178 | 11.5 |
| Totals | 123 | 1371 | 45 | 1539 | 100.0 |

Based on the proportion of rims among the three wares, however, 50% of the sherds are from utility ware vessels (jars, primarily). Another 21% are from plain wares (bowls, jars, and carinated bowls), and the remaining 29% are from fine ware vessels (bowls, bottles, carinated bowls, and compound bowls). The plain to decorated sherd ratio for the assemblage is 1.01, consistent with Late Caddo period, Titus phase occupations in the Big Cypress Creek basin.

The sherds are from vessels primarily tempered with grog (or crushed sherds), ranging from 91.8% to 93.2% by ware (Table 2), and grog-tempered sherds account for 92.4% of the entire sherd assemblage. Bone temper accounts for only between 6.2-8.2% of the sherds by ware, and two sherds—a plain rim and a red-slipped engraved body sherd—are from vessels made with shell temper. These latter two vessels likely were made either among Caddo groups on the middle Red River (i.e., McCurtain phase) or Belcher phase Caddo groups in the Great Bend area of Southwest Arkansas and Northwest Louisiana (Perttula et al. 2012).

**Table 2. Tempers used in the three wares.**

| Ware | Grog | Bone | Shell | N |
|---|---|---|---|---|
| Plain | 92.5% | 7.4% | 0.1% | 775 |
| Utility | 91.8% | 8.2% | - | 586 |
| Fine | 93.2% | 6.2% | 0.6% | 178 |
| Totals | 92.4% | 7.5% | 0.1% | 1539 |

**Fine Wares**

The fine ware sherds from the Sam D. Carpenter Bottom site include both engraved and red-slipped sherds (Table 3). A significant portion of the fine wares (13.5%) are clearly from vessels (bowls and bottles) decorated only with a red slip on one or both vessel surfaces, which is consistent with the use of red slipping among Caddo groups living in the western part of the Big Cypress Creek basin heartland. The remainder of the fine wares are from engraved bottles (9.5%) and engraved bowls (77.0%), including bowls, carinated bowls, and compound bowls; about 5% of these vessel sherds also have a red slip. A small proportion (4.6%) of the engraved sherds have either a red (n=5) or white (n=2) pigment rubbed in the engraved decoration. This form of decorative embellishment is more prevalent in the bottle sherds (17.6%) than in the bowl sherds (2.9%).

**Table 3. Fine wares from the Sam D. Carpenter Bottom site.**

| Decorative Method | Rim | Body | N | Percent |
|---|---|---|---|---|
| Engraved, bottle sherds | - | 17 | 17 | 9.5 |
| Engraved | 32 | 105 | 137 | 77.0 |
| Red-slipped | 3 | 21 | 24 | 13.5 |
| Totals | 35 | 143 | 178 | 100.0 |

*Slipped Sherds*

There are rim and body sherds from red-slipped vessels at the site (Figure 2a-f); the slip is made from a clay wash that had crushed hematite or red ochre added to it before its application to the vessel surfaces. These sherds are from bowls (Figure 2a, f) as well as bottles (Figure 2d). Bowls have a red slip on both interior and exterior surfaces (n=18), while bottles have a slip only on the exterior surface (n=6).

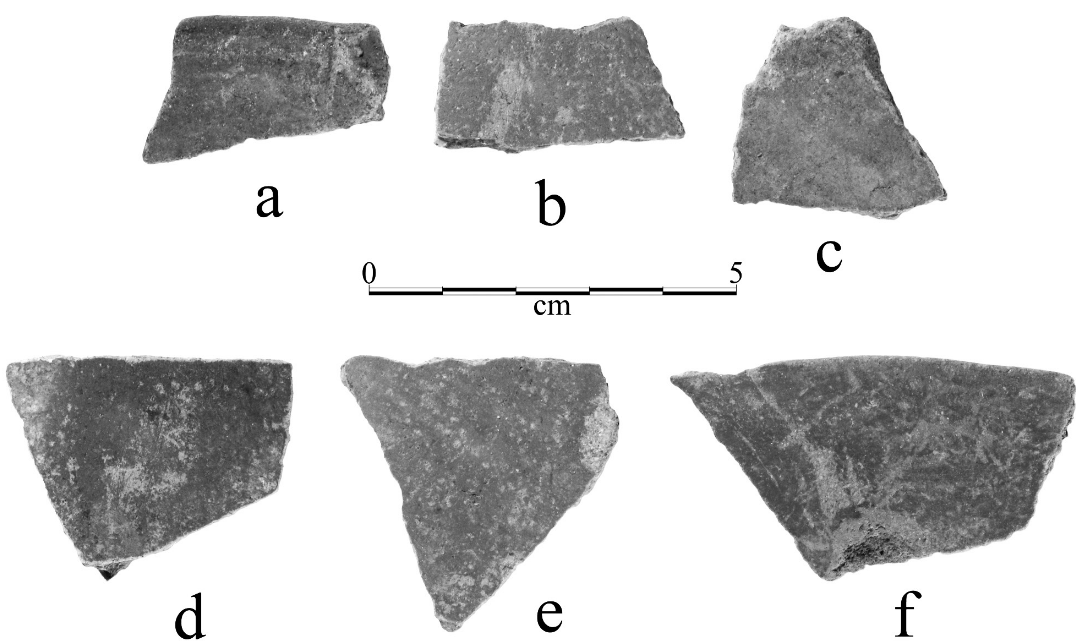


Figure 2. Red-slipped rim and body sherds: a, f, rim sherds; b-e, body sherds.

*Engraved Sherds*

There are 154 engraved rim and body sherds in the Sam D. Carpenter Bottom site ceramic assemblage (see Table 3), including 32 rims. About 11% of these sherds are from Ripley Engraved bottles (Figure 3). None of the bottle sherds are from red-slipped vessels, but three have a red pigment applied to the engraved decoration (Figure 3a-c).

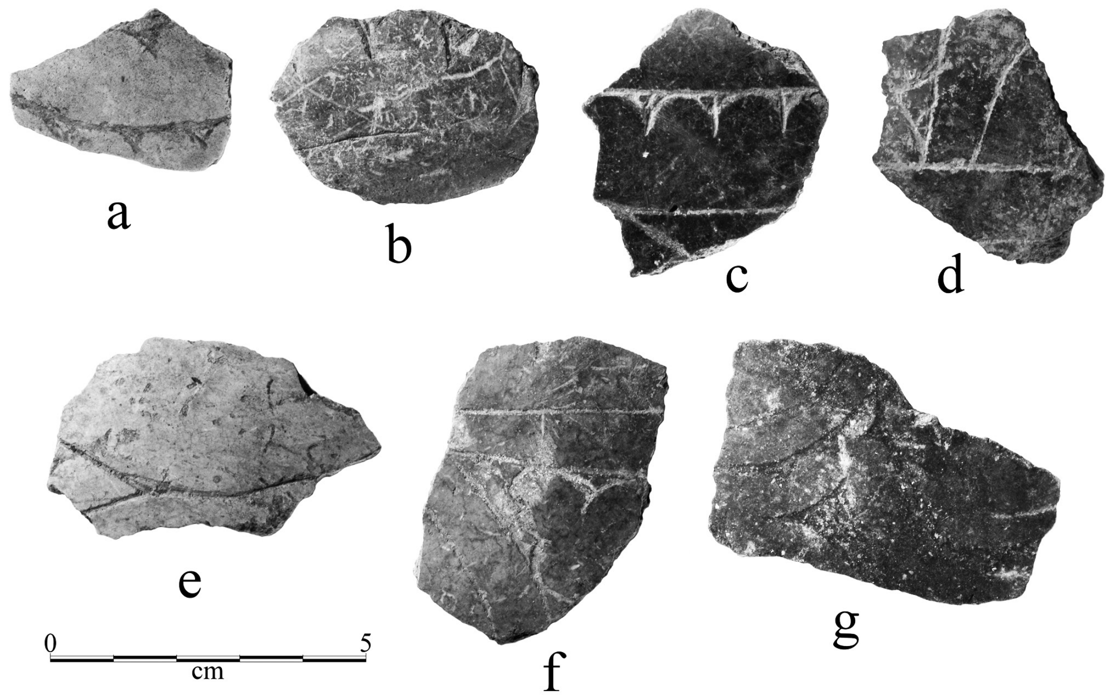


Figure 3. Ripley Engraved bottle sherds.

Many of the Ripley Engraved bottle sherds have curvilinear or straight lines with excised or hatched pendant triangles (n=8, see Figure 3a-d, f-g). Others have curvilinear engraved lines (n=8, see Figure 3e) or sets of parallel lines on the vessel body, but lack the pendant triangles.

There are a wide variety of engraved elements on sherds from carinated bowls, compound bowls, and bowls in the fine wares (Table 4). In most cases, it appears that these engraved sherds are from Ripley Engraved vessels (see Suhm and Jelks 1962:Plate 64). Ripley Engraved is the principal fine ware in Late Caddo period Titus phase occupations dating from ca. A.D. 1430-1680 in both the Big Cypress and middle Sabine River basins in East Texas (Fields and Gadus 2012; Perttula 2012). The decorative elements recognized in this set of engraved sherds includes circle elements (Figures 4e and 5a, i, k), concentric semi-circles, cross-hatched circles and zones (Figures 4g and 5b), sets of curvilinear engraved lines and/or curvilinear zones (Figure 5c-e), sets of horizontal engraved or excised lines (many most likely from compound bowls or carinated bowls with horizontal scroll lines, Figure 4a, f), horizontal and vertical engraved lines (Figure 4h), slanted scrolls and scroll dividers (Figures 4c-d and 5f-h), scrolls and circles, semi-circles (Figure 5j), and vertical lines and zones (Figure 4b, i). There are also a few rim and body sherds that have pendant triangle elements (Figure 4j), but these are not representative of the pendant triangle motif defined by Thurmond (1990:Figure 6) on Ripley Engraved vessels. None of the sherds from the site have sets of upper and lower pendant triangles divided by a horizontal scroll line, and there are no central engraved diamond elements recognized in the Sam D. Carpenter Bottom site fine wares, which is one of the principal elements in the pendant triangle motif.

**Table 4. Decorative elements on engraved carinated bowl, compound bowl, and bowl rim and body sherds.**

| Decorative Element | Rim | Body | N |
|---|---|---|---|
| Circle element | 1 | 3 | 4 |
| Circle element and cross-hatched zone | - | 1 | 1 |
| Circle element and hatched zone | - | 1 | 1 |
| Circular zone, hatched | - | 1 | 1 |
| Sub-total, circle elements | 1 | 6 | 7 |
| | | | |
| Concentric semi-circles and excised pendant triangles | - | 1 | 1 |
| | | | |
| Cross-hatched circles | - | 2 | 2 |
| Cross-hatched and diagonal engraved lines | - | 1 | 1 |
| Cross-hatched curvilinear zone | - | 1 | 1 |
| Cross-hatched curvilinear zone and curvilinear lines | - | 1 | 1 |
| Cross-hatched engraved zone | 1 | 5 | 6 |
| Cross-hatched engraved zone and curvilinear engraved line | - | 1 | 1 |
| Cross-hatched zone and parallel engraved lines | - | 1 | 1 |
| Cross-hatched engraved zone and slanted scroll | - | 3 | 3 |
| Cross-hatched engraved zones and vertical engraved line | 1 | - | 1 |
| Sub-total, cross-hatched zones and elements | 2 | 15 | 17 |
| | | | |
| Curvilinear engraved lines | - | 9 | 9 |
| Curvilinear engraved line and excised pendant triangle | - | | 1 |
| Curvilinear engraved lines and open pendant triangle | - | 2 | 2 |
| Curvilinear zone, excised | - | 1 | 1 |
| Curvilinear and hatched zones | - | 3 | 3 |
| Sub-total, curvilinear lines and zones | - | 16 | 16 |
| | | | |
| Diagonal engraved lines | 1 | - | 1 |
| | | | |
| Hatched divider | 1 | - | 1 |
| Hatched zone | - | 3 | 3 |
| Sub-total, hatched elements | 1 | 3 | 4 |
| | | | |
| Horizontal engraved lines | 10 | 4 | 14 |
| Horizontal engraved line and narrow hatched zone | - | 1 | 1 |
| Horizontal engraved lines and hatched triangles | 1 | - | 1 |
| Horizontal engraved line and excised divider | - | 1 | 1 |
| Horizontal engraved scroll | 1 | - | 1 |
| Horizontal engraved scroll and hatched divider | - | 1 | 1 |
| Horizontal excised area | 1 | - | 1 |
| Horizontal engraved lines and slanting scroll | 1 | - | 1 |
| Horizontal and vertical engraved lines | 4 | - | 1 |
| Sub-total, horizontal lines and scroll elements | 18 | 7 | 25 |

**Table 4. Decorative elements on engraved carinated bowl, compound bowl, and bowl rim and body sherds, cont.**

| Decorative Element | Rim | Body | N |
|---|---|---|---|
| Opposed engraved lines | - | 4 | 4 |
| | | | |
| Parallel engraved lines | - | 10 | 10 |
| Parallel engraved lines and excised pendant triangle | - | 1 | 1 |
| Parallel engraved lines and hatched zone | - | 1 | 1 |
| Parallel engraved lines and open pendant triangle | - | 1 | 1 |
| Sub-totals, parallel lines and elements | - | 3 | 3 |
| | | | |
| Pendant triangle, excised | 1 | - | 1 |
| Pendant triangle, hatched | 1 | - | 1 |
| Sub-total, pendant triangles | 2 | - | 2 |
| | | | |
| Scroll and circle element | 1 | 1 | 2 |
| Scroll engraved element | 1 | - | 1 |
| Scroll engraved divider | 1 | - | 1 |
| Scroll fill zones | - | 4 | 4 |
| Scroll, slanting | 3 | 5 | 8 |
| Sub-total, scrolls | 6 | 10 | 16 |
| | | | |
| Semi-circle element | - | 1 | 1 |
| | | | |
| Straight engraved line | - | 24 | 24 |
| Straight engraved line and excised pendant triangle | - | 1 | 1 |
| Sub-total, straight lines | - | 25 | 25 |
| | | | |
| Vertical engraved lines | - | 1 | 1 |
| Vertical hatched zone and horizontal engraved line | 1 | - | 1 |
| Sub-total, vertical lines and elements | 1 | 1 | 2 |

It appears to be the case that the engraved carinated bowl sherds are primarily from Ripley Engraved vessels with scroll and scroll and circle motifs, as well as scrolls with semi-circle motifs, seen on ceramic vessels from early Titus phase mortuary contexts in the western part of the Big Cypress Creek basin. There are other Ripley Engraved sherds in the collection with portions of horizontal scrolls, or with vertical engraved lines that may mark portions of a continuous scroll motif. Scroll dividers are hatched, cross-hatched, or excised (see Figure 4b, d-e), as are scroll fill zones (i.e., the zones above and below the central scroll line, see Figures 4d and 5f-g).

The one bowl rim has a single row of hatched pendant triangles under the lip (see Figure 4j). Identified compound bowl sherds have widely-spaced horizontal engraved lines on what would be the rim's upper panel (see Figure 4f). It is not known what decorative motifs would have been present on the lower rim panel.

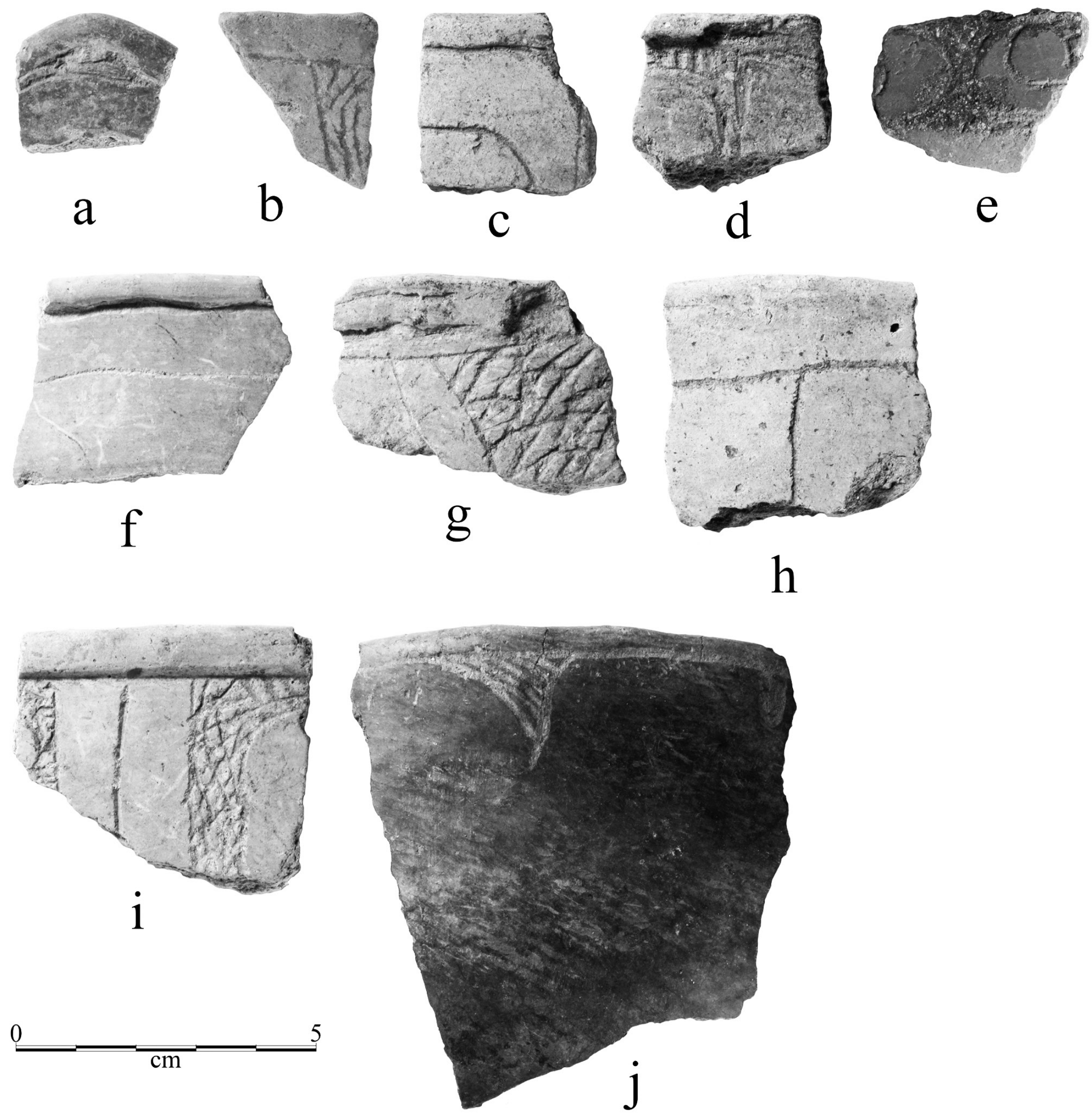


Figure 4. Engraved carinated bowl, compound bowl, and bowl rim sherds: a-e, g-i, carinated bowl; f, compound bowl; j, bowl.

Eight engraved carinated bowl rim and body sherds also have an interior and exterior red slip. Two have portions of Ripley Engraved scroll elements, while the others have horizontal, parallel, or straight lines, circle elements (see Figures 4e and 5a), or a horizontal excised area on a vessel with a rim peak (see Figure 4a). The red-slipped body sherd with a straight engraved line is shell-tempered; it likely is from an Avery Engraved red-slipped vessel.

**Utility Wares**

The utility ware sherds at the Sam D. Carpenter Bottom site are dominated by vessels with brushing on the rim and/or the body of cooking and storage jars (Table 5). Sherds with just brushing comprise 63.5% of

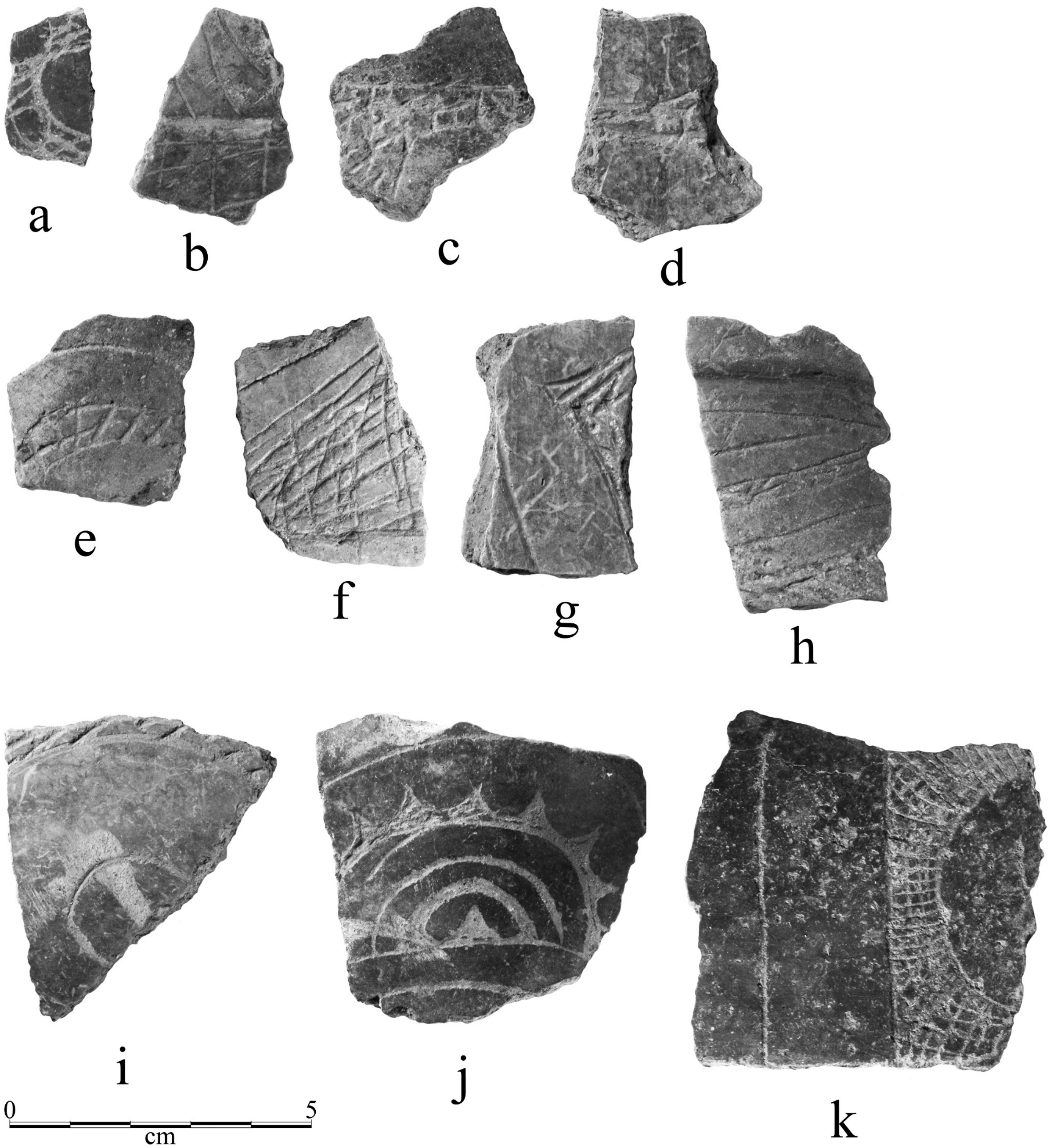


Figure 5. Engraved carinated bowl body sherds.

the utility ware assemblage, and another 5.5% have brushed decorations in combination with other decorative methods. More than 27% of the utility ware rims are from brushed vessels.

Other important utility wares include vessel sherds with incised (20.5% of the utility wares and 37% of the utility ware rims) and punctated (6.0% of the utility wares and 19% of the utility ware rims) decorations

**Table 5. Utility wares at the Sam D. Carpenter Bottom site.**

| Decorative Method | Rim | Body | N | Percent |
|---|---|---|---|---|
| Appliqued | 2 | 6 | 8 | 1.4 |
| Appliqued-Incised | - | 5 | 5 | 0.9 |
| Brushed | 15 | 357 | 372 | 63.5 |
| Brushed-Appliqued | - | 3 | 3 | 0.5 |
| Brushed-Appliqued-Incised | - | 1 | 1 | 0.2 |
| Brushed-Appliqued-Punctated | - | 1 | 1 | 0.2 |
| Brushed-Incised | - | 20 | 20 | 3.4 |
| Brushed-Punctated | 2 | 5 | 7 | 1.2 |
| Incised | 23 | 97 | 120 | 20.5 |
| Incised-Punctated | 7 | 3 | 10 | 1.7 |
| Incised-Punctated-Brushed | - | 1 | 1 | 0.2 |
| Neck Banded | 1 | 1 | 2 | 0.3 |
| Punctated | 13 | 22 | 35 | 6.0 |
| Ridged | - | 1 | 1 | 0.2 |
| Total | 63 | 523 | 586 | 100.0 |

(see Table 5). Sherds with appliqued decorations comprise 2.3% of the utility wares; 1.9% have incised-punctated decorations; and there are also a very few neck banded and ridged sherds (see Table 5).

*Brushed Sherds*

Brushed sherds, probably from Bullard Brushed jars and other types that have brushing on their vessel bodies, comprise almost 64% of the utility wares at the Sam D. Carpenter Bottom site (see Table 5). The proportions of brushed utility ware sherds is consistent with a Late Caddo period Titus phase occupation in the Big Cypress Creek basin in East Texas. All rims with brushing have horizontal brushing marks (Figure 6a-d), including several from vessels with bone temper.

The brushed body sherds have parallel (n=337, Figure 7a-d, g, k-l), opposed (n=5, Figure 7e), overlapping (n=5), vertical (n=9, Figure 7i) brushing marks, as well as one body sherd with a zone of curvilinear brushing marks (Figure 7h). It is likely that the majority of the parallel brushed sherds actually have brushing marks that are oriented vertically on the body of utility ware jars.

*Brushed-Incised Sherds*

There are a few (n=20) body sherds—all grog-tempered—that have brushed and incised decorative elements. This includes 18 with parallel brushed-incised lines (see Figure 7f, j), one with vertical brushed-incised lines, and another body sherd with diagonal incised lines adjacent to an area with horizontal brushing marks.

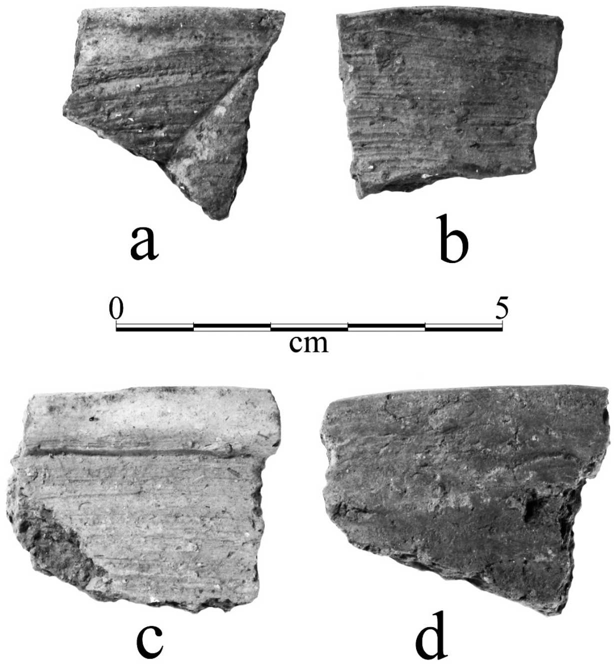


Figure 6. Horizontal brushed rim sherds: a-c, bone-tempered rims; d, grog-tempered rim.

*Brushed-Punctated Sherds*

The grog-tempered brushed-punctated sherds represent 1.2% of the utility wares in the Sam D. Carpenter Bottom assemblage (see Table 5). The two rims have horizontal brushing with horizontal rows of tool punctations near mid-rim. Body sherds have a row of tool punctations at the rim-body juncture (Figure 8b), with diagonal or vertical brushing on the vessel body itself. Other body sherds have parallel or horizontal brushing marks adjacent to a row or rows of tool punctations (Figure 8a).

*Incised Sherds*

Sherds from incised utility wares comprise the second-most important set of sherds in the assemblage, comprising 20% of all the utility ware sherds and more than 36% of the utility ware rim sherds (see Table 5). These sherds are primarily from Maydelle Incised vessels. There are a number of different decorative elements on the incised rim and body sherds (Table 6). On the rim sherds, the most common decorative element is sets of diagonal incised lines (Figure 9c, g), followed by opposed sets of incised lines (Figure 9b, e, h). Other decorative elements on the rims include cross-hatched lines (Figure 9d), horizontal incised lines, diagonal and opposed incised lines (Figure 9f), and horizontal and vertical incised lines (Figure 9a).

**Table 6. Decorative elements on incised rim and body sherds from the Sam D. Carpenter Bottom site.**

| Decorative Element | Rim | Body | N |
|---|---|---|---|
| Cross-hatched incised lines | 2 | 3 | 5 |
| Curvilinear incised lines | - | 1 | 1 |
| Curvilinear incised lines and cross-hatched incised zone | - | 1 | 1 |
| Diagonal incised lines | 12 | 3 | 15 |
| Diagonal and horizontal incised lines | - | 1 | 1 |
| Diagonal and opposed incised lines | 1 | - | 1 |
| Diagonal and vertical incised lines | * | * | 1 |
| Horizontal incised lines | 3 | - | 3 |
| Horizontal and vertical incised lines | 1 | - | 1 |
| Opposed incised lines | 4 | 8 | 12 |
| Parallel incised lines | - | 62 | 62 |
| Parallel and curvilinear incised lines | - | 1 | 1 |
| Straight incised line | - | 14 | 14 |
| Vertical incised lines | - | 1 | 1 |
| Vertical and opposed incised lines | - | 1 | 1 |

*diagonal incised lines on the rim and vertical incised lines on the body of one sherd

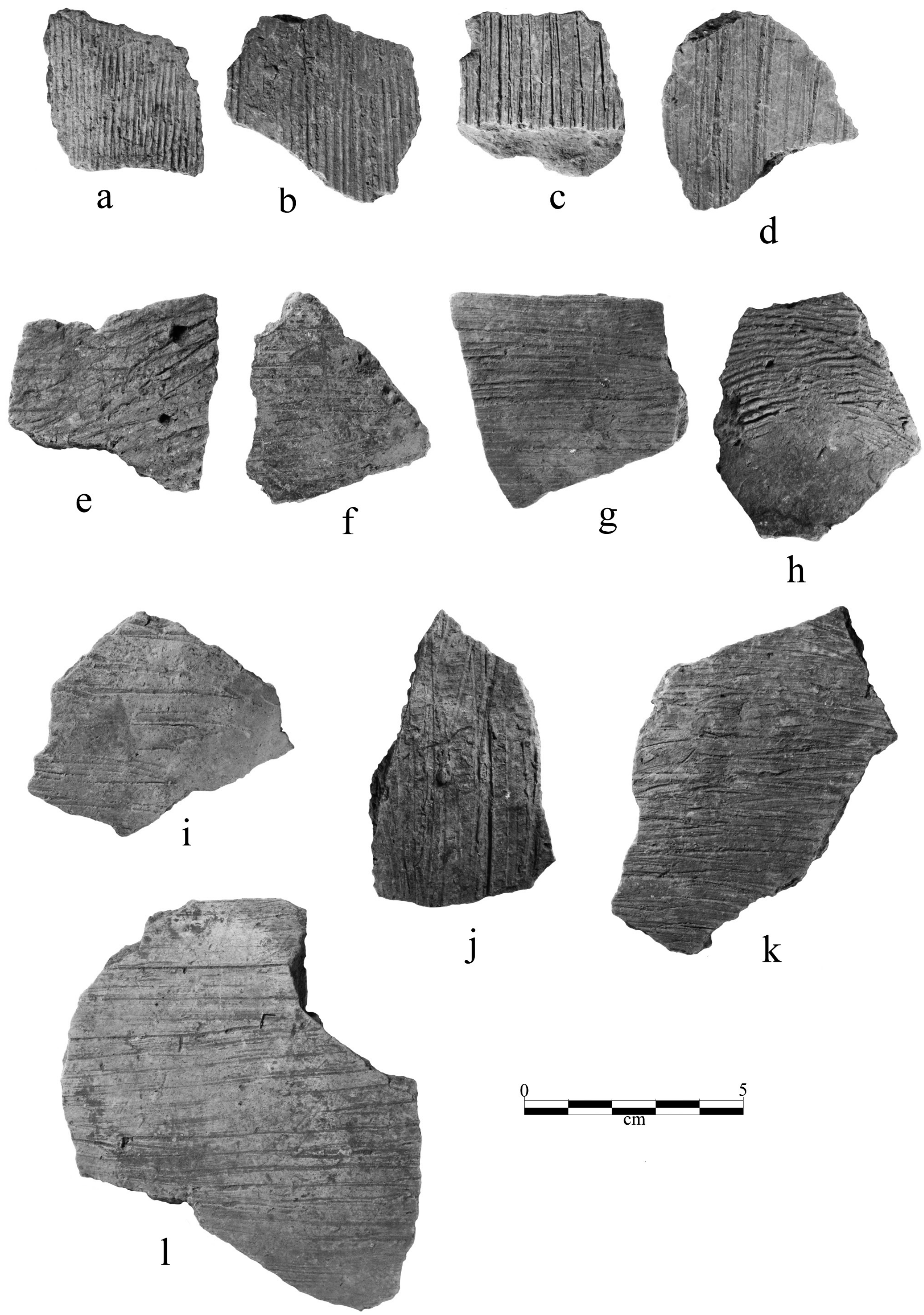


Figure 7. Brushed and brushed-incised body sherds: a-e, g-i, k-l, brushed body sherds; f, j, brushed-incised.

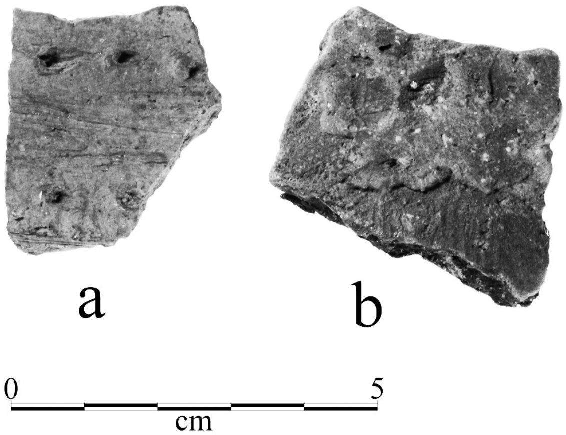


Figure 8. Brushed-punctated body sherds.

The majority of the body sherds have sets of parallel incised lines, where the orientation of the lines on the vessel is unknown (Figure 10d, h), or a single straight incised line (see Table 6). Other body sherds have opposed incised lines (Figure 10e-g), cross-hatched (Figure 10b), diagonal, and vertical incised lines (Figure 10c), among other decorative elements. One body sherd is from a Pease Brushed-Incised jar (see Suhm and Jelks 1962:Plate 60k) with opposed sets of incised lines radiating from a single vertical incised line (Figure 10a); the vertical incised line defines a panel filled with the opposed incised lines.

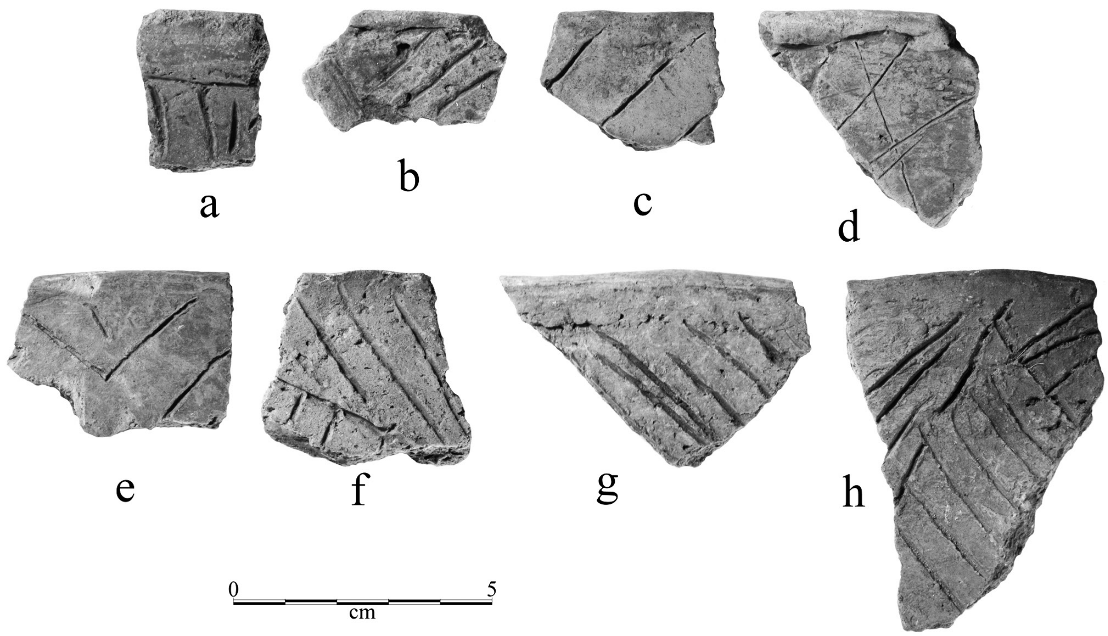


Figure 9. Incised rim sherds from the Sam D. Carpenter Bottom site.

*Punctated Sherds*

Sherds with punctated decorative elements are an important part of the utility ware assemblage at the site, comprising 6% of the surface collection sample and approximately 20% of the utility ware rims. The rim sherds have rows (both horizontal and diagonal in orientation) of tool punctations (n=11, Figure 11a-d, f) and circular tool punctations (n=2, Figures 11e and 12c). Body sherds have tool punctated rows (n=17, Figure 12a-b, d-e, g), circular punctations (n=2, Figure 12f), and fingernail punctations (n=3). Sherds decorated solely with rows of punctations on the rim may be from Mockingbird Punctated vessels, a common Titus phase utility ware on sites in the upper Sabine and Big Cypress stream basins.

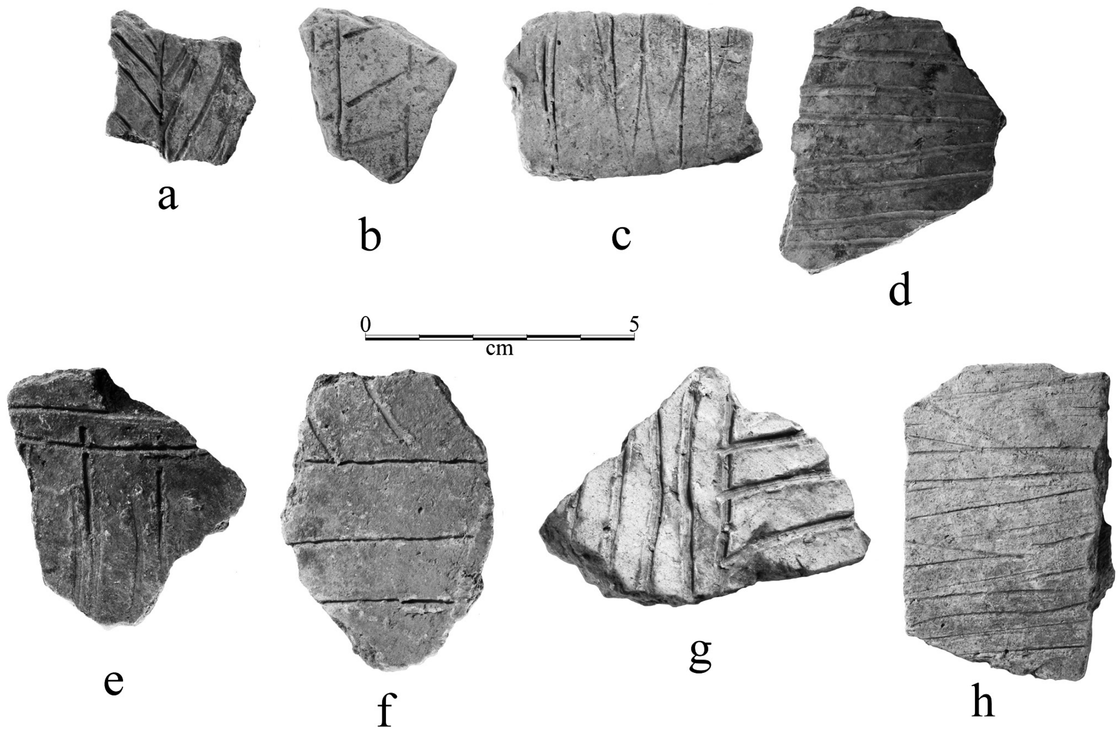


Figure 10. Incised body sherds.

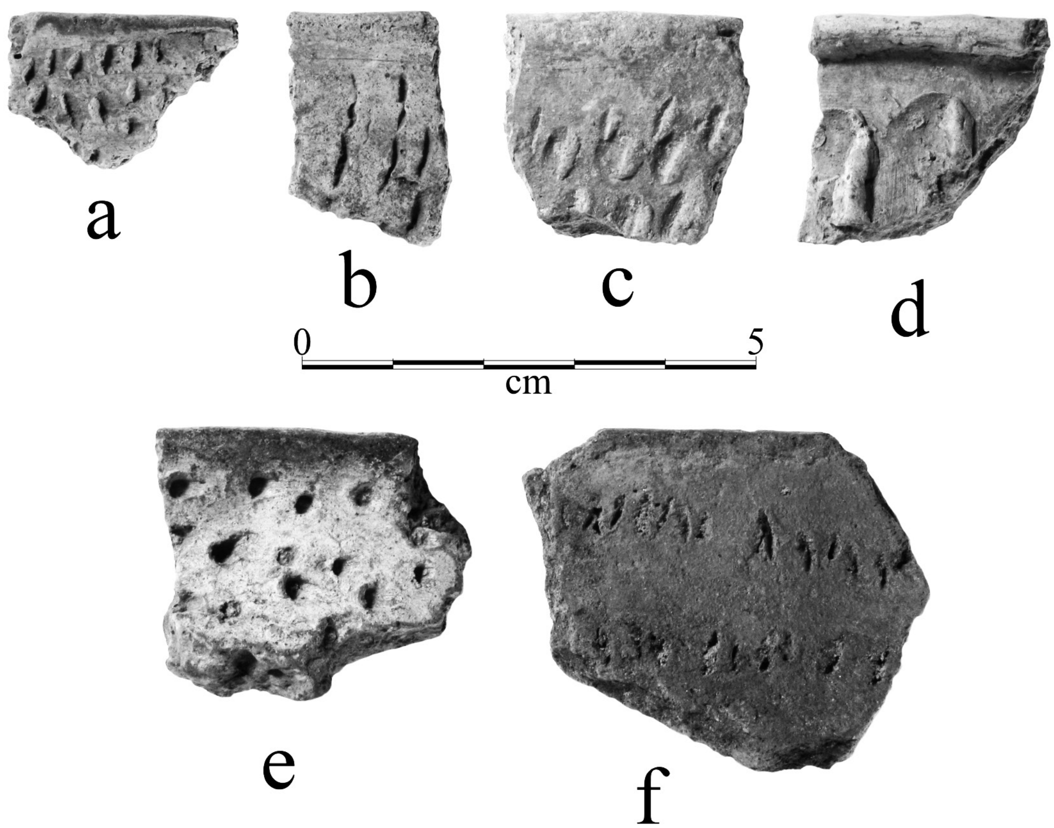


Figure 11. Tool punctated rim sherds.

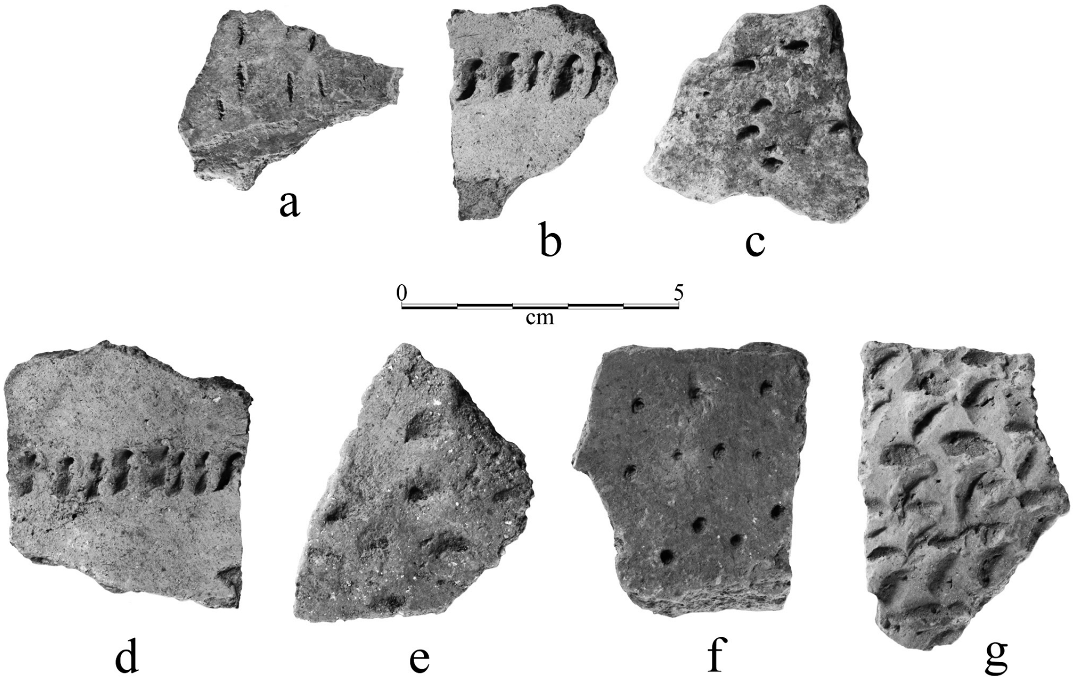


Figure 12. Tool punctated rim and body sherds: c, rim sherd; a-b, d-g, body sherds.

*Incised-Punctated Sherds*

Incised-punctated sherds, likely from Maydelle Incised vessels, account for only 1.7% of the utility wares from the Sam D. Carpenter Bottom site. The rim sherds include four with a row of tool punctations under the lip and diagonal incised lines (Figure 13a), one with diagonal incised lines and a vertical row of tool punctations, another with horizontal incised lines and row of tool punctations placed through the lines, and one with a circular incised zone filled with tool punctations (Figure 13b).

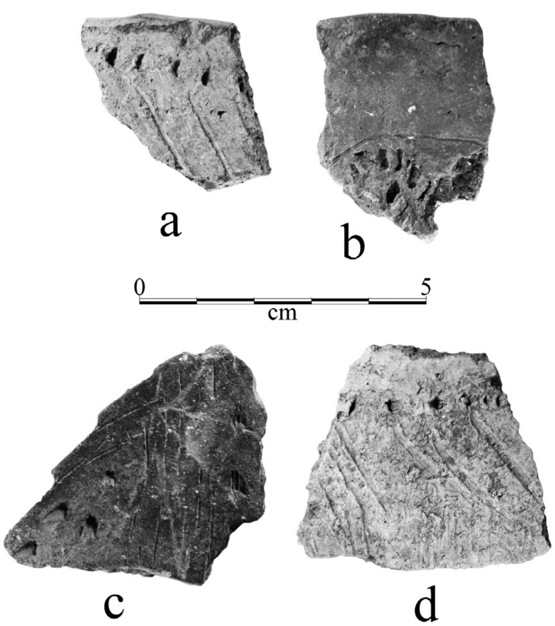


Figure 13. Incised-punctated rim and body sherds and Incised-punctated-brushed lower rim and body sherd: a-c, incised-punctated; d, incised-punctated-brushed.

Two of the incised-punctated body sherds have rows of fingernail punctations adjacent to a straight incised line. A third body sherd, with bone temper, has sets of opposed diagonal incised lines, with the triangular area between the lines filled with tool punctations (see Figure 13c).

*Incised-Punctated-Brushed Sherds*

This lower rim-body sherd has a row of tool punctations on the lower part of the rim, followed by a series of short diagonal incised lines that extend to the rim-body juncture. The vessel body has vertical brushing marks (see Figure 13d).

*Appliqued Sherds*

Grog-tempered appliqued sherds have nodes or vertical fillets on the rim (n=2, Figure 14a-b), as well as straight appliqued fillets (n=2) or ridges (n=4) on the vessel body (Figure 14d).

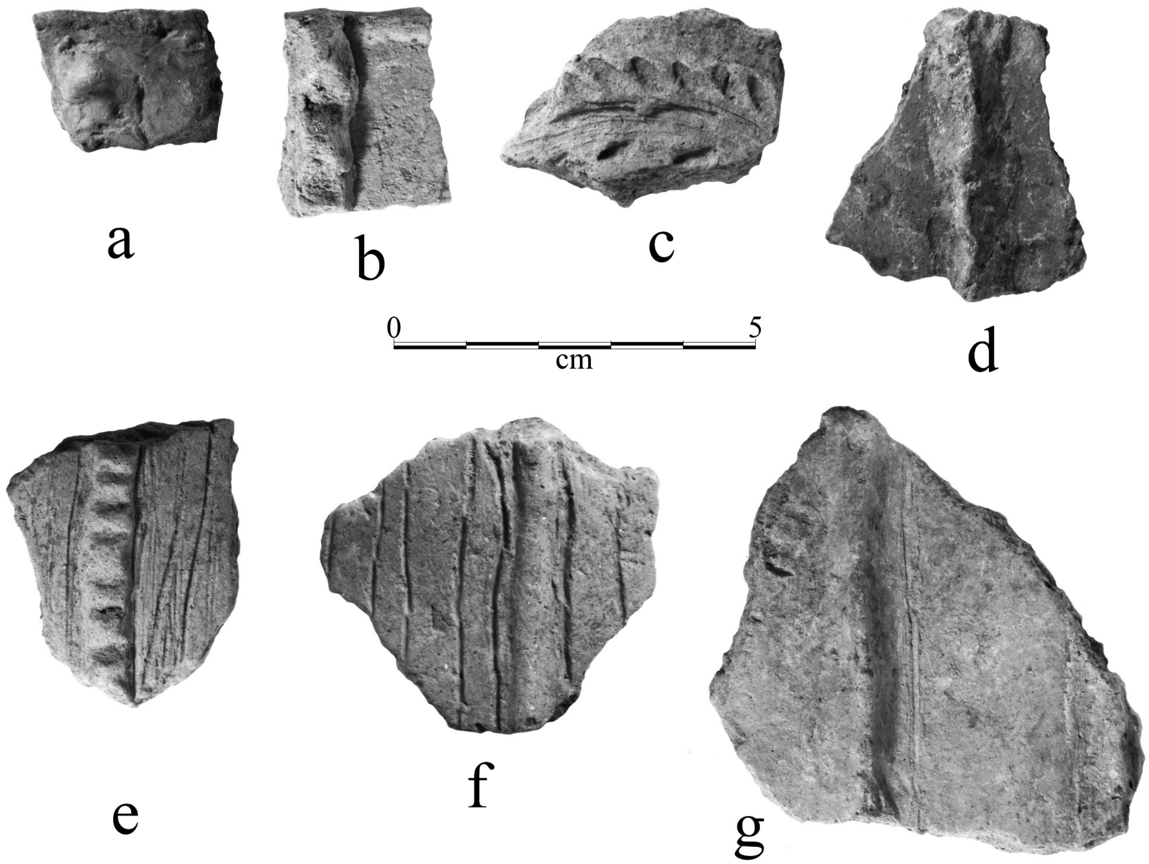


Figure 14. Rim and body sherds with appliqued elements, either by themselves, or together with other decorative elements: a-b, d, appliqued; c, appliqued-brushed (Harleton Appliqued); e, appliqued-brushed-incised; f-g, incised-appliqued body sherds.

*Appliqued-Brushed Sherds*

One Harleton Appliqued jar sherd has a curvilinear appliqued fillet and curvilinear brushed marks between fillets (see Figure 14c). two other body sherds have either a straight appliqued fillet or an appliqued ridge adjacent to an area with parallel brushed marks.

*Appliqued-Brushed-Incised Sherds*

One body sherd is decorated with a straight appliqued fillet with parallel brushed-incised lines on either side of the fillet (see Figure 14e).

*Appliqued-Brushed-Punctated Sherds*

A single grog-tempered body sherd is decorated with a straight appliqued ridge adjacent to an area with parallel brushing, as well as a row of tool punctations.

*Appliqued-Incised Sherds*

The five appliqued-incised body sherds (all grog-tempered) in the assemblage have either straight appliqued fillets (n=3) or straight appliqued ridges (n=2, see Figure 14f-g). There are parallel, straight, or opposed incised lines on either one or both sides of the appliqued elements.

*Neck Banded*

There are two grog-tempered sherds from a La Rue Banded jar (Suhm and Jelks 1962:Plate 47) in the utility wares. These jars have horizontal rows of neck banding on their rims.

*Ridged Sherds*

A single sherd from a grog-tempered Belcher Ridged jar (see Suhm and Jelks 1962:Plate 6) is in the collection; the sherd represents a trade vessel to Titus phase Caddo peoples. The sherd is from a vessel that has a series of vertically-oriented narrow ridges, with vertical brushing marks between the ridges. Belcher Ridged is the most common utility ware in Belcher phase components on the Red River in Northwest Louisiana (Kelley 2012:Table 14-1), and was made by Caddo potters between ca. A.D. 1500-1700.

**Plain Wares**

The plain wares from the site include 26 rims, 704 body sherds, and 45 flat and disk-shaped base sherds (see Table 1). The plain rims are from jars and bowls; the latter often have direct rims and exterior folded lips (Figure 15b, d-e).

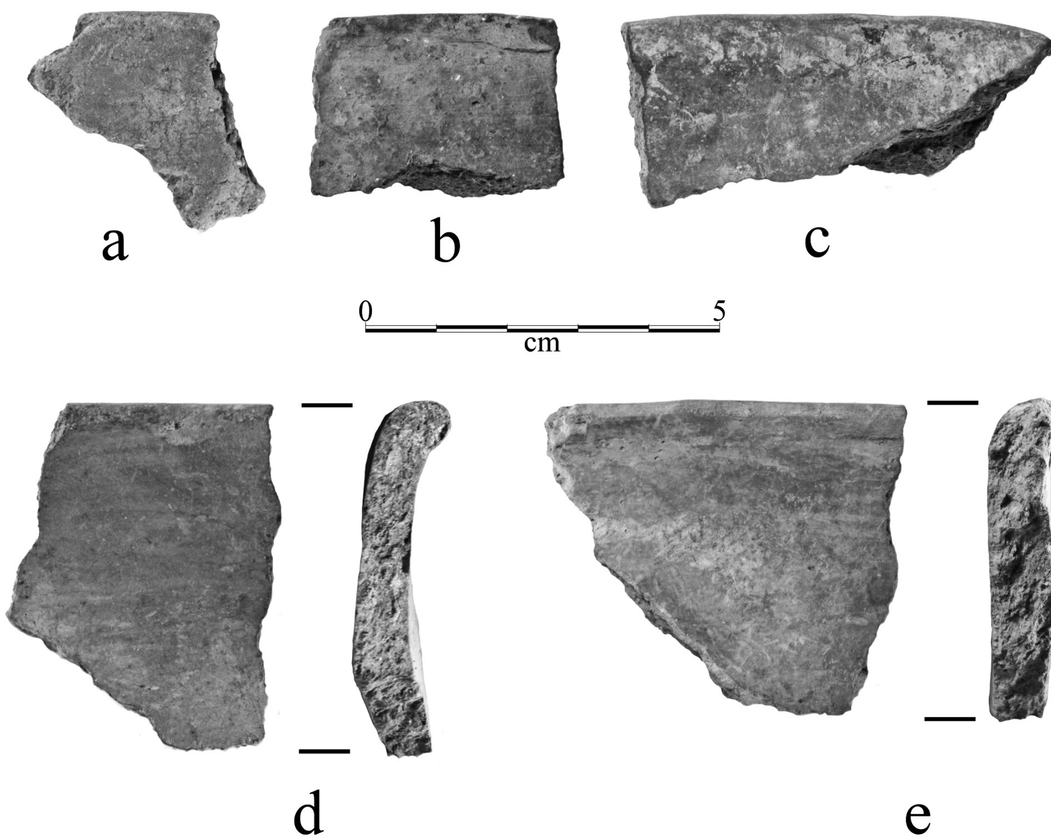


Figure 15. Plain ware rim sherds.

***Ceramic Pipe Sherds***

One elbow pipe stem sherd is in the ceramic collection. Such pipes were commonly made and used by Late Caddo groups in the Big Cypress Creek basin.

### *Daub and Mud dauber Nest*

The presence of daub (n=9 pieces) and a mud dauber nest fragment in the collection suggests that there are preserved wattle and daub-covered Caddo wood structures at the site, or at least the burned evidence of their construction and use.

### *Lithic Artifacts*

**Arrow points**

Nine arrow points are in the Sam D. Carpenter Bottom collection, three of the Maud type (Figure 16b, e-f) and six Perdiz points (Figure 16a, c-d, g-i). The proportions of arrow points suggest that the occupation here dates to the latter part of the earlier portion of the Titus phase in the Big Cypress Creek basin, from ca. A.D. 1500-1550.

The Perdiz points are generally unifacially flaked (67%) and made from chert (83%); one of the Perdiz points is made from a local quartzite (see Figure 16c). Two of the Perdiz points are made from a local brown chert (see Figure 16a, d), but the other three are from Ouachita Mountains sources, including a gray chert (see Figure 16g) and a brownish-black Big Fork chert (see Figure 16h-i). The Maud arrow points are primarily unifacially flaked as well (67%), but are all made from a local fine-grained quartzite; two of the three are of a heat-treated quartzite (see Figure 16b, f).

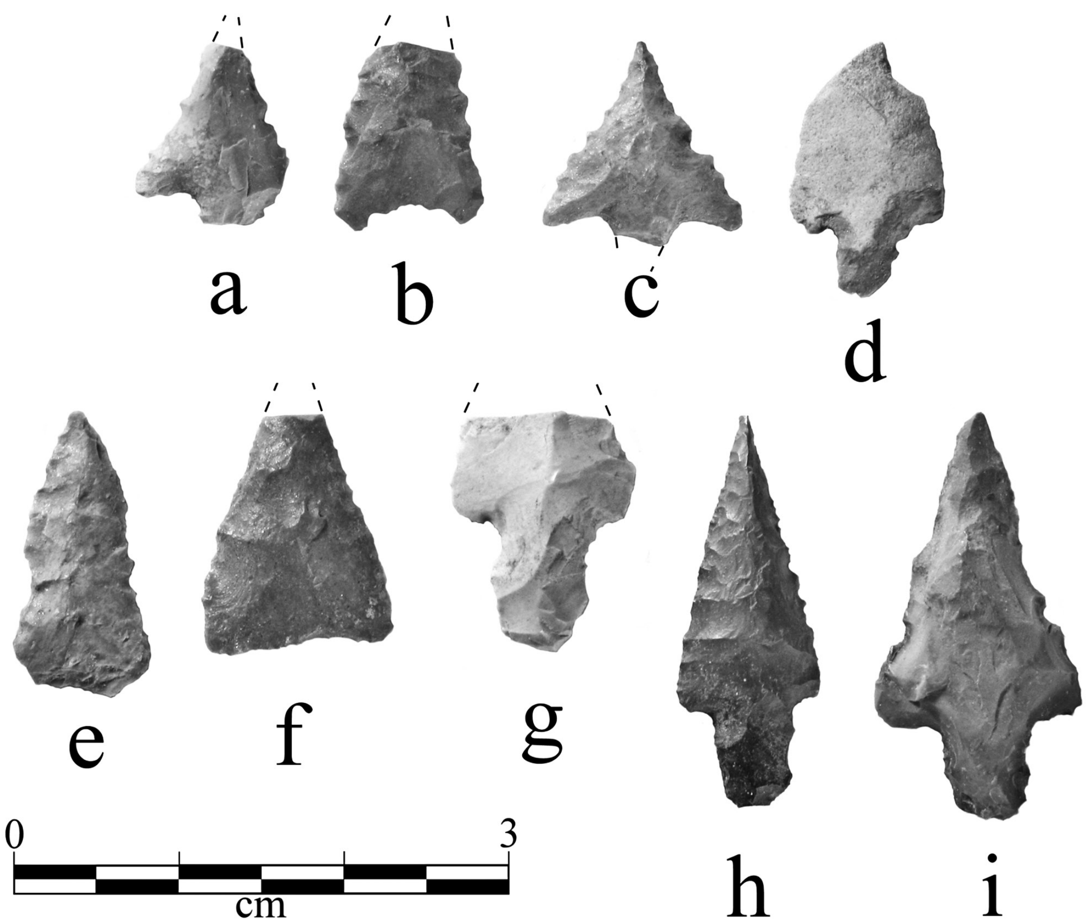


Figure 16. Arrow points: a, c-d, g-i, Perdiz; b, e-f, Maud.

**Bifaces**

There are three small biface fragments from the Sam D. Carpenter Bottom site, obviously discarded during the manufacturing process. Two of the bifaces are on a local quartzite, but the third is on a non-local gray chert.

**Lithic debris**

Including four cores, there are 109 pieces of lithic debris in the surface collection. The cores (both single and multiple platform flake types) are on local raw materials: quartzite (n=3) and yellow chert (n=1). Both local and non-local lithic raw materials are represented in the lithic debris, indicating that tools were knapped from a variety of sources during the Caddo occupation. Local lithic raw materials comprise 89% of the lithic debris, including quartzite (n=50, or 54% of the local lithic debris); brown chert (n=31, 33%); petrified wood (n=4, 4%); yellow chert (n=4, 4%); red chert (n=2, 2%); brown chalcedony (n=1, 1%); and brownish-red chert (n=1, 1%). Non-local lithic raw materials (11%) in the lithic debris include grayish-brown chert (n=4, 33% of the non-local lithic debris); orange novaculite (n=3, 25%); greenish-gray quartzite (n=2, 17%); white chert (n=1, 8%); gray chert (n=1, 8%); and dark gray chert (n=1, 8%). These materials likely all originated from raw material sources in the Ouachita Mountains of southeastern Oklahoma, and were probably also available in stream gravels of the Red River, about 70 miles north of the Sam D. Carpenter Bottom site.

There is a single unmodified quartzite cobble in the lithic assemblage. This is probably a cobble gathered as a source of raw material, but it was never reduced or knapped.

**Fire-cracked rocks**

Also in the collection are four pieces of quartzite fire-cracked rock. These are likely the product of the occasional use of a rock hearth or cooking fire.

**Ground stone tools**

There are five ground stone tools in the collection from the site. These include a ferruginous sandstone abrader with worn grooves on both sides of the tool, two ferruginous sandstone manos (grinding on both surfaces), a quartzite pitted stone with two pits on one surface, and a quartzite pestle fragment. These tools would have been used by Caddo peoples for wood and bone shaping and for the grinding and pulverizing of plant foods and seeds.

## ANALYSIS OF FAUNAL REMAINS FROM THE SAM D. CARPENTER BOTTOM SITE (41CP495)

***LeeAnna Schniebs***

Surface investigations along Big Cypress Creek in Camp County, Texas, at the Late Caddo period Titus phase Sam D. Carpenter Bottom site (41CP495) included the collection of 92 faunal specimens. The sample weighs 335.2 grams, 53.2% of the sample is identifiable, and 15 bone fragments are burned. In general, the collection is very well preserved although 10 deer bones are rodent gnawed and two bone surfaces are exfoliated. Table 7 provides the number of specimens (NISP) in the Sam D. Carpenter Bottom site faunal collection, as well as the minimum number of individuals (MNI), number of burned bones, and the percent of the sample represented by each taxon.

**Table 7. Summary of taxonomic recovery from the Sam D. Carpenter Bottom site (41CP495).**

| Taxon | NISP | MNI | Percent | No. Burned |
|---|---|---|---|---|
| Indeterminate (Vertebrata) | 2 | - | 2.2 | - |
| Softshell turtle (*Trionyx* sp.) | 1 | 1 | 1.1 | - |
| Indeterminate turtle (Testudinata | 1 | - | 1.1 | 1 |
| Turkey (*Meleagris gallopavo*) | 1 | 1 | 1.1 | - |
| Raccoon (*Procyon lotor*) | 1 | 1 | 1.1 | - |
| White-tailed deer (*Odocoileus virginianus*) | 45 | 2 | 48.9 | 5 |
| Small mammal (small Mammalia) | 1 | - | 1.1 | - |
| Large mammal (large Mammalia) | 40 | - | 43.4 | 9 |
| Total | 92 | 5 | 100.0 | 15 |

The recovery of deer, turtles, turkey, and raccoon is typical of Late Caddo faunal assemblages in East Texas. These animals prefer wooded edges and areas in close proximity to aquatic habitats, and are important protein supplements of the Caddo diet. They also provide materials used for non-food items as well, such as hides for clothing, feathers for decoration, and bones for tools. There are a minimum of two deer in the collection based on the identification of two right petrous bones (a hard portion of bone surrounding the inner ear). At least one of the individuals is immature indicated by four bones that are lacking epiphyseal fusion. The unidentifiable large mammal bones are small fragments from larger elements, and are likely the remains of deer. Table 8 lists only the identifiable elements in the Sam D. Carpenter Bottom site sample.

The deer elements recovered are dominated by leg bones, but also includes nine cranial elements, three rib and four vertebra fragments. The absence of scapula and pelvis bones may be the result of collection methods, or possibly that the majority of the torso was processed in another location. There are cut marks visible on the humerus bone and one of the femur fragments, which is indicative of butchering. Additional investigations at the Sam D. Carpenter Bottom site would provide more information about Late Caddo subsistence practices, such as animal hunting and processing information. The faunal remains from this site can be considered subsistence debris.

## MUSSEL SHELL

Approximately 20 pieces of freshwater mussel shell are in the surface collection. Their preservation is indicative of the preservation of organically enriched archaeological deposits (i.e., midden deposits) at the site, or at least in the surface collection area.

**Table 8. Composition of identified elements in the Sam D. Carpenter Bottom site faunal collection.**

| Taxon | Element | N |
|---|---|---|
| Softshell Turtle | pelvis fragment | 1 |
| Indeterminate Turtle | shell fragment | 1 |
| Turkey | tarsometatarsus fragment | 1 |
| Raccoon | humerus fragment | 1 |
| Deer | antler fragment | 2 |
| | cranial fragment | 4 |
| | occipital condyle | 1 |
| | petrous | 2 |
| | rib fragment | 3 |
| | vertebra fragment | 4 |
| | humerus fragment | 1 |
| | radius fragment | 2 |
| | ulna fragment | 3 |
| | metacarpal fragment | 1 |
| | calcaneus fragment | 2 |
| | navicular cuboid | 2 |
| | metatarsal fragment | 2 |
| | tibia fragment | 5 |
| | femur fragment | 4 |
| | metapodial fragment | 4 |
| | scaphoid | 1 |
| | phalanx | 2 |
| Total Identifiable Bone | | 49 |

## SUMMARY AND CONCLUSIONS

The Sam D. Carpenter Bottom site (41CP495) appears to be a single component Late Caddo period, Titus phase domestic site located in a bottomland setting in the Big Cypress Creek valley. A large sample of plain and decorated sherds from bowls, carinated bowls, compound bowls, bottles, and jars were collected from the surface of the site by Robert L. Turner, Jr., and they provide an indication of the composition of Titus phase domestic assemblage in the region; the vessels are almost exclusively tempered with grog, with the minor use of burned bone. Utility wares comprise almost 77% of the decorated sherds (and sherds with brushing account for 53% of the decorated sherds in the assemblage), with the remainder of the decorated sherds from engraved, engraved/red-slipped, and red-slipped fine ware sherds. Plain ware rims indicate that plain vessels are also a substantial part of the assemblage.

The utility wares are dominated by jars with brushed bodies and rims (likely from Bullard Brushed and Karnack Brushed-Incised vessels as well as other utility wares with brushed bodies) as well as jars with incised decorations, including diagonal opposed motifs from Maydelle Incised jars, as well as punctated rims. At least one sherd is from a Harleton Appliqued vessel. The utility wares as a whole more closely resemble eastern Titus phase sites in the Big Cypress Creek heartland (Fields and Gadus 2012:71; Perttula and Sherman 2009) because of the quantities of brushed sherds and the absence of neck banded utility wares. The fine wares, on the other hand, from the Sam D. Carpenter Bottom site are more like western Titus phase sites in the Big Cypress Creek heartland because red-slipped sherds are common in the assemblage, and the Ripley Engraved carinated bowl sherds have scroll and scroll and circle motifs, while sherds with pendant triangle elements (i.e., excised pendant triangles and central diamonds) are mostly absent (Perttula and Sherman 2009:400), although there are a few sherds with hatched or excised pendant triangles, generally associated with scroll motifs. These patterns in the Ripley Engraved motif, and the occurrence of both Maud and Perdiz points, also suggests that the site dates sometime prior to ca. A.D. 1550, perhaps from ca. A.D. 1500-1550, after which this motif became more prevalent in Titus phase ceramic assemblages along with Maud and Talco arrow points (see Perttula 1992:Appendix 1). The three obvious trade ware sherd in the surface-collected assemblage are shell-tempered rim and body sherds that may be from a Red River McCurtain phase Caddo fine ware vessel or vessels along with a Belcher Ridged body sherd from a Belcher phase utility ware vessel.

## ACKNOWLEDGMENTS

I appreciate the opportunity provided by Robert L. Turner, Jr. and Bo Nelson to study the surface collections from the Sam D. Carpenter Bottom site. Lance Trask prepared the figures for this article.

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# The McMinn Ranch Site (41CP72) in the Dry Creek Valley, Camp County, Texas

*Timothy K. Perttula*

## INTRODUCTION

The McMinn Ranch site (41CP72) is a small (less than an acre) prehistoric site on an alluvial terrace along the north side of the lower reaches of Dry Creek, an important eastward-flowing tributary to Big Cypress Creek. In addition to a cluster of several Late Caddo Titus phase settlements and small cemeteries in this part of the valley (Thurmond 1990:58; Perttula 2013a; Perttula et al. 2010), there are Middle and Late Caddo settlements and a large Titus phase cemetery at the nearby Harold Williams site (41CP10) (Turner 1997; Turner and Smith 2003) as well as a large Titus phase community cemetery at the Tuck Carpenter site (41CP5) (Turner 1978, 1992). This article is a discussion of the McMinn Ranch site based on the recent analysis of an assemblage of artifacts in a surface collection gathered by Robert L. Turner, Jr. some unknown number of years ago.

## ARTIFACTS

### *Ceramic Sherds*

There are 286 ceramic sherds in the McMinn Ranch site surface collection (Table 1), including 28 vessel rim sherds. The proportions of the rims between the different wares suggest that all three wares are well represented at the site: 25% plain ware; 39% utility ware; and 36% fine ware. The plain to decorated sherd ratio for this assemblage is 1.53.

**Table 1. Ceramic sherds from the McMinn Ranch site.**

| Ware | Rim | Body | Base | N |
|---|---|---|---|---|
| Plain ware | 7 | 150 | 16 | 173 |
| Utility ware | 11 | 57 | - | 68 |
| Fine ware | 10 | 35 | - | 45 |
| Totals | 28 | 242 | 16 | 286 |

The McMinn Ranch ceramic sherd assemblage is from vessels almost exclusively tempered with grog or crushed sherds, regardless of the ware (Table 2). The use of bone temper ranges from 4.4-7.3% by ware, and one red-slipped body sherd is from a shell-tempered vessel, either an undecorated portion of an Avery Engraved carinated bowl or deep bowl or a sherd from a Clement Redware vessel (see Flynn 1976). This latter vessel, regardless of the type, is likely an import from a McCurtain phase Caddo group living on the middle reaches of the Red River after ca. A.D. 1300 (e.g., Perttula et al. 2012).

**Table 2. Temper use in the ceramic wares.**

| Ware | grog temper | bone temper | shell temper | N |
|---|---|---|---|---|
| plain | 94.8% | 5.2% | - | 173 |
| utility | 92.7% | 7.3% | - | 68 |
| fine | 93.4% | 4.4% | 2.2% | 45 |
| Totals | 94.1% | 5.6% | 0.3% | 286 |

Utility wares comprise 60% of the decorated sherds, and 52% of the decorated rim sherds (Table 3). Engraved sherds are the single most common decorative category in the decorated sherd assemblage (31%), followed by brushed sherds (19.5%), and sherds from incised vessels (15%). Of the sherds with brushing—as the sole decorative method or in combination with other decorative methods—they represent 28.3% of all the decorated sherds and 47% of all the utility wares. These proportions of brushed sherds, in conjunction with the plain to decorated sherd ratio of 1.53, suggests that the McMinn Ranch site ceramic assemblage may date to the latter part of the Middle Caddo period in the Big Cypress Creek basin (Perttula 2013b:Table 8-20), and not to the Late Caddo Titus phase as suggested by Thurmond (1990). Radiocarbon or thermoluminescence dates from the assemblage are needed to evaluate the chronological possibilities.

**Table 3. Decorative methods represented in the utility wares and fine wares from the McMinn Ranch site.**

| Ware | Rim | Body | N |
|---|---|---|---|
| *Fine Wares* | | | |
| Engraved | 10 | 27 | 37 |
| Red slipped | - | 8 | 8 |
| Sub-total | 10 | 35 | 45 |
| *Utility Wares* | | | |
| Appliqued | - | 4 | 4 |
| Brushed | 2 | 20 | 22 |
| Brushed-appliqued | - | 1 | 1 |
| Brushed-incised | 1 | 6 | 7 |
| Incised | 2 | 15 | 17 |
| Incised-brushed-punctated | 1 | 1 | 2 |
| Incised-punctated | 2 | 3 | 5 |
| Pinched | - | 1 | 1 |
| Punctated | 3 | 6 | 9 |
| Sub-total | 11 | 57 | 68 |
| Totals | 21 | 92 | 113 |

**Fine Wares**

Almost 40% of the decorated sherds from the site are from fine ware vessels (see Table 3). In turn, 82% of the fine wares (carinated bowls and bottles) have engraved designs (two of these sherds also have a red slip), and the remaining fine wares are sherds from vessels decorated only with a red slip.

*Engraved Bottle Sherds*

Approximately 13% (n=5) of the engraved sherds are from bottles with burnished and polished exterior surfaces (Figure 1a-c). One bottle neck rim has a series of horizontal engraved lines, while the body sherds have sets of curvilinear and/or opposed engraved lines that would have encircled the vessel body. Two of these body sherds—including one with a red pigment rubbed in the engraved lines (Figure 1c)—have hatched or excised pendant triangles on the curvilinear lines.

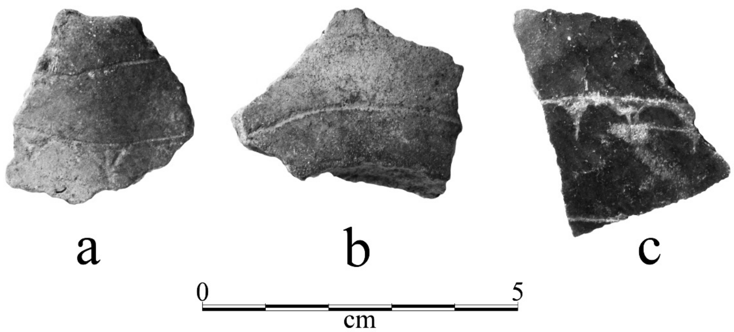

Figure 1. Engraved bottle sherds.

*Engraved Carinated Bowl Sherds*

There are 32 rim and body sherds from engraved carinated bowls, 71% of the fine wares in the decorated sherd assemblage (see Table 3). Two of these sherds (6.3%) have a pigment (white or red) rubbed in the engraved lines, and two others have a red slip on one (Figure 2a) or both (Figure 2f) vessel surfaces).

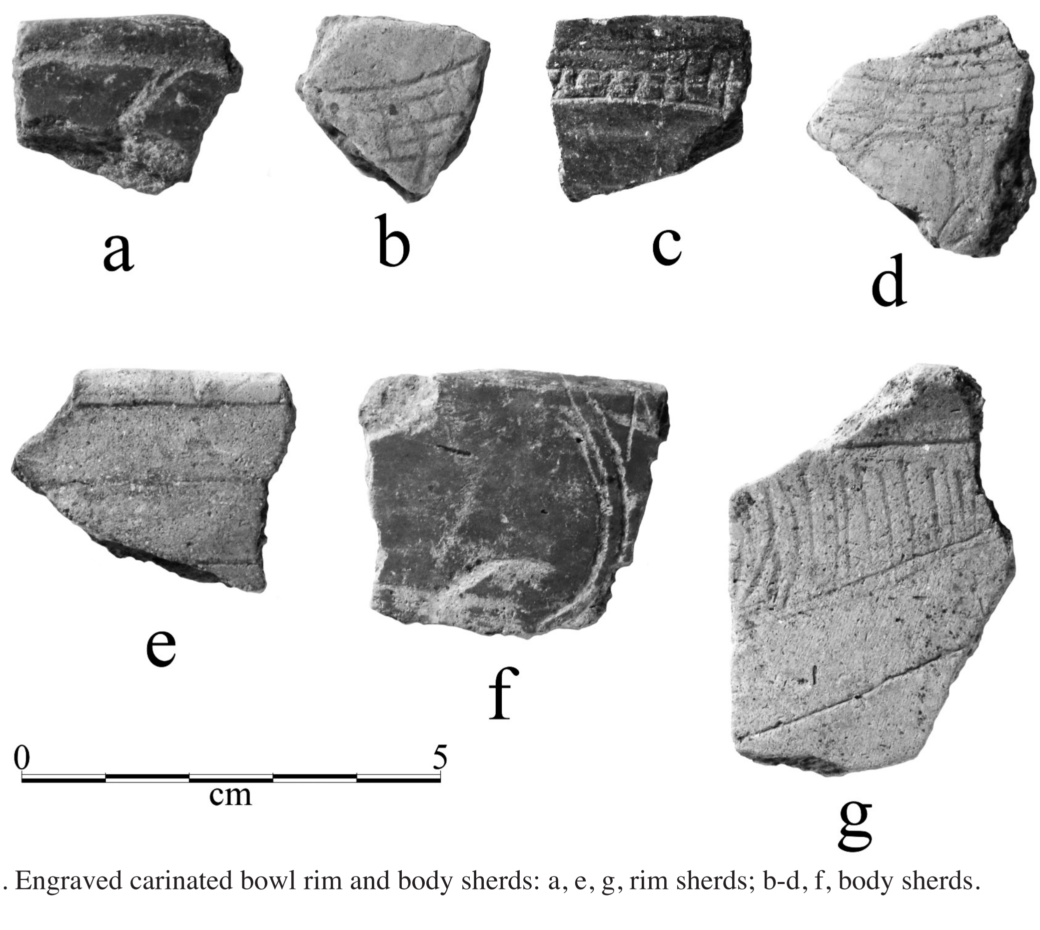

Figure 2. Engraved carinated bowl rim and body sherds: a, e, g, rim sherds; b-d, f, body sherds.

There are several different engraved decorative elements in the carinated bowls at the McMinn Ranch site (Table 4). Most of these (i.e., 78% of the rims and 26% of the body sherds) feature one or more horizontal engraved lines on the rim (see Figure 2a, e), and a few have attached pendant triangles. Others have sets of curvilinear lines, either by themselves, or with an engraved circle (see Figure 2d), there are engraved semi-circles (see Figure 2f) and several others have diagonal engraved lines or cross-hatched engraved zones (see Figure 2b-c).

**Table 4. Decorative elements on engraved carinated bowl sherds from the McMinn Ranch site.**

| Decorative Element | Rim | Body | N |
|---|---|---|---|
| Cross-hatched engraved zone | - | 2 | 2 |
| Curvilinear engraved line | - | 4 | 4 |
| Curvilinear engraved lines and circle element | - | 1 | 1 |
| Diagonal engraved lines | - | 2 | 2 |
| Hatched zone | - | 1 | 1 |
| Horizontal engraved lines | 1 | 2 | 3 |
| Horizontal engraved line under vessel lip | 3 | - | 3 |
| Horizontal engraved line and hatched pendant triangle | - | 2 | 2 |
| Horizontal and diagonal engraved lines | 3 | 1 | 3 |
| Horizontal and diagonal engraved lines and hatched pendant triangle | - | 1 | 1 |
| Parallel engraved lines | - | 5 | 5 |
| Scroll, slanted and hatched scroll fill zone | 1 | - | 1 |
| Semi-circle engraved element | - | 1 | 1 |
| Vertical engraved lines | 1 | - | 1 |
| Vertical engraved lines and associated excised area | - | 1 | 1 |

Only one engraved sherd in the McMinn Ranch site fine ware assemblage has a scroll motif (see Figure 2g). This rim has a slanting scroll line and an upper scroll fill zone with curvilinear to straight hatched lines.

*Red-Slipped Sherds*

Seven of the eight red-slipped body sherds have a slip on both interior and exterior surfaces, indicating they are from bowls, carinated bowls, or compound bowls; this includes the one shell-tempered red-slipped sherd. The other body sherd has a red slip only on the exterior surface, but it does not appear to be from a bottle because it does not have a roughened interior surface as most bottle sherds do.

**Utility Wares**

As mentioned above, sherds with brushing on the rim and/or the vessel body represent the most prevalent kind of utility ware vessel at the McMinn Ranch site. Sherds with brushing comprise 36% of the utility ware rims and 30% of the utility ware body sherds (see Table 3). Other utility ware sherds have appliqued, punctated, and pinched decorative elements.

The appliqued sherds, all grog-tempered, are body sherds. One has an appliqued node, while the other three have appliqued ridge elements; two of these have straight ridges and the other has a curvilinear appliqued ridge.

The brushed sherds are from vessels that are horizontally brushed on the rim (n=2, Figure 3c); these may be from Bullard Brushed or Pease Brushed-Incised jars. The body sherds have parallel brushing marks (n=18, Figure 3b, d-e), parallel-opposed brushing (n=1, Figure 3f), or vertical brushing (n=1).

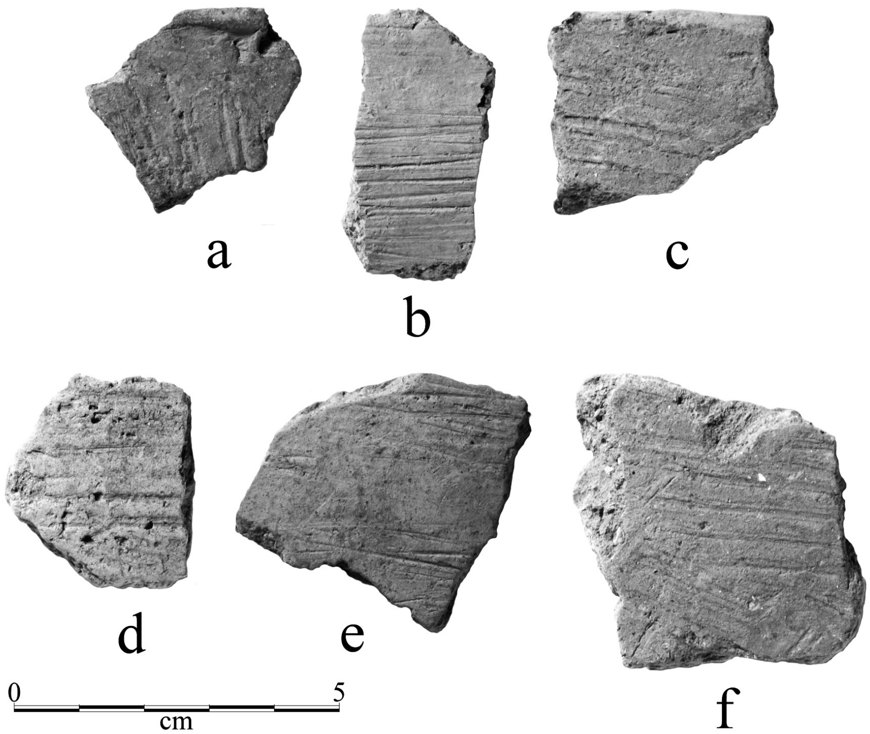


Figure 3. Brushed and brushed-incised sherds: a, brushed-incised rim; b-f, brushed sherds.

*Brushed-Appliqued*

The one brushed-appliqued body sherd in the McMinn Ranch collection may be from a Pease Brushed-Incised jar. The sherd has a straight appliqued fillet and parallel brushing marks on either side of the fillet.

*Brushed-Incised*

The seven sherds with brushed-incised decorative elements include a rim and six body sherds. The rim has diagonal brushed-incised marks and lines (see Figure 3a). Five of the body sherds have parallel brushed-incised lines and the other is parallel brushed with parallel incised lines drawn over the brushing marks.

*Incised*

One of the incised rims has a set of diagonal lines, while the other, perhaps from a Maydelle Incised vessel (see Suhm and Jelks 1962:Plate 52c) has cross-hatched incised lines (Figure 4a). Body sherds have parallel incised lines (n=11, Figure 4d-e), parallel and opposed lines (n=1, Figure 4c), cross-hatched lines (n=1), and cross-hatched and opposed lines (n=1, Figure 4b).

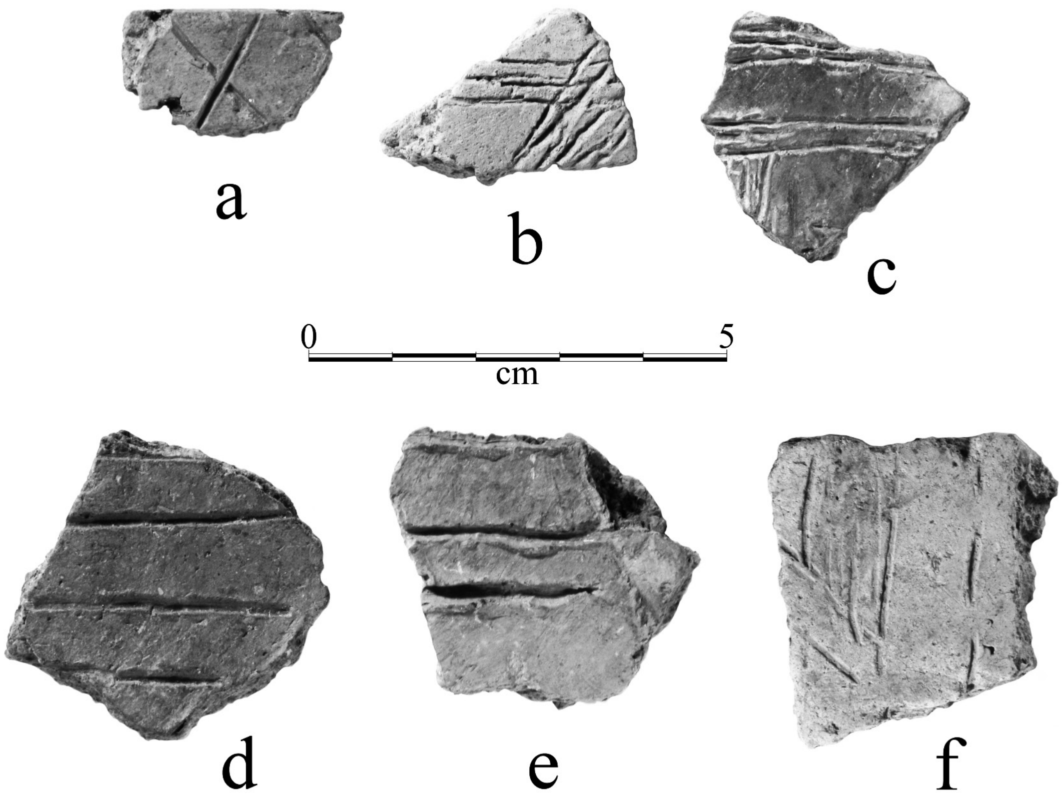


Figure 4. Incised rim and body sherds and incised-punctated body sherd: a-e, incised; f, incised-punctated.

*Pinched*

There is one body sherd in the collection with a pinched decoration. It has closely-spaced rows of pinching (Figure 5e), perhaps from a Killough Pinched jar (see Suhm and Jelks 1962:Plate 46f).

*Punctated*

The punctated sherds have rows of either tool (n=7, see Figure 5b-c and Figure 6c, below), fingernail (n=1, see Figure 5a), or large circular (n=1, see Figure 5d) punctations. The punctations are in rows, beginning under the lip, on the rim and/or the vessel body.

*Incised-Punctated*

The incised-punctated sherds represent 7.3% of the utility wares in the McMinn Ranch assemblage (see Table 3). One rim has vertical and curvilinear incised lines adjacent to a zone of circular tool punctations (Figure 6a), while another, likely from a Maydelle Incised jar, has a set of diagonal incised lines forming triangles filled with tool punctations.

The three incised-punctated body sherds have different decorative elements. One has a row of tool punctations adjacent to a single straight incised line. The second (see Figure 4f) has an incised triangle filled with incised lines, with a diagonal row of linear punctations likely separating sets of incised triangles. The last incised-punctated body sherd (or more precisely, a lower rim-body sherd) in the collection has a horizontal row of punctations at the rim-body juncture, with a single horizontal incised line above that on the rim, and opposed sets of diagonal incised lines.

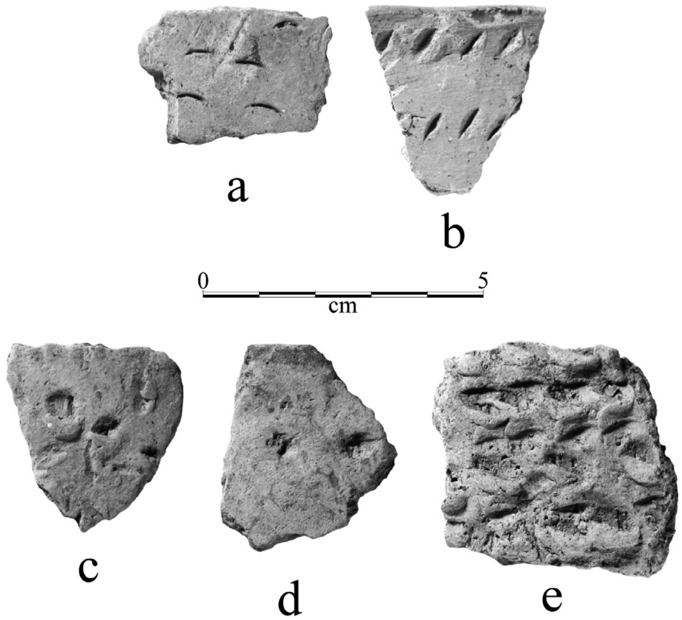


Figure 5. Punctated and pinched rim and body sherds: a–d, punctated; e, pinched.

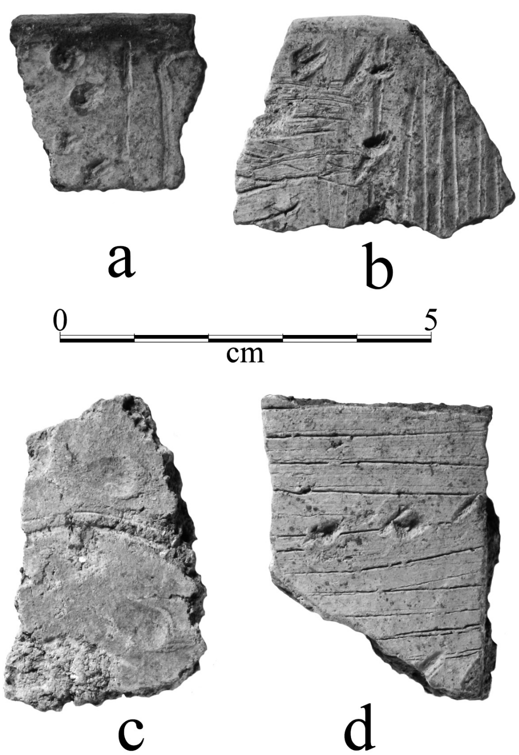


Figure 6. Incised-punctated, punctated, and incised-brushed-punctated sherds: a, incised-punctated rim sherd; b, d, incised-brushed-punctated sherds; c, tool punctated body sherd.

### *Incised-Punctated-Brushed*

Both incised-punctated-brushed sherds are from grog-tempered vessels. The rim has both vertical incised lines and a row of vertical tool punctates, as well as a row of tool punctates under the vessel lip (see Figure 6b). Opposite the set of vertical incised lines is an area with horizontal brushing. The one body sherd, probably from a Pease Brushed-Incised vessel, has parallel brushed-incised lines, with a row of tool punctations pushed through the brushed-incised lines (see Figure 6d).

### *Fired Clay Pieces*

The collection also has three thick, large, and conjoinable pieces of fired clay. The pieces are flat and disk-shaped (ca. 140 x 80 mm in length an width), a hefty 30 mm in thickness, with unsmoothed and unprepared surfaces. The pieces have both an oxidized and reduced core, although the surface is primarily an oxidized color. The function of these clay pieces is unknown, although it is possible that they represent a griddle or clay platform to rest flat-based ceramic vessels on when they were to be placed in a cooking fire.

### *Lithic Artifacts*

There are 13 chipped stone tools in the McMinn Ranch surface collection. This includes three arrowpoints: a Perdiz point made from a gray chert (Figure 7a), a unifacially flaked Maud arrow point made from a light gray chert, and a light gray chert arrow point medial fragment. There are also three small, thin, and narrow Gary dart points of Woodland period age (Figure 7b-d), two made from novaculite and the third from a heat-treated quartzite.

There is also a lightly heat-treated quartzite bifacial knive (see Figure 7g) and two biface fragments: one of gray chert and the other of white chert (see Figure 7e). The remaining tools are a heat-treated quartzite side scraper (see Figure 7f) and a gray novaculite scraper fragment, as well as a grayish-brown unilateral flake tool and a grayish-white drill. Almost 77% of the

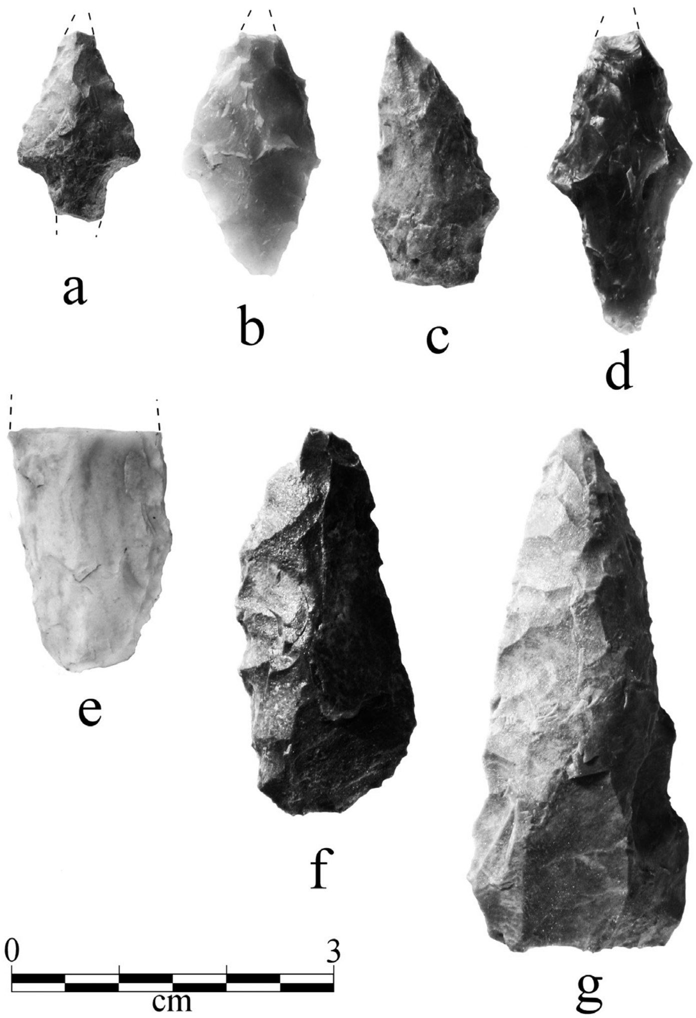


Figure 7. Chipped stone tools from the McMinn Ranch site: a, Perdiz arrow point; b-d, Gary points; e, biface fragment; f, side scraper; g, bifacial knive.

chipped stone tools in the McMinn Ranch collection are made from non-local lithic raw materials, primarily from Ouachita Mountains sources.

There are 13 pieces of lithic debris in the lithic artifact assemblage. One appears to be a resharpening flake from a celt made from a grayish-green metamorphic rock with whitish-blue inclusions; this raw material likely has a source in the Ouachita Mountains, well to the north of the site. Other non-local raw materials from Ouachita Mountains sources represented in the lithic debris include Big Fork chert (n=3), orange novaculite (n=1), grayish-brown chert (n=1), dark gray chert (n=1), and gray chert (n=1). The one local lithic raw material in the lithic debris is quartzite (n=5).

In addition to the chipped stone tools, the collection also has a quartzite cobble with edge abrading and pecking. The tool may have been used as a hammerstone

### *Animal Bones and Mussel Shell*

In the collection are 10 pieces of animal bone and a freshwater mussel shell fragment. Half the animal bone is burned, and the bone appears to be from both large and small mammals.

## SUMMARY AND CONCLUSIONS

The McMinn Ranch site is a small ancestral Caddo settlement in the Dry Creek valley of the Big Cypress Creek basin in East Texas. It probably has preserved midden deposits, based on the recovery of animal bones and mussel shell fragments in the surface collection. Most of the artifacts recovered by Robert L. Turner, Jr. in his surface collection are plain and decorated ceramic sherds, along with a small assortment of chipped stone tools that suggest the site was first occupied during the latter part of the Woodland period (ca. A.D. 200-700). The principal occupation, however, was by ancestral Caddo peoples who made certain kinds of grog-tempered plain wares, utility wares, and fine ware vessels.

The kinds and proportions of decorated sherds recovered at the McMinn Ranch help to situate the Caddo occupation temporally, as do the engraved fine wares. None of the engraved fine wares can be confidently identified as Ripley Engraved, a post-A.D. 1430 fine ware in the basin. Furthermore, reported ceramic assemblages in the Big Cypress Creek basin (see Perttula 2013b:Table 8-20) indicate that through time, brushed pottery becomes an important decorative component in the utility wares, the proportion of brushed pottery appears to increase through time, and greater proportions of sherds in different assemblages tend to be decorated versus those that are plain: this suggests that through time more Caddo vessels become decorated on both the rim and the body.

Pre-A.D. 1200 components in the Big Cypress Creek basin have decorated ceramics where brushed surfaces are virtually absent (see Perttula 2013b:Table 8-20) and plain/decorated (P/DR) sherd ratios range from 2.59-5.96, with a mean of 4.28. After ca. A.D. 1200, and perhaps not until after ca. A.D. 1250 or a bit later (see discussion in Perttula and Ellis 2012:201-208 and Table 8-24), brushing of vessel bodies and rims becomes one of the more dominant decorative techniques, occurring in frequencies between 10-43% in analyzed assemblages. P/DR ratios on Middle Caddo sites in the Big Cypress Creek basin range from 0.98-2.61, with a mean of 1.89. Continuing with the trend in the manufacture and use of brushed pottery as an important part of Caddo ceramic assemblages, after ca. A.D. 1400, in Late Caddo assemblages in this part of the Big Cypress Creek basin brushed pottery comprises between 41-76% of the decorated sherds (see Perttula 2013b:Table 8-20), with an east to west spatial trend in the frequency of brushing. P/DR values range from 0.57-1.48, with a mean P/DR value for these sites and components of 0.95. Given the location of the McMinn Ranch site in the western part of the Big Cypress Creek basin, it has P/DR values and relative proportions of brushed sherds that are consistent with a local Middle Caddo period (ca. A.D. 1200-1430) ceramic assemblage.

## ACKNOWLEDGMENTS

Lance Trask prepared the figures for this article.

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# Paleoindian to Middle Archaic Projectile Points from East Texas

*Timothy K. Perttula*

## INTRODUCTION

This article discusses and describes a number of distinctive Paleoindian to Middle Archaic projectile points from East Texas, centering on the middle Sabine River basin (Figure 1) and the collecting areas roamed by Buddy Calvin Jones. It is likely that these points were collected in the 1950s and 1960s from the surface at a series of sites in the Sabine River valley (Patti Haskins, February 2013 e-mail communication).

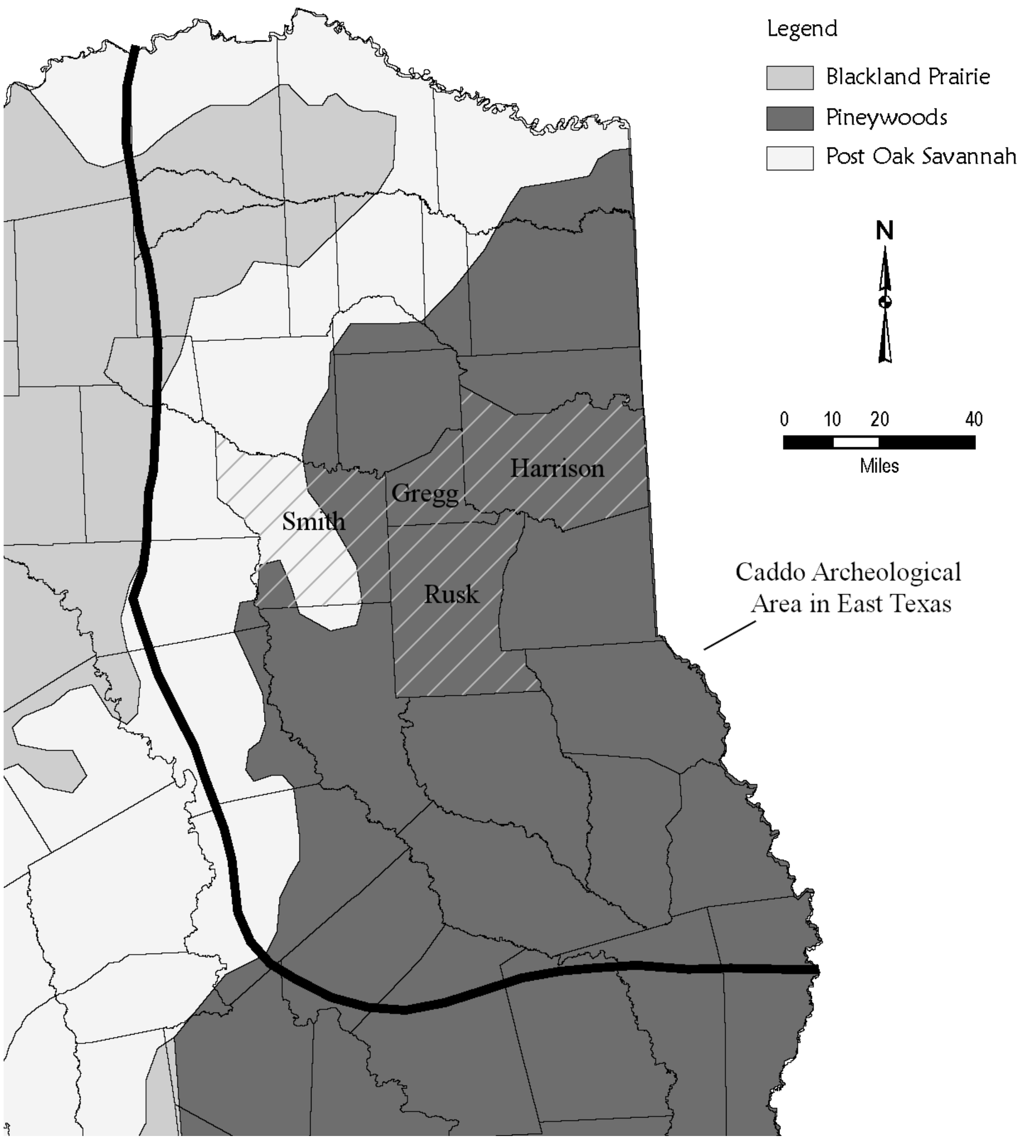


Figure 1. East Texas collecting area by Buddy Calvin Jones.

## CONTEXT

For the purposes of this article, the Paleoindian period in East Texas dates prior to 10,000 years B.P., perhaps beginning as long as 11,500 years B.P. or older, depending upon the age of any pre-Clovis era sites in the larger region. The Archaic period in East Texas lasts from 10,000 years B.P. to approximately 2500 years B.P., with the Early Archaic dating from ca. 10,000-8000 years B.P. (8050-6050 B.C.), the Middle Archaic ranging from 8000-5000 years B.P. (6050-3050 B.C.), and the Late Archaic dating from 5000-2500 years B.P. (3050-550 B.C.). The chronological ages and dates in this article are the uncalibrated calendar ages in years B.P.

The temporal ordering of Paleoindian and Archaic projectile points in East Texas draws upon the few available absolute dates from East Texas on Archaic sites, as well as the known temporal sequences of projectile points in surrounding regions, such as Southwest Arkansas (Schambach 1998; Trubitt 2009), Northwest and Northern Louisiana (Girard 2000; Girard et al. 2011; Anderson and Smith 2003; Rees 2010; Saunders 2010), the Missouri Ozarks (Ray et al. 2009), and Central Texas (Bousman and Oksanen 2012; Collins 1998; Collins et al. 2011; see also Turner et al. 2011), typically supported with series of radiocarbon dates from features and buried archaeological deposits. The age of the earliest well-established Paleoindian projectile point, the Clovis type, has been refined by Waters and Stafford (2007; see also Waters et al. 2011). This provisional ordering of projectile points also relied upon a recent cladistics study (see O'Brien and Lyman [2003] and Lipo et al. [2006] for considerations of cladistics and archaeological studies) of 93 Texas dart point types that has plotted the statistical affinities among the various types (Carpenter and Paquin 2010:158 and Figures 2 and 3). From these relationships, Carpenter and Paquin (2010:Figure 4) proposed hypothetical relationships between dart point types "based on overlap in temporal, spatial, and formal attributes."

In creating Figure 2, then, beginning in the Late Paleoindian period at ca. 10,500 years B.P., I employed the hypothetical relationships between types detected in the Carpenter and Paquin (2010) cladistics study, focusing only on those dart point types known to have been made and used at various times in the East Texas Paleoindian and Archaic (even if they were not included in Carpenter and Paquin [2010]), regardless of whether the spatial distributions of certain points (i.e., Evans, Pontchartrain, Epps, Rice Lobed, or Jakie Stemmed) suggested some types were common in the archeological record in one or more surrounding states. Known temporal ages of these additional project point types were used to place them in their best approximate age on Figure 2.

Based on these various lines of evidence, as well as the earlier suggested chronological sequences for East Texas dart points proposed by Story (1990:Figure 32) and Thurmond (1990:Table 8), the Paleoindian dart point sequence begins with the Clovis point (ca. 11,500 years B.P.), while the Early Archaic dart point sequence begins with Dalton and San Patrice points, although both point types were first made sometime prior to 10,000 years B.P. (Koldehoff and Walthall 2009: Ray et al. 2009) and are often considered to also be diagnostic of the Late Paleoindian period in the broader region. Recent radiocarbon dates from the Big Eddy site in southwest Missouri indicates both points were made and used until ca. 9800 years B.P. (Ray et al. 2009:160), in the early years of the Late Paleoindian-Early Archaic technological, subsistence, and settlement/mobility transition (cf. Bousman et al. 2002:989; Bousman and Oksanen 2012). Later Early Archaic points (ca. 9800-9000 years B.P.) include the Breckenridge, Scottsbluff, and Keithville types (Webb 2000:4), as well as later Pelican, Graham Cave, and Rice Lobed points (ca. 8500-8000 years B.P.).

Proposed early Middle Archaic points in East Texas include the Hidden Valley and Kirk types, as well as the Palmer type, although these are points that are not particularly common in East Texas dart point assemblages (e.g., Jones 1957; Rogers and Perttula 2004; Furman and Amick 2006; Turner 2006:Table 7). Between 6500-5000 years B.P., Middle Archaic points are suggested to include the Cossatot, Johnson, Jakie Stemmed, White River side-notched points (sometimes referred to as Big Sandy points, see Ray and Lopinot 2003), Morrill, Bell and Andice (or Calf Creek), and the distinctive blade-notched Evans point (see Figure 2).

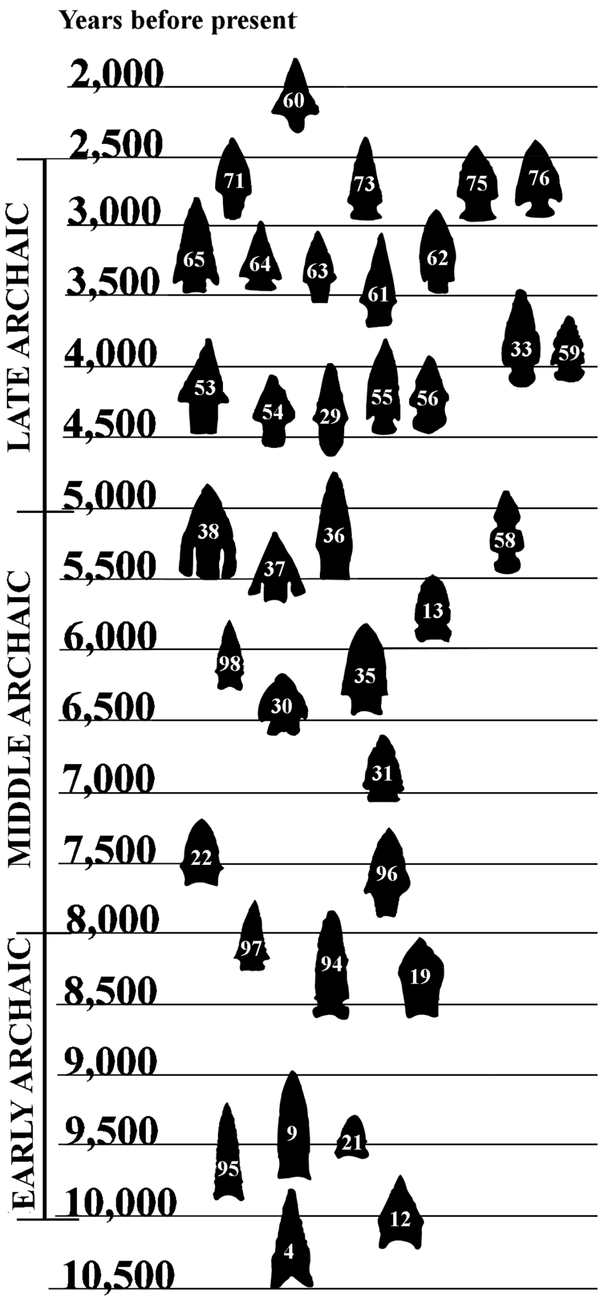


Figure 2. Proposed temporal ordering of dart points in the East Texas Archaic, ca. 10,000-2500 years B.P. (after Carpenter and Paquin 2010). Key to Projectile Point Types on Figure 2: 4. Dalton; 9. Scottsbluff; 12. San Patrice; 13. White River; 19. Pelican; 21. Keithville; 22. Kirk; 29. Wells; 30. Cossatot; 31. Palmer; 33. Palmillas; 35. Johnson; 36. Morrill; 37. Bell; 38. Andice; 53. Bulverde; 54. Carrollton; 55. Williams; 56. Trinity; 58. Evans; 59. Neches River; 60. Gary; 61. Yarbrough; 62. Pontchartrain; 63. Kent; 64. Ellis; 65. Marshall; 71. Dawson; 73. Godley; 75. Epps; 76. Motley; 94. Graham Cave; 95. Breckenridge; 96. Hidden Valley; 97. Rice Lobed; 98. Jakie. Figure drawn by Lance Trask, based in part on Carpenter and Paquin (2010).

## POINT TYPES

This sample (n=41) of Paleoindian to Middle Archaic projectile points in the Buddy Jones collection includes examples from 10 different defined projectile point types, that have been found on sites in the region that have dated occupations that span the interval from ca. 11,500 years B.P. to 6000 years B.P. The most abundant projectile point is the Dalton type (n=8), found on sites in eastern and east central Texas (Bousman and Oksanen 2012:Figure 9.20), the Trans-Mississippi South, including the Ozarks (Kay 2012), and much of the Mississippi River valley (Koldehoff and Walthall 2009:Figure 6.1), and side-notched Keithville points (n=4); Anderson and Smith (2003:Figure 5.10) and Rees (2010:Figure 3.1) refer to them as San Patrice, *var. Keithville*. These points occur in association with San Patrice points (Webb et al. 1971). There are also many (n=12) unidentified lanceolate basal fragments in the point sample.

### *Clovis*

The three Clovis points are made from cherts that are not local to East Texas. This includes a gray chert (Figure 3a), possibly from a Central Texas Edwards Formation source (see Waters et al. 2011:Figure 99), a lustrous gray chert with reddish-brown inclusions (Figure 4b), also possibly from a Central Texas source, and a dark gray chert (Figure 3b) that may have its source in the Johns Valley Formation in the Ouachita Mountains of Southeast Oklahoma (see Banks 1990); this material may also be found in Red River gravels. These points date from cal 13,100-12,800 years B.P. (Waters and Stafford 2007), and they are found on sites and localities across almost all parts of Texas, including East Texas (Bousman and Oksanen 2012:Figure 9.16).

The Clovis points have lateral and basal grinding and concave bases (Table 1), with flute scars on both faces. The flute scars range from 12-23 mm in length and 10-15 mm in width. Two of the three points have resharpened blades.

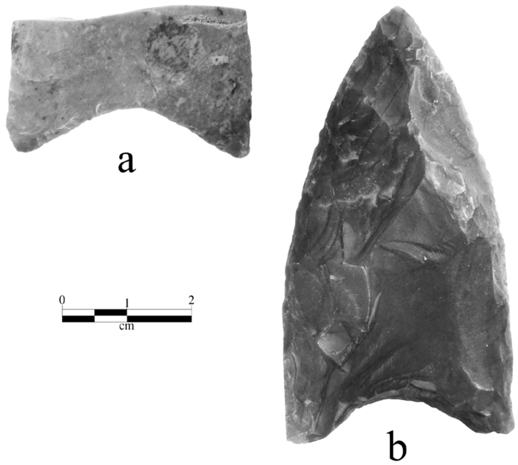


Figure 3. Clovis points: a, No. 1; b, No. 2003.08.162.

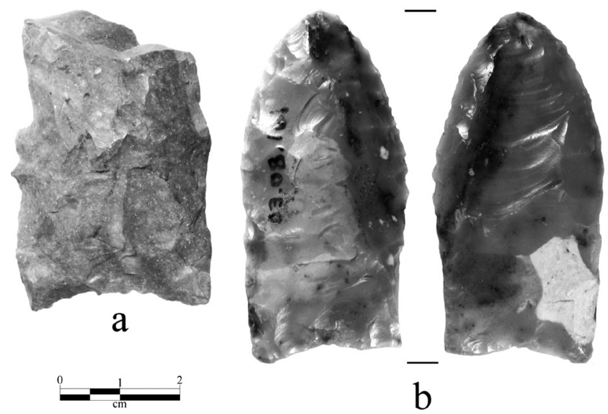


Figure 4. Unidentified lanceolate point and a Clovis point: a, unidentified lanceolate (No. 14); b, Clovis (No. 2003.08.161).

**Table 1. Projectile Point Attributes.**

| No. | Type | RM | L (mm) | W (mm) | Th (mm) | SW (mm) | Base Shape | GR | RS |
|---|---|---|---|---|---|---|---|---|---|
| 03.08. 161 | Clovis | g chert | 54.9 | 35.0 | 7.1 | - | concave | lt/ba | + |
| 0.3.08. 162 | Clovis | Johns Valley chert | 63.9 | 32.0 | 9.1 | - | concave | lt/ba | + |
| 1 | Clovis | g chert | - | 33.7 | 5.8 | - | concave | lt/ba | ? |
| 5 | Dalton | lg chert | - | 29.5 | 6.7 | - | concave | lt/ba | ? |
| 8 | Dalton | lg chert | 42.0 | 23.1 | 6.9 | - | concave | lt/ba | + |
| 13 | Dalton | g chert | 57.0 | 20.0+ | 6.2 | - | concave | lt/ba | +/beveled and impact fracture |
| 15 | Dalton | cg QTZ | 30.8 | 20.9 | 6.5 | - | concave | ba | + |
| 16 | Dalton | cg QTZ | - | 23.9 | 6.3 | - | concave | lt/ba | ? |
| 17 | Dalton | lg chert | 42.5 | 23.1 | 7.1 | - | concave | lt | + |
| 20 | Dalton | dg-blu chert | 37.9 | 22.0 | 7.9 | - | concave | lt/ba | +/serrated |
| 25 | Dalton | g-br chert | - | 25.9 | 7.1 | - | concave | lt/ba | ? |
| 24 | cf. San Patrice | g chert | 35.9 | 19.8 | 5.8 | - | concave | ba | + |
| 26 | San Patrice | r jasper | 26.9 | 25.1 | 4.5 | 17.9 | concave | - | + |
| 21 | Keithville | b-y chert | 32.0 | 28.0 | 6.7 | - | concave | ba | +/serrated |
| 23 | Keithville | br chert | 32.9 | 26.1 | 7.2 | 20.2 | concave | ba | + |
| 27 | Keithville | br jasper | 26.9 | 19.1 | 5.1 | 16.2 | concave | - | + |
| 28 | Keithville | PW | 30.9 | 20.3 | 4.8 | 14.0 | concave | ba | + |

**Table 1. Projectile Point Attributes, cont.**

| No. | Type | RM | L (mm) | W (mm) | Th (mm) | SW (mm) | Base Shape | GR | RS |
|---|---|---|---|---|---|---|---|---|---|
| 22 | Scottsbluff, Red River knife | br chert | 41.5 | 24.2 | 6.6 | 21.1 | straight-concave | ba | +/beveled |
| 2 | UID lanceolate | w chert | - | 25.8 | 5.6 | - | concave | lt | ? |
| 3 | UID lanceolate | g-y chert | - | 28.6 | 6.3 | - | concave | lt/ba | ? |
| 4 | UID lanceolate | lg NOV | - | 23.3 | 7.1 | - | concave | lt/ba | ? |
| 6 | UID lanceolate | banded g-br-lg chert | - | 29.9 | 6.9 | - | concave | lt/ba | ? |
| 7 | UID lanceolate | w NOV | - | 23.0 | 6.0 | - | concave | lt/ba | ? |
| 9 | UID lanceolate | lg chert | - | 32.1 | 6.2 | - | concave | lt | ? |
| 10 | UID lanceolate | dg chert | - | 28.9 | 4.7 | - | straight | - | ? |
| 11 | UID lanceolate | dg QTZ | - | 26.7 | 5.0 | - | concave | ba | ? |
| 18 | UID lanceolate | g-dg chert | - | 27.8 | 6.0 | - | concave | ba | ? |
| 18B | UID lanceolate preform | g chert | - | 25.4 | 6.7 | - | concave | - | ? |
| 19 | UID lanceolate | g chert | - | 19.3 | 5.1 | - | concave | lt/ba | ? |
| 14 | UID lanceolate (cf. Scottsbluff) | dg chert | - | 29.0 | 11.2 | - | concave | lt | ? |
| 12 | Pelican | g chert | - | 24.0 | 8.1 | - | concave | la | ? |
| 29 | Palmer | PW | 27.3 | 22.0 | 6.1 | 16.1 | concave | - | + |
| 1B | Johnson | g NOV | 19.8 | 26.8 | 7.0 | 21.0 | concave | - | + |
| 15B | Johnson | br chert | 27.1 | 20.9 | 6.1 | 13.0 | concave | ba | + |
| 16B | Johnson | y NOV | 28.9 | 20.9 | 8.7 | 17.5 | concave | - | + |
| 4B | Jakie | br jasper | 15.1 | 24.3 | 6.6 | 15.9 | concave | - | + |
| 5B | Jakie | br jasper | 24.0 | 19.0 | 6.9 | 16.0 | concave | ba | + |
| 8B | Jakie | dgb chert | 16.9 | 19.2+ | 5.5 | 12.4 | concave | - | + |
| 2B | White River | br chert | 19.9 | 27.0 | 7.5 | 18.2 | straight | - | + |
| 3B | White River | br jasper | 21.9 | 23.9 | 5.4 | 16.6 | straight | - | + |
| 13B | White River | bl chert | 15.7 | 24.7 | 7.8 | 18.0 | straight | ba | + |

No.: Gregg County Historical Museum number; UID=unidentified; RM=raw material; cg=coarse-grained; r=red; w=white; g=gray; y=yellow; dg=dark gray; dgb=dark grayish-brown; lg=light gray; bl=black; blu=blue; br=brown; NOV=novaculite; QTZ=quartzite; PW=petrified wood; L=length; W=width; Th=thickness; SW=stem width; GR=grinding; lt=lateral; ba=basal; RS=resharpened; +=present; -=absent; ?=unknown

### *Dalton*

There are eight Dalton lanceolate points in this sample of points (see Table 1). They have concave bases, with lateral and/or basal grinding, basal ears, and extensive blade resharpening and/ or beveling (Figures 5-6, 7a; see also Figure 10j, below). One of the examples has very pronounced ears and shoulders (Figure 7a), similar to what has been named the Breckenridge Dalton (Kay 2012:Figure 10.3).

Six of the Dalton points are made from chert, primarily a gray chert, but one point is made from a dark grayish-blue chert of unknown source area (see Figure 5b); both kinds of cherts are non-local resources in East Texas. Two other Dalton points (see Figure 5a and Figure 6a) are made from a coarse-grained light gray quartzite that closely resembles a quartzite found in the Glover Sandstone Formation in the Neches River basin in East Texas (Perttula and Nelson 2006). Dalton points occur widely in East Texas and in the Trinity, upper Brazos, and Colorado River basin in East Central and Central Texas (Bousman and Oksanen 2012:Figure 9.20). Dalton and San Patrice points are generally considered contemporaneous in sites on the Southern Plains and in the Trans-Mississippi South, dating from ca. 10,500-9800 years B.P. (Ray et al. 2009; Bousman and Oksanen 2012), at the end of the Late Paleoindian period and the beginning of the Early Archaic period.

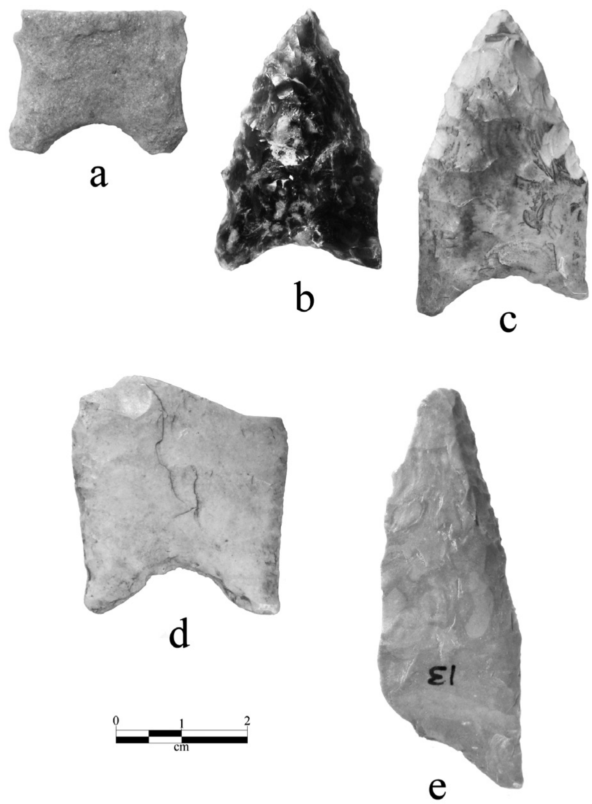


Figure 5. Dalton points: a, No. 16; b, No. 20; c, No. 17; d, No. 5; e, No. 13.

### *San Patrice*

The two probable San Patrice points in this collection resemble the *var. St. Johns* defined by Webb et al. (1971:13-14 and Figure 4). They have concave bases, one is basally ground, and both have resharpened blades (Figure 7b-c). One of the points is made from a red jasper (Figure 7b), while the other is made from a light gray chert (Figure 7c).

San Patrice points date from ca. 10,500-9800 years B.P., at the end of the Paleoindian period and the beginning of the early Archaic period (Ray et al. 2009; Bousman and Oksanen 2012), broadly contemporaneous with the Dalton lanceolate points. They occur widely across East Texas (Bousman and Oksanen 2012:Figure 9.19). At Horn Shelter, San Patrice and Scottsbluff points were found in layer 5F to layer 7 (Bousman and

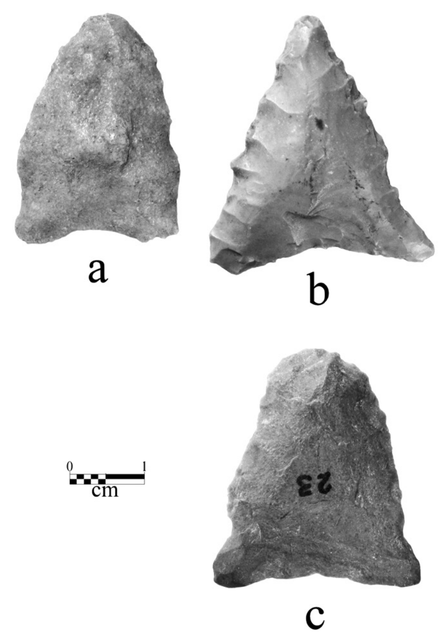


Figure 6. Dalton and Keithville points: a, Dalton (No. 15); b, Keithville (No. 21); c, Keithville (No. 23).

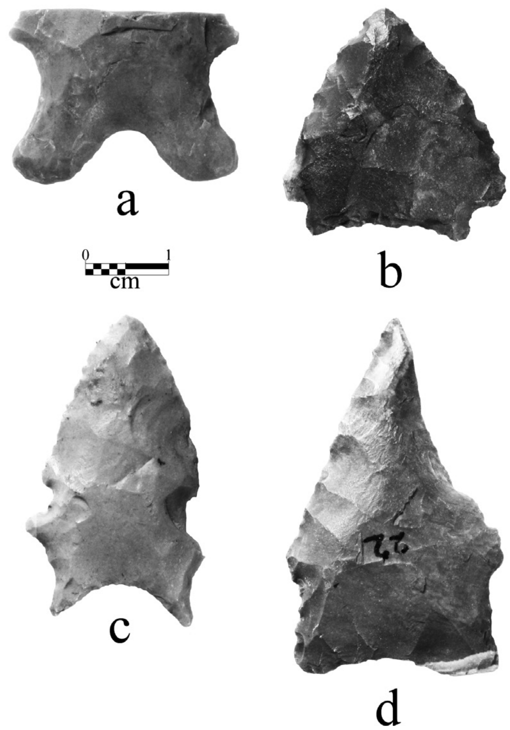


Figure 7. Dalton, San Patrice, and Scottsbluff points: a, Dalton (No. 25); b, San Patrice, *var. St. Johns* (No. 26); c, cf. San Patrice, *var. St. Johns* (No. 24); d, Scottsbluff/Red River Knife (No. 22).

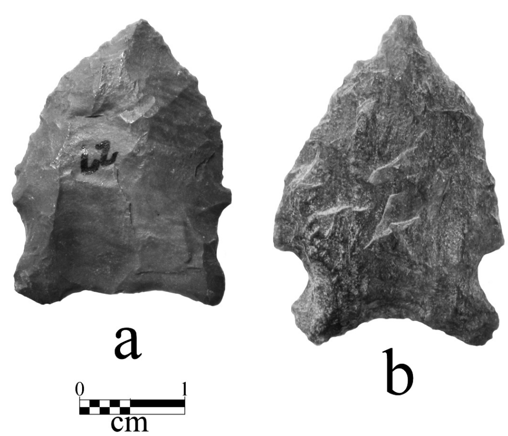


Figure 8. Keithville points: a, No. 27; b, No. 28.

Oksanen 2012:Figure 9.4); layer 5G has an uncalibrated radiocarbon age range of 9980-9500 years B.P. (Bousman and Oksanen 2012:204).

San Patrice projectile points and associated tools are typically manufactured on local raw materials (Saunders and Allen 1997:3; Webb et al. 1971), at least in sites thought to be situated in the woodlands (See Jennings 2008a, 2008b). In plains San Patrice sites, about 21% of the San Patrice points are made from exotic raw material sources compared to only 6% of the San Patrice points from woodland contexts (Jennings 2008a:Table 7). There is a marked preference for the use of non-local lithic raw materials in other Late Paleoindian-Early Archaic chipped stone tools.

### *Keithville*

The four Keithville, or San Patrice, *var. Keithville* points have shallow side notches, concave bases with basal grinding, and resharpened and serrated blades (Figure 8a-b, see also Figure 6b-c and Table 1). One of the points has a bifacial scraper edge along its resharpened blade (see Figure 6c). The points are made from local lithic raw materials, including petrified wood, a brown chert, and a brownish-yellow chert, as well as a brown jasper (Figure 8a), found in Red River gravel sources.

Keithville points are associated with San Patrice points (see Webb et al. 1971:Figure 6). As such, they are considered Late Paleoindian-Early Archaic (ca. 10,500-9800 years B.P., Ray et al. 2009; Bousman and Oksanen 2012) diagnostic chipped stone tools.

### *Scottsbluff*

One brown chert lanceolate point is a Late Paleoindian Scottsbluff (see Figure 7d). It has been unifacially resharpened and beveled, and conforms in form and apparent function (i.e., cutting, scraping and sawing, Turner et al. 2011:160) to the Red River knife defined by Johnson (1989). The point has a straight stem and a concave base, with basal grinding (see Table 1).

### *Late Paleoindian lanceolates*

There are 12 Late Paleoindian lanceolate point fragments (ca. 10,500-10,000 years B.P.) in this sample of points from the Buddy Jones collection (Figures 9a-b and 10a-i); one of these is a preform (Figure 10i). These lanceolate point fragments have concave and thinned (but not fluted) bases as well as lateral and/or basal grinding (see Table 1). These points may be fragments from completed Dalton, Meserve, and/or Golondrina points, but these basal fragments also resemble lanceolates from the Scottsbluff site (Knudson 2013:Figure 11.4c) as well as Plainview points (Knudson 2002:Figure 7.12).

The lanceolate point fragments are made primarily from a variety of non-local cherts (n=9), ranging in color from white, to gray, to dark gray, probably from Central Texas and Ouachita Mountains source areas. There are also lanceolate point fragments that are dark greenish-gray Southeast Oklahoma Ouachita Mountains quartzite (n=1, see Figure 9a) and white (see Figure 10b) and light gray (see Figure 10c) Ouachita Mountains novaculite.

One unidentified lanceolate point (see Figure 4a) may be a fragment of a Scottsbluff point as it has a broad and square and relatively thick stem, slightly concave, with lateral grinding (see Table 1). The point was broken by an impact fracture. It is made from a non-local dark gray chert with white flecks.

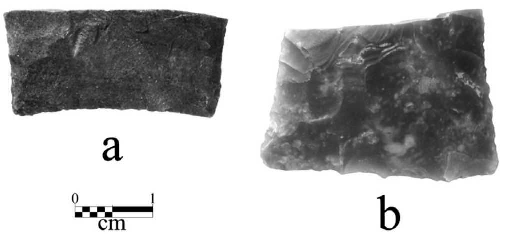


Figure 9. Late Paleoindian lanceolate point fragments: a, No. 11; b, No. 10.

### *Pelican*

A broad and expanding lanceolate base fragment is identified as a Pelican point (Figure 11). The base is slightly concave, with lateral grinding (see Table 1). The point is made from a non-local gray chert probably from a Central Texas source area. Anderson and Smith (2003:277-278) suggest that the Pelican point is a Late Paleoindian form dating from ca. 10,800-10,000 years B.P., related to and/or found in association with San Patrice (see Webb et al. 1971:Figure 7a-b) and Dalton points.

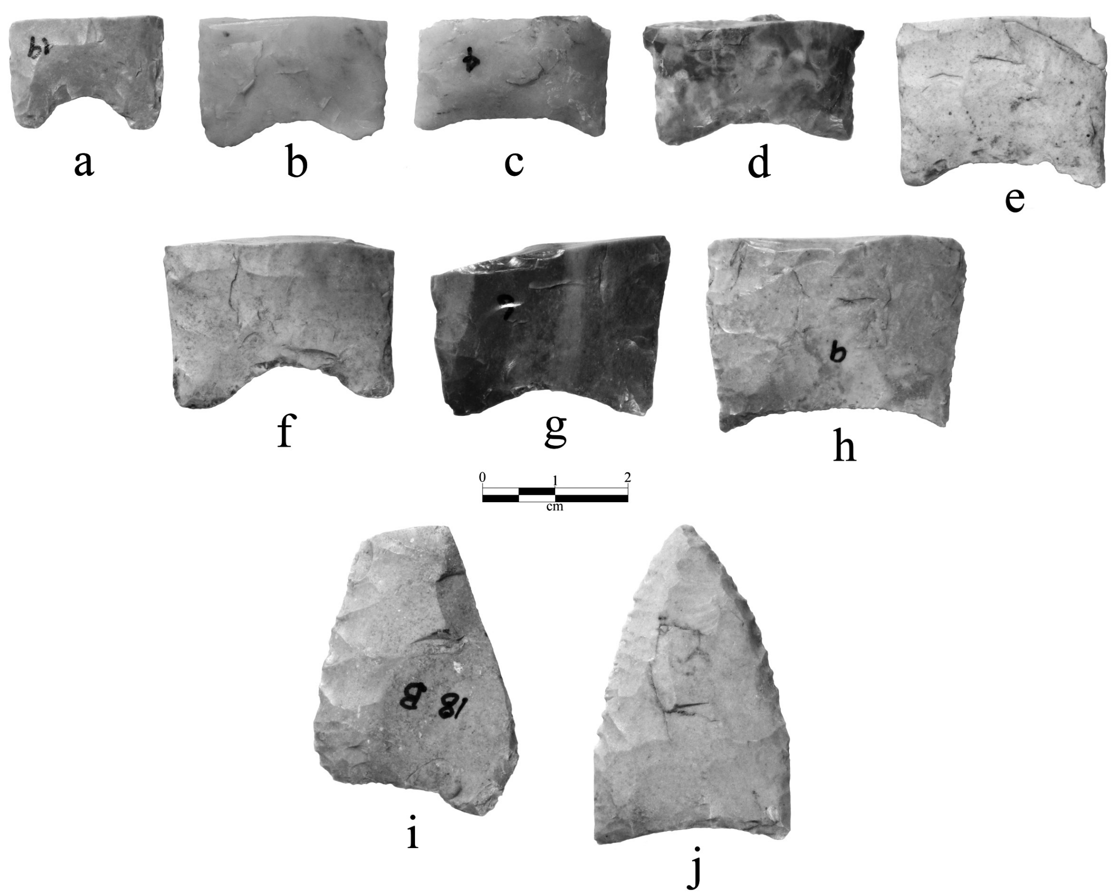


Figure 10. More Late Paleoindian lanceolate point fragments and a Dalton point: a, No. 19; b, No. 7; c, No. 4; d, No. 18; e, No. 2; f, No. 3; g, No. 6; h, No. 9; i, No. 18B (preform); and j, Dalton (No. 8).

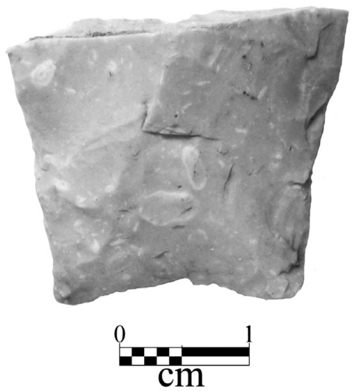


Figure 11. Pelican projectile point (No. 12).

### *Palmer*

The one Palmer point (Figure 12), dating from perhaps ca. 7000 years B.P., is made from a local petrified wood. Anderson and Smith (2003:276) include Palmer and Kirk Corner-Notched together as basically the same type, and they place the forms in an early corner-notched horizon that dates from 9500-8000 years B.P., in the Early Archaic. Bousman and Oksanen (2012:Figure 9.5) provide calibrated dates on Kirk points from Dust Cave, with two different summed probability distributions (calculated using OxCal 4.1.7) that range from ca. 10,200-9800 calibrated years B.P. and 8000-7600 calibrated years B.P.

The Palmer point has shallow corner notches and small barbs, and a shallow concave base. There is no grinding on the stem (see Table 1).


Figure 12. Palmer point (No. 29).

### *Jakie*

The three Jakie points, corner-notched with an expanding stem and shallow concave bases, are made from raw materials whose sources lie in the Ouachita Mountains in Southeast Oklahoma and that are also found in stream gravels along the Red River: a dark grayish-brown chert probably from the Johns Valley Formation (Figure 13a) and brown jasper (Figure 13b-c). Each of the three points has a blade that has been extensively resharpened into a unifacial scraper edge (see Table 1).

Ray et al. (2009:172-173) suggest that the Jakie point dates to the early part of the Middle Archaic period (in the western Ozark Highlands), from ca. 8000-7000 years B.P.

### *Johnson*

Two of the three Johnson points in this collection are made from Ouachita Mountains novaculite, either gray (Figure 14a) or yellow (Figure 14c). The other Johnson point is made from a local brown chert (Figure 14b). These Johnson points have broad but short stems, concave bases, and short barbs (if they have not been removed through resharpening), and the blades have been resharpened into unifacial (Figure 14c) or bifacial scraper edges (Figure 14a-b) (see Table 1).

Trubitt (2009:78 and Table 4) reports that Johnson points in Southwest Arkansas and Northwest Louisiana have been recovered in components that may date from ca. 7140-6640 years B.P. (or 8050-7450 cal. years B.P.) This includes radiocarbon dates from the Conly site in Northwest Louisiana that range from 7140 ± 160 and 6650 ± 40 years B.P.; two possible Johnson points made from novaculite were found at the site (Girard et al. 2011). An OCR date of 7039 ± 211 B.P. from 3MN496 has also been obtained from a soil associated with a Johnson point (Trubitt 2009:78).

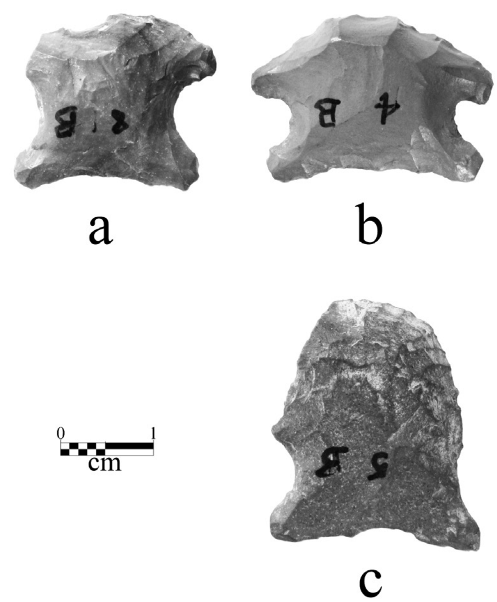


Figure 13. Jakie points: a, No. 8B; b, No. 4B; c, No. 5B.

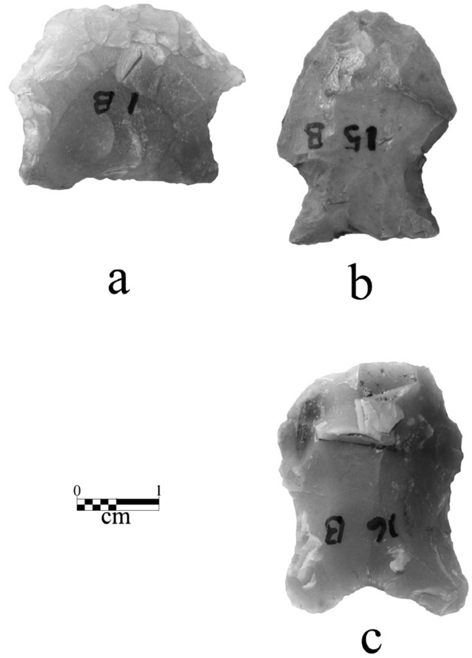


Figure 14. Johnson points: a, No. 1B; b, No. 15B; c, No. 16B.

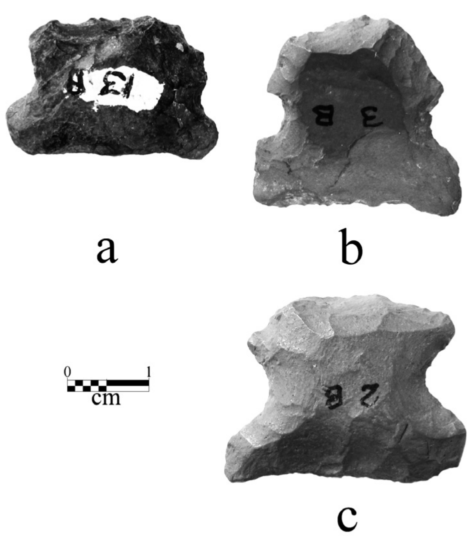


Figure 15. White River points: a, No. 13B; b, No. 3B; c, No. 2B.

***White River***

The three White River points have wide side notches, with squared barbs, and straight to slightly concave bases (Figure 15a-c; see Table 1). The blades have been extensively resharpened to form unifacial scraper edges. One of the White River points is made on a Ouachita Mountains black chert with a brownish cortex (Figure 15a), probably Big Fork chert, another is on a brown jasper (Figure 15b), and the third is made from a local brown chert (Figure 15c).

White River points have been found in radiocarbon-dated contexts in the Southwest Missouri Ozark Highlands that range from 6100-6190 years B.P. (Ray et al. 2009:174). In Southwest Arkansas, Trubitt (2009:78) reports that White River points have been found on sites with radiocarbon dates that range from 5750-6010 years B.P. OCR dates from 3HS195 with side-notched dart points range from 5674-6051 B.P. (Trubitt 2009:78).

## CONCLUSIONS

The projectile points discussed herein are evidence of the long-term aboriginal use of East Texas from ca. 11,500-6000 years B.P., in the Paleoindian to Middle Archaic periods. This period of time is not well known in the region, primarily because of a dearth of intact buried archaeological sites or single component sites as well as the lack of development of a chronology based on well-controlled absolute dating of features or buried occupation zones in single component or multi-component stratified sites. The earliest points in this sample from the Buddy Jones collection, the Clovis lanceolates, date from ca. 13,100-12,800 cal. years B.P. (Waters and Stafford 2007), while the latest, the side-notched White River dart point, ca. 6800-7100 cal. years B.P. (Ray et al. 2009:174).

Although not well understood in the East Texas archaeological record, this was a lengthy period of cultural change for the series of hunter-gather forager groups that occupied this and surrounding regions. The most intensive Paleoindian settlement of the Southeast U.S. took place in the resource-rich valleys of the Mississippi River and its principal tributaries (such as the Red River) (Anderson 1996a, 1996b). From there, groups settled throughout the wooded Southeast and East, with concentrations at 250-400 km intervals, indicating the scale of movement of these highly mobile foragers. The relatively sparse Early and Middle Archaic archaeological record, in conjunction with the dispersion of artifacts on many landforms and different settings within the region, seems to indicate that the aboriginal groups at this time were very mobile hunters and gatherers consuming a diversity of plant and animal foods rather than specialized hunters of extinct megafauna or bison herds. Johnson (1989) also suggested that some of the early Archaic archaeological remains (Plainview and Scottsbluff projectile points, and Cody knives) from the region are a result of Plains Early Archaic (ca. 10,000-9,000 years ago) groups that moved into parts of East Texas, during periods when grassland habitat spread eastward, to exploit the plains resources (such as bison) found there. However, the wide distribution of Scottsbluff projectile points in East Texas (see Bousman and Oksanen 2012:Figure 9.19) and adjoining parts of the Trans-Mississippi South cast doubt on the Plains origins of the aboriginal peoples that made this style of lanceolate point.

Much of the period between ca. 8000-5000 years ago was drier than today (Bousman and Oksanen 2012:Figure 9.2), with apparent rapid and punctuated reductions in biomass as well as the local expansion of prairie habitats along the western margins of the region. Nevertheless, drier conditions and changing vegetation conditions did not preclude occupations during these periods. While the archaeological data are still rather limited in the Middle Archaic, it appears that group mobility remained high for these hunting-gathering foragers (who utilized hardwood nuts, deer, shellfish, turtles, and small mammals) during the Middle Archaic. At the Conley site (16BI19) in northwestern Louisiana, a cal. 7100-8300 year old occupation, the Middle Archaic groups there "focused on deer and slack water aquatic species, but a wide range of resources, from varied microenvironments, was exploited" (Girard 2000:63; see also Girard et al. 2011). Hickory nuts and acorns were also common in the archaeological deposits.

Group territories were large and poorly defined, with most sites the product of repeated and recurrent occupations by small groups. Anderson (1996a) suggests that such Middle Archaic groups had highly mobile foraging adaptations along the Red River, the central Sabine River, and in interior uplands away from major drainages, with expedient lithic technologies. Most sites of this age were briefly used, but tended to concentrate in the larger drainages within the region. Sometime during the Middle Archaic period, fairly substantial and extensive occupations are recognized within the major basins in the region, with a rather limited use of smaller tributaries and headwater areas. Components of this period are open camps dominated by hunting tools and generalized cutting/scraping tools, debris, ground stone tools, and cores.

Burned rock features (possible hearths, ovens, and cooking pits?) and burned rock concentrations are present in dated late Middle Archaic contexts at a few sites in the Sulphur River drainage, suggesting that an important activity was the cooking and processing of plant foods, but mainly by small groups for short-term use (Fields et al. 1997:90). A single burned rock feature at the Unionville site (41CS151) has a calibrated age range of 6217-5924 B.P., during the latter part of the Middle Archaic period (Cliff et al. 1996).

Mound complexes of late Middle Archaic age in northern Louisiana at this time also suggest the development of more complex hunter-gatherer societies in certain parts of the Trans-Mississippi South (see Saunders 2010; Saunders et al. 1997; Saunders and Allen 1997). Such cultural developments apparently did not occur in East Texas.

## ACKNOWLEDGMENTS

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# Additional New Radiocarbon Dates from East Texas Caddo Sites

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

## INTRODUCTION

As a follow-up to the radiocarbon analyses reported by Perttula and Selden (2013), in this article, we report on five new radiocarbon dates obtained from Caddo sites in East Texas. The radiocarbon samples are charred organic remains scraped off of one surface of whole vessels or sherds. These samples are from the Ware Acres site (41GG31; Jones 1968; Perttula 2013a), the H. C. Slider site in Cherokee County (Perttula 2013b), an unknown site in the upper Neches River basin in Smith County (9-SC), and an unknown Titus phase site (11-BCJ) in the Big Cypress Creek basin. All of the dates are calibrated using OxCal v4.1.7 (Bronk Ramsey 2012), with atmospheric data from Reimer et al. (2009).

## THE DATES

Two radiocarbon samples have been submitted on organic residue from Ripley Engraved sherds recovered by Jones (1968) in a large midden deposit in Area C at the Ware Acres site in the Sabine River basin. The first Ripley Engraved sherd has a 2-sigma (95.4%) calibrated age range of A.D. 1436-1618, with a median calibrated age of A.D. 1465 (Figure 1). The sherd is a rim from a Ripley Engraved, *var. Galt* carinated bowl with a scroll and circle motif (Figure 2c).

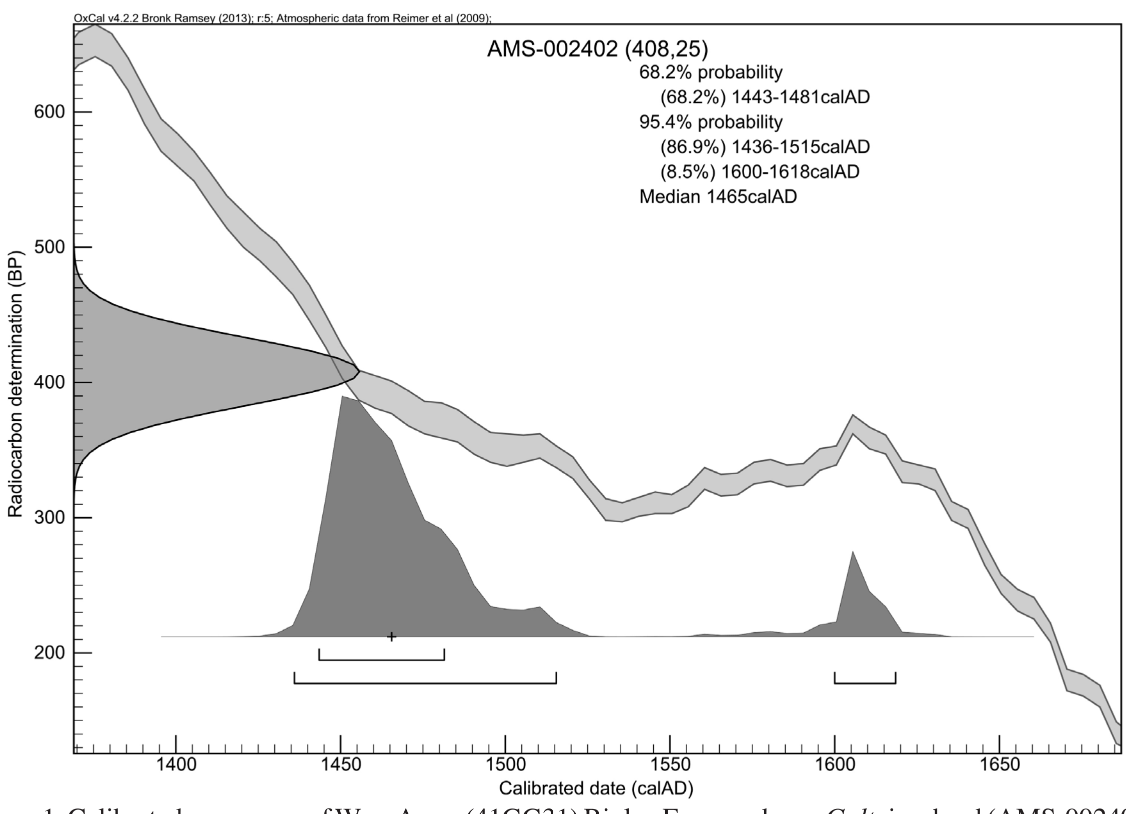


Figure 1. Calibrated age ranges of Ware Acres (41GG31) Ripley Engraved, *var. Galt* rim sherd (AMS-002402).

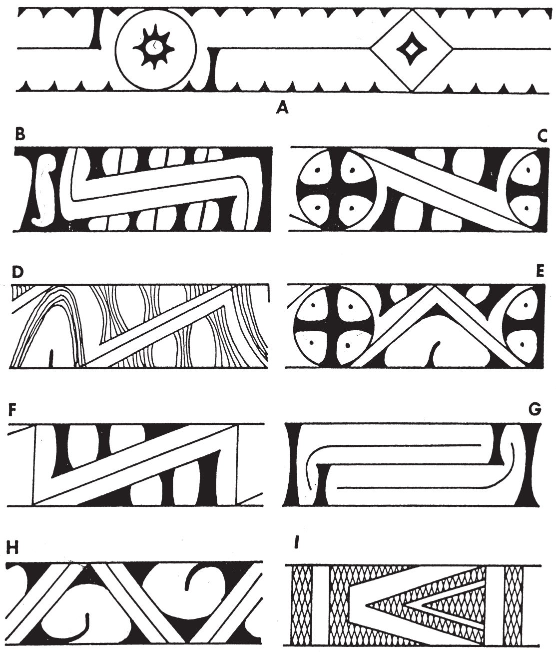

Figure 2. Ripley Engraved carinated bowl motifs.

The second radiocarbon sample from the Ware Acres site is on a carinated bowl rim with a Ripley Engraved, *var. Carpenter* or continuous scroll motif (see Figure 2f). The organic residue on this sherd has a 2-sigma calibrated age range of A.D. 1428-1487, and a median calibrated age range of A.D. 1450 (Figure 3). The median calibrated ages of both dated Ripley Engraved rim sherds range from A.D. 1450-1465, suggesting these sherds are from an early Titus phase occupation on this part of the site (Perttula 2013a). Much of the deposits in Area C at the site date after ca. A.D. 1600 (Perttula 2013a), however, based on the preponderance of sherds with pendant triangle motifs (Ripley Engraved, *var. McKinney,* see Figure 2a) in the decorated ceramic sherd assemblage.

The H. C. Slider site is a Late Caddo period, Frankston phase (ca. A.D. 1400-1650) settlement and cemetery in the Neches River valley in western Cherokee County (Perttula 2013b) that was investigated by Buddy Jones in the 1960s. There were midden deposits on three knolls, and Knoll A had four burials. The organic residue sample came

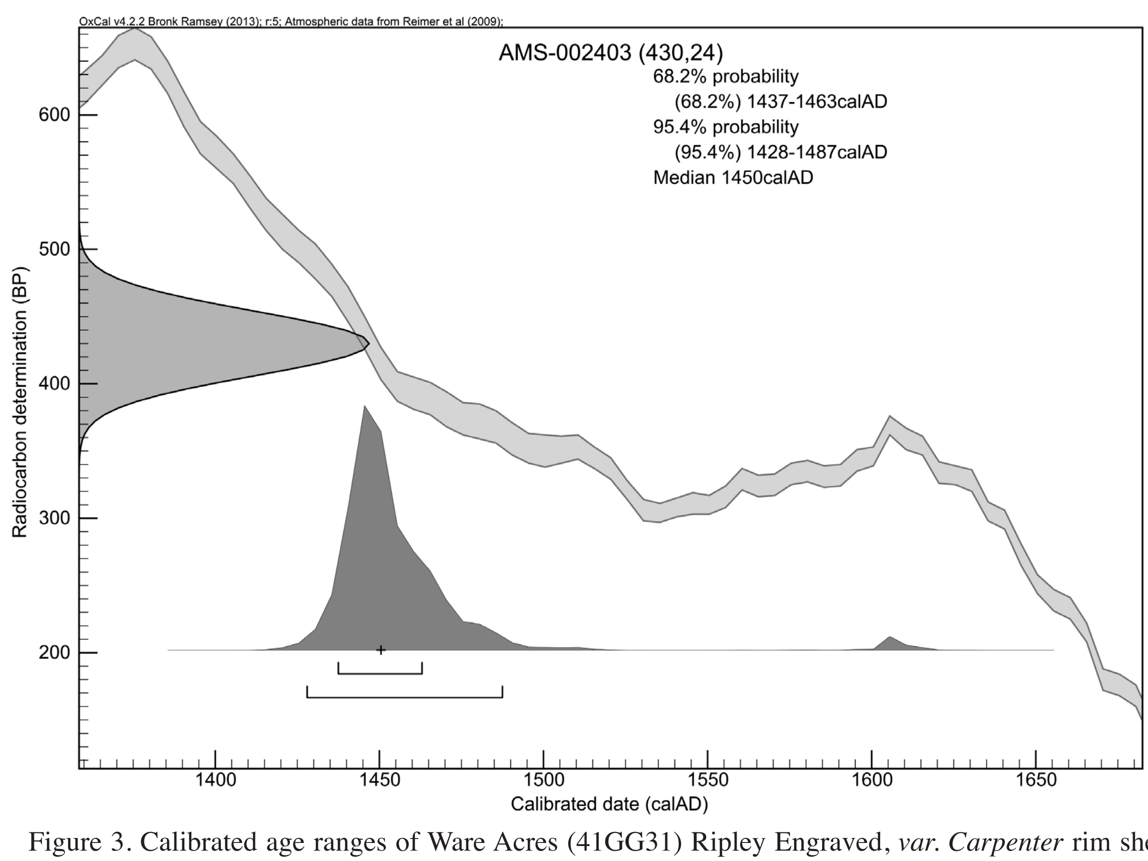


Figure 3. Calibrated age ranges of Ware Acres (41GG31) Ripley Engraved, *var. Carpenter* rim sherd (AMS-002403).

from a Bullard Brushed vessel (No. 7) in Burial 2. The burial had several funerary offerings, including two Killough Pinched jars, one with a pedestal base, a Poynor Engraved bottle, a Poynor Engraved carinated bowl, a plain carinated bowl, and a Bullard Brushed jar. The calibrated 2-sigma age range of the residue on the jar is A.D. 1453-1635, with a median calibrated age of A.D. 1547 (Figure 4).

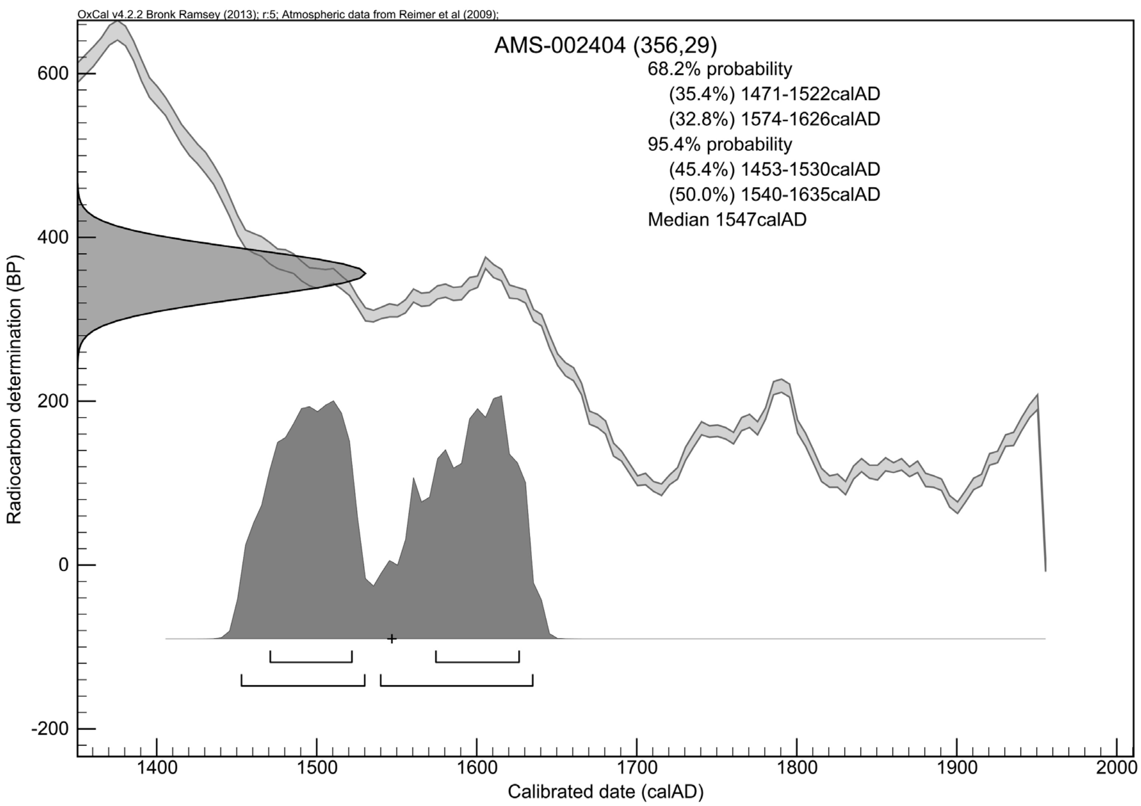


Figure 4. Calibrated age ranges of H. C. Slider site Bullard Brushed jar (AMS-002404).

The Bullard Brushed jar is a medium-sized vessel (16.7 cm in height) tempered with bone, grog, and hematite. There is vertical brushing on the rim and the body, extending to within 5 cm of the vessel base (Figure 5).

The SC designation on vessels in the Buddy Jones Collection at the Gregg County Historical Museum is for Smith County. Although the site provenience of Vessel 9-SC is not known with certainty, Jones excavations in Smith County were confined to several sites in the upper Neches River basin, in the area of present-day Lake Palestine (Perttula et al. 2013). The organic residue scraped from Vessel 9-SC has a 2-sigma calibrated age range of A.D. 1276-1394, with a median calibrated age of A.D. 1333 (Figure 6).

The dated vessel is brushed on the rim and body, with four vertical sets of appliqued nodes on the body itself (Figure 7). The lip is notched, which is an unusual and rare East Texas Caddo rim treatment.

Vessel 11-BCJ is from an unknown Titus phase site in the Big Cypress Creek basin. Buddy Jones excavated a number of Titus phase cemeteries on both Big Cypress Creek and Little Cypress Creek in the 1950s and 1960s, but due to lack of records, the site provenience of this vessel is not known at present. The 2-sigma calibrated age range of the organic residue on the Cass Appliqued jar (Figure 8) is A.D. 1455-1635, with a median calibrated age of A.D. 1553 (Figure 9). This date indicates that the vessel is likely from a late (post-A.D. 1550) Titus phase burial in the region.

Figure 5. Bullard Brushed jar from the H. C. Slider site, Burial 2, Vessel 7.

Cass Appliqued jars are not common in Titus phase sites, based on a compilation of more than 2030 vessels from burials in 17 different cemeteries (Perttula and Sherman 2009:Table 17-4). It was best represented at the Tuck Carpenter (41CP5) and H. S. Taylor (41HS3) sites on tributaries in the Big Cypress Creek basin. Cass Appliqued jars are also present in late 17th century Nasoni Caddo cemeteries on Black Bayou, a tributary to the Red River, in East Texas (Perttula et al. 2010).

## SUMMARY

The five new radiocarbon dates from these Caddo sites in East Texas add to the ever increasing corpus of radiocarbon dates obtained from Caddo sites in the region (Perttula and Selden 2013; Selden and Perttula 2013). Three dates from sherds and a Cass Appliqued vessel attest to a Titus phase age for these ceramics and the sites they come from: the median calibrated ages of these samples are A.D. 1450, A.D. 1465, and A.D. 1553. The other two new radiocarbon dates are from vessels from Caddo sites in the upper Neches

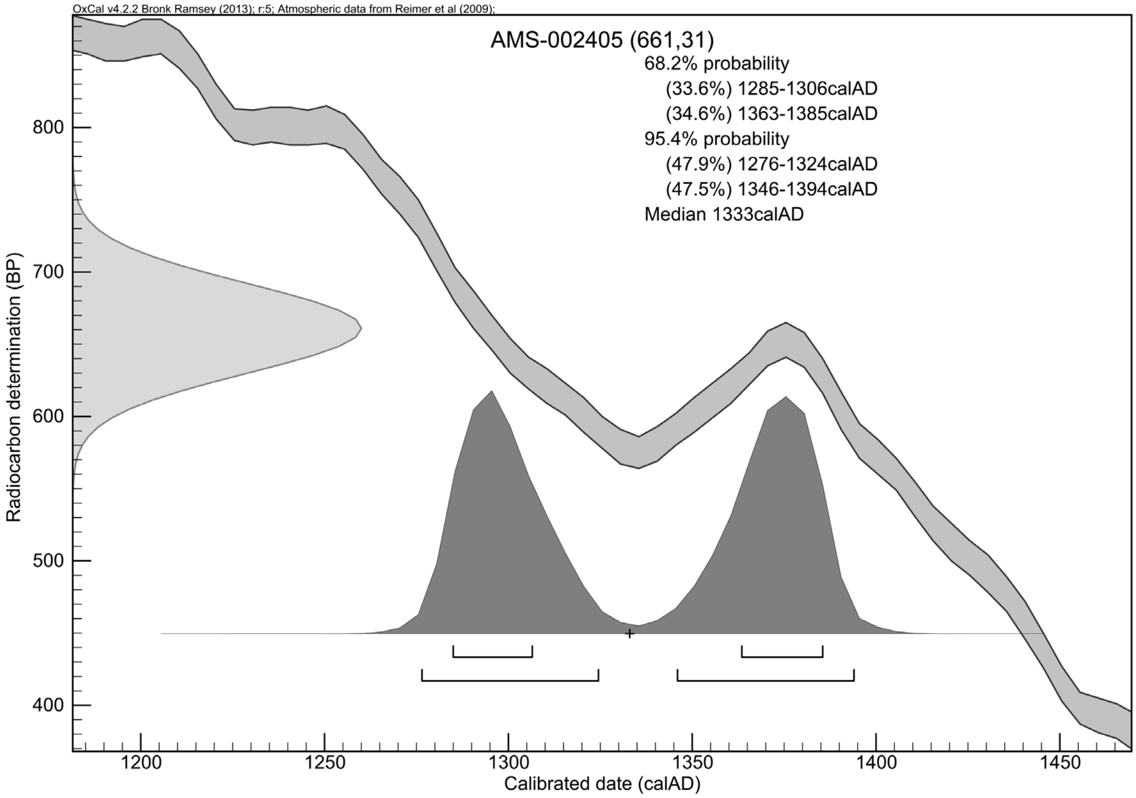


Figure 6. Calibrated age ranges of 9-SC Brushed-Appliqued jar, Smith County (AMS-002405.

Figure 7. Brushed-Appliqued jar from unknown upper Neches River basin site in Smith County, Texas.

Figure 8. Cass Appliqued jar (11-BCJ).

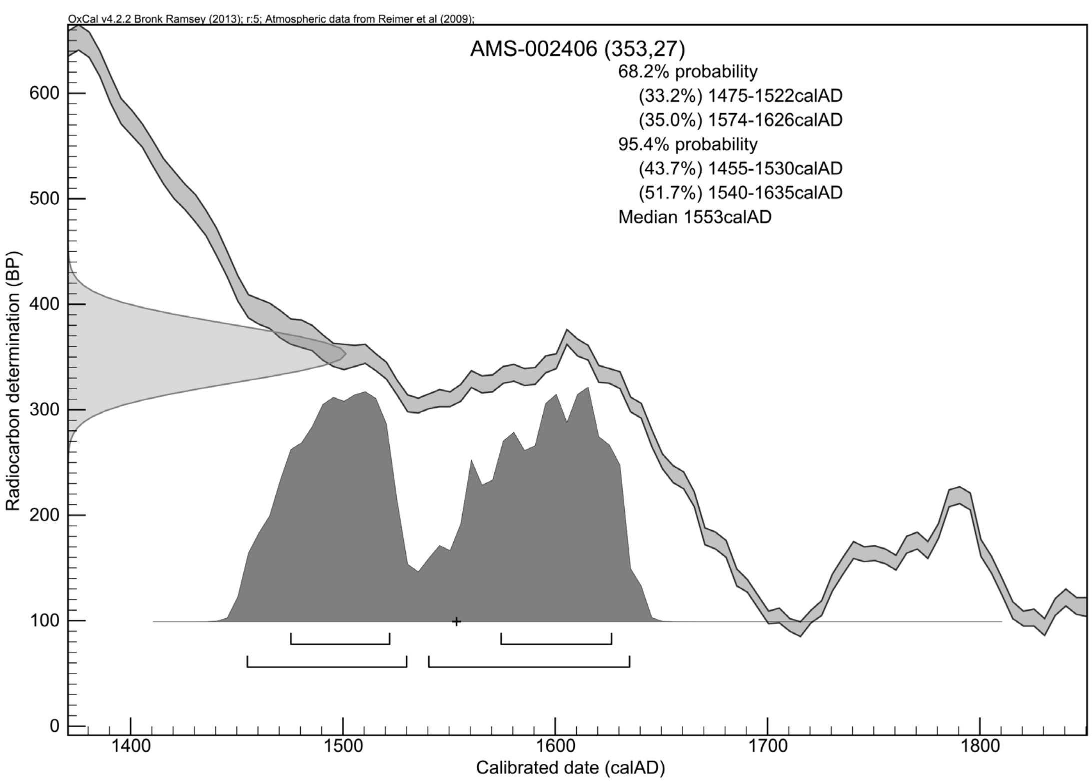


Figure 9. Calibrated age ranges of 11-BCJ Cass Appliqued jar from an unknown Titus phase site in the Big Cypress Creek basin.

River basin, one date from a clear Frankston phase context at the H. C. Slider site. The median calibrated age of organic residues on a Bullard Brushed jar from this site is A.D. 1547. The last dated vessel is a brushed-appliqued jar from an uncertain context. The 2-sigma calibrated age range of the organic residue on this vessel is A.D. 1276-1394, indicating that this vessel was in use by Caddo peoples in the Middle Caddo period.

## ACKNOWLEDGMENTS

We appreciate the permission of the Gregg County Historical Museum to document the vessels and/or sherds from these East Texas sites.

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# A Preliminary Temporal Analysis of the East Texas Archaic

***Robert Z. Selden, Jr.***

## INTRODUCTION

This article presents preliminary findings of a temporal analysis of the East Texas Archaic based upon the examination of radiocarbon $^{14}C$ dates from sites that have deposits that date to the period. All assays employed in this effort were collected from research and cultural resource management reports and publications, synthesized, then recalibrated in version 4.1.7 of OxCal (Bronk Ramsey 2013) using IntCal09 (Reimer et al. 2009).

The date combination process is used herein to refine site-specific summed probability distributions, illustrating—for the first time—the temporal position of each dated archaeological site with an assay that falls within the Archaic. Seventy-three radiocarbon dates from 34 sites serve as the foundation for this analysis of the East Texas Archaic period (ca. 8000-500 B.C.) (Table 1). All dates used in this analysis come directly from the East Texas Radiocarbon Database (ETRD) (Perttula and Selden 2011). Within the sample, there are 19 sites with a single radiocarbon sample that dates to the Archaic, eight sites with two dated samples, one site with three dated samples, three sites with four dated samples, one site with five dated samples, and one site with 14 dated samples (Table 1). Of the 73 $^{14}C$ dates from the ETRD used in this analysis, one dates to the Early Archaic period (ca. 8000-5000 B.C.), eight date to the Middle Archaic period (ca. 5000-3000 B.C.), and the remaining 64 date to the Late Archaic period (ca. 3000-500 B.C.) (temporal divisions follow Perttula and Young [2012]).

## METHODS

The date combination (R_Combine) process assumes that if all assays collected at a particular site draw carbon from the same reservoir, then they should have the same underlying $F^{14}C$ value and can be combined prior to calibration (Bronk Ramsey 2008). The measurements have Gaussian uncertainty distributions, and $X^2$ was used to test the assumption that all ratios are the same to reveal whether compelling evidence exists—at the 95% confidence level—that dates cannot be related to the same event (Bronk Ramsey 2008). Each site-specific figure provides the summed probability distributions (SPDs), calibrated age range for combined assays, and all dates utilized to determine these results.

Although $^{14}C$ determinations are most often represented in the form $A \pm E$ where $A$ is the radiocarbon estimate (B.P.) and $E$ represents the standard deviation, the method of date combination can be used to create a new $^{14}C$ determination from multiple assays, often with the ancillary benefit of a decrease in the standard deviation (Ward and Wilson 1978). To test whether a series of $^{14}C$ determinations are consistent, the pooled mean is calculated by way of $Ap$, where:

$$A_p = \left(\sum_{1}^{n} A_i/E_i^2\right) / \left(\sum_{1}^{n} 1/E_i^2\right) \tag{1}$$

**Table 1. Catalog of $^{14}C$ dates for the East Texas Archaic period.**

| *Trinomial* | *Assay No.* | *Raw Age* | ± | *δ $^{13}C$ (‰)* | *Conv $^{14}C$ Age* | ± | *1σ Age Range** | *2σ Age Range** | *Median* |
|---|---|---|---|---|---|---|---|---|---|
| 41AN38 | Beta-236791 | -- | -- | -23.9 | 2800 | 40 | 1004-907 BC (0.68) | 1051-839 BC (0.95) | 954 BC |
| 41AN115 | Beta-166266 | 3840 | 50 | -27.1 | 3810 | 50 | 2340-2195 BC (0.58), 2175-2145 BC (0.10) | 2461-2134 BC (0.94), 2076-2064 BC (0.01) | 2258 BC |
| 41BW692 | UGA-13422 | 3450 | 40 | -24.5 | 3450 | 40 | 1874-1843 BC (0.17), 1816-1799 BC (0.08), 1779-1731 BC (0.29), 1719-1692 BC (0.14) | 1886-1666 BC (0.95) | 1768 BC |
| 41BW692 | UGA-13423 | 2760 | 40 | -25.1 | 2760 | 40 | 970-962 BC (0.05), 1002-826 BC (0.95) | 1002-826 BC (0.95) | 904 BC |
| 41BW692 | UGA-13421 | 2690 | 40 | -24.6 | 2630 | 40 | 831-787 BC (0.68) | 896-765 BC (0.95), 678-675 BC (0.01) | 806 BC |
| 41CP220 | Beta-204253 | 4450 | 40 | -24.9 | 4450 | 40 | 3324-3234 BC (0.31), 3223-3220 BC (0.01), 3173-3161 BC (0.03), 3118-3078 BC (0.14), 3072-3024 BC (0.19) | 3339-3206 BC (0.39), 3195-3008 BC (0.51), 2986-2932 BC (0.06) | 3153 BC |
| 41CS151 | Beta-81674 | 5300 | 60 | -25.4 | 5300 | 60 | 4231-4193 BC (0.15), 4177-4046 BC (0.53) | 4317-4289 BC (0.03), 4262-3985 BC (0.93) | 4135 BC |
| 41CS151 | Beta-76608 | 2400 | 60 | -25.0 | 2400 | 60 | 729-693 BC (0.11), 659-653 BC (0.02), 543-398 BC (0.56) | 756-684 BC (0.17), 670-390 BC (0.78) | 513 BC |
| 41DT59 | Beta-81670 | 2660 | 50 | -26.2 | 2640 | 50 | 889-881 BC (0.04), 843-781 BC (0.65) | 917-756 BC (0.93), 685-669 BC (0.02), 607-601 BC (0.00) | 815 BC |
| 41FN66 | Beta-205705 | 4110 | 80 | -16.5 | 4250 | 90 | 3009-2983 BC (0.05), 2935-2836 BC (0.28), 2816-2671 BC (0.35) | 3097-2574 BC (0.95) | 2840 BC |
| 41FN130 | Beta-304937 | 3530 | 40 | -6.5 | 3830 | 40 | 2391-2385 BC (0.02), 2346-2202 BC (0.66) | 2460-2196 BC (0.91), 2170-2147 BC (0.04) | 2286 BC |
| 41FN130 | Beta-304936 | 3450 | 40 | -5.7 | 3770 | 40 | 2282-2249 BC (0.16), 2232-2137 BC (0.52) | 2335-2324 BC (0.01), 2307-2113 BC (0.82), 2101-2037 BC (0.13) | 2190 BC |
| 41HE139 | UGA-12890 | 4050 | 40 | -23.85 | 4070 | 40 | 2836-2816 BC (0.08), 2668-2566 BC (0.49), 2523-2497 BC (0.11) | 2859-2810 BC (0.14), 2752-2722 BC (0.05), 2701-2486 BC (0.77) | 2616 BC |
| 41HE139 | UGA-12889 | 2590 | 40 | -25.9 | 2580 | 40 | 809-756 BC (0.58), 685-669 BC (0.10) | 821-742 BC (0.64), 690-663 BC (0.12), 647-549 BC (0.20) | 773 BC |
| 41HE245 | SMU-660 | 2853 | 57 | -- | 2853 | 70 | 1122-923 BC (0.68) | 1258-1233 BC (0.02), 1217-843 BC (0.93) | 1033 BC |
| 41HE245 | SMU-684 | 2821 | 59 | -- | 2821 | 71 | 1112-1101 BC (0.03), 1086-1064 BC (0.05), 1058-898 BC (0.60) | 1208-1140 BC (0.06), 1135-823 BC (0.89) | 990 BC |
| 41HE245 | SMU-657 | 2669 | 50 | -- | 2669 | 64 | 896-797 BC (0.68) | 999-759 BC (0.94), 683-670 BC (0.01) | 842 BC |
| 41HE245 | SMU-656 | 2635 | 49 | -- | 2635 | 63 | 896-868 BC (0.11), 859-769 BC (0.58) | 969-963 BC (0.00), 931-736 (0.82), 690-662 BC (0.04) | 810 BC |
| 41HP106 | Beta-83089 | 2830 | 70 | -27.2 | 2800 | 70 | 1041-892 BC (0.59), 878-846 BC (0.10) | 1189-1181 BC (0.01), 1156-1145 BC (0.01), 1130-810 BC (0.94) | 964 BC |

**Table 1. Catalog of $^{14}C$ dates for the East Texas Archaic period, cont.**

| *Trinomial* | *Assay No.* | *Raw Age* | ± | *$\delta^{13}C$ (‰)* | *Conv $^{14}C$ Age* | ± | *1σ Age Range** | *2σ Age Range** | *Median* |
|---|---|---|---|---|---|---|---|---|---|
| 41HP118 | SMU-1970 | -- | -- | -21.5 | 2980 | 30 | 1266-1190 BC (0.50), 1179-1158 BC (0.10), 1145-1131 BC (0.08) | 1371-1346 BC (0.02), 1316-1117 BC (0.93) | 1218 BC |
| 41HP118 | SMU-1883 | -- | -- | -25.0 | 2860 | 70 | 1127-926 BC (0.68) | 1260-892 BC (0.93), 878-846 BC (0.03) | 1043 BC |
| 41HP159 | GX-15881 | -- | -- | -25.5 | 5540 | 70 | 4452-4339 BC (0.68) | 4527-4259 BC (0.95) | 4394 BC |
| 41HP159 | GX-15880 | -- | -- | -26.0 | 4990 | 70 | 3933-3875 BC (0.20), 3807-3696 BC (0.48) | 3946-3656 BC (0.95) | 3783 BC |
| 41HP159 | SMU-2222 | -- | -- | -25.8 | 4800 | 90 | 3692-3686 BC (0.01), 3661-3511 BC (0.56), 3425-3382 BC (0.11) | 3765-3723 BC (0.03), 3716-3370 BC (0.92) | 3571 BC |
| 41HP159 | GX-15878 | -- | -- | -24.1 | 4490 | 70 | 3340-3204 BC (0.39), 3198-3095 BC (0.29) | 3367-3007 BC (0.90), 2989-2931 BC (0.05) | 3190 BC |
| 41HS524 | Beta-92922 | 2570 | 50 | -29.1 | 2510 | 50 | 776-731 BC (0.16), 691-660 BC (0.12), 651-544 BC (0.41) | 796-501 BC (0.90), 495-486 BC (0.01), 463-449 BC (0.01), 442-417 BC (0.02) | 634 BC |
| 41HS846 | Beta-210250 | 3560 | 40 | -25.6 | 3550 | 40 | 1950-1876 BC (0.49), 1843-1819 BC (0.11), 1798-1780 BC (0.08) | 2016-1997 BC (0.03), 1980-1756 BC (0.92) | 1893 BC |
| 41LR152 | Beta-153589 | -- | -- | -24.8 | 2490 | 40 | 763-725 BC (0.14), 694-681 BC (0.05), 673-541 BC (0.50) | 781-486 BC (0.90), 463-448 BC (0.02), 443-417 BC (0.03) | 626 BC |
| 41LR187 | Beta-153595 | -- | -- | -25.6 | 3650 | 40 | 2123-2093 BC (0.16), 2042-1954 BC (0.52) | 2140-1914 BC (0.95) | 2021 BC |
| 41LR297 | Beta-237679 | 2470 | 50 | -24.6 | 2480 | 50 | 760-683 BC (0.23), 670-523 BC (0.45) | 772-479 BC (0.85), 470-414 BC (0.11) | 614 BC |
| 41NA231 | Beta-204779 | 3100 | 40 | -24.9 | 3100 | 40 | 1426-1370 BC (0.45), 1349-1316 BC (0.24) | 1447-1266 BC (0.95) | 1375 BC |
| 41NA236 | Beta-204781 | 4290 | 40 | -25.1 | 4290 | 40 | 2927-2879 BC (0.68) | 3023-2871 BC (0.94), 2802-2779 BC (0.02) | 2907 BC |
| 41NA240 | Beta-151100 | 2720 | 40 | -24.7 | 2720 | 40 | 902-827 BC (0.68) | 971-960 BC (0.02), 935-804 BC (0.93) | 868 BC |
| 41NA240 | Beta-151099 | 2380 | 40 | -23.8 | 2400 | 40 | 522-401 BC (0.68) | 749-687 BC (0.14), 666-643 BC (0.04), 592-577 BC (0.01), 568-393 BC (0.77) | 487 BC |
| 41NA264 | Beta-151106 | 3130 | 80 | -27.0 | 3090 | 80 | 1447-1261 BC (0.68) | 1523-1122 BC (0.95) | 1346 BC |
| 41NA285 | Beta-151111 | 3770 | 40 | -24.2 | 3780 | 40 | 2284-2248 BC (0.19), 2234-2141 BC (0.49) | 2343-2121 BC (0.88), 2095-2041 BC (0.08) | 2207 BC |
| 41NA285 | Beta-203672 | 2860 | 40 | -25.0 | 2860 | 40 | 1112-1101 BC (0.05), 1087-1064 BC (0.11), 1058-976 BC (0.50), 952-946 BC (0.03) | 1191-1177 BC (0.01), 1160-1144 BC (0.02), 1131-914 BC (0.92) | 1032 BC |
| 41NA290 | Beta-151114 | 3220 | 70 | -26.8 | 3190 | 70 | 1600-1594 BC (0.01), 1531-1394 BC (0.67) | 1630-1305 BC (0.95) | 1469 BC |
| 41NA290 | Beta-151117 | 3030 | 40 | -25.5 | 3020 | 40 | 1377-1338 BC (0.18), 1321-1252 BC (0.38), 1242-1213 BC (0.13) | 1396-1153 BC (0.92), 1146-1129 BC (0.03) | 1283 BC |

**Table 1. Catalog of $^{14}C$ dates for the East Texas Archaic period, cont.**

| *Trinomial* | *Assay No.* | *Raw Age* | ± | *δ $^{13}C$ (‰)* | *Conv $^{14}C$ Age* | ± | *1σ Age Range** | *2σ Age Range** | *Median* |
|---|---|---|---|---|---|---|---|---|---|
| 41NA290 | Beta-151118 | 2930 | 40 | -24.1 | 2940 | 40 | 1256-1237 BC (0.08), 1215-1111 BC (0.50), 1103-1081 BC (0.08), 1065-1056 BC (0.03) | 1291-1280 BC (0.01), 1270-1014 BC (0.94) | 1156 BC |
| 41NA290 | Beta-151115 | 2960 | 110 | -26.9 | 2930 | 110 | 1301-1000 BC (0.68) | 1415-895 BC (0.95), 869-853 BC (0.01) | 1145 BC |
| 41PN175 | Beta-163092 | 2990 | 40 | -25.4 | 2980 | 40 | 1291-1280 BC (0.04), 1270-1129 BC (0.64) | 1375-1340 BC (0.05), 1320-1110 BC (0.86), 1103-1073 BC (0.03), 1066-1056 BC (0.01) | 1217 BC |
| 41RK215 | Beta-60090 | 3560 | 90 | -25.3 | 3560 | 90 | 2025-1860 BC (0.47), 1853-1771 BC (0.22) | 2194-2178 BC (0.01), 2144-1684 BC (0.95) | 1907 BC |
| 41RK215 | Beta-60089 | 3100 | 90 | -26.0 | 3090 | 90 | 1489-1482 BC (0.01), 1455-1257 BC (0.63), 1235-1216 BC (0.04) | 1598-1595 BC (0.00), 1531-1109 BC (0.93), 1104-1056 BC (0.02) | 1343 BC |
| 41RK222 | Beta-72779 | 3170 | 120 | -24.1 | 3180 | 130 | 1620-1301 BC (0.68) | 1767-1112 BC (0.95), 1101-1085 BC (0.00), 1064-1058 BC (0.00) | 1454 BC |
| 41RK222 | Beta-72780 | 2970 | 60 | -29.6 | 2890 | 60 | 1194-1142 BC (0.14), 1133-996 BC (0.53), 985-981 BC (0.01) | 1265-914 BC (0.95) | 1083 BC |
| 41RK222 | Beta-72777 | 2480 | 70 | -27.6 | 2440 | 70 | 748-688 BC (0.17), 665-644 BC (0.06), 589-580 BC, (0.02), 556-409 BC (0.43) | 766-401 BC (0.95) | 571 BC |
| 41RK222 | Beta-81715 | 2460 | 60 | -26.3 | 2440 | 60 | 746-689 BC (0.18), 664-646 BC (0.05), 552-410 BC (0.45) | 762-682 BC (0.22), 672-403 BC (0.74) | 566 BC |
| 41RK222 | Beta-72774 | 2420 | 90 | -26.7 | 2390 | 90 | 748-688 BC (0.14), 666-644 BC (0.05), 590-579 BC (0.02), 558-389 BC (0.47) | 784-356 BC (0.92), 286-234 BC (0.04) | 521 BC |
| 41RK468 | Beta-239707 | 3220 | 40 | -27.2 | 3180 | 40 | 1495-1425 BC (0.68) | 1530-1386 BC (0.95) | 1456 BC |
| 41RK468 | Beta-239709 | 2560 | 40 | -27.7 | 2520 | 40 | 781-746 BC (0.16), 688-665 BC (0.12), 646-552 BC (0.41) | 797-517 BC (0.95) | 643 BC |
| 41TT392 | Beta-64978 | 3440 | 60 | -32.2 | 3320 | 60 | 1668-1526 BC (0.68) | 1745-1491 BC (0.93), 1480-1456 BC (0.02) | 1602 BC |
| 41TT396 | Beta-64979 | 3690 | 70 | -29.4 | 3620 | 70 | 2125-2091 BC (0.10), 2044-1890 BC (0.58) | 2198-2165 BC (0.03), 2151-1863 BC (0.85), 1851-1772 BC (0.08) | 1988 BC |
| 41TT550 | Beta-70992 | 2620 | 60 | -26.5 | 2600 | 60 | 835-751 BC (0.50), 687-667 BC (0.08), 638-594 BC (0.10) | 901-716 BC (0.62), 695-539 BC (0.33) | 773 BC |
| 41TT550 | Beta-71230 | 2650 | 60 | -28.5 | 2590 | 60 | 827-750 BC (0.45), 687-666 BC (0.09), 641-592 BC (0.14) | 896-537 BC (0.95), 529-537 BC (0.00) | 756 BC |
| 41TT550 | Beta-70991 | 2570 | 60 | -27.3 | 2530 | 60 | 794-731 BC (0.22), 691-662 BC (0.11), 650-546 BC (0.36) | 805-486 BC (0.91), 463-449 BC (0.01), 442-417 BC (0.03) | 643 BC |
| 41TT550 | Beta-70990 | 2470 | 70 | -26.0 | 2450 | 70 | 749-688 BC (0.17), 666-643 BC (0.06), 591-578 BC (0.03), 566-413 BC (0.41) | 767-404 BC (0.95) | 582 BC |

**Table 1. Catalog of $^{14}$C dates for the East Texas Archaic period, cont.**

| *Trinomial* | *Assay No.* | *Raw Age* | ± | *δ $^{13}$C (‰)* | *Conv $^{14}$C Age* | ± | *1σ Age Range** | *2σ Age Range** | *Median* |
|---|---|---|---|---|---|---|---|---|---|
| 41TT852 | Beta-300058 | 2580 | 30 | -25.0 | 2580 | 30 | 802-768 BC (0.68) | 814-750 BC (0.80), 688-666 BC (0.10), 640-592 BC (0.06) | 782 BC |
| 41TT853 | Beta-300108 | 4240 | 40 | -24.7 | 4240 | 40 | 2907-2866 BC (0.45), 2805-2762 BC (0.24) | 2920-2848 BC (0.53), 2814-2738 BC (0.33), 2731-2678 BC (0.10) | 2867 BC |
| 41UR77 | Beta-166912 | 7030 | 40 | -25.4 | 7020 | 40 | 5982-5942 BC (0.29), 5928-5877 BC (0.36), 5856-5850 BC (0.03) | 5997-5808 BC (0.95) | 5913 BC |
| 41UR77 | UGA-12975 | 5220 | 50 | -25.3 | 5220 | 50 | 4220-4213 BC (0.02), 4150-4135 BC (0.05), 4055-3965 BC (0.61) | 4230-4197 BC (0.08), 4174-3955 BC (0.88) | 4031 BC |
| 41UR77 | UGA-12979 | 4650 | 40 | -26.1 | 4630 | 40 | 3499-3433 BC (0.54), 3379-3361 BC (0.15) | 3621-3610 BC (0.01), 3522-3342 BC (0.94) | 3454 BC |
| 41UR77 | UGA-12977 | 4400 | 40 | -27.2 | 4360 | 40 | 3016-2916 BC (0.68) | 3091-2900 BC (0.95) | 2979 BC |
| 41UR77 | UGA-12976 | 4230 | 50 | -25.6 | 4220 | 50 | 2901-2858 BC (0.26), 2810-2752 BC (0.33), 2722-2701 BC (0.10) | 2915-2833 BC (0.34), 2820-2660 BC (0.59), 2652-2634 BC (0.02) | 2790 BC |
| 41UR77 | UGA-12978 | 4120 | 50 | -24.4 | 4180 | 50 | 2881-2848 BC (0.14), 2813-2739 BC (0.34), 2732-2679 BC (0.20) | 2896-2621 BC (0.95) | 2764 BC |
| 41UR77 | Beta-166911 | 4130 | 60 | -24.7 | 4130 | 60 | 2866-2805 BC (0.21), 2761-2620 BC (0.48) | 2884-2570 BC (0.94), 2515-2501 BC (0.02) | 2719 BC |
| 41UR77 | UGA- 12973 | 3500 | 40 | -25.8 | 3490 | 40 | 1880-1838 BC (0.25), 1832-1757 BC (0.43) | 1919-1734 BC (0.92), 1716-1693 BC (0.04) | 1816 BC |
| 41UR77 | UGA-12981 | 3220 | 40 | -25.8 | 3210 | 40 | 1509-1436 BC (0.68) | 1606-1574 BC (0.05), 1558-1551 BC (0.01), 1538-1411 BC (0.89) | 1478 BC |
| 41UR77 | UGA-12982 | 3180 | 40 | -27.3 | 3140 | 40 | 1491-1480 BC (0.05), 1456-1386 BC (0.63) | 1499-1368 BC (0.84), 1359-1315 BC (0.12) | 1420 BC |
| 41UR77 | UGA-12980 | 3130 | 40 | -25.2 | 3130 | 40 | 1450-1378 BC (0.60), 1337-1322 BC (0.08) | 1496-1311 BC (0.95) | 1410 BC |
| 41UR77 | UGA-12972 | 2980 | 40 | -27.0 | 2950 | 40 | 1260-1115 BC (0.68) | 1299-1026 BC (0.95) | 1171 BC |
| 41UR77 | UGA-12985 | 2850 | 40 | -24.7 | 2860 | 40 | 1112-1101 BC (0.05), 1087-1064 BC (0.11), 1058-976 BC (0.50), 952-946 BC (0.03) | 1191-1177 BC (0.01), 1160-1144 BC (0.02), 1131-914 BC (0.92) | 1032 BC |
| 41UR77 | UGA-12974 | 2600 | 40 | -26.4 | 2580 | 40 | 809-756 BC (0.58), 685-669 BC (0.10) | 821-742 BC (0.64), 690-663 BC (0.12), 647-549 BC (0.20) | 773 BC |

*All probabilities rounded to the nearest hundredth.

followed by the test statistic, *T*, where:

$$T = \sum_{1}^{n} \left(A_i - A_p\right)^2 / E_i^2 \tag{2}$$

the latter of which illustrates a chi-square distribution on $n - 1$ degrees of freedom under the null hypothesis (see Clark 1975:252; Ward and Wilson 1978:21).

Provided that the $^{14}C$ determinations are found not to be significantly different, they can then be combined with the pooled age as *Ap* given by (I), and the variance given by:

$$V\left(A_p\right) = \left(\sum_{1}^{n} 1/E_i^2\right)^{-1} \tag{3}$$

(Ward and Wilson 1978:21), which is a process accessible in OxCal by way of the R_Combine function. Once combined with R_Combine, a new date range, standard deviation, and median age is provided for the combined samples (Figure 1). Within the framework of this study, the new date range replaces the combined dates and this new date range is employed within the revised summed probability distribution, while the new median date is used for statistical analyses (see also Selden 2012, 2013).

Conventional radiocarbon dates employed were recalibrated using IntCal09 (Figure 2). The radiocarbon curve serves as the basis for date calibration and can aid the process of archaeological interpretation by highlighting temporal zones with reversals and plateaus. Within the span of time of the East Texas Archaic (ca. 8000-500 B.C.), the curve possesses a number of reversals and plateaus that warrant further consideration. These nuances help to clarify why some radiocarbon dates have longer spans of probability than others.

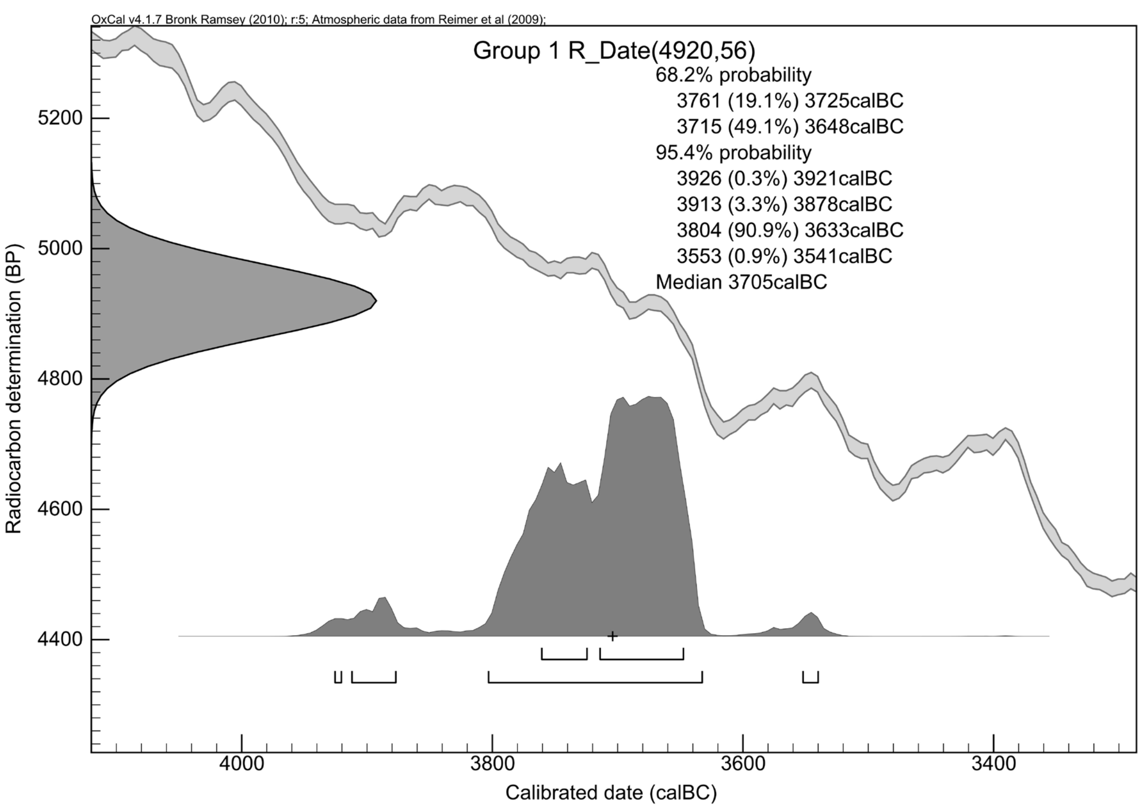


Figure 1. Calibrated results from the R_Combine function for the Finley Fan site (41HP159), Group 1.

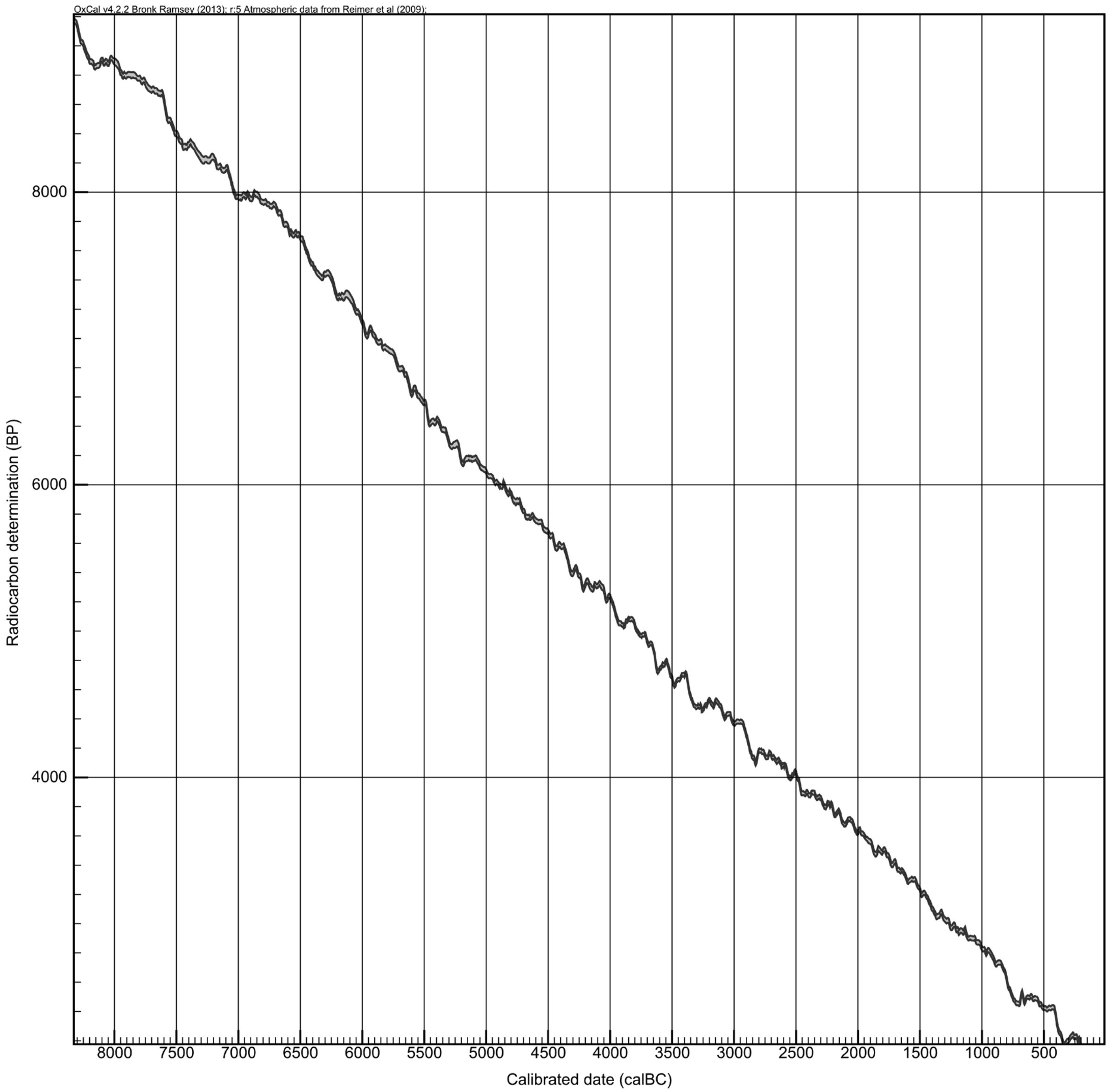


Figure 2. IntCal09 Radiocarbon calibration curve for the Archaic period.

The 1248 corrected dates in the ETRD were calibrated utilizing OxCal 4.1.7 (Bronk Ramsey 2013) and IntCal09 (Reimer et al. 2009). With few exceptions, older assays found to lack δ13C value estimates for fractionation correction used -25‰ for nutshells and charcoal (C3 plants) (Stuiver and Reimer 1993:Table 1).

Upon completion of the date combination process, a summed probability distribution (SPD) was produced for each of the sites with Archaic dates to illustrate the temporal position of each within the period. The dates were plotted in a manner where the SPDs, the combined groups, and the individual assays that inform them can be viewed together. These efforts permit the uncombined SPD for each site to be contrasted with the combined SPD and the combined groups that comprise it. This comparison demonstrates the impact that each site has upon the whole of the Archaic sample, and allows for a discussion of regional trends within the temporal sample.

## COMBINING THE SAMPLE

Archaic sites with combined $^{14}C$ dates include: Shell Lens (41FN130), Winston (41HE245), Finley Fan (41HP159), J. Simms (41NA290), Herman Ballew (41RK222), Mockingbird (41TT550), and 41UR77. The number of dates garnered through research at each of these sites is biased by variable research designs, mitigation strategies, and access to funding. In the following section, the $^{14}C$ assays from these seven sites are refined through date combination, and the subsequent results (combined dates) replace the original assays within the analysis of all Archaic sites.

### *Shell Lens (41FN130)*

The Archaic period dates from the Shell Lens site (Beta-304937 and Beta-304936) were combined into one group (Figure 3). The conventional age for Group 1 is 3800 ± 29 B.P., which has a calibrated 1σ age range of 2287-2201 B.C. (0.68), a 2σ age range of 2339-2315 B.C. (0.03) and 2310-2139 B.C. (0.93), with a median age of 2238 B.C.

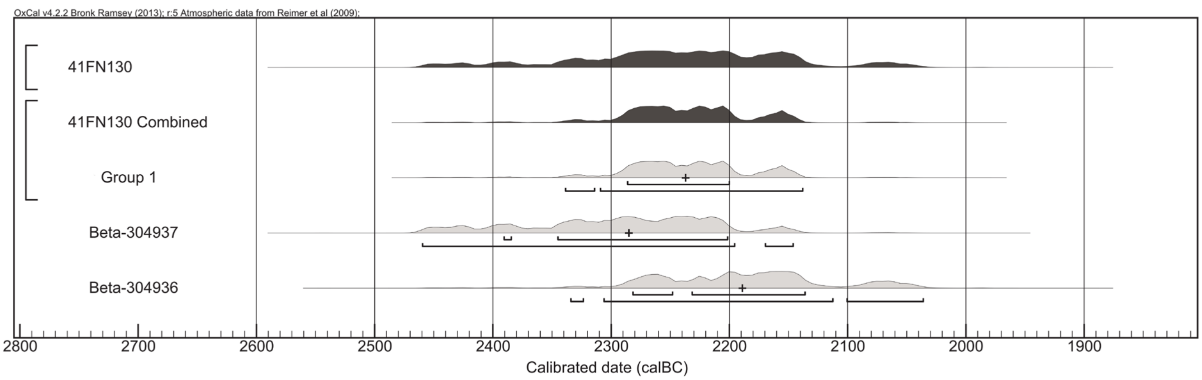


Figure 3. All and combined summed probability distributions for Archaic period dates from the Shell Lens site (41FN130) with 1σ and 2σ ranges, median ages, and number of samples.

### *Winston (41HE245)*

The Archaic period dates from the Winston site were combined into two groups (Figure 4). The conventional $^{14}C$ age for Group 1 (SMU-660 and SMU-684) is 2837 ± 50 B.P., which has a calibrated 1σ age range of 1056-916 B.C. (0.68), a 2σ age range of 1191-1178 B.C. (0.01), 1160-1144 B.C. (0.01), 1131-892

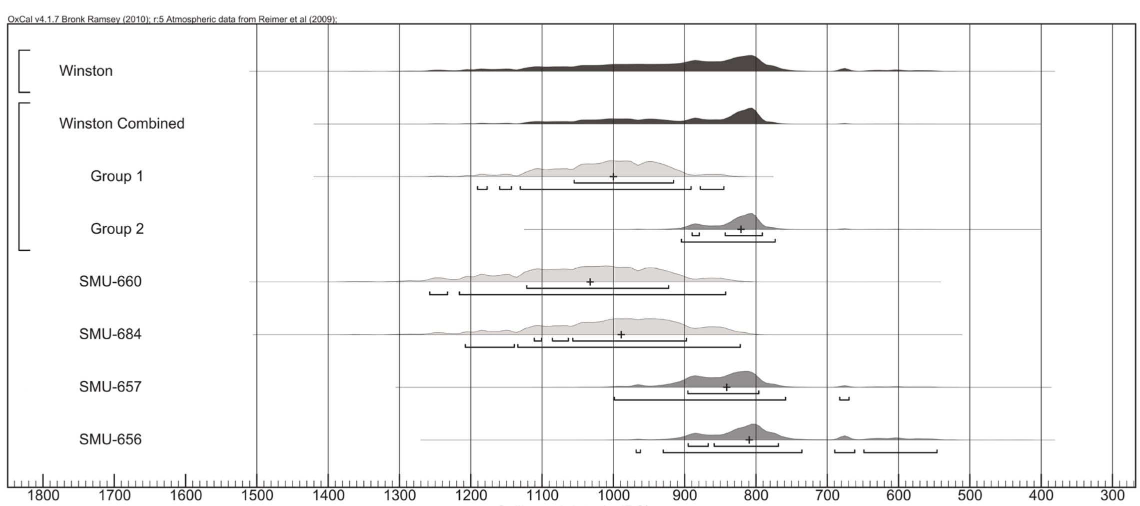


Figure 4. All and combined summed probability distributions for Archaic period dates from the Winston site (41HE245) with 1σ and 2σ ranges, median ages, and number of samples.

B.C. (0.91), and 879-846 B.C. (0.03), with a median age of 1001 B.C. The conventional age for Group 2 (SMU-657 and SMU-656) is 2652 ± 45 B.P., which has a calibrated 1σ age range of 890-880 B.C. (0.06) and 844-792 B.C. (0.63), and a 2σ age range of 905-774 B.C. (0.95), with a median age of 822 B.C.

### *41HP118*

The Archaic period dates from 41HP118 are represented by one group (SMU-1970 and SMU-1883) (Figure 5). The conventional $^{14}C$ age for Group 1 is 2962 ± 28 B.P., which has a calibrated 1σ age range of 1257-1234 B.C. (0.15) and 1217-1130 B.C. (0.54), a 2σ age range of 1295-1111 B.C. (0.91), 1103-1074 B.C. (0.03), and 1066-1056 B.C. (0.01), with a median age of 1190 B.C.

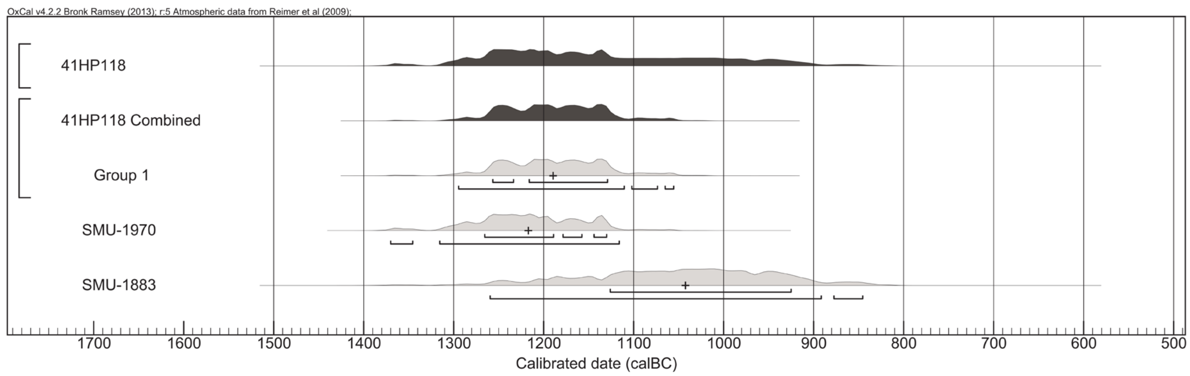


Figure 5. All and combined summed probability distributions for Archaic period dates from 41HP118 with 1σ and 2σ ranges, median ages, and number of samples.

### *Finley Fan (41HP159)*

The Archaic period dates from the Finley Fan site are represented by two individual assays (GX-15881 and GX-15878) and one group (GX-15880 and SMU-2222) (Figure 6). The conventional age for Group 1 is 4920 ± 56 B.P., which has a calibrated 1σ age range of 3761-3725 B.C. (0.19) and 3715-3648 B.C. (0.49), a 2σ age range of 3926-3921 B.C. (0.00), 3913-3878 B.C. (0.03), 3804-3633 B.C. (0.91), and 3553-3541 B.C. (0.01), with a median age of 3705 B.C.

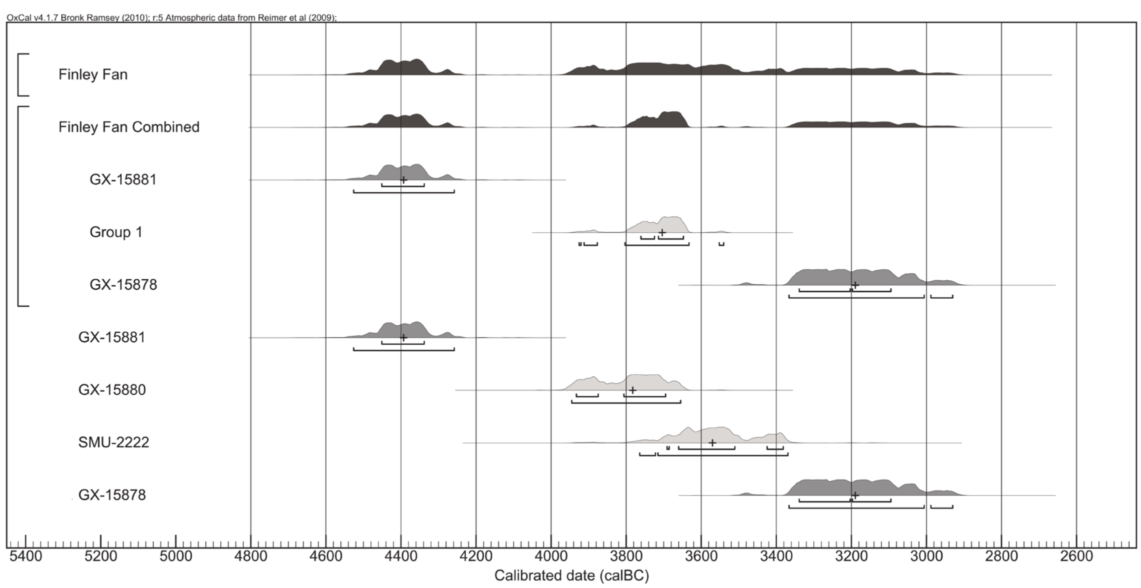


Figure 6. All and combined summed probability distributions for Archaic period dates from the Finley Fan site (41HP159) with 1σ and 2σ ranges, median ages, and number of samples.

### *J. Simms (41NA290)*

The Archaic period dates from the J. Simms site are represented by a single individual assay (Beta-151114) and one group (Beta-151117, Beta-151118, and Beta-151115) (Figure 7). The conventional age for Group 1 is 2977 ± 28 B.P., which has a calibrated 1σ age range of 1264-1191 B.C. (0.50), 1178-1160 B.C. (0.10), and 1144-1131 B.C. (0.08), and a 2σ age range of 1368-1361 B.C. (0.01) and 1314-1116 B.C. (0.95), with a median age of 1214 B.C.

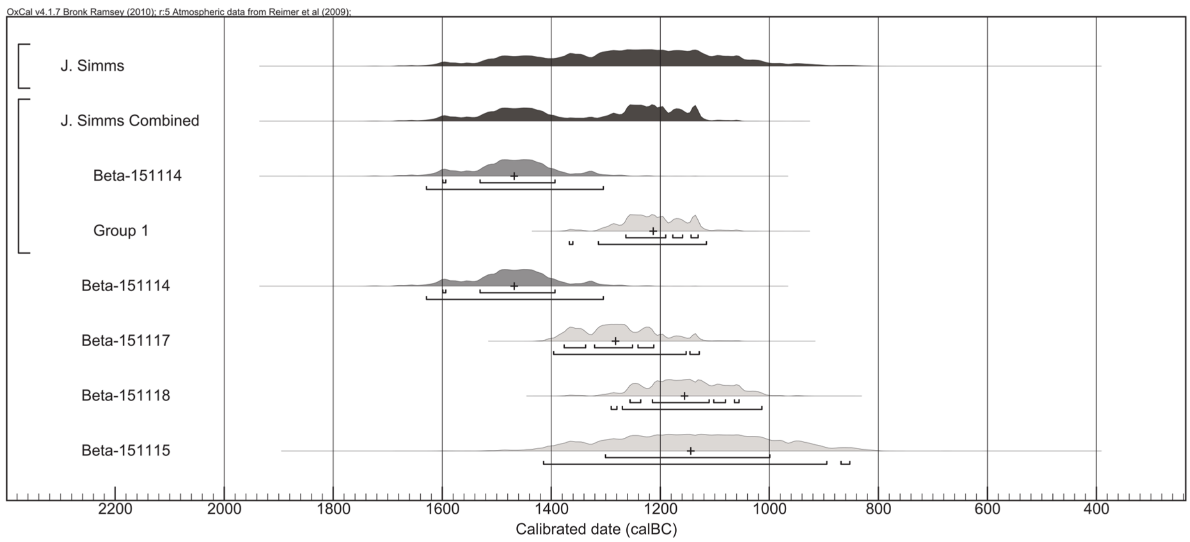


Figure 7. All and combined summed probability distributions for Archaic period dates from the J. Simms site (41NA290) with 1σ and 2σ ranges, median ages, and number of samples.

### *Herman Ballew (41RK222)*

Five Archaic period dates from the Herman Ballew site are represented by two individual assays (Beta-72779 and Beta-72780) and one group (Beta-72777, Beta-81715, and Beta-72774) (Figure 8). The conventional age for Group 1 is 2430 ± 41 B.P., which has a calibrated 1σ age range of 728-693 B.C. (0.13), 658-654 B.C. (0.01), and 542-410 B.C. (0.55), a 2σ age range of 753-685 B.C. (0.20), 668-632 B.C. (0.08), 626-611 B.C. (0.02), and 597-402 B.C. (0.66), with a median age of 527 B.C.

### *Mockingbird (41TT550)*

Four Archaic period dates from the Mockingbird site (Beta-70992, Beta-71230, Beta-70991 and Beta-70990) were combined into one group (Figure 9). The conventional age for Group 1 is 2550 ± 32 B.P., which has a calibrated 1σ age range of 797-752 B.C. (0.43), 686-667 B.C. (0.15), 633-625 B.C. (0.03), and 612-596 B.C. (0.08), a 2σ age range of 802-737 B.C. (0.47), 691-662 B.C. (0.17), and 649-547 B.C. (0.32), with a median age of 687 B.C.

### *41UR77*

The Archaic period radiocarbon dates from 41UR77 are represented by six individual assays (Beta-166912, UGA-12975, UGA-12979, UGA-12977, UGA-12973 and UGA-12974) and three groups (Figure 10). The conventional age for Group 1 (UGA-12976, UGA-12978, and Beta-166911) is 4182 ± 31 B.P., which has a calibrated 1σ age range of 2880-2857 B.C. (0.14), 2811-2748 B.C. (0.40), and 2724-2699 B.C. (0.14); a 2σ age range of 2888-2835 B.C. (0.22) and 2817-2667 B.C. (0.73); with a median age of 2774 B.C. The conventional age for Group 2 (UGA-12981, UGA-12982, and UGA-12980) is 3160 ± 24 B.P., which has a calibrated 1σ age range of 1488-1484 B.C. (0.04) and 1454-1412 B.C. (0.65), a 2σ age range of 1496-1401 B.C. (0.95), and a median age of 1437 B.C. The conventional age for Group 3 (UGA-12972

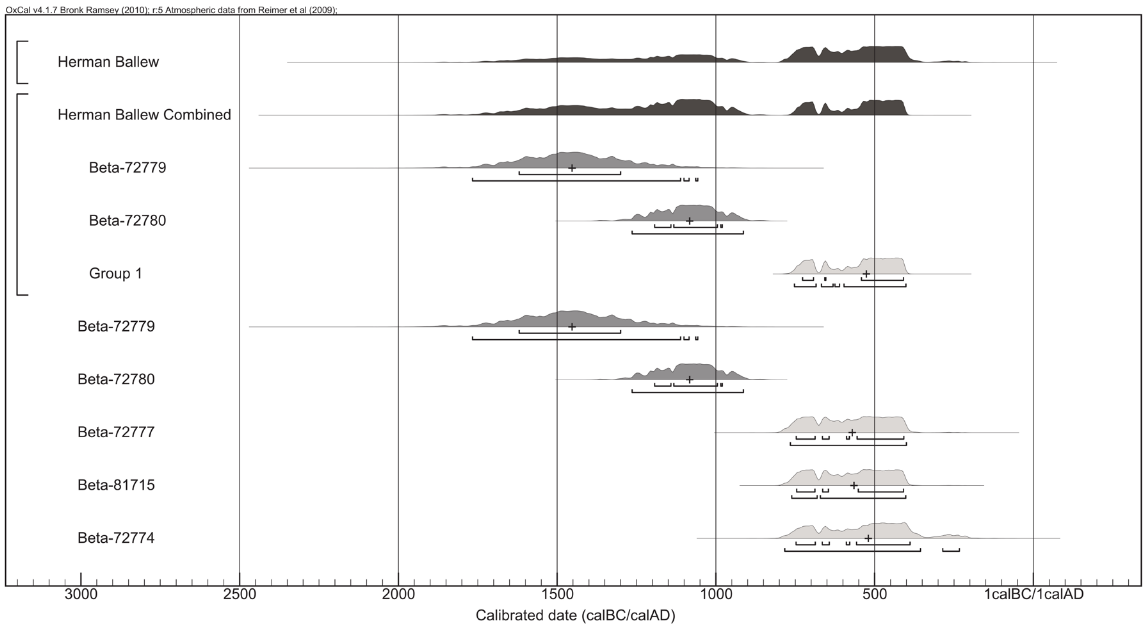


Figure 8. All and combined summed probability distributions for Archaic period dates from the Herman Ballew site (41RK222) with 1σ and 2σ ranges, median ages, and number of samples.

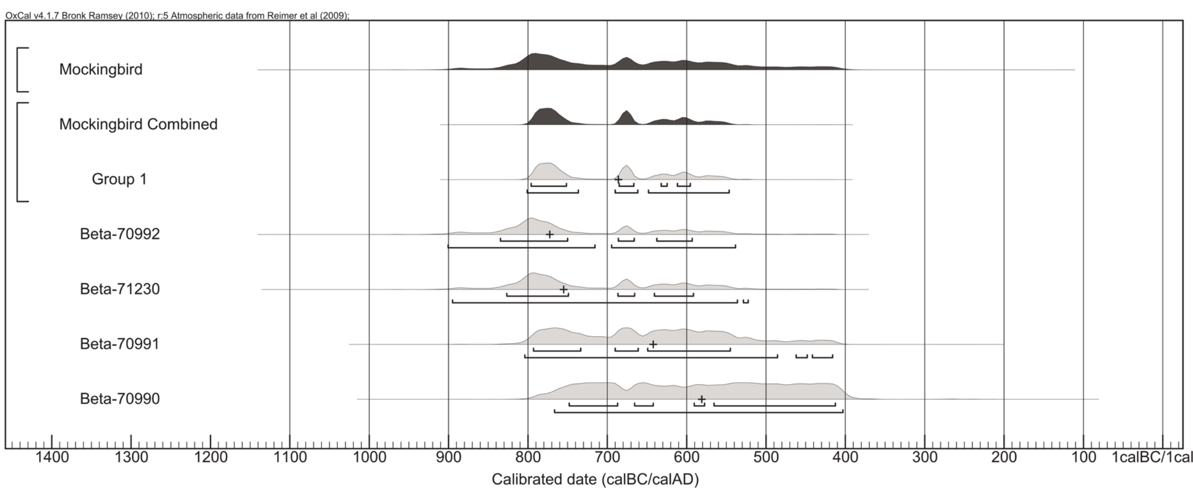


Figure 9. All and combined summed probability distributions for Archaic period dates from the Mockingbird site (41TT550) with 1σ and 2σ ranges, median ages, and number of samples.

and UGA-12985) is 2905 ± 29 B.P., which has a calibrated 1σ age range of 1129-1024 B.C. (0.68), a 2σ age range of 1211-1006 B.C. (0.95), and a median age of 1094 B.C.

## RESULTS

In every case where date combination was applied, the new combined age replaced the assays used to calculate it. Upon completion of the date combination process, the summed probability distributions for all East Texas sites with Archaic-era radiocarbon assays were plotted chronologically (Figure 11). This allows us—for the first time—to view all of the Archaic-era assays at the regional scale.

In the future, it would be useful to apply some manner of chronometric hygiene (e.g. Reith et al. 2011; Wilmshurst 2011) to the Archaic radiocarbon samples, whether following a conventional method or by vetting

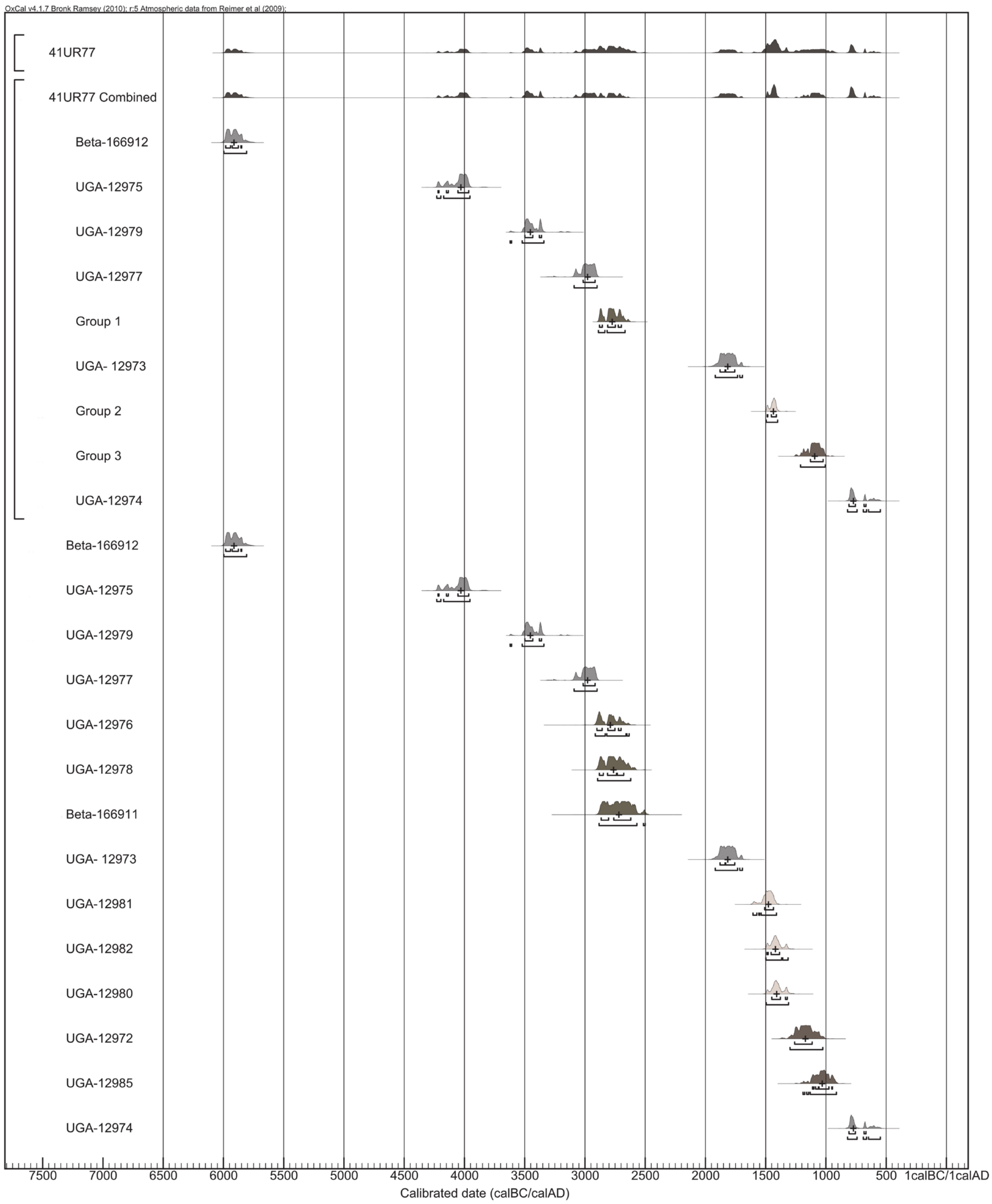


Figure 10. All and combined summed probability distributions for Archaic period dates from 41UR77 with 1σ and 2σ ranges, median ages, and number of samples.

each date to ensure that the assays represent an Archaic component associated with some manner of human occupation (i.e., artifact manufacture or feature use). At this point it is unknown how many of these dates can actually be attributed to the Archaic occupation of the East Texas landscape, but this preliminary analysis does illustrate a fairly remarkable increase in the number of dates during the Late Archaic (ca. 3000-500 B.C.) period following a sparse dated record for the Early and Middle Archaic. The fact that the number of assays from each period increase through time is a familiar trend (Selden 2012, 2013; Selden and Perttula 2013; Surovell and Brantingham 2007; Surovell et al. 2009), and one that is often attributed to an increase in population size (see Peros et al. 2010).

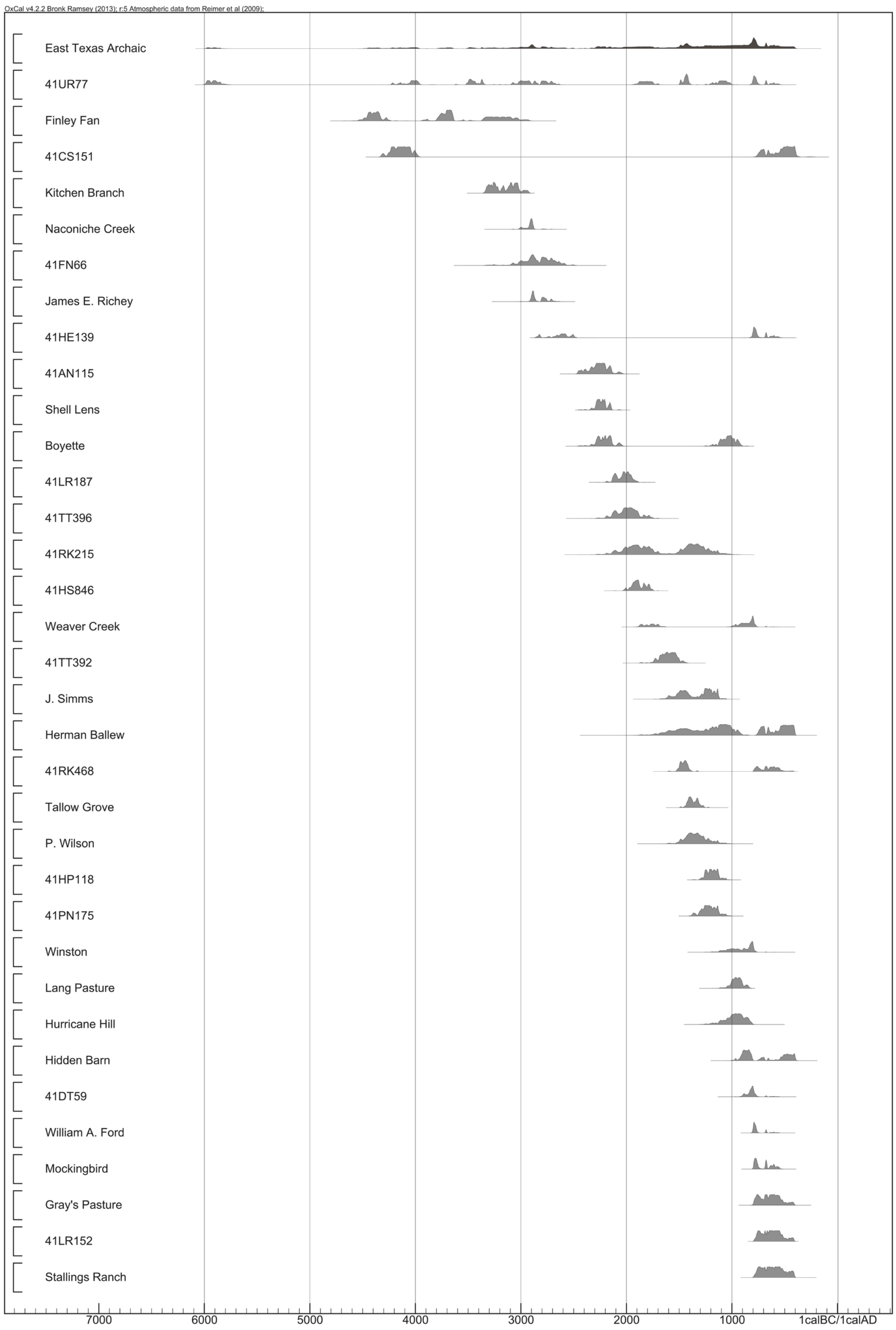


Figure 11. East Texas sites with Archaic-era assays in chronological order.

## CONCLUSIONS

Although biases likely exist in the radiocarbon sample from sites in the region, it is evident that the most extensive Archaic occupation of East Texas occurred during the Late Archaic period. Certainly more dates are needed from Early and Middle Archaic horizons that may exist at sites, but given the often ill-formed stratigraphy in archaeological deposits that occurs throughout East Texas, finding suitable samples can be a challenge. Also, some measure of chronometric hygiene needs to be applied to this sample of dates to increase their resolution and temporal accuracy. While large steps have been taken to explore East Texas archaeology, the Archaic period remains ill-defined with respect to its material culture as well as our understanding of the chronology. The fact that only 73 dates from the East Texas Radiocarbon Database—which is currently composed of 1248 radiocarbon dates from East Texas—speaks to the need for further research.

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