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## Current Research: Organic Residues on Engraved Vessels from Ancestral Caddo Sites in East Texas

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# Current Research: Organic Residues on Engraved Vessels from Ancestral Caddo Sites in East Texas

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In the course of recently documenting ancestral Caddo ceramic vessels from sites dating to Late Caddo period Titus phase contexts (ca. A.D. 1430-1680) in East Texas, specifically on sites in the Big Cypress Creek and Sabine River basins, I have encountered a significant number (ca. 9.6 percent) of more than 1790 engraved fine ware vessels that have an exterior organic residue (Table 1), including carinated bowls, compound bowls, jars, bowls, and even bottles. In some cases, the exterior residue on certain carinated bowls and compound bowls is so thick that the engraved design is obscured and almost completely covered with the organic residue (Figure 1a- c). If engraved fine wares from ancestral Caddo sites were used in daily life for the serving of foods and liquids, how did they accumulate an exterior carbonized residue by the time they were placed in burials as funerary offerings?

The exterior residue on Titus phase fine ware vessels appears to be the product of soot deposition from the smoke produced in a wood or grass fire (Skibo 2015:190; see also Skibo 1992:152-173). Skibo (2015:190) notes that this “type of soot is more permanently affixed to the ceramic surface because it contains resin droplets, which are drawn up with the rising smoke and are solidified once they come in contact with cooler surfaces. One the resin cools, it can produce a hard, waterproof soot layer that is very resistant to breakdown.” Such soot can be deposited if vessel surfaces are less than 400 degrees C, most likely because of the presence of liquids in a vessel (Skibo 2015:191). Skibo’s examination (September 11, 2018 personal communication) of Figure 1b-c notes that the residue looks “like classic exterior soot from being placed over the fire. The one pot has oxidation on the base and soot up to the rim [Figure 1b], which is very common. When a pot is right next to the flame, soot will not accumulate, but it will on the sides.” He also noted that “soot like this can be added to a vessel in just one... episode.”

Site	No. of fine ware vessels	No. with organic residue	Percent
Hinton Coll.*	220	18	8.2
41CP5	138	15	10.9
41CP12	187	19	10.2
41CP304	68	10	14.7
41FK2	39	2	5.1
41FK4	57	4	7.0
41HS3	326	4	1.2
41HS15	81	9	11.1
41MX2	57	9	15.8
41TT6	52	8	15.4
41TT7	165	29	17.6
41TT550	46	13	28.3
41UR2	108	10	9.3
41UR315	95	4	4.2
41UR317	67	9	13.4
41UR318	38	4	10.5
41UR326	48	6	12.5
Totals	1792	173	9.6

\* From a variety of sites in Camp and Titus counties, Texas (Perttula et al. 2012a)  
Source: 41CP5 (Perttula et al. 2010a); 41CP12 (Perttula et al. 2010b); 41CP304 (Perttula 2005); 41FK2 (Perttula 2019); 41FK4 (Perttula 2019); 41HS3 (Perttula 2018); 41HS15 (Fields and Gadus 2012); 41MX2 (Perttula 2019); 41TT6 (Fields et al. 2014; Eloise Gadus, September 2018 personal communication); 41TT7 (Perttula 2019); 41TT550 (Perttula et al. 1998); 41UR2 (Perttula 2019); 41UR315 (Perttula et al. 2012b); 41UR317 (Perttula et al. 2012c); 41UR318 (Perttula et al. 2012c); 41UR326 (Perttula et al. 2012c)

Table 1. Proportion of engraved vessels with organic residues from a sample of Titus phase sites.

To account for the soot and exterior organic residues on a significant proportion of engraved fine ware vessels (principally carinated bowls) in Late Caddo period Titus phase burial features, I suggest that these vessels (and their contents) were smoked in fires, or suspended over fires, that had been placed at one end of the grave during ancestral Caddo mortuary rituals. Carter (1995:128) has noted that in Caddo mortuary rituals, “[s]omeone in the family kept a fire burning at the east end of the grave for the six days a spirit stayed before starting on its way. All personal possessions, such as clothes owned by the one who had died, were hung on a pole set beside the fire to be bathed in its smoke.” These Titus phase engraved vessels were bathed in such a smoke. Both grass and cedar twigs were used to create the bathing smoke (Carter 1995:138-139; Espinosa 1927:163-164).

The age, frequency, and distribution of engraved fine ware vessels with organic residues from being “smoked” should be systematically determined in other areas of East Texas, as well as in other parts



Figure 1. Examples of engraved Titus phase vessels with a thick charred organic residue on their exterior surfaces: a, Vessel 13, Joe Justiss site (41MX2); b, Vessel 74, Russell Bros. site (41TT7); c, Vessel 91, Russell Bros. site (41TT7).

of the Caddo area. Recent communications with Ann Early, Pete Gregory, Jeff Girard, and Duncan McKinnon indicate that engraved vessels of any age with organic residues are very rare to absent in ancestral Caddo vessel assemblages from the Ouachita and Red River basins in Southwest Arkansas and assemblages in Northwest Louisiana. This indicates that the behaviors by Caddo peoples in parts of East Texas after ca. A.D. 1430 (and perhaps before that time as well) differed from other Caddo communities in likely grave side rituals that produced the exterior residue on vessels that were placed as funerary offerings in ancestral Caddo burials. This diversity in mortuary behavior warrants further evaluation and consideration as part of developing a

better understanding of the history and character of ancestral Caddo mortuary traditions.

Finally, it is hoped that samples of the charred residue on a few engraved Titus phase vessels with thick exterior residue can be analyzed. Such samples of the charred materials could be subjected to lipid analysis, gas chromatography/mass spectroscopy (see Evershed 2000), and phytolith and starch analysis, to determine what plants were burned and smoked to produce the soot on the vessels.

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