

BOILING, BAKING, AND POTTERY BREAKING: A FUNCTIONAL ANALYSIS OF CERAMIC VESSELS FROM COWEETA CREEK

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The Coweeta Creek Pottery Assemblage

The pottery assemblage considered here derives primarily from the Coweeta Creek mound, which formed from successive rebuildings of the community's townhouse. Specifically, we examine materials from the first five floors of the Coweeta Creek townhouse. These sherds and other refuse were dumped on townhouse floors between building stages. Rodning and VanDerwarker (this volume) have demonstrated that the sherds from townhouse floors are significantly larger and less fragmented than those from other contexts at the site. One possible explanation for this pattern is that refuse was deposited during events related to the ceremonial destruction and rebuilding of the townhouse. Several large vessel fragments may be related to activities that took place in the townhouse. Townhouse floor assemblages may have also included refuse redeposited from the surrounding village (Egloff 1971; Schiffer 1985). Other pottery was analyzed from Features 70, 71, and 72, which were pits located southwest of the townhouse. We chose these pit assemblages because of the relative abundance of sherds and their proximity to the townhouse. Additional pottery was analyzed from the floor of a burned domestic structure located in the southeastern part of the excavated area (Figure 1). Seven smashed pots and two large vessel fragments were recovered from the floor. Considering their surface treatments and paste characteristics, vessels from

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Functional studies of southeastern pottery assemblages have provided important insights on regional economic and social organization (Blitz 1993; Hally 1983a, 1983b, 1984, 1986a, Pauketat 1987, 1989; Shapiro 1984, Steponaitis 1984; Welch and Scarry 1995; Wilson 1999). By identifying functional attributes of different vessel shapes, sizes, and surface treatments it is possible to relate archaeological pottery assemblages to past foodways. This approach also holds certain advantages over traditional type-variety classification systems in that the analytical units defined are functionally meaningful. Here we offer a functional analysis of Qualla phase pottery assemblages from the Coweeta Creek site in southwestern North Carolina.

A renewed interest in the Qualla phase occupation of southwestern North Carolina has generated a better understanding of Cherokee lifeways in the late prehistoric and protohistoric periods (Ward and Davis 1999:183-190). Archaeological study of the Coweeta Creek site along the Little Tennessee River has figured prominently in these recent advances (Figure 1). Analyses of mortuary patterns, architecture, and faunal and botanical assemblages are laying the groundwork by which to examine more complex social issues (Rodning 2001; Sullivan and Rodning 2001; VanDerwarker and Detwiler 2000). A lack of archaeological research on pottery, however, represents a gap in our basic knowledge of Qualla phase foodways. In this article, we define the range of vessel types from an assemblage of pottery from the Coweeta Creek site and consider the activities in which each vessel type was likely used. We intend for this study to be a baseline for future studies of Qualla phase pottery at Coweeta Creek and throughout southwestern North Carolina.

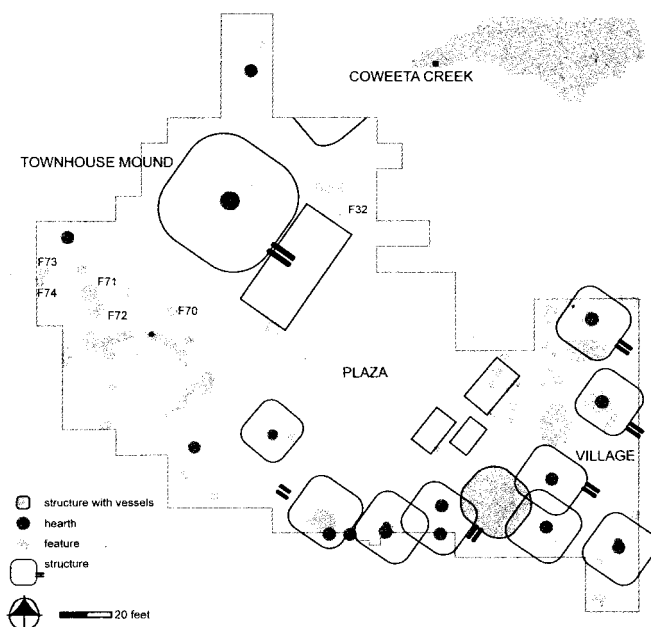


Figure 1. The Coweeta Creek site (31MA34).

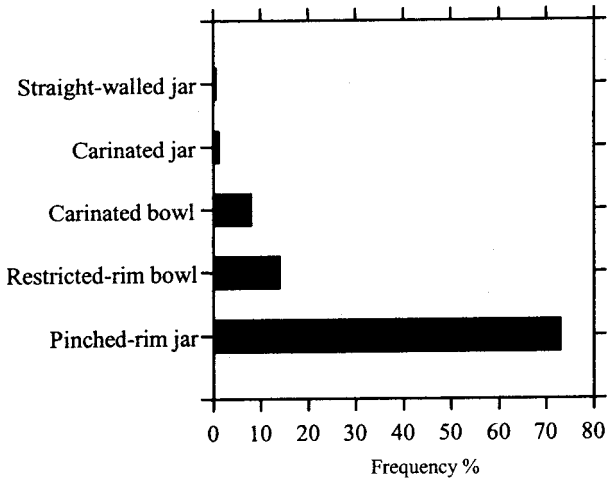


Figure 2. Vessel class frequencies from the Coweeta Creek site.

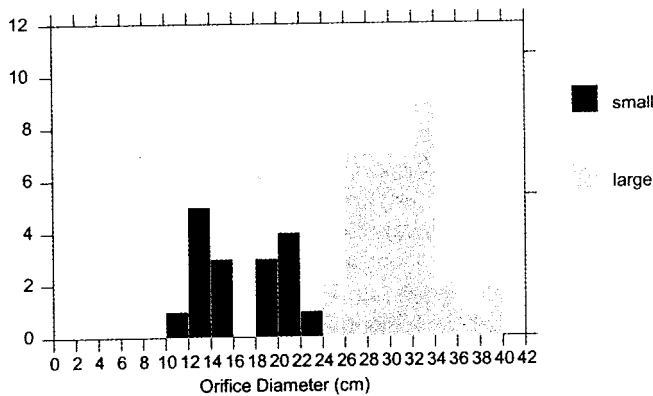


Figure 3. Coweeta Creek site pinched-rim jars.

this building probably predate deposits from the mound and pits southwest of the mound. These materials were included, however, as they provide a rare glimpse of a domestic vessel assemblage from a behavioral context. As a whole, the pottery assemblages examined as part of this study derive from a combination of different refuse and behavioral contexts. As a result, the relative frequencies of different vessel types and sizes may vary from more discrete discard contexts.

Pottery analysis entailed the tabulation of sherds by vessel type. Rim sherds were used to represent individual vessels. In situations where multiple rims could have originated from the same vessel, they were counted as a single vessel. Orifice diameter was measured on all vessels with rims representing at least 5% of the total vessel orifice. Vessel shape and size were correlated with evidence of use wear, such as pitting, sooting, and oxidation (Hally 1983a, 1986a; Schiffer et al. 1994; Shepard 1971; Skibo 1992; Steponaitis 1984). These more detailed observations about vessel function derive primarily from analysis of the whole and partial vessels in the assemblage.

Qualla Phase Vessel Classes

The Coweeta Creek pottery assemblage consists of a minimum of 170 vessels, 142 of which are from the townhouse. The other 28 vessels come from the village area. All potsherds in the sample are grit tempered. Jars constitute 73% of the minimum number of vessels (MNV; Figure 2). Restricted-rim bowls and carinated bowls are also numerous, constituting a total of 14% and 8% of the MNV, respectively. The remaining 5% of the assemblage

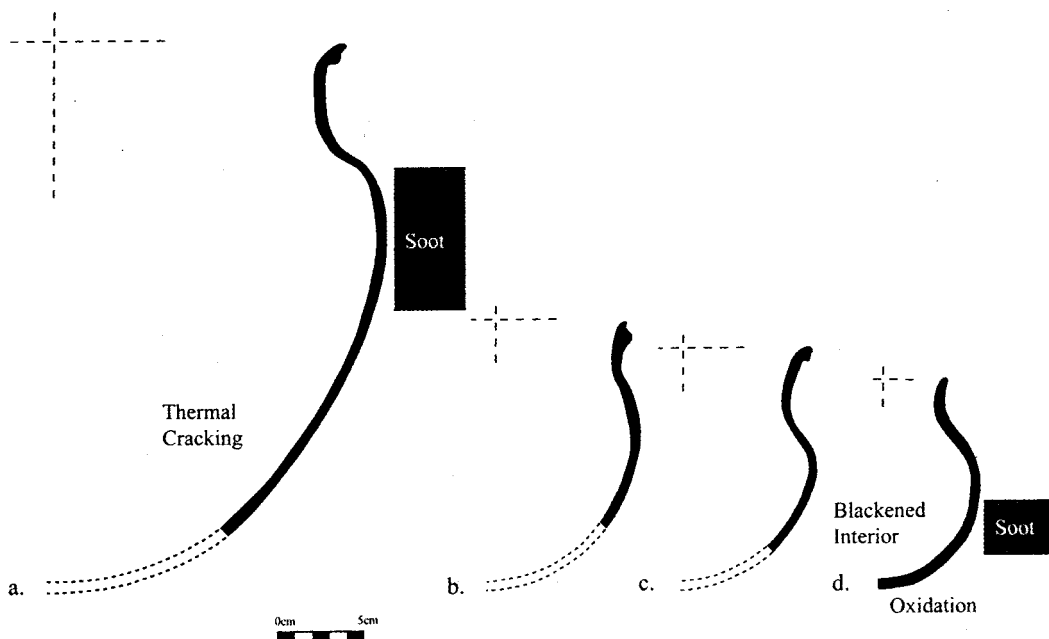


Figure 4. Small and large pinched rim jar profiles: (a) large pinched-rim jar, 2020p8701; (b) small pinched-rim jar, 2233p1935; (c) small pinched-rim jar, 2233p1720; (d) small pinched-rim jar, 2233p1718 (RLA catalog numbers).

is represented by two carinated jars, one straight-walled jar, one pinch pot, one flaring rim bowl, and three vessels represented by rims too small to be assigned to a vessel class. The flaring-rim bowl and pinch pot are not included in this study as the former is probably a non-local exchange item and the latter may not have been a formal vessel.

Pinched-Rim Jars

A bimodal distribution of pinched-rim jar orifice diameters suggests that Coweeta Creek potters produced jars in small and large size classes (Figure 3). Small pinched-rim jars have orifice diameters ranging from 10 to 24 cm, while large pinched-rim jars have orifice diameters ranging from 25 to 40 cm. Large pinched-rim jars have deep, oval bodies and short flaring necks with pinched lips (Figure 4). Exterior surfaces are complicated stamped with either plain or burnished interiors (Egloff 1967). Patterns of surface alteration include oxidized and sooty exterior surfaces and pitting on interior basal surfaces.

A portion of a large pinched-rim jar from Feature 32 exhibits all three of these characteristics. An 8-cm zone of soot encircles the shoulder of this vessel. The vessel's exterior is also highly oxidized at its base (Figure 4a). These telltale signs of thermal alteration indicate prolonged exposure to a cooking fire (Hally 1983a; Holmes 1886; Skibo 1992; Steponaitis 1984). Interior pitting on the vessel's basal surface provides clues to the kinds of cooking tasks for which large jars were used (Hally 1983a; Shapiro 1984). Pitting may have covered the jar's entire basal portion, although the vessel is broken, making it impossible to know for certain. The location and structure of this pitting is similar to that reported for Barnett phase (AD 1550-1700) jars in northwestern Georgia (Hally 1986a).

An examination of eighteenth-century Qualla phase pottery assemblages from the Townson (31CE15) and Tuckasegee (31JK12) sites in southwestern North Carolina has resulted in the identification of three additional large pinched-rim jars with this distinctive use wear pattern. This pitting is absent from small pinched-rim jars, suggesting functional differences between large and small size modes of this vessel class.

To explore more fully the differences in form and function between small and large pinched-rim jars, we expanded our sample to include ten Qualla phase vessels from the Tuckasegee and Townson sites. Analysis of this expanded sample revealed that large pinched-rim jars exhibit a higher degree of orifice constriction than do small pinched-rim jars. The degree of orifice constriction of both large and small pinched-rim jars was determined by measuring the angle of the line running from immediately beneath a vessel's lip to its point of maximum width (Figure 5). This measurement,

referred to here as rim angle, was calculated for all pinched-rim jars represented by rims that are intact from lip to shoulder. Small pinched-rim jars have rim angles in the range 69° to 87° with a median score of 77.5° (Figure 6). Large pinched-rim jars have rim angles in the range 51° to 67° with a median score of 58° .

Given their size, shape, and use wear patterns, large pinched-rim jars were likely used for boiling large quantities of food like hominy and other maize dishes (Hally 1986a; Harrington 1909:223; Shapiro 1984; Wright 1958). Hominy preparation requires a boiling period of 3 to 4 hours in which a mixture of shelled maize kernels

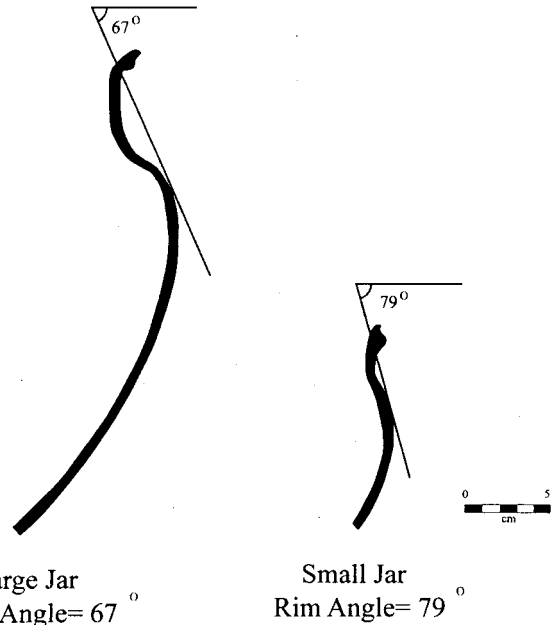


Figure 5. Rim angle measurements.

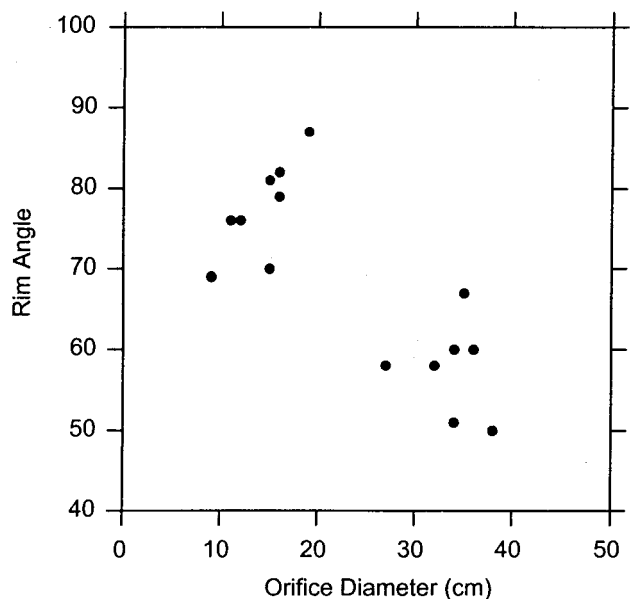


Figure 6. Rim angle measurements for small and large pinched-rim jars.

and water is stirred repeatedly (Fussell 1992:197; Wright 1958). Hardwood ash lye is used to facilitate removal of the outer skins from kernels. Considering these procedures, the basal pitting on large pinched-rim jars may be the result of a combination of thermal shock, chemical corrosion, and abrasion (Hally 1983a:18).

The greater orifice constriction of large pinched-rim jars would have increased containment while decreasing rapid evaporation of water during boiling (Linton 1944:370). The flared lips of these jars would have facilitated pouring foodstuffs into other vessels for mixing and serving tasks (Braun 1980, 1983; Shapiro 1984:702). However, large pinched-rim jars would have been too large and heavy to be moved frequently while cooking. No lugs or handles were added to the vessel rims of these jars that would have facilitated frequent movement.

Small pinched-rim jars have globular bodies with short flaring necks and notched rim strips (Figure 4b-d). Vessel exteriors typically have complicated stamped designs and vessel interiors are often burnished. Three partial small pinched-rim jars provide the most insight into the function of this vessel class. Two of these vessels have sooty outer surfaces indicating that they were used as cooking pots. The smallest of these two jars has an oxidized base surrounded by a 3-cm-wide ring of soot (Figure 4d). The basal portion of this vessel is also blackened on its inner surface, indicating prolonged exposure to a cooking fire. The other pinched-rim jar has soot covering much of its exterior surface (Figure 4). As noted earlier, small pinched-rim jars have less access restriction than large jars. The small size and unrestricted shape of these vessels would have facilitated their movement during cooking while providing easy access to contents (Braun 1983; Shepard 1971). Lug handles present on some small pinched-rim jars also suggest the need to manipulate these vessels during

cooking activities (see Pauketat 1987:7). Moreover, the flared necks of these jars would have allowed a vessel's contents to be poured easily into other containers (Braun 1983). Based on this evidence, we surmise that small pinched-rim jars were likely used to reheat small portions of food or to mix and cook selected ingredients that were later added to dishes such as stews. It is also possible that small pinched-rim jars were used to process many of the same foodstuffs as were large pinched-rim jars, but in smaller quantities (Hally 1986a; Shapiro 1984).

Straight-Walled Jars

Only one straight-walled jar has been identified in the Coweeta Creek assemblage (Figure 7b). This vessel is characterized by a pointed base, straight unrestricted walls, and a flaring rim. The outer surface is complicated stamped and the inner surface is burnished. Soot covers the upper portion of this vessel indicating exposure to a cooking fire. This unrestricted shape would have presented little access restriction to contents (Braun 1983; Shepard 1971). Thus, straight-walled jars may have been used to prepare meals that required frequent mixing and stirring.

Restricted-Rim Bowls

Orifice diameters of restricted-rim bowls range from 10 to 32 cm (Figure 8). These vessels are relatively shallow with broad rounded bases and constricted orifices (Figure 9). Rim strips are notched (Egloff 1967). Exterior surfaces are complicated stamped while interior surfaces are burnished. These pots do not have sooty exterior surfaces, and there is no other evidence that they were used for cooking activities. Considering their small size, these bowls were likely serving and eating vessels for individuals and small groups. As such, their constricted shape would have reduced the risk of spillage when they were carried around or passed about (Braun 1983).

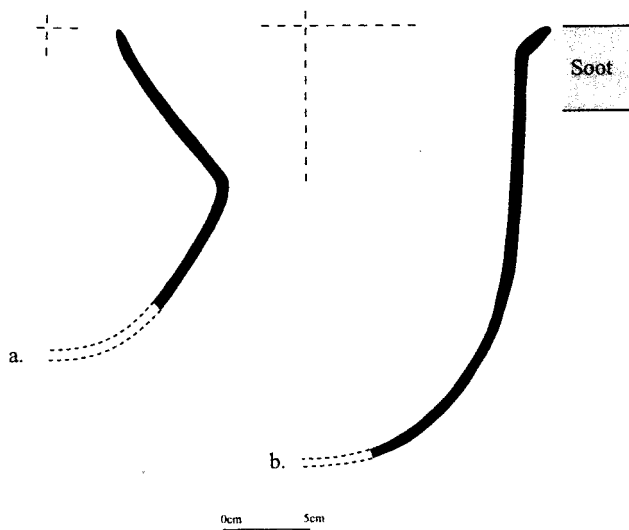


Figure 7. Carinated jar and straight-walled jar profiles: (a) carinated jar, 2020p4864; (b) straight-walled jar, 2020p2232.

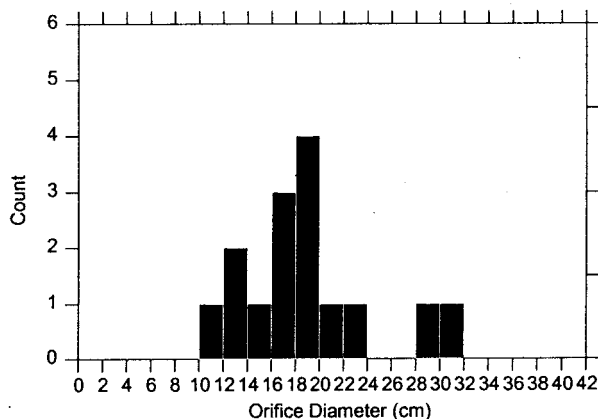


Figure 8. Restricted-rim bowls from the Coweeta Creek site.

Carinated Bowls

Carinated bowls are wide, shallow vessels with relatively flat bases. Rims slant inward, often forming a sharp angle with the vessel body (Ward and Davis 1999: Figure 5.18; Figure 10). The upper portions of these vessels are burnished with incised design fields that contain both rectilinear and curvilinear motifs (Egloff 1967; Ward and Davis 1999:181). They are complicated stamped below the shoulder, and vessel interiors are invariably burnished. Carinated bowls are generally larger than restricted-rim bowls. While orifice diameters range from 9 to 30 cm, only one carinated bowl has an orifice diameter below 22 cm and may represent a smaller size mode of this vessel class (Figure 11). Two partial vessels from the townhouse and one from a burned domestic structure in the village provide the most detailed information about the function of carinated bowls (see Figure 10).

The two carinated bowls from the townhouse are very similar in body morphology. Neither vessel exhibits any evidence of exposure to a cooking fire. However, a circular zone of pitting marks the base and lower wall of one vessel (Figure 11b). This use wear pattern, characterized by areas of intact vessel surface separated by individual pits, is likely the result of the bowl's contents being scooped out with a ladle. Hally (1983a) and Shapiro (1984) have identified similar patterns of use wear on Lamar period carinated bowls from northern Georgia. Based on their broad shallow shapes, patterns of use wear, and mode of decoration, these carinated bowls were probably communal serving vessels (Hally 1983a, 1983b, 1986a; Henrickson and McDonald 1983; Wilson 1999).

The carinated bowl from the village differs from the two townhouse vessels in both shape and surface alteration. This vessel is taller with a higher length to width ratio than other carinated bowls in the Coweeta Creek assemblage. In addition, a 2-cm ring of soot encircles the vessel base indicating that it was placed over a low fire (Figure 11c). This bowl was likely used in both cooking and serving tasks. The more constricted nature of this vessel would have allowed foods to simmer for extended periods over a low fire while decreasing liquid evaporation (Linton 1944). Clearly, carinated bowls were used for both cooking and serving tasks (Hally 1983a, 1986a; Shapiro 1984). However, the differences in shape and function among these vessels require further examination.

Carinated Jars

Two carinated jars have been identified in the Coweeta Creek assemblage (Figure 7a). These vessels have rounded, subglobular bodies, flat or gently rounded bases and long, insloping necks that form constricted orifices (Ward and Davis 1999: Figure 5.18). Surface

treatment is similar to that of carinated bowls with complicated stamped bases and upper rims embellished with incised curvilinear design fields. Interior surfaces are burnished and there is no evidence of exposure to a cooking fire or any form of physical abrasion. Both vessels have 9-cm orifice diameters. Considering their high degree of access restriction and high length-to-width ratios, carinated jars were probably used for the serving and short-term storage of liquid foods (Hally 1984, 1986a).

Vessel Fragments

Two large vessel fragments were recovered from the burnt domestic structure located in the Coweeta Creek village area. Both fragments appear to have been used as griddles or baking platters, as evidenced by circular

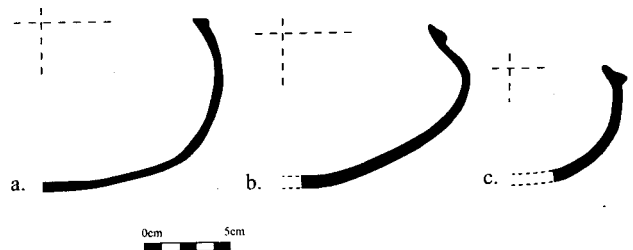


Figure 9. Restricted-rim bowl profiles: (a) restricted-rim bowl, 2233p1468; (b) restricted-rim bowl, 2020p6833; (c) restricted-rim bowl, 2233p1934.

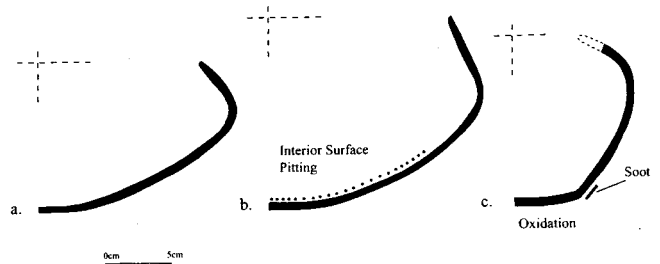


Figure 10. Carinated bowl rim profiles. (a) carinated bowl, 2020p2232; (b) carinated bowl, 2020p330; (c) carinated bowl, 2233p1718.

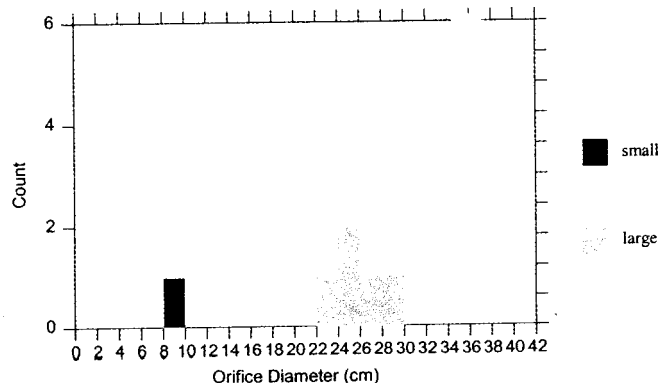


Figure 11. Carinated bowls from the Coweeta Creek site.

zones of oxidation surrounded by bands of soot. We have identified two similar artifacts from a late eighteenth-century Cherokee house at the Townson site, located about a day's walk west of the Coweeta Creek site along the Hiwassee River. Hally (1986a) has also reported their presence in sixteenth-century assemblages from northwest Georgia. He suggests that these vessel fragments were used for baking foodstuffs such as corn bread. Henry Timberlake's 1762 description of Cherokee bread baking in the Overhill country provides some insight into how these vessel fragments may have been used.

After making a fire on the hearth-stone, about the size of a large dish, they swept the embers off, laying a loaf smooth on it: this they cover with a sort of deep dish, and renew the fire upon the whole, under which the bread bakes to as great perfection as in any European oven (Williams 1948:57).

Such baking utensils were probably common additions to household vessel assemblages. That more of these were not identified in the assemblage may be a result of the difficulty of identifying them after breakage.

Discussion

In this study we have identified five vessel classes in the Coweeta Creek site assemblage. These include small and large pinched-rim jars, straight-walled jars, restricted-rim bowls, carinated bowls, and carinated jars. Functional evidence indicates that boiling was the primary method of food preparation at Coweeta Creek. Ethnohistorical information indicates that eighteenth-century Cherokees boiled most foods before mixing them together to form stews, soups, and gruels (Hally 1986a; Ulmer and Beck 1951; Swanton 1946; Williams 1948; Wright 1958). The importance of boiling is also represented in the large number of cooking jars at Coweeta Creek, as thermal shock would have led to higher breakage and replacement rates than for other vessel types (David 1972; Foster 1960; Pauketat 1989). Baking was a less common food preparation technique carried out in large, recycled vessel fragments (Hally 1983a, 1983b, 1986a; Williams 1948).

An examination of the *in situ* vessels from the catastrophically burned structure at Coweeta Creek reveals that domestic household assemblages included almost the entire range of Qualla phase vessel types. Presumably a combination of the jars, bowls, and griddles from this burned living surface would have been used to prepare any single meal. The recovery of a large carinated bowl from the hearth of this structure reveals that some cooking activities took place indoors.

From a broader regional perspective, the Qualla phase vessel assemblage at Coweeta Creek is similar to those from late prehistoric and protohistoric Lamar period

settlements in northern Georgia. The Coweeta Creek assemblage includes basically all the same vessel types reported for the Barnett, Tugalo, and Dyar phases (Hally 1983a, 1983b, 1986a, 1986b; Shapiro 1984). Two Lamar vessel types absent from the Coweeta Creek assemblage are flaring-rim bowls and gravy boat bowls. These also appear to be absent from later Qualla sites like Tuckasegee and Townson. Overall, however, there seem to be important continuities in terms of the organization of native food preparation and serving practices in this area of the Southeast from the late sixteenth through early eighteenth centuries. We hope this study will provide a baseline for additional investigations of Qualla phase pottery assemblages at Coweeta Creek and throughout southwestern North Carolina.

Notes

Acknowledgments. We thank Brian Billman, Steve Davis, David Hally, David Moore, Brett Riggs, C. Margaret Scarry, Vin Steponaitis, Bram Tucker, Trawick Ward, and two anonymous reviewers for their comments on this article in manuscript. A special thanks goes to Amber VanDerwarker and Kandi Detwiler for contributing to an earlier version of this paper. Thanks also to Brian Egloff, Keith Egloff, and Bennie Keel, without whose earlier contributions to Cherokee archaeology this study would not have been possible.

1 The flaring-rim bowl is red slipped and composed of an orange, grit-tempered paste that is quite different from the paste of other vessels from Coweeta Creek.

2 Two of the large pinched-rim jars with thermal cracking are from the Townson site. The other jar with thermal cracking is from the Tuckasegee site. It is significant that thermal cracking was identified on every large pinched-rim jar that is intact enough to analyze in this fashion.

3 Their rounded bases also would have made it possible to rest them on the ground without some kind of support.

4 Foodstuffs were likely sipped or scooped directly out of restricted-rim bowls.

5 Continuing analyses of Coweeta Creek pottery assemblages have revealed carinated jars to be absent from this Qualla phase site.

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